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### Agricultural Science-Sandy Soils.

At a meeting of the Farmer's Club held at the American Institute, on the 2d inst., an able essay on soils was presented by Professor S. W. Johnson, of Yale College, New Haven, Conn. The following are some of the views contained in it :-

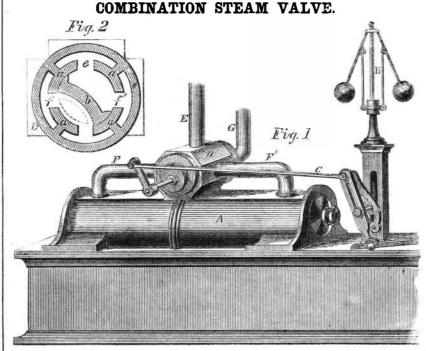
"The labors of chemists to discover positively all the causes of the fertiliy of soils have not yet met with conclusive success. The mechanical structure of soil is of primary importance. Naked rock grows lichen—the same rock crushed into coarse grains, grows a much higher order of vegetable-pulverized fine, the cereals grow in it. Geology, chemistry, botany, physiology, meteorology, mechanics, hydrodynami s, heat, light and electricity, are all intimately combined in the grand process of vegetation. There are sandy soils in our Eastern States, which, without manure, yield meagre crops of rye and buckwheat; but there are sandy soils in Ohio, which, without manure, yield on an average eighty bushels of Indian corn an acre, and have yielded it for twenty to fifty years in unbroken succession, the ingredients of these soils being, by chemical analysis, the same. At present no difference is known between them, except the coarseness of the particles—the first being coarse, while the Ohio sand is an exceedingly fine powder. The power of soils to attract and imbibe moisture and oxygen was well shown by Schubler, of Hoffen, 40 years ago. Of 13 different soils quartz sand absorbed in thirty days over 1-1000 parts of oxygen and no moisture, while humus absorbed 13 of oxygen and 120 of moisture."

## Patent Law Question.

MESSRS. EDITORS-If A, of New York, buys of an inventor in Boston a patent machine, the use of which is confined, by papers signed by both parties, to A's own business in New York, and A exchanges his old machine with the inventor for a new one, and the inventor sends an order on A to B in New York to take possession of the old machine, which B does, and sells it to C, who knows nothing | it is placed on a stem, which is connected about how B came by it, can C use the machine in New York, or in any other place he chooses, or can the inventor stop it, or is any one liable for damages? M. B.

[The inventor or patentee has the sole right of "making, using, and selling;" therefore C has no right to use the machine which he purchased from B, without the consent of the patentee. Ignorance in the case of purchase is not a valid excuse for the infringement of a patent right.-EDs.

THE lightest substance at present known is hydrogen, which is sixteen times lighter than air, hence it is used to fill balloons.



Could the shade of immortal Watt once more revisit the earth, it would feel a sense of satisfaction when contemplating the varied and numerous improvements which have been made to the steam engine since his day, and how greatly steam has been economized by mechanical devices during the past half century. It is our pleasant task to chronicle these improvements, which have, to the true thinker, a deeper meaning than money-making; each improver or simplifier of means to an end, being an aid to progress—a help to civilization. Such an improvement is the combination steam valve invented by Robert Stewart, of Elmira, N. Y., and which is fully explained by the accompanying illustrations. It combines in itself a steam valve, a regulating valve, a graduating cut-off, and a stop

Fig. 1 is a perspective view of the invention applied to a steam engine, A being the cylinder, B the governor, that by means of a slotted piece acts upon the link, C, which is also connected with the eccentric and stem of the valve, thus regulating its motion by the governor. D is the valve, G being the induction pipe, E the exhaust, and F F' the pipes admitting steam to their respective ends of the

The construction of the internal parts are better seen in the cross section, Fig. 2. A shell, c, has bearings, a, in it, provided with ports, e ff', each of which communicate with their respective pipes, E F F', and the intervals between the bearings and the shell form steam passages. The valve is seen at b; with C, and the steam finds its way in through an opening in its end, represented by dotted lines. In the position which the valve is placed in, in the section, the steam would be passing to the end, F, of the cylinder, while F' would be exhausting through the exhaust, E. By placing (with a hand lever or similar means) the valve so as to close both ports, f f', it becomes a stop valve, no steam being then able to pass into the cylinder. The friction is very slight, and there is no hindrance to the steam passing directly to the cylinder from the boiler, as in the ordinary steam chest, and on the whole it is an excellent contrivance.

It was patented September 14th, 1858. The inventor will be happy to furnish any further information upon being addressed as above.

Multum-in-Parvo Bath.



The above illustration, which we transfer from the pages of the London Artizan, shows a very simple and exceedingly valuable improvement in the construction of the most important of all domestic conveniences and requisites for health-maintaining purposesthe bath. Cleanliness is said to be next in degree to godliness, and anything which renders the attainment of daily ablution more easy, agreeable. and inexpensive, and more consistant with the economy and arrangement of general domestic life amongst the less wealthy and luxurious classes, should be hailed as a great boon to society at large. The chief cause of this much-to-be-deplored state of bodily uncleanliness is the almost impossibility of any but a wealthy or well-todo person being able to afford the first cost of a reclining bath, and also that the very large quantity of water requisite renders it difficult to be readily obtained without help, or some other interfering cause steps in to render it difficult, expensive, troublesome, or impossible. The great disadvantage of the ordinary hip bath is, that it does not permit of the feet being immersed simultaneously with the posterior portion of the body, and the position of the bather is not the most favorable for cleansing the upper parts of the person.

This bath is only about the size of, and in appearance externally very much like, the ordinary hip bath, and being quite portable, may be kept in the bed-room or dressingroom; the small quantity of water which is skin is the result.

necessary for enabling a complete and thorough cleansing of the person to be performed, renders it capable of almost instantaneous use, independently of any assistance from servants. In using the bath, the bather sits upon the seat, with his feet in the lower part, or foot-bath portion, just as if sitting in an arm chair; the splayed sides prevent splashing over. The seat has a movable pool or dish, which is used as a sponging bath, or a bidet, and which, upon being removed, allows of the lower part, or foot-bath portion, being used as a hip bath; thus this bath combines in one and the same apparatus, a sponging bath, a foot bath, a hip bath, and a bidet; and, by the addition of a pump and the usual poles and fittings, it may also be used as a shower bath. Now, a great domestic convenience such as this, commends itself directly to the serious and immediate attention of every one who values health—and there is no better promoter of bodily health than daily ablutionary exercise-and this is, by this new bath, rendered quite practicable for those to whom it was before absolutely impossible.

Improvement in Steamships.

