Recently, Mr. Thomas Lishman, of Stockton (formerly manager of the Millbank-forge, Hart-warren, now, in partnership with his brother, delivered a lecture on strikes, at Hartlepool, in the course of which he said, to strike for the shortening of the hours of labor, put short hours further off than ever. The way to cure low wages was for working men to hoard up money and become themselves the employers of labor, as was done in co-operative societies, and limited liability companies. The lecturer instanced the great effects of the Rochdale Co-operative Society, and what had arisen from two pence a week collected among twenty-eight weavers. The annual profits of that society, now more than thirty years old, were £5,000. Teetotalism was also a tremendous help in this matter of doing away with strikes. But the worst of all these matters was a lock-out. He was entirely opposed to strikes; but still more deadly against a lock-out. It was not for a raising of the number of the hours of labor that a lock-out occurre1; but a spirit of vengeance actuated the man who locked his employees out. Trade societies would be beneficial if they would neither recognize "strikes" nor "lock-outs." Already, the workmen in the iron shipbuilding yards of this district had lost over £2,000, which would be forever lost to them and to the district. If the men saved the money expended in strikes they would be able to start concerns of their own.

## Improvements in Gas Engines.

In gas engines, as at present arranged, it is common to fire the charges of mixed gas and air by means of electricity, but this is inconvenient, as it is found difficult to keep the batteries in working order. Mr. Hugh Smith, of Westbourne Park, therefore proposes as an improvement to fire the charges by means of vapor which burns spontaneously on coming in contact with air; the vapor he employs is that of the liquid phosphide of hydrogen; and he passes small pipes, which he calls explosion tubes, from the gas main to each end of the cylinder, and on these tubes are applied, just before the connection with the cylinder, bottles containing the liquid phosphide, so that the gas may pass over the liquid. When the cylinder is charged with gas and air, a tap on one of the explosion tubes is opened, and the gas, carrying with it the vapor of the phosphide, enters the cylinder, and the vapor there meeting with air, an explosion at once takes place, driving the piston along the cylinder, and in this manner the piston is driven from end to end of the cylinder. This method of firing the charges is applicable whatever be the form of the combustion chamber, whether it be, as assumed, in the foregoing description, a cylinder with a piston working within it, or of other form and construction.-London Artizan.

## Paper from Wood.

We stated some time since that the paper on which the SCIENTIFIC AMERICAN is printed contained thirty per cent of wood pulp. A company has been formed with a capital of \$500,000 for preparing the pulp, and on the 12th inst., they met to examine the works, which are situated on the Schuylkill, near Philadelphia. A poplar tree taken from the hillside was converted into clear, white, soft paper, in the space of five hours. In the evening a hanquet was given by Messrs. Jessup & Moore, at the Continental Hotel. About 200 guests were present, and speeches were made by the Mayor of Philadelphia and other prominent gentlemen.

A STEAM HOIST .- At the Newark Castle Wharf a steam hoist (without any engine), made at the Trent Iron Works, has been successfully tried. A timber frame forming the base of the machine, incloses a large cylinder. On the steam being admitted to it a beam of iron, armed with strong teeth, is forced out, and from this motion is given through a simple ar rangement of wheels, which causes the chain barrel to revolve. The direct action of steam is thus brought into use without the intervention of a steam engine as in ordinary steam cranes. The working is easy, and without noise.

A BALLOON train, to ply between the Place de la Concorde and the Champs de Mars, is spoken of as one of the schemes to be tried during the great gathering in Paris next year.



E. A. V., of Md.-Illuminating gas may be made by the des tructive distillation, in a close retort, at a bright red heat of wood, bituminous coal, petroleum, and other organic com pounds which contain hydrogen and carbon. Several forms of apparatus for the purpose-some very cheap and simple-have been illustrated in our columns. The simplest, and probably the pounds which contain hydr best apparatus for obtaining light from petroleum, is a ker lamp

C. W. B., of N. H.-In order not to lose any power in conducting your water down an inclined pipe to your turbine, must have the pipe of sufficient size to keep up the full pres of the head upon the wheel. rbine, you

B. H. P., of Iowa.-The specimen which you send us is a piece of a tin pail. If you "found it 40 feet below the surface d 17 feet in sand stone rock," some person must have carried We have known miners in California to be puzzled by it there. finding pieces of their own shovels in their diggings

A. S. of Iowa.—The most effectual mode of making bridge bolts rust proof is to cover them with zinc-galvanizing, asit is improperly called. Next to this the best plan is to paint them with linseed oil and white or red lead.

E.S. W., of Conn.—For directions for making black ink, see page 211, current volume.

B. P. B., of Conn.-Blowers must of course be so placed as to allow a free supply of air.

G. A. S., of N. Y.-Professor Chandler's elaborate discussion of boiler incrustations having been so recently pub-lished in our columns, nothing in your paper, can be new to our readers, excepting, possibly, the suggestion that lime in the feed water may combine with the grease from the engine to form lime

E. C. E., of Pa.-It will take any person of ordinary intelligence, certainly not more than thirty minutes to under stand chemical symbols. He needs to be told only that they are the initials of the names of the elements, and that the atc weight of any element is the number of times which its atom is eavier than the atom of hydrogen. We can conceive no greater waste of time than the attempt to teach chemistry without first teaching Dalton's atomic theory.

B. F. M., of N. Y.—A cylinder is a round body of the same size throughout its whole length; a body with a circular base which tapers to a point, is called a cone. The form of the cigar steamer approaches that of two cones joined at their bases; it is therefore called conical in form-never cyindrical.

J. B. F., of—..." I wantto know what book is the best for a young man to take that wants to learn about steam and steam engines." One of the best 18 Bourne's Hand Book. We can

send if of \$1 50, C. C., of N. Y.—The directions for making a sun dial were published in Vol. 2d. New series page 96-No. 6. J. H. H., of N. Y.-Chloroform, benzine, and naptha

are all solvents of india-rubber

S. P., of Pa.-We cannot tell you how to become a otive engineer in the SCIENTIFIC AMERICAN

J. S., of N. Y.-You have omitted to send anything but the size of your shaft, viz, 3½ inches by 13 feet long, and you wish to know whether it is strong enough for your water wheel. If we knew more about it we should give you an answer with pleasure. Mills that have balanced wheels and sashes can be run much faster than others not balan

F. M. H., asks.-" If I obtain a patent for spring bed ms with slots suspended by annular rúbber rings, can I apply the same to carriage seats and sell rights for same without taking out a separate patent?" No A separate patent will be

Drawing Dust from Shops.—It Brooklyn Inquirer will call, we will relieve him, or no pay. American Ventilation Com<sup>¬</sup> pany, 17 Courtlandt street, N. Y.

W. F. M., of N. J.-A Barker's mill applied to a hydrant would probably yield less power than a little turbine, and would be more expensive. G. F., of Me.—For a discussion of the power of wind

mill s we refer you to Morin's Mechanics.

S. W. M., of N. Y.-There is no other disinfectant for your stagnant pool so cheap as the surrounding soil. You mus t either fill or drain it.

L.S., of Cal.—In a syphon gage the length of the divisions in the scale is not varied by the difference in the area of the surface of mercury acted upon by the steam.

W. G. B., of Del.-Electroplating with iron is effected by reducing the iron from the proto-sulphate, or the neutral chloride. Brass cannot be deposited by the battery. Perhaps by employing a very powerful current you may deposit the copper and zinc simultaneously, and then unite them by heat.

T. G. of Conn.-We know of no such substance as the oxalic muriate of tin.

E. S., of Ohio .- To make cloth water-proof, cover it with a mixture of paraffine and a minute proportion of linseed oil-L. O., of N. Y.-The specific gravity of the human

body is very nearly the same as that of water; it is said that a lift of about four pounds is sufficient to float an ordinary person. The specific gravity of cork varies very widely with different samples, but it is probable that from one-tenth to one-fourth of a cubic foot would float a person weighing 175 lbs., provided the whole of the body and head except the month was submerged

T. H. M. H., of Pa.-The swarming of bees is easily prevented by keeping them in a large hive or room. This plan is extensively practiced. The hymenial flight is liable to take place during the season for most profitable swarming.



ISSUED FROM THE U.S. PATENT OFFICE FOR THE WEEK ENDING APRIL 10, 1866. eported Officially for the Sci

10 Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent specifying size of model required and much other inormation useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

3,765.—Manufacture of Cans.—John T. Ackley and John K. Truax, Philadelphia, Pa.: We claim the application of pitch or a bituminous or resinous ce nent to the inside or the outside of a box or can, made wholly or artly of paper, substantially as and for the purpose above set orth. 53.765. partly forth.

The object of this invention is to produce a can made wholly or partly of paper or pasteboard, which will hold greasy and corrosive solids and fuids without leaking or ozing through its walls. The inner surface is coated with a resinous or bituminous cement,

so as to protect the substance from which the can is made from the action of its contents, whereby a can composed wholly or partly of paper can be made capable of holding solids and liquids of a greasy or volatile and penetrating character. The outside may be coated likewise, if desired, and the lid or cover is also protected by the ame means 1

53,766.—Churn.—Levi O. Allen, Gardiner. Maine: First, I claim the compressing curb, C, and disk, H, acting in com-bination with the adjustable floats inclosed by them, as and for the purpose described. Second, I claim the arrangement and mode of adjusting the floats relatively to each other and the containing vessel, as and for the purpose described. Thrd, I claim the ribbed plates in each end of the churn box, in combination with the adjustable floats.

53,767.-Constructing Wells.-E. S. Alvord, Milford,

53,767.-CONSTRUCTING TOTALS IN CASE IN THE STATE OF TH

[The object of this invention is to construct a well by sinking or driving tubes into the ground, and forming at the bottom a cavity. the lower part of which is filled with gravel or other filtering mat rial, to prevent dirt from entering the pump when it is operated.]

rial, to prevent unit from entering the pairs when it is operated.) 53,768.—Staging for Buildings.—William Arrouquier, Worcester, Mass.: First, I claim an adjustable and portable staging constructed so that it can be attached to the window frames, or similar apertures of a building, which consists of the combination of the pieces, A B C D, bolts, E G, and supported piece, F, in the manner and for the purpose herein described and set forth. Second, In the combination with the staging aboved described, I claim the metal frame or carriage, H, having friction rolls, i h b], and lips, g and t', as and for the purpose herein set forth. 53,760 Cistern for Draining Deat —E H Acheroft

53,769.—Cistern for Draining Peat.—E. H. Ashcroft,

laim the tank or drainage vessel constructed as described, with orated sides and bottom, together with the perforated tubes nected therewith. Lynn, Mas

connected therewith. 53,770.—Heater for Chimneys.—Thomas M. Aspinall and Stephen H. Whitlock, Piqua, Ohio: We claim the arrangement of the heater box for insertion in the chimney above the arch and provided with a flue, A a A, for the passage of the heated air, etc., from the fire, a cold air induction open-ing, B, and a warm air delivery, C, substantially as described and represented.

S. and a value art certery, v. substatibility as described and represented.
 53,771.—Leather Splitting Machine.—Cyrus W. Baldwin, Charlestown, Mass., and Lorenzo D. Hawkins, Stoneham, Mass.:
 We claim the arrangement as well as the combination of the hand wheelshait, its right and left screws, and the two wedges in the frame of the machine and with the boxes of the upper or gage roller and springs, or their equivalents, applied to such boxes, substatially as specified.
 We also claim the combination as well as the arrangement of the abutments, K. K. with the hand wheelshaft, its right and left screws, and the two wedges applied in the frame of the machine and with repert to the boxes of the upper or gage roller, and the springs or their equivalents applied to such boxes, substantially as specified.
 3.772.—Tree Protector.—Burronorbs, Reach Weat Mari.

their equivalents applied to such boxes, substantially as specified. 53,772.—Tree Protector.—Burroughs Beach, West Meri-den, Conn. Antedated March 30, 1866: I claim a disk, A, constructed of wood, metal, or other suitable material, and ot two or more parts, in such a manner as to admit of being snuglyadjusted to the trunk of a tree in combination with the pendant flange, B, at the under side of the disk, substantially as and for the purpose set forth. I also claim the tube C, inserted in the di-k in connection with the vessel, D, substantially as and for the purpose specified.

