these that from Porthmawr in Wales is about an ave rage specimen. Its constitution is as follows:Silica............................34•21
Alumina and oxide of iron.......52•00
Lime.
6.199

Magnesia $0 \cdot 659$
Sulphuric acid. $4 \cdot 12$
Phosphoric acid. 6.633

Total. . $97 \cdot 821$
The other samples are formed wholly ot these same substances, but in different proportions. The silica and alumina would doubtless bo combined as silicate of alumina, which is clay.
The lime would be combined first with the phosphoric acid which in this specimen would take it all. The cornpound formed would be phosphate of lime. This is commonly said to be insoluble and worthless, the biphosphate or super-phosphate being the soluble and highly prized fertilizer which produces such magical effects. The phosphate is, however, soluble to some extent, and is not wholly worthless as a fertilizer.

In other samples of coal ashes which have been analyzed, the quantity of phosphoric acid was not sufficient to take up all the lime, and in these cases the remainder of the lime would enter intu combination with the sulphuric acid, forming sulphate of lime. This is known under the names of gypsum and plaster of Paris, as a very valuable fertilizer.

It may be that the ashes of English coals contain these two substances, phosphate of lime and sulphate of lime, in sufficient quantities to make them valuable as manures. It would be a little surprising, however, it their value for this purpose should be so great as to make the privilege of collecting them in a single district for six months worth $\$ 9,000$. This circumstance suggests the possibility that some rare metal or other valuable sulstance may have been discovered in them. It also suggests the desirableness of a more thorough examination of the ashes of American coals. The constitution of these is, however, so different from that of the ashes of English coals, that it by no means follows that any substance oecurring in one will be found in the other.

## MICROSCOPIC OBJECTS. <br> 

says Bryant, speaking of the human race. With equal truth it may be said that all the hosts of mankind who have been born into the world since the creation, are $\begin{gathered}\text { ut a } \\ \text { a } \\ \text { bandful to the countless myriads }\end{gathered}$ of beings that swarm in that invisible world which has been revealed to us by the magical power of the microscope. When we reflect that each one of these beings has his own needs and desires, his loves and battles, his career trom life to death; and that every drop of every stagnant pool has been teeming with them for immeasurable ages betore the existence of the human race, the mind is overwhelmed in the effort to conceive the vastness of this creation. It is an impressive thought that mankind should have lived on the same planet with this world of sentient beings for so many thousands of years without ans suspicion of its existence.
It is not strange therefore, that when the discovery was made, the minds of men should be turned to the examination of their minute, strange and curious contemporaries, and that this stndy should be prosecuted with ever-widening interest. That this is the case we are very trequently reminded by some improvement in the microscope, by some discovery through its aid, or by some work upon its use.
We bave now before us a book of 140 pages on "The Preparation and Mounting of Microscopic Ubjects," devoted exclusively to this department of mi croscopic observation. The various methods of attaching the minute specks to glass slides, so that they may be brought under the focus of the instrument, as well as the balsams and cements employed, and the different modes of preparing the objects, are very fully and intelligently discussed.
The work is by Thomas Davies, and is published by William Wood \& Co., 61 Walker street, New York.
A pine tree was lately cut in Colebrook, Conn. for the shatt of a big wheel for a Manufacturing company, which worked thirty-six inches in diameter and twen-ty-six feet in length. The stump was six feet through.

## RECENT AMERICAN Patents.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Otfice last week; the claims may be found in the official list:-
Protector for Baskets.-This invention consists in applying a metallic frame to baskets in order to protect the same or preserve them trom wear or injury. The inuention is chiefly designed to be applied to large baskets or those in which weighty substances are conreyed or carried, such, for instance, as bushel baskets used by farmers and others, coal baskets for carrying coal, \&c. Baskets of this kind are soon worn, cut, broken or destroyed, in consequence of the weighty substances carried in them, and a metallic frame renders them durable, serving as a support to the basket in holding its contents and likewise protecting it from external injuries, such as blows, concussions, \&c. Philip Eley, of New York city, is the inventor.
Means for Raising Oil from Wells.-Tbis invention relates to a new and improved means for ralsing petroleum in wells through the medium of air injected into them. The invention has for its object, first, the keeping ot the air passage free from mud, sand, etc., whid are liable, in the old plans, to choke all said passage ; second, in having the air passage so arranged that it will not interfere in the least with the ascent of the oil in the oil tube, nor the oil intertere with the current of air-due provision heing also made for the difference in the exbaustion of the oil tube and well pipe, as well as for the ready connecting and disconnecting of the several parts. The above inventiun is liy Messrs. L. W. Turrell, Samuel Stanton, and L. C. Ward, Newburgh, Orange Co., N. Y.

Kinding up Watches.-This invention consists of a main spring barrel composed of two barrels, one inside the other, the outer barrel being rigidly connected with the main gear wheel, and the inner barrel carrying the winding arbor, the main-spring and the maintaining ratchet, or its equivalent, in combination with two stops or dogs, one applied to the inner, and one to,the outer barrel, in such a nanner that, when the spring is wound up the inner barrel turns independent of the outer barrel until the two stops are in contact, and when the main spring breaks the inner barrel flies back and completes a tull revolution, or nearly so hefore its stop strikes the dog of the outer barrel, and thus the force of the spring is spent, and injury to the mechanism of the watch is prevented. Invented and patented by G. C. Martin, Cleveland, Cuyahoga Co, Ohio.
Roller Cleat for Trunks.-This invention consists in the arrangement of mortises or cavities in the cleat of a trunk, in combination with rollers, the axles of which have their bearings in the sides of said mortises or cavites in such a manner that the rollers can be secured to the cleat without the use of a metal bracket, and a simple, cheap and durable fastening tor said roller is produced. The ends of the cleat are made thin and turned up over the edge of the trunk in such a manner that, bv the cleat, the edge and ends of the trunk are protected, as well as its bottom, and the cleat is less liable to be knocked off than it is when attached to the bottom in the ordinary manner. John A. Lieb and John Schmadel, of 69 Prince st., Newark, N. J., are the inventors of this improvement.