Although during the past few weeks we have occupied our readers' attention with remarksupon the construction of ships and the preservation of life at sea, and have incidentally made many suggestions upon these important topics, there is still left one idea which has not been touched upon, and which is a very important consideration in case of accident by fire or storm, this is the presence of the machinery. The weight of the engines and boilers of an ocean steamer varies from 300 to 700 tens weight, and it must be recollected that this is dead weight, interfering with the buoyancy of the ship, and becoming a positive incumbrance the moment it is disabled. By the ingenious method of constructing steamships and placing the machinery invented and patented by Messrs. Salomon & Morris, of this city, the moment the captain discovers that the engine and boilers can be of no more service, they can be let fall into the water, thus lightening the ship in case of storm, and saving the cargo, or in case of fire affording a space into which the passengers can go and remain cool and safe from the ravages of the flames. There are other points in the construction of their boat which also deserve to be noticed, namely, the shape of the guards, and the life-preserving tubes which are secured underneath them, and the admirable method in which the hull is trussed, but we will desist, as it is only our intention to call the attention of practical shipbuilders to the invention.

Tanning Deer Skins.

The method usually practised in preparing deer skins for market is as follows: The skins are placed in a barrel of water with enough ashes to make a weak lye. They remain there until the hair comes off easily with a graining knife, and they are then grained. They are then hung up to dry until hard and flinty, and then they are soaked in rain water with a little soft soap ; the water being about blood warm. To dry them wringing is resorted to, and after this process, the wrinkles are pulled out by the hand. They should be next smoked with rotten wood or sawdust, in a long trench for a day or so, the skins being placed loosely in a box or barrel, and again washed in rain water. This process is repeated two or three times and a very well tanned

# Scientific American.



Issued from the United States Patent Office FOR THE WEEK ENDING NOVEMBER 2, 1858.

[Reported officially for the Scientific American.]

\*Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SOIENTIFIC AMERICAN, New York.

METHOD OF HANGING SWORDS—Jonathan Ball, of Utlea, N. Y.: I claim the arrangement and combination of the scabbard, D, plate, C, and bit pin, A B, with the belt or sash plate, substantially as and for the purposes shown and described.

MEGRANISM FOR TERMSMETTING ROTARY MOTION—Gerard Bancker and Andrew Campbell, of New York City: We claim the use of the combination of the sliding clamping block, G, and extension rod, C, with the doable-acting clauping lever, made and operated in the manner and for the purposes set forth.

Saw Gummer—Nelson Barlow, of New York City: I claim the described arrangement of lavors. C and D, rests, E and F, in combination with the milling cutter and clamp, all substantially as set forth.

TRUCKS FOR LOCOMOTIVE ENGINES-Levi Bissell, of TRIOKS FOR LOCOMOTIVE ENGINES—Levi Bissell, of New York City: I do not claim a single pair of wheels having a lateral motion, as the same have been proposed for carriages, and a so for locomotives, but in such eas sthey have moved on flat bearing plates, and there was nothing to prevent the truck from maintaing an angular position to the drivers when traveling on a straight line; but by my invention this is prevented, because the inclines, combined and acting as set forth, bring the truck to its proper position, as the engine passes off the curve on to a straight track.

What I claim as an improvement on the aforesaid patent of August 4th, 1857, is, the rigid truck frame, f, attached to the engine by the bolt or pin, h, and receiving one pair of truck wheels, in combination with the double inclined bearings, n o, for the purposes and substantially as specified.

Tool for Campfining Leature Straps—James

TOOL FOR CHAMFERING LEATHER STRAFS—James Bridger, of Richland, Iowa: I claim the tool described for chamfering and channeling leather straps, as described

STOVES—J. H. Buchanan, of New Concord, Ohio: I claim the arrangement, consisting of the concave bed or ash pit, A, of larger diameter than the grate. and constructed with supporting lugs or ledges, a a, semi-spherical open top grate or fire chamber, C bb, with draftspace, m, existing between it and the ash pit or bed, A, and flaring stove-pipe, D, appearing as a continuation of the grate, and furnished with a transverse feed and draught deer, F, and arranged above the fire grate, a ud made ad justable in a vertical line with the fire grate on a vertical standard, all for the purposes stated, and substantially as set forth.

GATE HINGE—C. E. Burnham, of Binghamton, N. Y.: I claim the pintles, E., placed within the sockets, a s', that are attached to the ends of the gate, A, in connection with inclined planes, d, and steps, e', attached to the posts, B F, the spring, d, acting or bearing on the pintles, e, and the levers j F, or their equivalents, connected to the pintles through the medium of the rods, h, and arms, g, the whole being arranged to operate substantially as shown and described,

[The pintles are fitted in sockets and attached to each end of the gate, and plates with double inclined planes and steps attached are secured to the gate posts: the pintles are acted upon by eprings connected to levers, and the whole are arranged so that the gate may be made to swing at either end, the pintles serving in the capacity of both hinges and catches.]

RAKING ATTACHMENT TO HARVESTERS—W. W. Burson, of Yates City, Ill.: I claim, first, The transverse hinging of frame, F, as described, for elevating the rake as it moves to the reor.

Second, Adjusting the rake in its position for starting by the gravity of the gear portion of the raking mechanism, combined with the transverse hanging of the frame, F', the operation being substantially as described.

rame, F, the operation coins successfully assembled.

Third, The combination of the tilting platfern, P', stubble leveler, P'', and glancing board, R', with the rake for collecting and delivering the cut product, as specified.

Fourth, The combination of shaft, S, cam wheel, W, spring, I, and slotted step, h, substantially as and for the purpose set forth.

ARITHMOMETER FOR ADDITION-O. L. Castle, of Up-

ARITHMOMETER FOR ADDITION—O. L. Castle, of Upper Alton, III.: I claim, first, Combining the shaft, D, of the driving wheel, C, which serves to give motion to the register, with the keys, F. F. by means of a series of ratchet wheels on the said shaft and a series of levers of different lengths which work on said shaft as a fulcrum, and are connected with the keys, when the whole are arranged as set forth.

Second, Combining the register wheels of lower denomination with those of higher denomination, by means of the pawls, t, ratchet wheels, s, and stationary plates, u, the whole applied, arranged and operating substantially as described, for the purpose set forth. Third, The springs, w w w, with their elastic arms, 13, applied to the register wheels, in combination with the stationary plates, u u u, and their projections, 1414, to operate substantially as and for the purpose set forth.

[This invention is intended to simplify the arithmometer which was noticed by us on page 99, Vol. XIII, Soi. Am., and which was re-issued on May 11th last. It is impossible to describe it in a few words, and we can numbers.]