53,773.— Plow.—J. S. Beals, Alabama Center, N. Y.: I claim the supplemental share, D, constructed substantially, as shown and described, and attached to the plow beam at the rear of the coulter and point of the share of the main plow, as and for the purpose herein set forth,

-Extension Table.-William Beadle, Keyport 53,774.-J. N. I clair

N. J.: claim the leaves, D D, falling parallel to the line of extension in nombination with the sliding tops, C C, the removable tr benter boards, G G, and stationary box frame, for the purposes

set forth. 53,775.—Float for Boats.—Alonzo T. Boon, Galesburg, Ill., assignor to self and J. Scott Richnor, Musca-tine, Towa: I claim the adjustability of the buoys or floats, B, by means of the ears. c. and places, d, and their arrangement and aftachment to the platform, A, substantially in the manner and for the putpose as herein set forth. 52,700. Chappen for Decement The chapter T. Decement Y.

herean set forth. 53,776.—Clamp for Brooms.—Theodere F. Boyer, Har-risburg, Penn.: I claim it e wire clamp described, the same consisting of the upper part, A. B. formed of a single piece of wire, a', as described, and two straight pieces, a2 a2, attached thereto, and of the iower part, C. D. formed and constructed like the said upper part, A. B, with the ad-dition of the uprights, blo 23, as described; the said two parts be ing adapted for adjustment together on a broom, substantially as and for the purpose described.

53,777.-- Manufacture of Cheese.--Jenks Budlong, Char-don, Ohio: I claum the described in provement in preparing or making cheese for market by condemsing the curd in a series of hoops arranged as specified, by the action of the screws, E F, shaft, I, and beam, G, ar-ranged as specified.

ranged as specined.
53,778. - Combined Umbrella and Cane. - P. T. Brownell, Elmira, N. Y.:
Firs., I claim in unorellas and parasols. pla ing the stretchers out ide of and above the ribb, and hinging the inner ends of the ribs to the runner, substantially as described.
Second, I also claim the cane, A, made substantially as above shown, with a tube, (C, at its upper end, a sliving box, K, to which the stretchers, J, are hinged, and rod, F, which operates the runner, I substantial y as described.
Third, I also claim the combination of an umbrella made substantially as described.
Third, I also claim, the combination of an umbrella made substantially as described.
Spread, serves as its handle, and when it is closed up, serves as a receptacle for it, substantially as shown.
53, 770 - Arrifforial Eucl. - James F. Buckley, Brooklyn.

53,779.—Artificial Fuel.—James F. Buckley, Rrooklyn, N. Y. Antedated March 30, 1866: Iclaim prep. red charco.il saturated with whisky, volatile oils and a glutinous waste formed into blocks, as a cheap, aromatic, artificial fuel for common uses.

53,780.—Die for Nut Machines.—Orrin C. Burdict, New Haven, Conn.: I c aim a hexagonal disconstructed in the manner substantially as herein set forth.

53,781.-Die for Punching.-Orrin C. Burdict, New Ha-

ven, Conn.: I claum a die constructed substantially in the manner described, o that the 'ize of the die may be adjusted by taking from or adding o the number of pars, substantially as specified,

53,782.—Bolt-heading Machine.—Orrin C. Burdict, New

Haven, Conn.: First, I clain the combination of the hinzed bar, A', cam. B' nd vibrating lever, C', for the purpose of arresting the movement f the slide, K, without disconnecting the power from the ma-lines. civites. Second, "he combination of the dies, E' and H', as preliminary shaping dies, when the said dies are combined with the herein-described nut machine s as to accomplish the preliminary shap-ing before the bar so shaped is presented in front of the die box.

53,783.—Thread Tension Device for Sewing Machines.— Thomas A. Chandler and H. C. Goodrich, Rockford, [1]:

Ill.: We claim the pivoted lever. I, and jaws, E, in combina ion with the spring, f, arranged in the manner and operating as and for the purpose set forth. See nd We claim the adjustable clamp, H, plate, A, and pivot.<sup>1</sup>, in combination with the spring, t, and lever. I, arranged and operat-ing substantially as and f r the purpose set forth.

- Stave Machine.-Thomas Cheshire, Cincinnati. 53.781. Uhio

Uhio: Iclaim indenting or compressing into the edges of staves groover r creases, so that the alter swelling out of the wood in the casks of arrels shall make pericetly tight and strong joints, substantially choose when the strong st

barrels shall make periectly tight and strong joints, substantially as described. I also claim in combination with indenting or creasing wheels, the jointers pivoted and made yielding on the swing or rocking plates, it, substantially as and for the purpose described 53,765. – Beehive. – James B. Child; Lee Center, III.: I claim the combination of the cross bar, it, horizontal bars, I I, lifting tars, G G, and sping catches. H H, who cach bir, I is pro-yided with two lifting bars, G G, and all arranged to operate as and for the purposes specified.

53,786. - Paper Window Shade. - Lewin A. Colbert, Bal-

timore, Md.: I claim, rirt, A window Shade. —Lewin A. Conjett, Bar-timore, Md.: I claim, rirt, A window shade made of paper connected to one or more collers by a woven f. bri, and rendered translucent either be fore or after mounting, substantially in the manner described. Second, The compo. Id spring rollers and cornice box airanged and operating substantially as and for the purposes set forth.

53,787.—Toy Boat.—George J. Colby and Levi H. Thomas, Waterbury, Vt. Antedated March 30, 1866

aim a toy boat constructed in the manner as herein described, new article of manufacture.

as a new article of manufacture. 53,788.—Water Wheel.—A. P. Conant, Smithland, Ky: I claim the arrangement of the tangential buckets of the wheel, C, curved bucket of the discharge wheel, D, and L-shaped gate, B, constructed and operating in the manner and for the purpose herein specified.

53,789. - Stovepipe Drum. - Theodore R. Cook, Saratoga Springs, N. Y.: I claim the radiator, A, having the internal t bes. B and C, spiral diaphragm, a, and damper. E, all arranged and operating substan-tially as herein shown and described.

790.—Apparatus for Administering Medicines.—Sam-uel Curtiss, Ir, Williamsburgh, N. Y.: claim an apparatus for measuring an administering medicines, structed and arranged su stantially as descri ed and for the pur-es set forth 53,790.-

[The object of this invention is to turnish an apparatus for con taining medicine, when prepared for the patient, and it consists o

a cup for containing the prepared medicine, having a scale to show the quantity prepared, of a reservoir for measuring the quantity to be given at one time, and a spoon-shaped orifice for administering the same, the medicine being forced from the measuring reservoir to the administering orifice by the action of a piston.]

53,791.- Broom Head. - John Danner, Canton, Ohio: I claim in combination with a broom head having slots or op ings in each of its sides, the clauping plate, C, and through tightering bolts, for the purpose of first arranging and then tigh clamping the broo u corn or other filling to the broom head, s stantia ly as herein described and represented.

53,792. Harrow.-N. A. Davis, Sutton, N. H.:

53,792. Harrow. --N. A. Davis, Sutton, N. H.: First, I claim suspending the cultivator head or rake in front of the carriege winesis to means of faxible supports so as to allow the vibration of the head laterally, and allow the same to be raised or lowered by the levers, G.G. to any required hight to regulate the operation of the teeth. Second, I also claim the facible guards, P. attached to the outer end or the cultivator head D. and reaching forward to mear the iront ends of the states, C. for the purpose of guad ding the head from contact, with site, G. to the purpose of guad ding the head the outer also claim the manner of fastening the teeth, I, to the cultivator or rake head, D. by means of the arm, t, secured in the solor, T. to prevent the lateral swain 18 of the teeth, as specified, and in combina ion therewith, I claim the spiral spring, s, arranged and operating as set ford. Fourth, i also claim broadly suspending a cultivator head or rake the same by means of a lever or levers fr in the diver's seat, as and for the purpose specified. 53,793.-Washing. Maching --David Donation, there

-Washing Machine.-David Dennison, Annis 53,793

53,793.—Washing. Machine.—Jan... quam, Mass: I claim the combination of the slatted frame, C, pressure roller, E, bar, D, swinging arms. D'D', bars, G H, spring, F, and box, b, constructed and arranged r lativ. J, to each other, and operating in the manner and for the purpose herein specified. I also claim the .rrangement of the swinglug arms, D D, bars, G H, sp ing, F box, f, and roller, E, in the manner and for the purpose pose herein specifiet.

in connection with a slatted bad. The object of the invention is to obtain a machine of the classspecified which will act uniformly upon the clo:hes, subject all par s of them to an equal pressure and fric tion, and cleanse them without injury.]

53,794. – Car for Transporting Petroleum. – James and Amos Densmore, Meadville, Pa.; We claim the two tanks, B B a t. ched to the platform of the car. A, by means of the r me work, C C C C and C CC C. together with the bot., 1234 and 1234, directly over the trucks when the same are c. n true ed in the combination as hereinbefore described, and for the purposes set forth 1er-inbefore, or any other me banical construction, sub-tantially the same and which would produce the same result. nme revult. We claim the combination and application as en.irely new, and as valuable and useful improvement.

53.795. - Plumb Level .- Michael W. E. Doran, Indiana-

boly 100. - 1 furner 2000 and polls. Ind.: I clam the construction and arrangement of a level or angle indi-cator by means of the plate, F, with slot, G, for adjusti ig the same across the clustic, E and having the pendents, H, when operated substantially in the manner and for the purpose's set forth.

53,796. - Button. - Frank Douglas, Norwich, Conn.: I claim a button secured by pointed screw, substantially as and for the purpose described.

53,797.—Clothes Drier.—James W. Epperson and Thos. W. Farrill, Woodhull, Ill.: We claim the movab e head block, F, in combination with pulley, g. and hook. b substantially as and for the purpose described. The axie, b, in combination with the head block, f, and the lines, land k, substantially in the manner and for the purposes described.

53,798. Apparatus for Carburetting Air.—Horatio Fair-banks, Boston, Mass.: I claim an imp ovement in apparatus for carburetting air in the reservor. A, in combination with one or more reservors D G, and a series of frames or plat s covered with cloth, or its equivalent, and provided with suitable (penings for the circulation of the air, operating substantial y as set forth.

53,799.—Machine for Stitching Needles into Paper.— George P. Farmer, Philadelphia, Pa.: I claim, as an improvement on my m.ebine patented July 1, 862, the within-described box or hopper. A, separated into several com-partments of different sizes and each compartment separa ed into other compartmet is by partitions, i i, all substantially as and for the purpose herein set forth.
52,800.—Mathead effect.

the purpose herein set forth. 53,800. — Method of Treating Leather Scrap.—Henry B. • Farwell, Boston, Mass.: I came ecovering thet llow or fatty matters from whitenings, or scraps of leather, in the manner as set forth. I also claim in combination with the same the employment of oil of vitriol, as and for the purpose s t forth.

53,801.-Horse Shoe.-Joseph W. Faulkner, Rockford, III.: 111.: First, I clim the bifurcated spring clips with two prongs, con-structed, arranged and operating as described for the purposes set forth

forth second, The combination of the spring draw clip with the shoe, by means of the transverse slot and screw nut, so that as the clip is drawn to the shoe the schet schetnend upon the hoof

arism to the shoe the shoe is tightened upon the no-i 53,802.—Well Borer.—F. Fohr, Rowlesburg, West Vir-ginia: I claim the use of a double connection letween the sinker and drill, such for instance as the spring clamp and screw, or any other equivalent connection, for the purposes set forth.

(This invention consists in the combination of a spring catch or clamp with the sinker and drill of a well borer, in such a manner that a double connection between the drill and sinker is obtained, and if the screw or ordinary connection breaks, the drill is raised by the catch and prevented from being wedged into the hole.]

53,803, --Musical Instruments. --Joseph Foster and Eph-raim Foster, Keene, N. H.: We claim the tremulo reed. G, constructed as above shown, and applied to musical instruments substantially, as described, to pro-duce a tremulo tone for all the notes which are played while the tremulo reed is operated.