RAILROAD DITCHING MACHINE—William Chadwick and S. J. B. Anderson, of Terre Haute, Ind.: We claim the levers, 24 7 and 9, arranged on a car, substantially as described, for holding the scoops at the side of the car, and for adjusting or raising and lowering them, as required.

quired. We also claim the levers, 13568 and 10, arranged a a railroad car, as described, for operating the scoops as to catch their load of earth, and for dumping them

as dequired.

We also claim the scoops, FF', made as described, so that they may be worked either end forward the same side up, to be filled.

that they may be worked element of the deep, to be filled.

We claim the vibrating mouth piece, x, hinged to the weight of the vibrated substantially as described.

CAE AXLE BOXES—John W. Cochran, of New York City: I claim, first, The sliding oil ar, a, constructed and arranged upon the uxle, and in relation to the packing of the box, as set forth.

Second, I claim the arrangement of the lubricator, door, disks, packing, follower, and bolts as described, whereby the whole may be adjusted to the bearing brasses, as set forth.

Machine for Cutting Corks—Edward Conroy, of Boston, Mass.: I claim, first. The combination and arrangement of the sliding plate, V, sliding plate and spring or pointers, W, in front of the same, vibrating angular lever, Y, and cams, a a, on inclined revolving shaft, P2, partly cogsed wheel, R, and spring arbor or shaft, T, for placing and securing the rough pieces of corks to be cut between the pointed end of the said arbor or shaft, 'T, and correspondingly pointed revolving substantially as described.

Second. I claim the combination of the cam, K, secured to the top of the frame, A. and curved spring, J, with the sharpening device. G, and rotating cutter plate, H, for sharpening the cutters after they have cut the cork, and are in the act of being again withdrawn, and moved toward the arbor or shaft, T, as described.

Third I also claim the combination of the cam, O8, and triction roller, b, with the sliding frame, B as set forth.

[This is an improvement, in connection with the rotary cutters and sharpening device, of the machine illustrated on page 364, Vol. XII, Soi. Am. The present invention enables it more effectually to cut the corks, and improves the mechanism which holds the cork

white being cut.]

Grain Separators—William R. Cox, of Delphi, lows: I am aware that suction blast spouts have been arranged in various ways, and I therefore do not claim, broadly, the separating of dust, chaff, am other light impurities from grain, by subjecting the same to the action of a blast in passing through a spout or spouts. But I claim the spouts, F. F. provided with the defectors, cd. connected by the trough. I, and arranged relatively in respect to each other, and to the spout, D, and trunk, A, substantially as and for the purpose set forth. while being cut.]

iorth.

I further claim, in combination with the above, the loaded valve, J, applied to the trunk, A, and used in connection with the spouts, D E F, for the purpose specified.

tached to an inclined trunk communicating with a fan box are employed, the several parts being constructed and arranged in such relation with each other as to separate all dirt, chaff, or foreign substances from the grain very expeditionally. Deflectors are also used, placed within the suction blast spouts, so as to properly present the grain to the action of the blast. A regulating valve is placed in the inclined trunk, to bring the blast under perfect control.]

BANK LOOKS—Lyman Derby, of New York City: First, I claim the use of the bars or cross bars secured on an axis ecc: ntric to its true center, for the purpose of obtaining gravity to unlatch them, in combination with the inside of the door of a safe or other place, substantially no set forth.

stantially as set forth.

Stantially as set forth, stantially as set forth, stantially as set forth, stantially stantiall

scribed.

Third, I also claim the use of the application of a clock-work movement, in combination with an inverted Y-shaped pendulous latch lever and bars ercross bars, on the inside of the door of a safe, for the purposes set forth.

MANUFACTURING STEEL—Joseph Dixon, of Jersey City, N. J.: I claim the process of making steel by heating pig or east iron, covered or stratified by any substance which will preserve a separation of the plates or pieces of iron through the process of heating, except sofar as the use of oxyd of iron as a separating material by any patent referred to.

Harroon—George Doyle, of Provincetown. Mass.: I claim, first, Attaching the shank of the harroon to the head, so that when the latter turns in the fish, the flat side instead of the edge shall be presented to the resisting body, substantially as described.

Second, The siots, 3 and 4, and lip, 6, operating substantially as set forth and (or the object specified.

TACKLE BLOOKS—John Ferrier, of Charlestown, Mass.: I claim placing two rows of pulleys, C D, in each block, the axis, a. of one row being at right angles to the axis, b. of the other, and the rope passed or adjusted around the pulleys, as and for the purpose set forth.

with two rows or series of pulleys, one placed above the other, with their axes at right angles to each other. By this device a greater number of pulleys can be placed in a block of less cumbersome dimensions than usual friction is greatly diminished, and a very efficient and powerful block is obtained.]

GASFITTER'S VISE—Joseph S. Ford, of Philadelphia, Pa.: I claim the upper die, D. and lower die, J, In combination with the screws, H H', the said dies having two or more semi-circular recesses, situated in respect to each other and to the screws substantially as and for the purpose set forth.

CAR SPRINGS—Perry G. Gardiner, of New York City: I claim as my invention the following named improvements and features in the conical coiled steel spring,

First, its construction out of a plate or bar as described not thinned, slotted, or hammered out at the ends, which is to constitute the apex of the spring.

Second, Nicking or compressing the face of the plate (as shown at the line) without breaking or cutting the fiber of the metal, for the purpose described.

PLOWS—John Gehr, of College of St. James, Md.: I claim the hollow corrugated roller, a, in combination with the mold board, c, brace, g, and guard, f, the whole being constructed and arranged substantially in the manner and for the purposes set forth.

STRAW CUITERS.—Oliver C. Green, of Dublin, Ind.: I claim the described arrangement of the hinged connecting rod, P, lever, G, spring, H, pin, I, sliding gate, D, and oblique knite, E, with the V-shaped knives, b, at the cnd of the trough, B, for the purpose set forth.

Joint for T-Rails—Wm. Harvey, of Albany, N.Y.: I do not claim the invention of a plate, which like the plate, C, stands flush with the face of the rails at the joint, to serve as a bearing for the wheels in passing the joint, as I am aware that numerous different modes of applying such plates have been proposed, neither do I claim generallly the use of side clampin g plates. But I claim the arrangement and combination of the laterally tongued side plate D, with the rails, A, chair. B, and side piece, C, as and for the purposes shown and described.

[Two side plates are secured one on each side of the joint, the one on the outside serving as a continuous bearing for the wheelsat the joint. These are combined with a chair that differs very slightly or not at all from those in common use, and the side plates not only lock the rails together both laterally and vertically at the joints, but also prevent the working or drawing out of the spikes which secure the joint chair to the tie.]

RAILROAD CHARGE. P. F. Hall, of Troy, N. Y.: I claim the combination of the plates, b b c. and lips or jaws, a and c together with the draw bore spiking of the same, by which they are keyed and also wedged and fastened to the tie by one operation, all as snext field and for the several purposes set forth,

. SEEDING MACHINES—Aaron Hatfield, of Petersburg, Ill.: I claim the arrangement of the seed hoppers represented, in combination with the mechanism for driving the seed slides and dropping the grain or seeds, and covering them as described and shown.

covering them as described and shown.

Drinking Cup—Louis Grosholz, of Philadelphia, Pa.: I do not desire to confine myself to the employment of three sections, inasmuch as two might be used for a small sized cup, and for those of a larger size, four or five sections might be advantageously employed. But I claim as a new and improved article of manufacture, a drinking cup formed of two or more sections with inclined sides, said sections being adapted to, and detachable from, each other, substantially as set forthand for the purpose specified.

SEEDING MACHINES-Wm. Y. Henry, of Monmouth ll.: I do not claim the markers or weights, h h, for

SEEDING MACHINES—Wm. Y. Henry, of Monmouth, Ill.: I do not claim the markers or weights, h, h, for they have been previously used.

But I claim connecting or arranging the levers or rods, M M, of the peetles or weights, h, and the levers, I, of the those, H, substantially as shown, when used in combination with the wheel, i, connected with the slide, Q, and the whole arranged to operate as and for the purpose set forth.

This is an improvement in seeding machines designed for planting seed in check rows; it consists in the employment of devices whereby the distributing apparatus, markers and shares are all Placed under the control of the driver.]

TAP FOR CUTTING WOODENSCREWS—W. O. Hickok, of Harrisburg, Pa.: I do not claim a hellow cylindrical projection at the cutting end of a tap, nor the throats leading from beneath the cutters into the same.

But I claim making screw threads, dd, around the outer surface or periphery of the cylindrical projection, h so that they shall operate in the manner and for the purpose described, the said projection, b, being made slightly larger than the hole in the wood in which the required screw is to be cut, for the purpose described.

DIE FOR CUTTING WOODEN SOREWS—W. O. Hickok, of Harrisburg, Pa.: I do not claim the arrangement of two cutters, in combination with the lower die, so as to cause the one to commence, and the other to finish, the groove which produces the thread upon the cylinder of wood operated upon, as this arrangement and combination is well known.

But I claim the reduced sectional thread, k, in combination with the first cutter, C, when the same is made to operate in the manner and for the purpose set forth and described.

and described.

IMPROVED LOCK AND KEY—Joseph Hoffacker, of New York City: I claim, first, Constructing a lock which is closed or locked by the bolt shooting forward and upward, and which is opened or unlocked by a screw key urging the bolt downward and backward, substantially as described.

Second, The construction of the bolt in combination with the barrel and the three springs substantially as described.

Third, The combination of the door handles with the lever, substantially as described.

Fourth, The construction and operation of the screw key, substantially as described.

Threshing Machines—Abram Jackson, of Lebanon, Tenn.: I am aware that threshers and winnowers have been mounted upon wheels like those of a common wagon; the traveling whee's operating as driving wheels operating as driving wheels to the other machinery. In such cases the wheels are usually made and sold as part of the thresher and winnower, and I believe no thresher and winnower has been heretotore constructed so as to be readily used upon a common farm wagon.

I do not broadly claim the mechanical devices above described, but limit myself to their new results as contributing to make substantial improvements in harvesters.

ters.
I claim the arrangement of the band wheels, D, upon the spokes of the wagon wheels in connection with the hounds, F, substantially as described for the purposes set forth.

FILTERING COCK—Lemuel P. Jenks, of Boston Mass., and Francis Draper, of East Cambridge, Mass. We do not claim the reversal of the filter to change th current, nor the reversion of the entire to change the current, nor the reversion of the vesse, containing the filtrating portion of the filter, nor the purifying the filter by means of the specific gravity of a small portion of water left behind after the full current has ceased.

tion of water left behind after the full current has ceased.

We do not claim the alternate transmission of the water from one side to the other in filtering cocks, nor do we claim that device in combination with the optional passage of liquid through the case without passing through the filter.

Nor do we claim the alternate transmission of the water by one passage across the width of the filter.

But we claim the combination and arrangement of aftering cock substantially as described, giving the optional transmission of the water through the filtering readium in either direction, or through the filtering case, the former without unnecessary impediment to the current, by one passage across the width of the filtering medium and closed or discharging at pleasure, the filtering case and the filtering medium being stationary.

SAUSAGE MACHINE—R. V. Jones, of Johnstown, Pa.:

SAUSAGE MACHINE—R. V. Jones, of Johnstown, Pa.: I claim the arrangement of fignged cylinder, B, with a knife, D, having hooked or V-shaped teeth, substantially as and for the purpose specified.

SHELD PINS—Josee Johnson, of New York City: I do not claim making a shield pin of one piece of wire, as that has been done before.

But I claim shielding the point of the pin within folds or coils when turned on both sides the main stem as described at B, in Figs. 1, 2 and 3, and at C, in Figs. 5, 6 and 7.

CAR SEATS—P. P. Joseff, of Philadelphia, Pa.: I claim the combination and arrangement of the slotted vertical bar, E, having grooved wheels, K, on its face cogged plate, E, pinions, D &, radial arm, D', and wrist pin or stud, C, projecting from the end of the movable seat bottom. A', and jointed crank, G, substantially in the manner described.

In this invention the reversible backs of the seats are raised to a horizontal position with their edges next each other, and the hinged bottoms of the seats are turned over and brought into the same horizontal line as the seats, but filling up the space between the permanent portions, so as to form a series of couches in a very expeditious manner. There are also a number of ingenious mechanical means by which this change is effected, and the parts secured in their position.]

Sash Fastener—Edward M. Judd, of New Britain, Conn.: I do not claim a sash-fastening formed by attaching a pindle to the end of a fast steel or metal spring, which is secured to the edge of the stile of the sash, and having a rod attached thereto, and passing through the stile of the sash for the purpose of withdrawing the pintle from the holes in the case or framing, for such is an old and well-known fastening. But I claim attaching the rod, D, to the spring, B, by means of the grooves, a', in said rod, the button a'', at its end, and the hole, b, and slot, c, in the spring, B, substantially as and for the purpose set forco.

[This is an improvement in that kind of sash fastenings in which a pintle is attached to a flat spring, the spring being secured to the edge of the sash at one side. and the pintle fitting in heles in the stiles of the frame or case. The object of the invention is to facilitate the application of the fastening to the sash, and render it more efficient in its operation than usual] ,

SEEDING MACHINES—H. Kaller, of Perry, III.: I do not claim providing the wheels, B, with concave peripheries for that has been previously done to effect the purpose stated. Neither do I claim the marker, N, attached to the reversible bar or rod, M. But I claim the cylinders, I I, provided with the seed cells, d', having the slides, e, attached and arranged within the tubes, F, and relatively with the hoppers, H, to operate as and for the purpose set forth.