53,804.—Sawing Machine.—Henry Fryatt and E. C. Edmonds, Buffalo, N. Y.:
 We claim the arrangement and combination of the vertically sliding gate, C, and the horizontal ways, dd, thereon for the tongues, g g, of the saw to slide in, substantially as and for the purpose here in specified.

g i in  $\mathbf{g}$  to the baw cosine in, account and arrangement of the sliding we also claim the combination and arrangement of the sliding gate, C, and the graduated balance lever, I, with its weight, K, substantially as and for the purpose herein specified.

stanbally as and for the purpose herein specified. 53,805. - Amalgamator.—Willard Monroe Fuller, Chica-

go, Ill.: In an approx go, Ill.: In an appara us for extracting gold and silver from quartz. con-structed substantially as herein described. I claim surrounding the amaigamating kettle with an annular chamber. the central space of which a all form the fire chamber of the apparatus, the said annu-lar chamber being so arranged in relation to the kettle that the quartz or tailings may be drawn off simulaneously from al points of the circumi(rence of the kettle, substantially as and for the pur-poses herein set forth. In an apparatus as above d-scribed, I claim connecting the said annular chamber which a receiving chamber into which the quartz or tailings flow, which said receiving chamber into which the quartz or tailings flow, which said receiving chamber into which the quartz or tailings solve, which said receiving chamber into which the quartz or tailings solve in the apparatus herein described. I claim the valve placed in the feed or hopper, and co structed and arranged substantial y as set fort: for regulating the flow of the ore into the kettle.

ettle. In apparatus constructed and operating as set forth, I claim the ombination and arrangement of valves whreby the automatic dis-harge of the tailings may be effected. I, apparatus constructed substantially as set forth, I claim mak-ng the · oors and flues which lead from the interior of the vessel to he outs de ther-ol, of an OG stape, that is to say, with inclined prfaces to deflect the tailings and prevent the possibility of its ac-umulating and choking up the apparatus.

53,806. - Stovepipe Drum. - Milo Gage, Medina, N. Y.: I claim the combination o the chambers, C.D. with the tubes, B.F. the chamber, D. beng divided into the two comments h, by the chamber on domper, b c, and the tubes B.F. comments a ternately sith sold competents, the while begrating in ucco drangit with a large amount of radiating surface, substantially a herein specified.

herein specified. 53,807.—Machine for making Eyelets.—Thomas Garrick, Providence, R. I.: First, I claim the combination of the protuberance or teat, r, on the end of the hub or punch, t, with the cutting edge, a. of said punch, substantially as described for the purpose set forth Second, I claim the combination of the cutting die, e, and fixed hub and punches, t, constructed substantially as described with the moving cleaners d d, constructed substantially as described with the manner and for the purpose set forth. Third, I claim the combination of the mold in the movable punch for shapin, the exterior of the eyelet, and the cutting shoulder, 2, constructed and operating substantially as described with the further and the combination of the mold in the movable punch the startion of the eyelet, and the cutting shoulder, 2, constructed as described with the fixed hub or punch, t, construct-ed and operating in connection substantially as described for the purpose set forth.

53,808. – Waterproof Collar. – Henry C. Gibson, Camden, N. J.:

N. J.: I claim a waterproof gentlemen's collar, the inieriorside of which is made of cloth, prepared substantially as herein described, and otherwise, and the exterior or paper side with or without glazing or enamel, made to resemble linen or other textile fabrics in use for the rurpo e, all as herein described. 809

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19.—Bag Holder.—Cyrus F. Gillett, Sparta, Wis.: st, I claim securing bags to funnel r ceivers by means of clamp-upports, B B, substant lally as described. ond, The hinged or flexible connections, a a, of the legs, B, in ination with the funnel receiver, A, and hoop, C, substantially stribed.

Sature of the provided matrix of the provide 53,810. - Pump.-Jacob Goodyear, Borough of Carlisle,

**Fenn.:** I claim the combination and arrangement of the cylinders, A and A', B and B', the valves s. and a' the rims m and m', and the ndia rubber rings, C and C', as and for the purposes set forth and described.

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<sup>5</sup>3,811.-Sheep Rack.-G. F. and T. M. Gondy, Inde-

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>0,511.—Sneep Kack.—G. F. and T. M. Gondy, Independence, Ohio:
 Frs'. We claim the adjustable covers. B. arms of limbs. A', and chains, f f', in combination with the shait, G, and rack, substantially as and for the purpose set forth.
 \*cond. We claim in combination with the above, the adjustable guards, H, and cords, n, substantially as and for the purpose set forth.

53,812 .- Paddle Wheel.-James Granger, Zanesville,

53,812.—P'addite whech.—onlines changes, Ohio: The combination of the paddles, H arms, I I, connec ing l ers, M, bridge pieces, J. endless chain G, and pulleys D E, structed and arranged in the manner and for the purpole be specified

This invention relates to that class of padd le wheels in which the paddles are attached to endless chans passing over whiles, and it consists in so arranging the sail wheels, and hanging the paddle- on the endless chains, that a sweep in a circular direction will be given to the addles in their passage through the water, the importance of which is obvious ]

53,813. Step for Spindles.—Charles E. Griffin and Thomas Marsh, Smithfield, R. I.: We claim the independent step for spindler, B in combination with a close oil o amber, a b substantially as described. 53.813. 53,814

53,814. - Hay Rack. - W. E. Grimes, Allen, Mo.: I claim the arrangement of the settions A CL and D, with the windlass, H, and pole, 1, as and for the purpose he ein specified.

53,815.—Process and Compositions for printing Photo-graphic Pictures.—Victor M. Griswold, Peekskill, N. Y.:

graphic Pictures.—Victor M. GPiswold, Peekskill, N. Y.: First I claim as a new article of manufacture, the photographic sur ace describ d' with our without the spal picture enanci. Second, The composition of the opal collodion, by t e formula, No. I, and i i the minner hereinabove set forth, or in any manner sub-antially the same. Third, The funing of the plate over a mixture of ammonia, alum, and unslacked lime, as her inabove set forth. Fourth, The composition of the sensitizing solution, by the formu-la, No. 2 and in the manner hereina-over set vorth, or in any manner her sub-tantially the same. Furth, The composition of the opal picture enamel by the formula, No. 3, and in the manner hereinabove set is ofth, or in any manner sub-tan ially the same. Sixth, The composition on the process of manufac ure, of the opal collodon, s nsi ising solution, and picture camel hereinbefore de-cribed, as and for the purpo e hereinabove, excircle, Seventh, The orocess hereinabove, describ d, for preparing and 1 isning an opal surface for photographic purposes. 53,816.—Machine for Pressing Glass Buttons,—Timothy

53,816.—Machine for Pressing Glass Buttons.—Timothy Guilford, Cheshire, Conn.: I claim a deconstructed in several parts substantially in the man-ner described in combination with the punch, F, and follower, E, as and for the purpose specified.

and 100 the particle 53,817, —Letter File.—James C. Hadden, New 1011 City: I c'ai n a file for letters, newspapers, etc. in which two or more angular-shaped holding pins or sta les theretor are used, and ar-ranged so as to operate sub-t inially n the monor described. I also claim in combination with the above, projecting the opposite corner of the book to hat in which the letter-indicing pins are used, by means of a metallic plate or plates, or other suitable material, sub tantially as d scribed. Conse -Cane Stripper —Joel A. Hall, Columbus, Ohio:

sub tantaly as d scribed. 53,818.—Cane Stripper \_Joel A. Hall, Columbus, Chio: Firs, I clam, s caring the stripping knives to rether in pairs by means of elastic, or non-chi-tic house, s, C C, applied to their extrem-ities, substantially as described. Second, The construction of the cutting p rtions of the knife blades, G G with curved edges, g, sub tantially as described. Third, Providing for adjust ng and setting t eguide rollers, D D, nearer to or further from each other, suid rolers being applied to the elastic knihe blades, substantially as described.

the elastic knie blades, substantially as described. 53,819.—Lantern.—John O. Harris, Reading, Penn.: First, I claim the cap, E. on the top of the globe, A, of the lant-ern, closed as its upper end, and provided with its rai openings, C, in combination with the jacket F. closet ar its upper end and pro-vided with later J openings, e, and also provided with a conteal flange, G, at its lower end, having a periorated partition plate, sub-stantially as and for the purpose set forth. Second, The conical base, B, provided with perforations, b, in its bottom, in combination with the jacket F, and cap. E at the upper part of the lantern, substantially as and for the purpose specified.

53,820.—Gas Heating Apparatus.—David G. Haskins, Cambridge, Mass.: First, I claim, the application, substantially after the manner herein described, of the flume of any gas or of any oil, or fluid, to the heating of a current of air which may be introduced from with-out into rooms, apariments, or buildings. Second, I claim the combination with an outer casing. A, and an inner chambe, B, of heat-retaining and radiating oevices, substan-tially as and for the purpose set forth.

53.821.—Smith's Vises.—S S. Hepworth, Boston, Mass.. I claim the sleeve. B. in combination with the nut, A. connected to the movable juw, E. operating as and for the purpose described. 53,822.-Rail Road Switch for Street Cars.-John A.

Heyl, Boston. Mass: I claim the arrangement of the double flanged wheel. C, and at-tached wheel, d, operated by levers, e and f. ubon and in combina-tion with the axles of car as "essribed, and operated with the said double-flanged wheel, astride of the guide rail, substantially as de-scribed.

crived. 33,823.—Shingle Machine.—Simeon Heywood, Clare-mont, N. H.: I claum, in a shungle or other machine, the arrangement of the arr, A. A. the mowable bars, B. B. the inclined planes CCCC, the acks, K K the pmion, J, applied to the tilting bed, as and for the surposes set orth

53,824.—Lamp Burner.—George Hillegass, Philadelphia,

Second In adjusting the or the purpo for the purpose set forth.
53,825. — Polishing Wheel.—Leonhard Holtzscheiter, Philadelphia, Penn. Antedated March 25, 1866.:
I claim the polishin whe<sup>1</sup> consisting of a disk, A, of wood or other sui able material, and a series of strips, D. of leather, packed and cem.netd together and into a groove in the periphery of the said disk, all as set forth.

53,826. Hat-Pressing Machine.-Nicholas B. Hooker,

e', and burner, f', substantially as and for the purposes set forth. Seventh, The combination and arrangement of the frames, H, levers, K R M T Z, irons. I P V, table, A B, and block plate, D, sub-stantially as and for the purposes set forth.

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stantially as and for the purposes set form.
53,827. - Catch for Money Drawers. - Saunders Hubbell, Jr., Urbana, Ohio:
Iclaim, First, the catch, E, the rod, F, and the spring arm, G, when operated substantially as and for the purpose described.
Second, The drawers, CD. when combined with the catch, E, substantially as gescribed and for the purpo e specified.

substantially as described and for the purpo e specified. 53,828.—Attaching Thills to Carriages, Etc.—Winford R. S. Hunter, Blackberry, Ill.: I claim, First The employment of a spring. C, in combination with the slotted thill head or iron, substantially as described and for the purposes spielded. Second, I claim providing the slot, a, with the recess, c, as and for the purposes set firth Third, I claim the combination of the spring, C, the bolt or pin, E, aud thils, A, provided with a slot, a, arranged as and for the purposessecified.

53,829.—Oil Tank.—Joshua K. Ingalls, New York City: First, I claim the means of redeving the pressure within the tank or vessel, substantially as described. Second, I claim the jointed arm, c, or any equivalent device operated to regulate or adjust the pressure within the tank or record.

ressel. Third, I claim the strainer or sprinkler, T, arranged as shown and operated in connection with the relief pipe, as described. 53,830.-Hame.-Francis X. Kaffer, Champagne City,

m.: III.. I claim the combination of the notched staple, a, with the flat gring, b, subst initially as and for the purposes described. 53,831.

spring, b, subst initially as and for the purposes described. 53,831. Bolt Heading Machine. - Charles Kane and James Kane, Pittsburg, Pa.: First, We claim the dies, I and K, having their pressing surface at right angles with the center of their motion and having projecting ledges or shelves, i. and k k so that when the dies come together they leave between them a parallel opipedic space, the dimension of which is greater in a direction perpendicular to the line of mo-tion of the dies.

cond, The cutters, M and N, in combination with the pressing . I and K arranged in the manner and for the purpose societed.

ures, 1 and K, arranged in the manner and for the purpose spicified. 53,832.—Bolt Machine.—Charles and James Kane, Pittsburg, Pa.: First, We claim a bolt machine having a double set of dies one above the other, in the one of which to shave and in the other to cut the equare neck of the bolt and head, the same arranged and operating substantially as described.

operating substantially as described.
53,833.—Combination of Ruller, Blotter and Paper Cutter.—Lewis Katen, Greenpoint, Brooklyn, N. Y.:
I claim the arrangement of the plate and the uprights in combination with the revolving blotter, the whole o arranged and construct that they may be used for the various purposes herein set forth and described by simply reversing the position of the article 53,831.—Beverage.—Jonathan H. Kenyon, Sempro-nious, N. Y.:

I claim birch nextar compounded of the ingredients herein de-scribed.