[A peculiar seed-distributing device is employed in this invention, and it is so arranged that a veryefficient seeding machine is obtained, and one that may he easily operated.]

STEAW CUTTEES—James Lashbrooks, of Rockport, Ind.: I do not claim, separately, any of the parts.

But I claim the two rollers, B B, provided with the circular toothed blades, C, in combination with the clearers, b, the whole being arranged to operate as and for the purpose set forth.

[This invention consists in placing a series of toothed circular blades on parallel rollers fitted within a hopper, the blades being arranged relatively with each other and with clearing prongs, whereby the desired work may be done with great facility without choking or clogging.]

MINERS' RAILROAD TURN OR CIRCULAR SWITCH—E. B. Lowman, of Bellair, Ohio: I claim the arrangement of the crossings, as seen at letters C D E F M N& L in Fig. 1, toxether with its adaptation to the working of miners on either side of the entry by reversing its position on the main stem.

MACHINE FOR SOLDERING—E. Manley, of Marion, N. Y.: I claim arranging within and in the desired relation to the furnace, A, mounted on wheels, G, and constructed as set forth, an inclined copper bar or soldering tool, I, having notches on its lower surface and a wedge or key, J, shove, for retaining it with the required degree of heat, in combination with the inclined conducting twie, L, and hinged box, M, and its attachments divided into two compartments for the solder scraps and resin, the whole being constructed and operating substantially as described.

A suitable furnace is supported on a pair of wheels. and through it is passed an inclined copper bar or soldering tool, having a wooden handle on one end, and being bent and rounded like an ordinary soldering tool on the other. With this is combined a tube bent upward that catches all the bits of solder, resin, &c., that drop off as the apparatus moves along over the metal

SMOKING TUBE—Charles Matthews, of New York City: I claim arranging the tubes, C and E, with the mouth-piece, D, in such relation to each other that they form a compound smoking tube for smoking obseco or other substances in a finely divided state, the whole being conservated and arranged as

state, the whole being conseructed and arranged as specified.

And I also claim closing the upper end of the tube, E, in such a manner that the same when inserted into the draught tube, C, and brought close up to the inner end of the mouth-piece, D, leaves a sufficient space for the passage of the smoke up through the central opening of the mouth-piece described,

And I further claim constructing an ash-pan in such a manner that the same slides on the compound smoking tube by means of a loop, H, so that the ashes dropping from the lighted end of the tube are deposited in the ash-pan, substantially as specified.

This invention consists of two tubes of thin paper. one of which fits into the other, with barely space b tween for the passage of the smoke. The inner tube is closed at the bottom by an oblong piece of stiff paper bent over its end in the shape of the letter, U, and contains the substance to be smoked in a state of fine powder. A firm and thick paper tube, from 11/2 to 2 inches long, is fitted into one end of the outer tube, to serve as a mouth-piece, and also as a support for the inner tube —of which the closed end reaches and is fastened to it-but so as not to close it (viz., the mouth-piece) entirely; the curved form of the end of the inner tube permitting the smoke to pass freely on either side of it. This compound tube, when filled, is twisted to a tapering end, which, when used, is inserted into the collar of the ash-pan, which is an oblong dish, or pan, about 236 inches long, of very light metal, in the form of a trough, having at one end a collar or loop of proper diameter and half an inch long. The object of this pan is to catch the ashes, and as the cigar burns away, the pan is made to slide along towards the mouth of the smoker.]

PLOWS—A. A. McMahen, of Oxford, Miss.: I claim, in combination with a colter having a brace and adjusting openings therein, a mold board whose shank is made adjustable in the beam, so that said moldboard may be adjusted to the colter and in the beam as described, the whole being combined and arranged in the manner and for the purpose set forth.

manner and for the purpose set forth.

PRESSES FOR EMBOSSING AND FIGURING VELVETS, &c.
—John Nagele, of Altoona, Pa.: I claim, first, The application of steam to presses for figuring silks, velvets, and similar materials, substantially as described.

Second, The combination of rollers, A B B C, with the wheels, rr, and chain, z.
Third, The double lever, H H, in combination with the chain, H, and weight, W.
Fourth, The movable guide, N, in combination with the rollers, all in the manner and for the purpose, substantially as described.

stantially as described.

Refricerator—Benj. M. Nyce, of Kingston, Ind.: I claim. first, The employment of the fan. K, when arranged as set forth, for producing a circulation of the contained air, so as to bring it in immediate contact with the lime or other dessicating composition for the purposes specially set forth.

Second, I claim the peculiar construction of the beam, T, that is to say, I claim the metal bar, x, the insulating beam, v, the trough, y, and supporting beam U, all arranged for the purposes and in the manner described.

Third, I claim the partition, O, when arranged and operating substantially in the manner and for the purposes set forth.

poses set forth.

TRAP FOR ANIMALS—R. L. Payne, of Halifax, Va.: I claim the arrangement of the separate balanced fingers C, in connection with the box or body of the trap, sub-stantially as described and for the purpose set forth.

TRIPPING BLOCK FOR BOAT DAVITS—Charles Perley, of New York City: I do not claim a link and lug, as the same have heretefore been used in cable stoppers, but in that instance the apparatus was a fixture, and not adapted to a hoisting or lowering device, and in applying the same to the present purposes new and very useful results are attained.

I claim the tripping or disconnecting block, constructed substantially as specified and applied to davit blocks for boats or to other purposes, as set forth,

METHOD OF ADJUSTING THE PLUMMET WITHOUT MOVING THE TRIPOD IN SURVEYING INSTRUMENTS—Charles A. Saxe, of Philadelphia, Pa.: I claim the arrangement described for placing surveying instruments centers over any point within the circle, K. without moving the legs of the instrument, and unscrewing the leveling screws, but by unscrewing the screws, C.C., moving the ball plate, A., and revolving the ring, H, as described.

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# Scientific American.

HAND PRINTING PRESENCE—J. N. Phelps, of New York City: I claim, first, The combination and arrangement of the radial pins, T, on the transverse shalt and shoulder came, s, on the sides of the lever, N, oscillating arms, J, spiral springs, U, for moving the same automatically, and spiral springs, M for pressing the inking roller in contact with the printing rollers, QR, when receiving the ink from the same, and in contact with the face of the type in the form secured to the under part of the platen, G, substantially in the manner and for the purpose described.

Second, I claim arranging the inking rollers, QR, in the relation to each other and to the inking roller, K, at the lower end of the bars or arms, J, and the lower surface of the platen, G, when raised as described, and in combination therewith.

Third, I claim the segmental shield or plate, P, so arranged in relation to them and the corresponding segmental formed arm or support. C, as to thoroughly protect the sheets of paper being imprinted, from contact with the said inking rollers, and enable its edges, to be moved upward in the space between the shield or plate, P, and arm or support, C, substantially in the manner as described.

Lifting Handless—Joseph B. Sargent, of New Brit-

LIFTING HANDLES—Joseph B. Sargent, of New Britain, Conn.: I am aware that handles have been made with projections similar to D D, for the purpose of striking on the plate, to prevent the handle from being ruised above its proper position when in use.

I therefore do not claim as my invention the projections, D D, nor their striking on the plate.

But I claim "a lifting handle" with the plate cast in any metal that can be bent, having the socket formed in the manner described, and operating in connection with the handle, as specified, the whole being an improved article of manufacture.

HEMP BRAKES—William Shelby, of Waverly, Mo.: I do not claim, broadly, the invention of reciprocating beaters or blades for hemp machines. But I claim the arrangement of the beaters or blades, I J, at varying distances, in combination with the yielding plates, K, as and for the purposes shown and described.

are employed, operating or working between stationary blades placed in oblique position relatively with the reciprocating beaters, and consecutively in a reverse position relatively with each other. These parts are used in connection with elastic plates, so that hemp or flax may be thoroughly operated upon, the woody portion being first broken, and then detached orseparated from the fibrous portion.]

COMBINED BOOK AND SLATE—Forrest Shepherd, of New Haven, Conn.: I am aware that slates have been used in books, where it was necessary to turn back and forth from one to the other, which in general is attended with more inconvenience than where the two are used separately. I therefore do not claim that arrangement as such as my invention.

But I claim the combination of the slate with the book when so connected and arranged that the slate

But I claim the combination of the slate with the book, when so connected and arranged that the slate can be used with equal convenience and facility with each page of the book, while the page and the slate are continually before the eye of the user, as re resented in Fig. 1, and the whole is constructed and connected substantially as described.

CAR SEATS—John W. Sibbet, of Cincinnati, Ohio: I Claim constructing every alternate seat in two distinct parts, and providing the upper detachable portions, A, with guiding hubs. L, at their ends, to whichare stacked straps or bands, K. for elevating them, horizontal spring bars, N, whose ends enter slots, J, in the guide columns or posts, I, for sustaining them, in conjunction with the straps or bands, K, in their elevated portions, A, and combining with the said upper detachable portions, A', and the permanent seats, A, pieces of cushioned or stuffed cloth, Q, or other material, capable of being packed in the boxes, b, of the seats, the whole being constructed, arranged and operated substantially as described.

Every alternate seat in the car is made in two parts d the upper portions are provided with means for elevating and sustaining them in a horizontal plane between the permanent seats and the roof of the car. The upper portions and lower permanent seats are prowith cushioned canvass, or other sacking cloth, so that they can form beds upon the frames, and accommodate as many persons laying down as in a sitting posture.]

RAILROAD CHAIRS—James H. Simmons, of Painted Post, N. Y.: I claim the construction of a chair raised in the center for the ends of the rails to rest on, as shown at c, and sloping from near the center toward each end of the chair, leaving a space between the rails and the chair over the sloped portion, to accommodate the spring of the rails, together with projections, V V, as described.

CANDLESTICKS, &c.—Samuel Slocumb. of Cambridge, Mass.: I claim as a new article of manufacture, a lamp stand having a metal socket, a glass shank, and a mar-ble base, the whole being secured together by the rod, Depart forth

PREPARING WOOL AND OTHER FIBERS FOR SPINNING—Waterman Smith, of Manchester, N. H.: I claim, in the process of drawing wool and other fibrous substances, heating the sliver of wool, or other substance, and keeping it hot while it is being drawn, by passing it over or against, and in contact with, heated surfaces, either moving or stationary, substantially as described, for the purposes set forth.

MACHINE FOR CREASING AND BLACKING LEATHER FOR HARNESS—Adolph Stempel, of Oquaroka, Ill.: I do not claim, broadly, the employment or use of creasing and embossing rollers, in connection with a pressure roller, for ornamenting and creasing leather, for such device has been previously used.

But I claim the pressure roller, F, and the creasing and embossing rollers, i, in combination with the color fountains, K L, and felt rolls, M M, the whole being arranged to operate as and for the purpose set forth.

(By the employment of creasing and embossing roll and a pressure roller combined, leather straps of various widths may be creased and embossed. In connection with these there are also two color fountains and felt distributors, so placed as to color the edges of ing.]

PEDAL ATTACHMENT FOR PIANOS—William B. Stetson, of Taylor, N. Y.: I claim the construction and arrangement of the pedal chord bars, b b b, connecting suspension rods, c c c c c, and upper he rs, f f, and finger rods, i i i i i, and operated as described in combination with key-board instruments, and whereby the corresponding harmony of any melody or air is produced simultaneously therewith by the performer, through the agency of the feet, substantially as set forth.

SAFETY APPARATUS FOR STEAM BOILERS—Francis Stebblins, of Hinsdale, N. H.: I am aware that it is not new to so combine a vessel with a boiler and an alarm or signal apparatus, that such vessel, when the water in the boiler may be above its lowest safe water level, shall be kept filled with water by the pressure of the steam, and when such water may fall below such level of afety, such vessel, by the entrance of steam into it, shall be simplied of its water and thereby, by the abstraction of the weight of water from such vessel, the slarm or signal abmaratus shall be subtraction no resignal abmaratus shall be in the nongration. the alarm or signal apparatus shall be put in operation, and therefore I do not claim such. Although I maintain this principle of operation in carrying out my in-

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vention, I effect an important and valuable improvement, as my invention rests on an improved mode or means of carrying out such principle, and consists in an arrangement of pipes with respect to the vessel and boiler. Whereby the steam and water passages are entirely separate from one another, so that the water does not hinder or obstruct the passage of the steam from the boiler to the vessel, D, one not having to rush directly by and in contact with the other, while the steam may be flowing into the vessel, D, of the safety apparatus. Furthermore, my arrangement presents other advantages, as by means of it the safety apparatus is entirely out of the boiler, and is not liable to be in priously affected by the foaming of the water in the boiler.

I claim the improved as fatty apparatus as executed.

boiler.

I claim the improved safety apparatus as specified, or the above described arrangement of the two separate steam pipes, fl, the two separate water pipes, gl, and tubular shaft, a, together and with respect to the boiler, A, the vessel, D, and its loaded level, C, and so as to enable the whole to operate substantially in manner as explained.

SPRED INDICATOR AND RECORDER FOR RAILROAD CARR—J. Dutton Steele and William Lorenzo, of Pottstown, Pa.: We claim the governor shaft and indicator, and the shaft carrying the prepared paper, in combination with the main driver, arranged and operating as described.