3835... Bread and Mcat Cutter...Solomon Kepner, Pottstown, Pa.: I claum the commination of the holder, F, with the frame, C, and knice H, substantially as described and for the purpose set 53,835

[The object of this invention is to furnish a convenient instru-

ment for slicing bread or meat, and it consists of a platform upon which, and a frame within which, the article to be sliced is placed In this position it is held by a morable holder applied to its upper part, so that the descending knife may cut a slice of exactly the required thickness.

-Tree Protector.-Dallas Knowlton, Liberty, 53,836. Maine

Maine: laim a tree protector having plate, A, cut open on one side as escuted and having apertures, C, therein with pin, D, all con-ted, combined and arranged substantially as herein specified new article of manufacture. I cla

53,837. --Cultivator.--John Lacy, Chicago, Ill.: First, I claim attaching the shoves to beams having an inde-pendeut vertical movement and so connected to the movable frame. LH, that by moving the letter sidewise all the plows are moved with it, said movable frame being pivoted at b, substantially as and tor the purpose set forth. Second, I c aim interposing the conical rollers, a, between the fixed and movable frames to enable the latter to be more easily operated, as shown and described.

53,838.-Hand Corn Planter.-Richard Lambert, Cort-

Josos, --Haint Corn Francer, --Mchartt Lambert, Corr-land Village, N. Y.: First, I claim in combination with the slide, G, and rol, F, the ad-justable block, H, substan ially as and for the purpose set forth. Second, I claim the arrangement of the case, B, with the double bottom, M M' the slide, G, rod, F, and spiral springs, L L, sbstan-tially as de cribed.

53,839.—Method of Recovering Waste Alkali Used in the Manufacture of Paper—Theodore F. Lehmann, Alleghany, Pa.: I clam converting the unspent caustic, alkali of alkahne solu-tions into a carbonate of the same by artificial application of car-bonne acd.

53,810.--Steering Screw.--Frank Liburn, New York

53,810.--Steering Sciew, --riam Instan, -... City: I claim the arrangement of the shaft, D, the beam, E, and cord, e, gear wheel, F, and shaft, G, constructed and used, as and for the purpose here n specified Second, Arrangement of the cars, H ard K, with the 'ogale joint and propeller, B, as and for the purpose herein specified. Third, The combination of the roughler, B, with the steering propeller, , when the two are connected and arranged to operate by the means, substantially as herein specified.

53,841. - Measuring Funnel.—James Lloyd, Spring-field, Ohio:

field, Ohio: First, I claim the combination with a funnel of a measure index and the turning or sliding valve, E, and its valve seat, substantially as set forth. Second, In combination with a funnel measure, a movable gage or scale J, as and for the purpose set forth. Third, In combination with the sliding valve, E, and the funnel measure, A, the movable gage or scale. J, substantially as set forth. Fourth, In combination with the funnel measure, A, and the sliding valve, E, the air tube, K, located within the spout, so as not to impair the exterior cylind ical form of said spout.

to impair the exterior cylind teal form of said spout.
53,842.—Car Seat. Edwin Lockwood and George W. Pitman, Bordentown, N. J.:
First, We claim the detachable back, B, united with the frame through the arm pieces, C, by means o the hooks, D, and brace E, and carch, G F. so as always to maintain the same relation to the reat, A, substantially as st forth.
Second, We claim in comvination with the detachable backs, B, a doubl. system of ro s and levers so as to make either side of the seat adjustable, substantially as set forth.
Third, In c mbination with the levers. K, we claim the rods, M M' when arranged substanti. We sand for the purpose set forth. Fourth, In combination with the rods. L and L' we claim a series of detents, I and the fixed rod, P, operating as a ston, so arranged that a greater or less inclination can be given to the seats, A, substantially as totrit.
Fit , We claim the adjustable foot rest, S, arranged substantially and for the purpose set torth.
Sa&d3.—ADDaffatus for Carburetting Air Charles B

53,843.—Apparatus for Carburetting Air.—Charles B. Loveless, Syracuse, N. Y.: First, I clain placing the oil and gas chambers under water in the tank, substantiall as described and for the purposes specified second, The closed cylinder, C, containing the oil and air cham-bers, substantially as set forth.

Third, The glass indicator, C, constructed and operating substantially as described. Fourth, The oil feed pipe, F, passing in part through the water, substantially as described. Fifth, The supply gas pipe, L, passing in part through the water, substantially as described. Sixth, The tank A, and blower, B, in combination with the closed cylinder, C, substantially as described.

53,844.-Washing Machine.-Philip Lutes, Platte City,

Mo.: Iclaim the structwre of the upper portion of the washing ma-chime, consisting of the central piece or iid, A', and the hunged end pieces, A2 A2, with the intervening spaces or openings, G G, as set forth.

forth. Second, I claim the combination and arrangement of the or tub, A. rillers, B. rubber, C c', arms, C' C', handle, C2, bearin central piece or hd, A', hinged end pieces, A2 A2, and inter spaces or openings, G' G' the whole being constructed and of ing substantially as and for the purposes described. ings, D, rven;

spaces or openings, G' G' he whole being constructed and operating suostantially as and for the purposes described.
53.845.—Machine for Cutting and Finishing Marble.— James W. Maloy, Boston, Mass.: I claim. First, The combination of a revolving tool or tools with a feeding table or platform, susceptible of two motions, one tangential to the circle described by the said revolving tool or tools, and the other at right angles to that of the first, as set forth and for the purpose sp cified.
Second, The combination of the two traveling tables or platform, susceptible of two motions, one tangential to the circle described.
Tizid, So arranging and operating the table or p atform that supports the marbie or other material to be acted upon as to conv. y the latter utomatically to the revolving tool or tools.
Fourth, The arrangement of the dutch nut, d', screw shaft, d', overvolving shaft, b, operating a described.
Fith, The use of the adjustable lever swivel clamp for nolding the material to be acted upon firmly in its place, as described.
Sixth, The use of a revolving, grinding or rubbing c linder so arranged and constructed as to contain the grinding material and deliver t through apertures to the material to be acted upon, as set terth.
Sevennh, In combination with the revolving prinding or rubbing or rubbing tool, where shaft, d', screw nut, O'O, had the shaft, t, as described.
Tighth, The arrangement of devices for feeding the settew shaft.
G', screw nut, O'O, had the shaft, t, as described.
Sighth, The arrangement of devices for feeding the settional cutters in their place and so that they can readily be inser.ed or removed as specified.
Sighth, The arrangement of devices for feeding the setting shaft.
Seven and, O'O, had the shaft, t, as described.
Sighth, The arrangement of devices for feeding the setting shaft.
G', serew nut, O'O', had the shaft, t, as described.
Sight

53,846. - Friction Coupling.-Judson Mattison, Oswego,

N. Y.: What I claim as my invention and improvement in friction couplings for-shating and machinery, is the use and application of vulcanized india-r-bber, as an ela-tic friction substance to be used in the manner and for the purpose specified. I also claim the construction and arrangem int of the oil vessels or cannals, S and V, with their drains or holes, T and Z, for the pur-pose set low thand described.

53,847.- Soap.-Nathaniel Ridley Eaves Mayer, Ches-ter C. H., South Carolina: What I claim in the composition in washing clothes, and other articles prepared substantially as described for the purpose set forth

53,848.-Corn-Stalk Cutter.-George D. McClure, Den-ver Station, Ill.: I claim an improved corn-stalk cutter, constructed and arranged substantially as described and for the purpose set forth.

53,849.—Apparatus for Stripping Corn from the Cob for Table Use.—William E. McGill, Cincinnati,

for Table Use.--Willian E. McGill, Cincinnati, Ohio: clam the combination of the spike plate with the shel'er, rating substantially as and for the purpose herein set forth.

53,850.—Harrow.—Anthony Mero, New Haven, Mich. First, I claim the construction of the bridge bar, B, with slotted and forked ends adapted for receiving and serving as bearings for the contral turning posts, b, of the harrows, substantially as de scribed.

slotted ngs for as de-

scribed. Second, The combination of the forked drag bars, C C, with the forkel bridge bar, B, and the central posts, b b, substantially as described. Third, The combination of the seat, E, with the forked bridge bar. B, and rotary, harrows, A A, substantially as described.

53,851.—Cotton Bale Tie.-Isaac H. Merritt, Cincinnati, Ohio

Uhio: I claim the combination of the band, A, and key, C when so arranged that the separated lugs of the single key shall detain the re-spective ends of the band, substantially as described and repre-

Sented. 53,852.—Medical Compound for the Eye. Granderson Mershon, M. D., Brookville, Iowa: I claim combining the above-named substances in such propor-tions that the medicinal virtues of each are greatly increased, form-ing a specific for inflammatory diseases of the eyes.

53,853.—Bed Bottom Connection.—Frederick Metz, Lyons, N. Y.: I claim the combination of the socket, D, with the head, E, and bearing, a, of the clasp or plate, C, said socket and head being provided with the grove and tongue, c.d, or their equivalent, and the whole arranged in connection with the slats, A, in such a manner: sto allow them to turn to opposite positions, substantially as specified.

53,854.-Spring Saddle.-John C. Miller, Louisville,

**Ay:** I claim connecting the seat of the saddle separate from and independent of the bars of the tree, and haveing the said seat upon the ends of sprin: at a distance of several inches above the bars of the tree, all constructed as herein described and set forth.

tree, all constructed as herein described and set forth.
53,855,—Machine for Seeding Raisins.—Samuel C.
Moore, Boston, Mass.:
Iclaim the spiked or tootled cylinder, B, in combination with the grate or open trame cylinder, H, arranged to work together.
In combination with the cylinder, H, Iclaim the scraper, t arranged inside of the cylinder.
In combination with the toothed cylinder, B, I claim the former, to ranged inside of the cylinder.
Aloo in combination with the toothed cylinder, B, I claim the rack of teeth, R, for removing the stones and seeds and, pits from the teeth, Q.

the feeth, Q. 53,856.—Farm Gate.—J. C. Murphy, Mendota, Ill.: I claim a gate constructed substantially as descrived in combina tion with the wheel, c. track. d, nook. M pulley, H, and inclined bars, a b, arranged and operating as and for the purpose specified. 53,857.—Loom.—Ira Orndorff, Russelville, Ky.: I claim First, The changable sectional pattern wheel when the sections are changed in d held in place, substantially in the manner and for the purpose described. Second, The adjustable cams arranged on the side of the disk as shown in Figs. 7 and 8, to change the shuttle boxes, substantially as and for the purpose set forth. 53,858.—Loom.—Ira Orndorff. Russelville, Ky.:

as and for the purpose set forth. 53,858.—Loom.—Ira Orndorff, Russelville, Ky.: I claim. First, The combination of the changing shuttle boxes with the lay, arranged and operated substantially in the manner and for the purpose set forth. Second, Changing the shuttle boxes of looms by a pattern cam and ratchet combined. arranged, and operating substantially in the manner and for the purpose described. 53,850.—Awning.—I A Dain Clude N. M.