HARVESTERS—Charles T. Stetson, of Amherst, Mass.: I claim combining two double-edged cutting blades with each of the vibrating cutter shanks for the purpose of reducing the number of joints in the cutting apparatus, substantially as set forth.

uns, substantially as set forth.

I also claim combining an inwardly extending curved arm, a', with the inner end of the finger bar, when the vibrating end of said arm is made to play between guiding cheeks, or in a guiding groove, and the said inner, end of the finger bar is jointed to a vertically sliding head, all substantially in the manner and for the purpose set forth.

LOCK—O. B. Thompson, of Hudson, Ohio: I claim the tumblers, f, and guards, g, constructed and arranged substantially as shown, and placed in such relation with the plate, b, of the bolt tumbler, C, and slides, j, too perate as and for the purpose set forth.

I also claim, in combination in the above parts, the bar, H, arranged substantially as shown, so as to be acted upon by the arbor bit, s. to adjust the tumblers, f, se the bolt, B, is shoved out from the case.

I further claim the plate, l, and buffer, m, placed at the back part of the slide chamber, E, substantially as and for the purpose set forth.

This invention consists in the use of a series of slot-

[This invention consists in the use of a series of slotted tumblers and guards peculiarly arranged, and placed in such relation with a bolt tumbler and adjusting lever that a very simple burglar and powder-proof lock is obtained, one that may be cheaply constructed, the tumblers rendered permutable, and no parts liable to get

SEEDING MACHINFE—Joseph Walton, of Delavan, Wis.: I do not claim the sowing of grain broadcast by centrifugal force, nor combining a sewing machine and a harrow, nor the sowing of two or more kinds of grain at one and the same time.

at one and the same time.

I claim the rotary disk, B, in combination with the throat, L, the partition, N N, the valve, H I, the finger E, and the grass seed hopper, when the whole are arranged and combined for joint operation as set forth.

CAR BRAKES—J. N. Ward, of Brooklyn, N. Y.: I claim the combination of the pulleys and brakes, together with the mode of operating the same, the whole being constructed and arranged as specified, and for the purposes set forth.

purposes set forth.

SELP\_INKING HAND PRESS\_Daniel Zuern and L. L. Bevan, of Shamokin, Pa.: We claim the combination of the arm or lever, G, with the shaft, H, the crank, I, and the vertical revolving arm, K, thereby accomplicating a double action, viz, first upon the ink roller, b, second upon the movable bed, E, for reception of rard or paper to be stamped or printed. By down vertical pressure of lever, A, roller, D, moves horizontally over ink sponge, F, and in contact withit. We also claim the combination of finger, d, with hook e, on movable bed plate with the mode of adjustment and disconnection, for the purpose of effecting movement of movable bed plate, E, and also the movable bed plate, E, for the purpose substantially as set forth. But we do not claim any other part or portion of the machine as new, or of our invention.

AXLE BOXES—Henry Howson, (assignor to Isaac P. Wendall and Jacob L. Wendall), of Philadelphia, Pa: I claim the combination of the box with the bearings, B and B', and retaining keys, C and C', when the interior of the box is arched on the top, when the said arch terminates on each side of the recesses, g, formed in the sides of the box, when the keys are adapted to fit into the recesses and against the edges of the bearings, and when the seve all parts are arranged in respect to each other, substantially in the manner and for the purpose set forth.

WEIGHING CARTS—James W. Martin (assignor to Lewis Rothermel), of Philadelphia, Pa.: I do not claim the application of a scale beam to a cart-forthe purpose specified, for this has been formerly done, and may be seen in the device patented by me, and formerly aluded to.

lided to.

But I claim the shaft, E, provided with hooks, d.d. and arms, e.e, which are connected by rods, f.f. with lever, h, having their fulera, i, connected by pendants, i to the arms, k. of a shaft, l, which is connected with the scale beam, G, by the arm, o, and rod, a, the rods, q, of the body resting on the lever, h, when the latter raises the body, and the latter provided with the rod, c, for the hooks il, to catch over, the whole being arranged substantially as and for the purpose set forth.

[This is an improvement on a cart previously pate ed, and illustrated on page 129, Vol. XII, Soi. Am. It consists in an improved mechanism, whereby the care body may be firmly secured to its bed when necessary. and also readily detached therefrom, and elevated s as to be connected only with the scale beam, for the purpose of having its load weighed.]

PADLOCKS—E. M. Mix and J. E. Mix (assignors to themselves and C. D. Johnson), of Ithaca, N. Y.: We do not claim, separately, the curved tumblers, a, for they or their equivalents have been previously used.
But we claim the combination of the curved or bent tumblers, a, and dog, D, rovided respectively with springs, C k, and arranged relatively with the bolt or shackle, B, to operate as and for the purpose set forth.

[In this lock a dog with a series of tumblers are used, so constructed asito render it extremely difficult to pick or open by any instrument except the proper key. The invention is more especially applicable to padlocks, although its use is not confined to them.]

BILLIAED TABLE.—Daniel D Winant, of New York City, assignor to William R. Winant, of Proceeding, N. Y.: I claim, first, Constructing the beds of billiard tables of slabs of glass, substantially as and for the purposes specified.

Second, I claim the clips, c c, taking the beveled edges of the slab to retain the same, as described and shown.

Third, I claim the block, e, receiving the screws, g, of the cushion rail, as and for the purposes described.

MECHANICAL MOVEMENT-Joseph H. Davis, of Wo-MANDARMONIA MOVEMENT—Joseph H. Davis, of Woburn, Mass.; I claim the arrangement set forth for transmitting power from any patne motor to a propelling gear or wheel, viz, through the intervention of a series of curved or bent and weighted arma, said arms working together a d connected to the gearing at their ends, substantially in the manner and for the purpose set forth.

RUDDER FOR VESSELS—Silas Yerkes, Jr. (assignor to himself and George Yerkes), of Philadelphia, Pa.: I do not claim, broadly, making a rudder in two parts, and connecting them so as to act simultaneously, but independently of each other.

But I claim the gearing of the outer or aftermost of the two hinged portions of the rudder with a fixed gear or toothed are attached to the vessel, substantially as and for the purpose specified.

[This rudder is made in two parts, called by the inventor the "main rudder" and "outside rudder." The former is hinged in the same manner as a common r dder, to the stern-post of the vessel, and the other one is hinged in a similar manner to the back of the fast one, and has secured to it a concentric toothed gear, which gears with a stationary toothed arc, concentri with the first one. The main rudder is operated in the usual way, and by its action the outside one is caused, by the arc and gear, to move faster in the same direction, and the two combined produce a greater effect on the water by a given movement of the steering apparatus than a single rudder presenting the same area of surface.]

RE-ISSUES.