53,859. — Awning. – J. A. Pain, Clyde, N. Y.: I claim the arrangement of the jointed rod, 1 m n, the inclosed drum, d, and operating cord, p, substantially as described and represented.

a, and cross slot all, arranged and applied to the sashes, substan-tially as described. 53,871.--Locomotive Head Lights.--Thomas S. Ray and Samuel E. Cleveland, Buffalo, N. Y.: First, Inja locomotive head light lamp for burning petroleum or coal oil, lawing a cylindrical wick tube, a top shield and defice-tor, so constructed and placed upon the wick rube as so form a combustion chamber above and around the base of the fame, we claim a circular opening made through the base of the fame, we claim a circular opening made through the shield and below the deficetor for the purpose of admitting alt directly to and slightld below the base of the flame, substantially as described. Second, In a locomotive head light lamp having a cylindrical wick tube, we claim having the bottom of the wick rube porns o as to admit the air free and unobstructed into the wick rube open so as to admit the air free and unobstructed into the wick rube open so as and the air to take an indirect r ute in its passage into the case, for the purpose of admitaling having a cylindrical wick tube and a shield or cap around the top of the burner, we claim a free unobstructed and direct passage for the air through the shield to the outside base of the fame, in combination with perfora' ed openings through the bottom of t e case, or with openings which and substautially as set forth. Fourth, We claim the combination of a cylindrical wick tube left free and open at the bottom for admitting air to the luside of the fame, with a deficetor placed on the top of the wirner, we claim a free and open at the bottom for admitting air to the luside of the fame, with a deficetor placed on the top of the wirner, we claim the forth. Say, 872. - Harvester. - Owen Redmond, Rochester. 53,860.—Threshing Machine.—Nelson Palmer, Hudson, N.Y.:

**IN. 1.** : First, I claim the eccentric bolts, G, or their equivalents, to regu-ate the relations of the concave to the cylinder, substantially as et forth. forth. econd. I claim springs of rubber or other material when placed

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between the slats to give elasticity to the movements of the con-cave, substantially as and for the purpose set forth, Third I claim the board, H, when used sutstantially as and for but I claim the board, H, when used sutstantially as and for purpose set forth. uurth, I claim the board, H, when used in combination with cylinder, A, and board, H, substantially as and for the pur-set forth. th

53,861.—Method of Preserving and Drying Green Corn on the Cob. – David Parker, Shaker Village, N. H.: I cla im the drying and preserving of green or unripe corn on the cob. by first scalding or partially ooking it, and then drying it rap idly by artificial beat in ovens or drying chambers, until all the most ture is driven off from the grains and cob, substantially as herein described.

herein described. 53,862.—Harvester.—E. G. Passmore, Jr., Philadelphia, Pa.: I claim, First, 'The stiding shaft. D, its bevel wheel, L, gcaring into a wheel, L', on the rake haft in combination with the gearing into a wheel, L', on the rake haft in combination with the gearing berein described, or culvialent to the same, for operating the cut-ters, the wholebeing arranged for the simultaneous stopping and starting of the cutting apparatus and rake, substantially as herein described. Second, The studs, g, made adjustable on the arms, N, and adavied to the flanged cam, substantially as and for the purpose specified.

53.863.

pecified. 3,863.—Knife and Fork Scourer.—R. R. Patterson, Springfield, Ill.: I claim, First, The scourer, I, or is equivalent hurg within a rame or holder having suitable handle for moving the same, in combination with the bed, B, upon which the knives or forks are ald, when arranged together, substantially as and for the purpose Pecified.

specified. Second, In combination with the above I also claim the perfor-ated receptacle or reservoir, a. for the scouring material when se-cured to the scourer or its holder, in such a manner that as it moves over the kn were or fork, it will throw the scouring material upon the same, substantially as described. spec Se ated

(This invention relates to a novel and useful implement for the couring and cleaning of knives and forks, whereby they can scoured with the utmost dispatch and in a most satisfactory man ner 1

53.864. -Feed Water Apparatus .-- James H. Pease,

3,864.—Feed Water Apparatus.—James H. Pease, Reading, Pa.: I claim, Firt, The arrangement of the injector of a locomotive r other bo ler in combination with the read pipe of its force pump, then such pipe has a suitable stor cock for opening or closing the communications through the same, substantially as and for the urpose specified.

Sommarize specified. Second, The combination of the feed pump and the injector whereby to supply water to a locomotive or ther boiler by one tes of pipes and connections, substantially as level described Third, The stop cock in combination with the discharge orifice of the injector overflow, for the purpose specified.

53,865.- Saponifier.- Henry Pemberton, Alleghany,

Pa.: I claim the use of the aluminates of soda or potassa, either with or without admixture of the hydra'es of those alkalies in the man-ufacture of saponifier or concentrated lye, substantially in the manner hereinbefore described.

53,866.—Buckle.—L. W. Perkins, Beloit, Wis. : Iclaim, First, The frame. A, and lever, B, constructed and ar-ranged to operate in the manner and for the surposes herein set for h,

tor h, Second, The rem vable stip, e, in combination with the jaw, D, and lever, B, for the purpose of adjusting the iaw, as described. Third, I claim making the faces of the jaws, C' and D. corrugated or roughened for the purpose of holding the stop more securely, as set forth.

53,867.—Cultivator.—George Perry, Muscatine, Iowa: Frst, I claum the adjustable beams, C.C. in combination with the slotted cross har, A, and the slotted bra es and notched latches, M M. substantially as and for the purposes set forth. Second, I claim the foot levers, G, in combination with the supplementary frame, substantially as and for the purposes set forth.

Supplementary frame, substantially as and for the purposes set forth. Thurd, I claim the buttons, O O, attached to the f am<sup>3</sup>, D D, and rigidly securing the supplementary fraire either up or down when desired, substantially as and for the purposes set forth. Fourth, I claim the levers, H H, and the parallel bar, I, in com-bination with the hinged standards of the interior shorels and os-cillating because, C C, the latter being also adjustably attached, sub-stantally in the manner and for the purpose set forth. Fifth, I claim the mode of attaching the standards of the interior plows by the jawa, L L, to the beams, c c, substantially as and for the purposes set forth. Systh, I claim a hinged shovel attached to the standard by a wooden pin, substantially in the manner and for the purpose set of torth.

wood 53.868

3,868.—Machine for Grinding Clay.—Benjamin Porter, Jackson, Mich.: I claim in combination with the central grinding shaft, G, and lox, D, I claim the auxiliary grinding shafts, 11 H, substantially as leacribed.

described. I also claim the cleats or pieces, d d, on the inside of the box, sub-tantially as described for the purpose set forth. I claim the combination and arrangement of the rock shafts, T T, arms, U U, slides, V V, arms, X X, and cam, a, to push out the molds when required.

53,869.—Machine for Catching Sheep and other Ani-mals.—Robert Ralston, Kalamazoo, Mich.: First, I claim the jawa, being fastened upon the leg. Second, The points of the jawa passing reach other, thus allowing them to it closely to the leg of a small or large animal. Third, The combination and arrangement of the machine, sub-stantially as and for the purposes set forth.

53,870.—Sash Fastener.—John C. Rankin, Mount Ver-non, N. Y.: I claim the stated plate, B, and the slide, E, or their equivalents, applied to the sashe f a window, substantially as described. I further claim the slide, E, with its notches, d d, spring, F, and button, e, box, C, and the plate, B, provided with the vertical slot, a, and cmss slot all, arranged and applied to the sashes, substan-tially as described.

forth. 53,872. — Harvester. — Owen Redmond, Rochester, N. Y.: I claim engaging the gearing with, and disengaging it from the driving shaft, C. by means of the loose sleeve, b, double couplings, d', springs, e e', and turning sleeve, a, the whole arranged, couplings, bined and operating substantially as and for the purpose herein set forth.

also claim the combination of the connecting bar, K, and

standard, I, with the finger beam, G, the bar being jointed at s, and the standard forming a stiff connection with the finger beam, or an extension thereof, and the whole being so arranged that a simple litting of the finger beam will elevate its outer end it a greater de-gree than its inner end, substant:ally as described. I lso claim the wedge side, o, in combination with the heel pro-jection, q, of the finger beam, for the purpose of stiffening and sus-taining the latter before it is rised, substantially as described. I also craim the combination, of the slide, o, "ock lever, N. lever, , and link, u, whereby the slide is first pressed forward to silfen the finger beam and the latter is then raised, substantially as speci-fied.

d. I also claim supporting the shoe, Q, by the grasp wheel or truck in combination with unking said shoe adjustable higher or lower y the serew.h<sup>2</sup>, resting on the shark or bearing, g<sup>2</sup>, of the wheel, w whole arranged, combined and operating substantially as set

the whole arranged, combined and operating substantially as see forth. 53,873.—Evaporator.—David Reeves, South Pass. An-tedated April 7, 1866: First, 1 claim the employment or use, in a sugar-evaporating pan, of a bottom, F, and partition, E, arranged in such a manner that a communication may be formed between the several com-partments, and the communication cut off when desired, by the moving of the bottom in contact with and from the lower edges of the partitions, substantially as specified. Second, The packing, a, inserted in the lower edges of the par-titions, substantially as and for the purposes set forth. [This invention relates to an improved means for transferring the juice from one compartment of the nanto another, whereby

[This invention relates to an improved means for transferring the juice from one compartment of the pan to another, whereby the scum is not allowed to incorporate with the body of the juice or sirup during said transfer; and also to an adjustable throat or damper phaced in the flue, and arranged in such a manner as to graduate the heat under the finishing compartment as occasion may require].

may require.
 53.874.—Fliers for Spinning.—George ......
 Lowell, Mass.: First. I claim the elliptical form and semicircular shape of the arms, b, as herein specified, and for the purpose set forth. Second, I claim the headless bobbin. d, in combination with a flier, constructed as herein described.

3.(10)—mather score and the second state of the second state of

1 also chaim one or more magnets, and the encourage of the divisional ring and the cases thereon. I also claim the arrangement of the divisional ring and the annular float, so that the ring may make a part of the hollow

I also claim the arrangement of the divisional ring in another respect, viz., so as to incline to the plane of the magnets, the same being substantially as and for the purpose hereinbefore explained. I also claim the combination as well as the arrangement of the two magnet cases, the bearing carrier, and the divisional ring, or the same and the annular float.

use same and the annular float. 53,876.—Churn.—Frank J. Robinson, Laconia, N. H.: First, I claim the construction of the dasher with inclined radial plates, h h, and vertical tubes, g g, substantially as and for the purpose herein specified. I also claim the combination of the central opening, p, for the ingress, and the tubes, n n, for the egress of air, in combination with the dasher, for the purpose set forth.

53,877.—Provision Safe and Table.—Jonathan S. Robin-son, Baltimore. Md.: I claim the combination of the safe, A, and table, B, when con-struct-d and operating as described.

scruced and operating as described. 53.878.—Horse Hay Eork.—L. M. Roby, I eesville, Ohio.: First, I claim the combination and arrangement of head bar, A. constructed as described, with the tiues, B. secured as specified and with bale posts, C. onle, D. trigger post, E. and adjustable trigger, K. substanially as and for the purpose set forth. Second, The trigger, K. constructed as described, in combination with arm, b. screw, i. spring, x, and tooth, s, substantially as and for the purpose set forth.

53,879.—Brick Machine.—T. H. Rodgers, Chicago, Ill.: I claim, First, The main frame. A, provided with the mcld, in combination with the plunger, D, and levers, F and G, arrauged and operating as and for the purpose set forth. Second, In combination with the above described parts, I claim the shart, H, provided with the lever, J, and connecting rod, I, for operating the press, as described. Third, In combination with the press constructed as described, I claim the lever, b, for elevating the plunger, D, and removing the brick, as shown and described.

53,880.-Fireplace.-Francis M. Rogers, Cincinnati,

Unito: f claim, First, In the described combination, the back, G, cr plate, I, and damper, K, forming a smoke-consuming and re beraing chamber, J, throat and direct exit, substantially as forth.

Second, I claim the series of ash flues, l, atranged as described in combination with the direct exit flue, for the purposes set forth.

Second, I claim the series of ash flues, I, arranged as described, in combination with the direct exit flue, for the purposes set torth. 53,881.—Revolving Fire-arm.—Sylvester H. Roper, Roxbury, Mass.: I claim, First, The coubination of revolving carrier, the piston, the hanner, and the connecting link, G', arranged and operating substantially as described. Second, I also claim the inclined plane, v, on the end of the pis-ton, in combination with the Inclined plane, u, on the head of the hanner to lock the hammer, as described, whether used in com-bination with a revolving carrier or a stationary cartridge bed. Third, I also claim the double-acting spring, H, constructed and arranged as d scubed. In combination with the ratchet wheel, E, and the eccentric slot, s, as and tor the purpose described. Fourth, In combination with the double-acting spring, H, the serew, t, as and for the purpose described Fifth, I also claim tonnecting each end of the main spring to the hammer by a separate stirrup, arranged and age. B, and its cover, sitch, In combination with the cylindrical case, B, and its cover, d, I ariso claim the jelding spring, e, as and for the purpose described.

described.
53,882.—Vegetable Silcer.—Christian -Rosenburg and Warren Tamer, Chicago, Ill: We claim the slicer herein described, composed of the bed, A a, with the clouble side process, BI B2 CI C2, and adjustable holes, E P, adapted to receive knives or different sizes and hold them at various hights, substantially as and for the purpole herein set forth.

various hights, substantially as and for the purpole herein sec-forth.
53,883.—Molding and Casting Apparatus.—George Ross, Newport, Ky. Antedated October 18, 1865: I claim. First, The vertical pipe molid drying oven, herein de-scrübed, arvanged with separate and distinct communications with the modiling and casting pits. As and for the purpose specified. Second, The described, or equivalent, consecutive arrangement of receiving pit, A. molding pit, B. oven d, and casting pit, D. Third, the combination of the two cranes. F and G, with the molding pit, B, oven, C, aud casting pit, D. arranged substantially as specified. Fourth, The skids, H H, arranged in the described combination with cranes, F and G, and contin...son pit, A E CD.
52 984.—Under for Chisels.—John Russell, Sing Sing,

53,884.-Holder for Chisels.-John Russell, Sing Sing, N. Y.:

I claim clamping the chisel between two disks of india rubber or gutta percha, by means of the set screw, D, or its equivalent, sub-stantially as and for the purposes set forth.

53,885. – Apparatus for Separating the Precious Metals from other Substances.—Van Buren Ryerson, New

from other Substances.—Van Buren Ryerson, M York City: I claim the pan with the bottom formed with recesses, sub-tially of the form herein described, in combination with means or the equivalent thereof, for giving reciprocating moti-substantially such as described

53,886. Stovepipe Damper.—Rufus S. Sanborn and William Bennett, Ripon, Wis.: We claim the metallic plate, A, with the funnel-shaped tube, B, when arranged in the manner substantially as and for the purposes herein specified.

53,887.- Manufacture of Molasses.-George W. Sayre Pisgah, bio. Antedated March 25, 1866:

Pisgah, 'hio. Antedated March 25, 1866: I claim the arrangement, construction, and combination of the steam boiler. D, slup pan, E, and dome, F, with condensing pipes, H J and K, and water tank, P, as herein described, and for the pur-poses herein set forth.

63,888.—Bed Bottom.—Frederick Schimming, Philadel-phia, Pa.:
 I claim the sacking or bed bottom, the straps, 11, and the springs, e.e. arranged substantially as herein specified and described.

53.889. -Watchman's Register.-Ph. Louis Schmandt'

33,889.—WAtchman's Register.—Ph. Louis Schmandt' Hoboken, N. J.: I claim the use and employment of the point, N, or an equivalent noving part of a clock in combination with the lid or dial cover, C. where a mark of the the time by a motion of the lid, c, is produced on said lid.

53,890.-Lamp Snuffer.-Karl Schou, Lafayette, Ind.: I claim an imployed lamp smulfer, constructed and operated sub-stantially as herein described, in combination with a lampwick tube, for the purpose set forth.

The object of this invention is to furnish an instrument for snuff ing and rimming lamp wicks, both when the lamp is burning and when extinguished, and it consists of a pair of blades, which, by pulling upon the end of a wire projecting from the burner, are made to close upon each other above the end of the wick tube, trimming wick evenly.]

53,891.--Plow.--S. F. Seely, Sylvania, Ohio: I claim the curved or semicircular rear part of the seam, A, and front part of the plow or land side, B, substant ally as shown, to ope rate upon weeds, irash, etc., and prevent the same from choking or crigging up the plow, as set forth. The semicircular coulter, D, in combination with the semicircular rear end of the beam, substantially as and for the purpose speci-fied.

rear end of the beam, substantially as and for the purpose specified. The subsoil plow, E, having a curved standard. E, pivoted to curved bars, G H, the front ends of which are pivoted to the land side at elevated points, to operate in the manner substantially as and for the purpose herein set forth.

[This invention relates, first, to a new and useful improvement in the construction of the plow and the coulter for the same, whereby the plow is prevented from becoming choked up or clogged with weeds and trash which are very liable to collect in front of it dur-ing the operation of plowing. Second, to a new and improved subsoil plow attachment, so constructed, arranged, and applied that it will have a tendency to penetrate the earth as the plow is drawn along, and to break up and locate the call at the bottom of the fur row made by the surface plow, and at the same time not be lia ble to break in the event of coming in contact with stones or other obstructions.]

53,892. --Means for Operating the Pickerstaff of Looms. Peleg A. Sherman and Freeman Baxter, Paw-tucket, R. I.:
We claim the inclined slotted guide, J. as set forth for communi-cating the desired motion to the hock, E. or whatever instrument or device is used to convey the worth through the warp. We claim the guide, J. and the lever, A. connected to the brace, F. by the stud, B. in combination with the rod, C. and pickerstaff, D. as and for the purpose set forth.
2002 Broom Model Schammen and Long

as also for the purpose set forch. 53,893.—Broom Head.—Samuel S. Sherinan and Jere-miah G. Sherman, McHenry, Ill.: We claim fastening the broom corn or other material into the broom head, by forcing keys or wedges through slots in said head, substantially as herein shown. The slots, ab, the keys, p, the cross bars, b. and ledges, c, when arranged and operating substantially as herein shown.

arranged and operating substantially as herein shown.
53,894.—Door for Puddling and other Furnaces.—Nathaniel L. Libby, Boston, Mass., and Benjamin Shiverick, Waltham, Mass.:
In combination with an iron door we claim a lining of calcined plaster, gypsum, or other material which conductsheat slowly, made either solid, or with an opening or airspace, as may be preferred. We claim a nose piece or guard around the hole in the door made separate from the door and fastened to i... We claim making the lining of the door to cover and protect, or partially cover and protect the nose piece or flange around the hole in the door, substantially as described. We claim in furnace doors a lining made of plumbago or crucible material, to protect the door and intermediate lining from intense text.

advial, to protect the door and interingenerate intrig from interact We claim the combination and arrangement of the Iron plate, A, ning, J, and lining, K, substantially as described. We claim making the lining of furnace doors in one piece of white lay free brick crucible material. We claim fastering the lining to the iron plate by the bars of met-I, L L, substantially as described. We claim the holes in the door in combination with the lining for he purpose s, cented, substan ially as described. clay W the purp

53,895.—Rectifying Apparatus.—Thomas Simmons, Chi-

53,895.—Recent ying Appartues.—Inomas siminous, on-cago, Ill.: I claim the combination and arrang-ment of the reservoir, A. the receiver, B. the connecting pipe, C, provided with the stop cock, D, or its equivalent, and the steam pipe, L, arranged and ope along as and tor the purposes specified. I claim the containation and arrangement of the reservoir, A, the perforated chamber, P, the receiver, B, connecting pipe, C, and stea in pipe, L, operating as and for the purpose set forth

53,896.—Annular Auger.—Robert Stewart, Elmira, N. Y.: I claim making the thread of a hollow auger with openings, c, substantially as and for the purposes set forth. Hevolving each outer hollow auger in a reverse direction from its next inner hollow auger, substantially as and for the purposes set

forth Arranging a series of hollow augers so that the purpose set a series of hollow augers so that the rear end of each auger shall project sufficiently beyond the next larger auger to turn as its own shari in independent journal boxes, substantially as and for the purposes set forth.

for the purposes set forth. 53,897. .-Buttonholes for Paper Collars.—Daniel Stoner, Chffeago, Ill: I claim the combination in a buttonhole for card board paper col-lars and cuts. or collars and cuts of any similar material, of the en-largements. A and B. proportioned as specified, and the peculiar y-constructed slit connecting the same, all arranged and operating substantially as specified and shown. 53,898. - Lamp Cleaner.-Edmund F. Sutton, New York

City: I claim the elastic self-adjusting wiping finger on one side of the stick or shaft, in combination will the fixed wiper on the opposite side of the stick or shaft, the two operating together, substantially as herein specified.

as herein specified. 53,899.—Planes for Making Blind Slats.—Enoch K. Thomas, Rock Island, Ill., and Hans H. Andreson, Davenport, Iowa: We claim the construction of a cutter for producing slats with one or two cutt ng edges, and opening through the shank of the cutter for the pussage of the slats, substantially as described. The combination of one or more s at cutters, constructed substan-tially as described, with a plane stock having its sole stepped, sub-stantially as set forth.

53,900.-Exercising Machine.-T. P. Thorpe, New York

City: I claim making use of wire, or its equivalent, for the seat, E, the rods, N, the springs, C C the base or foundation, A A and the feet. B B B B, as herein formed or combined and described, and for the purposes herein mentioned. I also claim the toy horse are balance weight marked, P, and sliding on rods, N N, as described for the purposes herein men-tioned.

53,901 -Cotton Picking Machine.-A. Tieusch, Mem-

phis, Tenn.: First, I claim the employment of rotary brushes, or their equiva

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ent, substantially as described, for the purpose of gathering cotton rom the plants.

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ent, substantially as described, for the purpose of gathering cotton rom the plants. Second Mounting a series of movable brushes upon a carriage in such manner that upon moving the carriage over rows of cotton plants said brushes will draw the cotton from the pods and deliver it in the machine, substantially .s described. Third, The combination or movable and stationary combs, k l, or their equivalents, with ro ary brushes. which are adapted ior gather-ing cotton from the pods, substantially as described. Fourth, Providing the movable and searched. Fourth, Providing the movable combs, l, with clearers, p, or their equivalents, substantially as described. Sixth, The combination of a slotted or open guard plate, E, with a series of brushes adapted for picking cotton from the pods, sub-stantial y as described. Sixth, The hinged doors, D D', forming the upper and lower sides of a cotton receiver, in combination with the devises for gathering cotton from the pors, sub-tar tially as described. Seventh, L.casting the driver's sea , P, in such relation to the cot-ion receptale that the driver's sea , P, in such relation to the cot-form side guards on each side of the gathering part of the machine. Eighth, Constructing the sides, A. A of the carriage body so as to form side guards on each side of the gathering part of the machine, substantially as described. Minth. roviding to radjuting the brushes and securing them at any cesired hight according to the light of the corriage of a cotton picker or gatherer, sub-santially as described. Eleventh, The homed brace, M, and tongu, I, applied to the carriage of a cotton picker or gatherer, sub-santially as described. Statually as described. Statually as described. Sayo2.—Propeller Wheel.—Thomas Tripp, Chicago, Ill.:

53,902.—Propeller Wheel.—Thomas Tripp, Chicago, Ill: I claim constructing the blades of a propeller screw with two re-versed curves which shall be arcs of the two cucles last above de-scribed, as and for the purposes specified and shown.

-Furnace Grate Bars.-George O. Tupper, New 53,903

33,903.—rutringor Grand Land York City: I claim the furnace grate bars, the rib or lower part of which is corrugated longitudinally, with one or more corrugations on each ide, substantially as herein described, and for the purposes set 53,904. -Grain Hoisting Apparatus.-Otis Tufts, Bos-

forth
53,904.—Grain Hoisting Apparatus.—Otis Tufts, Boston, Mass.:
I claim the transversely morable valve seats, k, in combination with the pulling shaft, o, aud rack and pinon, mm, or equivalent, for the purpose of storping, starting, regulating the speed, and reversing the direction of motion in grain hoisting apparatus, substantially as represented.
I claim, in combination with a hoisting apparatus, and more particlearly with the starting and storping cord or rod thereof, of a closed vessel filled with liquid, and provided with a piston, when such cord or rod is arranged, as by movement imparted thereunto, by open relose appeurs with the bolisting apparatus, or by preventing the liquid from massing, the piston will stop the holisting apparatus, and hold it from moving substantially as escribed.
I claim the combination with the storping and sparatus, and the stem valve or movable seat of the stem endor, operating substantially as described.
53 905.—Percolator.—P. H. Vander Weyde, Philadel-

53,905.—Percolator.—P. H. Vander Weyde, Philadei-delphia, Pa.: First, I claim the method herein discribed of making extracts and for filtering purposes, which consists in dividing the column or ves-sel to contain the material to be extracted or filtered, into a series of horizontal layers or divisions, which by suitable mechanical means may be moved upwards so as to allow the addition of the fresh ma-terials to the bottoms, and its removal from the top when extracted, substantially as described Second, I claim the manufacture of artificial bone black from wood charceal, and its use for filtering purposes, either alone of mixed with compounds of lime or magnesia.