MODE OF GENERATING HEAT—T. R. Hartell (assignee of Wm. Hartell and Jos. Lancaster), of Philadelphia, Ba. Fatented Nov. 23, 1852: I claim the adaptation of, or rendering available, tark as a field for the production of the intense and steady heat required for the melting of glass and for other processes and manufactures, by introducing water or the vapor of water into a furnace or fire place, in contact, combination with, or in close proximity to the tark substantially as set forth.

SEWING MACHINES-I. M. Singer and E. Clark (assig SEWING MACHINES—I. M. Singer and E. Clark (assignees of John Bachelder), of New York City. Patented May 8, 1849: What is claimed is the combination of mechanism substantially such as is described, so that the cloth or fabric to be sewed being placed upon the machine will be automatically fastened on to the feeding apparatus, carried forward to receive the stitches, and sischarged from the feeding apparatus, abstantial as described, and so that seams of any desired length may conveniently be sewed.

CORN HARVESTEES—E. C. Manck and W. T. McGa ney, of Conrad's Store, Va. Patented April 22, 1856 hey, of Conrad's Store, Va. Patented April 22, 1856: We claim, first, The rotary arms, p, in combination with eccentric guides, q, substantially in the manner and for the purpose specified. Second, The employment of a double series of cutters, for cutting stalk and stump, as described.

### ADDITIONAL IMPROVEMENT.

METHOD OF ATTACHING LAMPS TO LANTERNS—John Fleming, of Pitrsburg. Pa. Patented July 6, 1858: I claim the improved aronagement described, the same consisting in the attachment of the spring. It, and clies, E.E. to the lamp case, instead of to the function as and for the purpose specified.

DESIGN.

STOVES-E. J. Cridge, of Troy, N. Y.

### Monster Steam Hammer.

There is at present being constructed in lewcastle-on-Tyne, says the London Times of the 4th ult., by Messrs. Morrison & Co., engineers, of that place, a monster steam hammer, ordered by the Russian government. It is the largest ever constructed on the Tyne, and is of most gigantic proportions. It is constructed on the principle of Messrs. Morrison's patent. The hammer bar and piston are forged in one solid mass. The diameter of the bar is thirteen inches, and that of the piston thirty-one inches, and the total weight of this portion of the hammer exceeds five tuns. It was forged by a two-tun hammer of similar construction. The cylinder stands on two frames of three feet in width, and there is a clear working space of fourteen feet between them. The frames arch overhead, and clasp the cylinder, the whole being securely fitted and bolted together, and forming one solid mass. The total hight from the ground to the under side of the frame is nine feet four inches, and the total hight of the hammer itself is eighteen feet, the hammer having a clear fall of six feet. The ingress and egress of the steam is regulated by a double balance piston valve, which is worked by hand, by produced by giving two or three coats, and means of a long lever reaching from the valve to a staging, on which the engine-man stands. The number and force of the blows can be regulated, by means of this valve, to he most astonishing nicety, so great being the command which the workmen have over this immense mass, that it can be arrested in a moment, while in the act of falling. One of the great features of this hammer is the entire absence of all complication in its construction, so great, indeed, that it hardly looks complete as it stands, and it seems impossible that one lever could make various changes of movement and varieties of blows. so necessary to forge work, but this is the case. It is very well suited for the rough work it has to undergo, and is peculiarly adapted to be used in countries where—as in | rust for two days. The barrel must now be Russia—skilled labor is scarce, as it is almost impossible for any portion of it to get out of repair. The breaking of piston rods and cylinders, so common in other hammers, cannot occur here, as the hammer bar or piston rod is of such enormous dimensions, and is forged solid in the piston, the two combined forming | iron.

the whole weight of the hammer. This novel machine is just completed, and will, in a few days, be shipped for St. Petersburgh.

### Domestic Recipes.

ARTIFICIAL FLOWERS.—The beauty of these imitations of the floral world depends upon the taste and skill of the makers. The delicate fingers of woman and her quick powers of imitation, combined with an exquisite taste for the beautiful in nature, enables her to excel in this branch of art, which at present is carried to the highest pitch of perfection in the French capital. Although all the finest qualities of our artificial flowers are imported, still great quantities of them are manufactured in New York City, and they may be imitated by many females as a domestic recreation affording much pleasure. The materials required for them are velvet and fine cambric for the petals, and taffety for the leaves, with thin whalebone or wire for the stems. These are cut into the proper forms and pasted together with a solution of gumarabic. The colors to produce the shades are put on with a fine hair pencil in the same manner as drawings are colored and shaded. Carmine is employed to produce the red and pink colors; the yellow is a tincture of turmeric; green of distilled verdigris; blue neutralized sulphate of indigo; and purple a tincture of orchil or logwood and the oxyd of tin. Great care is necessary in the employment of these colors.

To Clean Gloves .- Lay them on a clean board, and first rub the sunface gently with a clean sponge and some camphene, or a mixture of compliene and alcohol. Now dip each gleve into a cup containing the camphene. lift it out, squeeze it in the hand, and again rub it gently with the sponge, to take out all the wrinkles. After this gather up the cuff in the hand, and blow into it to puff out the fingers, when it may be hung up with a thread to dry. This operation should not be conducted near to a fire, owing to the inflammable nature of the camphene vapor. The receipts given in all the printed books we have consulted for cleaning gloves are barbarous.

MAHOGANY STAIN-The color of mahogany may be imitated with a strong solution of logwood and fustic put on boiling hot with a brush. The color can be reduced to any depth of shade according to the strength of the liquor employed. After it is quite dry the wood should be varnished and afterwards polished. A varnish made with dragon's blood dissolved in alcohol, and applied in two or three coats will make a very good imitation of mahogany. When dry it should be rubbed down with rottenstone and oil.

ROSEWOOD STAIN .- This is made of a strong solution of logwood and red wood, commonly called hypernic. It is put on the wood when hot with a brush, the dark lines being the light shades one. By washing over the surface of this stain with a weak solution of saleratus, it will receive a bluish tinge and appear of a darker shade. When dry, use any kind of varnish for the production of a polished surface.

YELLOW STAIN .- A decoction of turmeric and a little alum, or the grounds of beer and a little sulphuric acid, makes yellow stain on white wood. Dilute nitric acid brushed over then exposed to the heat white wood, stove. also makes a yellow stain; this is the most convenient one for imitating maple.

BROWNING GUN BARRELS .- Mix one ounce of nitric acid and four ounces of the sulphate of copper in a pint of water, and apply this to the surface of the barrel, and set it aside to rubbed with a stiff brush, washed with lime water, dried, and afterwards varnished. It is sometimes necessary to apply two and three coats of the acid solution to obtain a proper coating of oxyd. The lime water neutralizes any free acid that may be left on the