53,906.—Water Wheel.—Henry Van Dewater, Buffalo, N.Y.: First, I claim the cysloidal buckets, c. applied to the wheel in con-nection with the incilined fange, b, at the top of the wheel, and the band, B at the ourcr edge of the lower part of the buckets, provid-ed with an inner inclined or beveled surface, substantially as set forth. Second Construction to the surface of the su

forth. Second, Constructing the cylinder, A, of the wheel with a hor partition, a, in connection with openings, h, made in said cylinder the partition and the chamber, D, in which the wheel shaft, C, is st substantially as and for the purpose specified.

substantially as and for the purpose specified. 53,907.—Sash Supporter and Fastener.—Isaac H. Wait, Otisco, Mich.: I claim combining with an overpoised lever, B, pivoted to the window frame and having a permanent hook or jaw, o, upon it, a second pivoted book or jaw, i, and so made as that one or both of saidhooks may act in connection with a holder or holders, ft, on the sash, substantially in the manner and for the purpose herein described and represented.

manner and orthe purpose herein described and represented.
53,908.—Trunk Hinge. –William Wakensham and Theo-dore A. Dunham, Newark, N. J.:
I claim a huge for trunks, chests, and other articles provided with lids having cleats or "valances" attached constructed in angle form so as to extend or lap over the ends or sides of the trunk or other article and the end or side "valances" of the lid, substantially as herein shown and the end or side "valances" of the lid, substantially as herein shown and

described. 53,909.-Seeding Machine.-Z. D. Waters, Brookville,

[escribed], S3,909.—Seeding Machine.—Z, D. Waters, Brookville, Md.: First, I claim the arrangement of one or more seed cups within a hop-per box, F, in such manner that said cup or cups shall elevate the seed above the bottom of the hopper and discharge the seed into a funnel, g, which conducts it out of the hopper, substantially as described. Second, Conducting the seed and fertilizer from two funnel hoppers, g<sup>2</sup>, into an inserted funnel-shaped guard, G, substantially as described. Third, The construction of the seed or fertilizer hopper of a cylindrical tabamber, b, communicating with an upper receiv 3r through slotted open-ng, d, substantially as described. Fourth, The construction of the elevated receiving hopp r, g, with the cylindrical ressel, b, and one or more revolving seed elevators, substan-ially as described. Fifth, The construction described. Fifth, The construction of the elevated receiving hopp ars, g, with the cylindrical ressel, b, and one or more revolving seed elevators, substan-ially as described. Fifth, The construction and for the purpose described. Subt, Extending the upper ends of the receiving hoppars, g, d, above he plane of the apertures, a a, leading into the cylindrical chambers, b, substantially as described. Seventh, Providing for discharging seed or fertilizing substances, or obth, from a hopper by means of revolving elevators or cups which are unrely inclosed within said hopper, substantially in the manner de-ceribed. Exhibit, Attaching the coverers, m m, to a forked standard, which is Exhibit, attaching the revenue of the approximation of the set of the standard, which is Eribed. Eighth, Attaching the coverers, m m, to a forked standard, which is onstructed substantially as described.

53,910 --- Cotton Giu-Joseph Watrous, Jr., Mystic River,

Conn.:

Conn.: I claim in combination with the slide frames the removable side cas-ings and deflecting boards, arranged as described. 53,811. — Cultivator. — Edward P. Wheelcr, Nebraska City, Neb. Ter.: City, Neb. Ter.: First, I cl im the arrangement of the levers, F, pivoted standards, L, and plow beams, D, as described. Second, I claim pivoting the levers, F, and standards, L, to the plow beams by means of the longitudinally arranged pins or rods, p, as and for the purposes shown and set forth. Third, I claim provising said levers when arranged with the standards, L, as set forth, with the knee rests, I, as and for the purposes specified. Fourth, I claim the conclustation of the hinged beams, D, standards, L, levers, F, and hooks, d, arranged as described and shown. S, I claim the arrangement of the adjustable standard, P, and cross bars, Q R, as de-scribed.

arrangement of the adjustable standard, P, and cross pars, Q is, as ue-scribed. Sixth, I claim the combination of the cross marking bar, T, provide I with shovels, V, with the drags, J, for the purpose set forth. Seventh, I claim the combination and arrangement of the standards, L P, the levers, F, beams, D, cross bar. H, and brace, I, when ar-ranged, so as to rendersaid standards, L, rigid, for the purpose of plow-ing in grain, as shown and sectified.

g in grain, as shown and specimed. 8,912.—Churn.—Edwin P. Whiteomb, Coldwater, Mich.: I claim the combination of the frame which supports the graving, the verse motion, diamond-shaped right-angle biades, or beauers, as de-ribed, with the space or water chamber which surrounds the churn bistantially as herein set forth.

53,913. – Manufacture of Candy. – H. C. Wilkins, Albany N. Y.: Ielaim the composition of matter above describal for the manu ac

ture of candy, together with the process of making the same, substan tially as set forth in the speci loation. 53,914.-Transmitting Power.-Jacob Woolf, Burr Oak,

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Mich Mich.: I claim the shaft, B, the arms, G G, with the shafts, H H, and weight oces, K K, arranged substantially as described, and operating either y pulleys, F, F and I I, and belts, or by toothed gearing, or by any de-ice to av-complish the s me end, so as to canse the weight. K, or their quivalents to be thrown out of balance in such a manner, that one shall e constantly further from the axis of the suard, B, than the other, and hereby aid it in its revolution, as and for the purpose set forth.

53,915. Rotary Engine.—Henry J. Behrens (assignor to himself, Henry C. Dart, and Edward Dart), New York City:
First, I claim the concentric fixed hubs, recessed substantially as described, in combination yith the two-geared shafts, their attached pistons and the cylinder, substantially as herein set forth.
Second, The pistons attached to the facing sides of thetwo disks, secured to their respective shafts and so arranged that the piston or pistons of a shaft work against the face of the disk of the other shaft, substantially as herein described.

Suos antially as herein described.
53,916.—Hame for Horse Collars.—John E. Brown (assignor to hiuself, Charles A. Mott, and A. A. Peebles), Lansingburgh, N Y.:
First. I claim the adjustable collar, B. arranged with the spring, d.g. and the spring, f, in combinat on with the holes, b, in the plate, a, at the out r edge of the hame, substantially as and for the purpose set forth. Second, The loop, F, bent in right angular form, notched at us rear or outer end, and secured to the hame by the eyes, g, to admit of the egg, of the trace strap being adjusted higher of lower i i the loop, and re tained as adjusted by the pole straps, substantially as shown and der geribed

b) of the trace single being adjusted higher of lower 11 the loop, and reger lead ad adjusted by the pole straps substantially as shown and derger bed 33,917.—Balling Press.—J. B. Gridtey, Louisville, Ky.: First, I claim in a ball is press, the levers, G. G. having their inner ends applied to or near the center of the follower, in combination with hangers, rods or bas. I I, which alford the fulerator said levers, and a rope, chain or other drawabt levice, whereby the loose ends of the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, substantially as and for the purposed herein sponteend each other, and which have their fulta a inon hangers, rods or burs, I claim a rope chain or up obtained their effective acting position, substantially as and for the objecters, in assuming the position from which they may be host specific with the hangers or rods, I, from which they may be not specific with the hangers or rods, I from which they may be not specific with the hangers or rods are attached, or in the appleation of the metallic blocks, H, or their equivalents. Fourth 1 claim the combination with the levers 6. G. hangers, I I, and rope, K, of the follower C, D, ribs, d', and guide slois, a, the latter more not make of the service with the follower, in the solution for the rough the present the suitily or canting of the follower, in the appleated to prevent the sitult or canting of the follower, in the solution with the levers 6. G. hangers, I I, and rope, K, of the follower C, D, ribs, d', and guide slois, a, the latter herein galage to prevent the suitile profest. Solution for the which hore, in the solution of the metallic blocks, H H, attached to the lever, G, G, and profested by a single prin

18.—Metallic Fastening for Plow Beams.—Lewis Gibbs (assignor to Bucher, Gibbs & Co.), Canton, Ohio: Jaima metallis festening for 53,918.

Unio: I claim a metallic fastening for uniting a plow beam and handle, made rith lucs, flanges and recesses, and united thereto in the manner and for he purpose herein described and represented.

State purpose nerven accorded and represented.
S3,919.—Coffer Dam.—Aaron Filmore (assignor to himself, B. H. Anstin, Jr., and Adolphus S. Austiu), Buffalo, N. Y.:
I claim a portable. coffer dam. A, (with or without a movable end plece, A2), for the purpose and substantially as described.
S2,000. Under Duble and State and C. Duble and State and Stat

piece, A2), for the purpose and substantially as described. 53,920. – India Rubber Hat and Cap Band. – William H. Halsey, Hoboken, N. J., assignor to David W. Mapes, Orange, New Jersey: I claim the combination of the two rollers, with their surfaces pre-pared as described, one roll having a sunken or depressed, and the other an e evated surface, substantially as, and operating as and for the pur-poses set forth.

poses set forth. 53,921.—New Article of Manufacture from Hard Rubber, to be used in Articles of Dress.—William H. Halsey, Hoboken, N. J., and Maurice Fitzgibbons, New York City, assignors to David W. Mapes, Orange, N. J.: We claim as a new article of manufacture, hard rübber or gutta perch, or similar material, ornamented by being subjected to two or more successive pressures or impressions of figured rolls, substantially as above described.

as above described.
53,922,—Hard Rubber or Gutta Percha for Articles of Dress and other use.—William H. Halsey. Hoboken, N. J., and Maurice Fitzgibbons, New York City, as-signors to David W. Mapes, Orange, N. J.: We claum the process hrrein, substantially as described, which con-sists of subjecting hard rubber, gutta percha, or other similar material, to two or more successive pressures of figured rolls, substantially as and for the purposes above described.

.-Stencil Brush.-Daniel K. Herr, Locust Valley, a., assignor to Theodore W. Herr, Lancaster, 53.923.

Pa., assignor to Incourse Pa.; assignor to Incourse ... rsi, I claim the combination of the brush tube, G, and the external g, B, constructed and operating substantially in the manner and for casing, B, constructed and operating substantiany in the manner state  $\mathbf{x}_{i}$  be purpose specified. Second. The brush, J I, when expressly made or adapted to my brush tube. G, and o be used in combination with the external casing, B, in the manner and for the purpose set forth.

53,924.—Nail Plate Feeder.—C. D. Hunt, Fairhaven, Mass., assignor to the American Nail Machine Com-pany, Boston, Mass.: I claim the combination and arrangement of the double rack bar, K, the pawis, I, the iever, G, the spring, M, and the cam, H, as applied to the vibratory arm, A, and the shaft, E, substantially as specified.

53,925.—Stovepipe Damper.—Sumner Marvin (assignor to himseif and Alfred W. Boynton), South Royalston,

Mass: I claim the damper apparatus, composed not only of the frustum ving the opening, b. but of the two dampers, U, D. and their setting rod, E, made and arranged together, and with a flue or pipe ibsiantiaity as specified. Machine \_\_Andrew A. Reed, No е. В.

53,926.—Eyeleting Machine.—Andrew A. Reed, North Bridgewater, Mass., assignor to Elmer Townsend, Boston Mass.

53,926.—Eyeleting Machine.—Andrew A. Reed, North Bridgewater, Mass., assignor to Elmer Townsend, Boston, Mass.
I claim the combination of the stationary work-supporting surface, the punch, and the setting mechanism, when the latter is arranged to feed the eyelet laterally to, or under the hole punched for its insertion. substantially as described.
I a.so claim the construction by which the eyelet is removed by the feed pin, directly from the magazine, without the intervention of a chute or roadway, substantially as described.
I also claim the combination of a stationary eyelet magazine, with a roadway claim, provided with pockets, into which the yeles are thrust, substantially as described, and from which they are removed by the feeding instrument, substantially as set forth.
53.927. Sewing Machine for Sewing the Sweat Linings to

feeding instrument, substantially as set forth.
 53,927. Sewing Machine for Sewing the Sweat Linings to Hats.-Frederick S. Sanford and Dwight Whreler (assignors to Glover Sanford and Sons, and Dwight

(assignors to Glover Santord and Sous, and Wheeler), Bridgewater, Connecticut: e c aim the work plate, D, guides, E and F, constructed and ar-ed substantially in the manner described, in combination with a hing apparatus, for the purpose specified. ₩e

53,928.—Detaching Boats from Davits.—E. H. Sheffield, Stonington, Conn., and E. P. Palner (assignors to E. H. Weston), New York City:
We claim the jointed hook-, c, fitting into ockets, d, on the ends of a boat, A, in combination with the retaining hains, f, and with suitable

mechanism for tightening or releasing said chains, constructed and oper-ating substantial y as and for the purpose described. 53,<sup>13</sup>29. - Harvester Rake. - Thomas Taylor (assignor to Samuel C. Ridgeway and John Fox), Baltimore, Maryland:

I claimed the combined action of the crank shaft and curved arm of the r ker, moving in the swiveled guide for giving motion to, and oper-ating the raker, as herein recited.

53,930.—Horse Shoe.—Cassius M. Werner (assignor to him self and Edwin A. Bigelow), Rockford. Ill.:

First, I claim forming the clasps with open loops, as and for the pur-

ose described. Seebad Cassing the clasps in one piece with the flahge bar, as de-cribed, for the purpose set forth. i hird, The combinat on of the sole, the ribs, the flange bars and the lasps substantially as described. cla

53,931.—Artificial Leg.—James W. Weston and Frederick Buckner, New York City, and Reinhold Boeklen, Brooklyn, N. Y., assignors to James W. Weston New York City:

First, We claim an ankle joint formed by a spring of rubber or other itable material, provided with recesses in its top and bottom surfaces, combination with corresponding projections on the foot and limb, bistantially as specified, so that the foot is allowed a limited motion in y direction, but is brought properly back to its place by said spring, as it forth. any direction set forth.

set forth. Second, We claim forming the ankle joint spring in the manner speci-fied, with the front portion thereof more rigid than the back portion, in order that the foot may conform to the surface stepped upon, as set

order that the foot may connorm to the state of the footh. Thrd, We claim a connecting bolt with rounded heads or nuts in com-bination with the elastic anklejont, substantially as and for the purposes specified, and in combination therewith we claim the sheet-steel socket

Third, We claim a contraction therewish we claim the sheet-steel socket specified, and in combination therewish we claim the sheet-steel socket for the heads, as set forth. Fourth, We claim the elastic stop block or blocks applied as shown, to arrest the forward movement of the lower limb, as specified. Firth, We claim the hocks, II, formed of a bent piece of metal passing around the limb at the joint to strengthen the same, it combination with an elastic contractibe band or spring applied oetween said hooks to throw the lower limb forward, as specified. Sixth, We claim atjusting the limb to the conical shape of the stump by the liming of veneer or other suitable material, rolled up with the carges lappling and attered at the upper end to the artificial limb, in combination with the curved adjustable wedge, or its equivalent, as and for the purposes specified.

combination with the curves accessed and the second 53,932.-Saddle and Harness.-Achille Angeline, Genoa

Job, 302.—Shadle and Harness.—Achille Angeline, Genoa Italy: First, I claim in the manufacture of cushions or pads for riding sad-dles, pack saddles, and harness of all kinds, of elastic surstances, such as vulcanized guita percha or caoutchour when of the form and shape, substant ally set forth. Second, The formation of said elastic substances into tubes, do uble tubes, dice, knobs, or spheres, substantially as and for the purposes here-in set forth.

53,933 — Rocket. — William Hale, London, England: I claim the application of the principle by which the expansion of the whole volume of the gas as it issues from the vent is made to subserve the purpose of producing rotation in the rocket about its longitudinal axis, substantiany as described.

53,934. — Steering Apparatus .— Morris West Ruthven, Middlesex County, England. Patented in England Nov. 10, 1864 :

I claim in combination with a tiller operated by gears, pivoted levers and links, substanti lly as herein described, a weight or spring which reserves or stores the power with which the water forces the rudder in one direction, and is applied to aid the helmsman in outling the rudder over in an opposite direction, substantially as set forth.

35-Peat Machine.-Jamos Hodges, Penny Hill, Bag-shot, England:

First, J claim the pulping trough and separator, E F, provided re-pectively with the spider diaphragms, I, and fixed bars, K, and also rovided with the shaft. G, having upon it the vanes, J, and bars, L, all rranged to operate in the manner substantially as and for the purpose et forth.

arranged to operate in the manner substantially as and for the purpose set forh. Second, The pulping and distributing trough, N, provided with dia-phragms. c, having a varying number of arms, and with a shaft, O, having vance, P, upon it, arranged to eperate substantially in the manner as and for the purpose specified. Third, The combination of the screw excavators, elevator and pulping mechanism applied to a ves el, and arranged for joint operation, sub-stantially as and for the purpose set forth. Fourth, The preparing of the peat he with subsoil drains, substan-tially as described, when used in connection with a vessel provided with an excavator and pulping apparatus, substantially as set forth.

53,936.—Rudder.—Morris West Ruthven, Middlesex Co. England. English Pat. July 11, 1863 :

I claim in combination with a rudder composed of a series of h sections, the connecting of said sections at heir upper earls by me a slotted crank or lever on one part that receives in its slott a pin o friction roll on the next adjacent part, and so on throughout the ser cause the parts when moved by the rudder to assume an approx curve, substantially as described.

53,937.—Sluice for Propelling Vessels.—Morris West Ruth-ven, Middlesex County, England. Patented in Eng-land May 1et, 1865 :

I claim the employment in the propelling of vessels of rotating sluices such as are herein described, each in combination with two outlet pass-ages, the sluice in each case being arranged to turn with its axis while the periphery and enis of the sluice are free as may be from contact with the inclosing surfaces of the chamber in which the sluice is contain-ed, by which arrangement the sluice may be turned comparatively free from friction, and consequently requires but little power to turn it.

53,938.—Swing.—John F. Hartman, Fond du Lac, Wisconsin :

I claim the combination and arrangement of bar, B, and swing bars, D D, with the levers, E F G and H, and rope, I, substantially as and for the purposes set forth.

53,939.—Pump.—A. Leuchtweiss, Cincinnati, Ohio: I claim the sharp-edged abutment, c.in combination with the discharge passage, a, screw, C. and cylinder, A. constructed and operating substan tially as and for the purpose described.

## REISSUES.

2,221.-Gang Plow.-N. F. Burton, of Galesburg, Ill. Pa-tented Oct. 28, 1861 :

First, I claim the device for adjusting the beams, A A', by means of late, f, and clamps, e e, and bars, g g, substantially as set forth, where y the depth of penetration of the plows, M and I, may be changed at plate,

back the second state of the plows, M and I, may be considered by the depth of penetration of the subsoril plow. I. having a long-winged mold board, with the surface plow, M, arranged as and for the purpose set forth. Third, The attaching of the axle, D, to the beams, A A', throu h the medium of the bal-shaped rod, L, in combination with the arm, H, attached to the axle, D, and having its bearing or fukerum on the rod, L, as herein described, whereiv the depth of the penetration of both plows may be regulated at pleasure, and they may also be made or run out of the ground when desired.

2,222.—Lock.—Rudolph Vollschwitz and J. J. Schnaepfer, (assignees by mesne assignments of F. Randolph) New York City. Patented July 25, 1865:

First. We claim a lock with a tubular case, B, containing a bolt, D, and ne or more tumbiers, E, to be operated from either side by a key, K. ubstantially as and for the purpose set forth. Second, The latch, F, in combination with the bolt, D, and tubular case, s, constructed and operating substantially as and for the purpose de-cubad

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2.223. — Revolving Fire-Arm.—J. J. Greenough, New York City, assignee of James Warner, Springfield, Mass. Patented June 24th, 1856: First, I claim the employment of a pin or other projection as described in the shield or rear frame for receiving recoil of the breech constructed as herein described, at a point just behind and in rear of a chamber that is on a une with the barrel when in position to be discharged for firing the arm, as and for the purposes above set forth. Second, I also claim making the pinor projection, E, adjustable, substantially as and for the purposes set forth. Third, I claim the excities, if i, in the battery plate, c. in such position and of such term as to receive and hold the ball or balls in case of the barreled, as described.

standaly as and for the purposes set forth."
 Third, I claim the exities, it', in the battery plate, c. in such position and of such turm as to receive and hold the ball or balls in case of the backed turner. As a set of the barrest turner is a discribed.
 2,224. Harvester, — Reuben Hoffheins, Dover, Penn. Pa tented May 20th, 1862:
 There is a described.
 2,224. Harvester, — Reuben Hoffheins, Dover, Penn. Pa tented May 20th, 1862:
 There is an proper, or upon the inner front corner of the platform of a barvester which has its curtuing apparatus and platform binned to the draft frame, all in such manner that the rake arm sweeps the platform of the form front front to inner side, and mautinus a correct position in relation to the finager beam and platform during the rising or failing n ovements thereof on the joint of plains by which has inservented to the draft frame, a substantially as set forth.
 Third, The anguhar rake arms rotated independently of the axis, f, and control led substantially as described, in combination with a guide way which is perpendiquar, or nearl, so, to the said axis, f, of the rake head.
 Fourth, Elevating and depressing revolving rake and reel arms by means substantially as described and shown.
 Fifth, an the dimeter of an and platform or finger beam, and adapted for supporting a sweep rake and automating position in relation to add the ray proves described.
 Stat Andredro support, F, vor its equivalent, rigidly mounded upon a longed finger beam or classer and adapted for supporting a sweep rake and muchaning position in relation to add the ray proves described.
 Stat Andredro support, F, vor its equivalent, rigidly mounded wholly wholl y poston outside or rown wheel, J, constructed and standard or support.
 Stat Andredro support, F, vor its equivalent, rigidly mounded wholly as described.
 Stat and round the axis of said wheel, J,

its equivalent, in connecton. A substantially as and for the particular described. Eighteenth, The pulley support, Q, with its pulleys, W2 VV2 in com-bination with a band or chain, N, and pulleys, W1 W3, substantially as and for the purpose set forth. Nineteenth, Providing in a harvester with the rake attached to its hinged finger beam or plaiform, an extensible means for driving the rake, which will permit the plaiform and rake to rise and fall together and accommodate themselves, independently of the draft frame, to the undulatons of the ground, substantially as described and for the pur nose set forth.

2,225.—Knitting Machine —Joseph Hellen (assignee by mesne assignments to John Nesmith), Blair, Penn. Patented July 16th, 1850 — extended 7 years: First, I claim forming the needle in the manner substantially as de-scribed, so that each needle shall be capable of being separately project-ed and withdrawn in the operation of knitting, by the asplicaton thereto of mechanism, substantially such as described, for producing these move-ments.

of mechanism, substantially such as described, for producing these move-ments. Second, I also claim the above described means of orojecting and withdrawing the separate needles, or any other substantial equivalent of a knitting needle when used to perform its functions. Third, I also claim the arrangement of the needles on a cylinder, in the manner described, in connection with the described means of moving or revolving the cylinder as a needle carrier. Fourth, I also claim the thread bearer, v, having an extended sideway pressers, substantally as described. Fifth, I also claim the thread bearer, v, having an extended sideway motion to and fro, at each stitch, by wh ch it lays the thread across the needle at each stitch, and returns with it to be ready for the next stich. Sixth, I also claim the spring vise for regulating the supply of thread o the needle, opened by the rod, W, substantially as described. Seventh, I also claim the machine by which their various motions are de-rived from a single orank and screw thread, substantially as described

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