Purifying Water.-A Mr. H. A. Sheldon sends the following account of an experiment to purify water : -"Having occasion to purify river water which was colored by passing through sk amps containing muck, peat, and other decayed vegetable matter, I tried the usual method with alum, which deposited the mechanical impurities but lett the water the color of pale sherry wine. I then mixed 1 oz . powdered alum and 2 oz . ciean white clay together, ior one barrel of water, made a thin paste and stirred it with the water, which, in twilve hours, was perfectly transparent and colorless. The precipitate in the latter case was of a dark chocolate, in the former a pale ashen color."

Messrs. Davison, Stiles \& Woolsey, 229 Broadway, are the agents for the traveling and steam cranes illustrated on page 190 of the current volume. All letters should te addressed to thein.


ISSUED FROM THE UNITED STATER PATENT-OFFICE for the week ending april 4, 1865.

- Pamphlets contanding the PatentLaws and tull particulars of the mode of applying for Letters Patent, specifying size of model required and much other in formation useful to inventors, may be had gratis by addressing MUNN \& CO., Publishers of the Scientific american, New York.

47,00.-Cigarette.-L. L. Arnold, New York City structem, First, A.fa nem nem articie or or manufacture, a a cigarette, Second, The method herein described of making the same. 47,081.-Cabinet Organ or Harmonium.-Thomas AtKins, Cincinnati, Ohio:
with regaro arranging the stops or swells of an or oran or harmonium

47,082. - Manufacture of Blacking, Etc.-Roberts Bar
tholow. Cincinnati Ohio. tholow. Cincinnati, Ohio:

 composed or the ingredients above named, and manuractured. com-
pounded and prepared in the manner and for the purposes substan-

 ior th, with ny spiutable
in me manner specited.
47,083.-Oil for Paint.-Roberts Bartholow, Cincinnati, Ohio:


 47,084. - Process for Preparing Petroleum for the Manufacture of Paint, Etc.-Roberts Bartholow, Cincinnati, Ohil:
I claim the manufacture, compounding and preparation of paints
for comno purpos, of yarious colors and sbaues of color, and
ombracing all


 above
47,085.-Machine for Securing Soles to Boots and Shoes. John Blakeney, Philladelphia, Pa.:
 lent to the same. Whereb ve the said screvr rod is cascused, or the equiv-
a faster speed than the nut, for the purpose specified. second, Two or more cutters, 4 a and 7, arranged in the proiection,
m. or the rrocking franne in respect to the wire $x$. in combination
with

Third, The support, 24, adapted to the last, in combination with
themovable plitte, Y, and the devicen herem described, or the equiv-
alent to the same, wher by the sudd support can be adjusted verti-
call

 purpose hcrein set forth.
47,086.-Spring Bed Bottom.-J. Blair Bowditch, New
Haven, Conn.:

## Haven, Conn.: <br> I claim the coinbiuation of the slats, B B, witb the wooden springs, D, as herein described, for the parpose specifif ed.

 47, 087.-Lamp Cone.-Charles H. Buckalew, Jersey I clain, the construction of the cone frame with a metallic baseand bifurcated connecting arch, with a filling or dome of glass blown and biturcated conneeting archl, with a alling or dome of glass blown
or cast willinin the said frame, sub stantially as berein described a nd
represented. or cast willing
represented.
LTbis improvement relates to the construction of the air cone or flame deflector which surrounds or covers th: upper part of the ordinary kerosene or petroleum oil lamps. The improvement consists in forming the cone of glass and metal combined. A frame of metal is frst made, corresponding to the shape of the cone; this frame is then flled with glass, when hot, by pressure. A transparent cone is thus produced, t:ieuse of which results in obtaining probably twenty per centmore light from lamps to which the improvement is ap plied.|
47,088.-Breech-loading Fire-arm.-John W. Cochran, New York City :
I claim, First, So constructing and applying a breech block, having movement such as is herein described, as to provide tor the inser
toon of the cartidge into the barrel from the under side of the stock of s fire-arm, substantiallv as herein specifed. Second, Providing a cavity, c, substancially as herein described, in
the under side of such a breech block for the reception or the, car-
tridge when the gun is in the inverted position shown in Fig. 3 , tridge when the gun is in the inverted pooition shown in Fik. 3 ,
whereby the movene.t of the said block whith is secessary for the
insertion of the cavtridge into the chamber of the barrel
greatly nsertion of the ca'tridge into the comber of the barrel ingreatly
reduced, and the discharged cartridge shells are steadied while being
withdrawn frum the farrel. withdrawn trum the larrel.
third, The construction and arrangement of the rear end of the
breecch-operating lever, e, eubstantialy as herein doscribed, whereby
an openug between the said end ot the breech block and the stuck is openuly
47,089. - Railroad Switch. -J. W. Colwell, Macedonia, Ohio:
Firti, I ciaim the gnards, C C' d d', and guard rails, $D$ D', in com-
bination with the switch rails, when arranged as and for the purpose set erth. I clatn placing the main track, A A', on a tangent with
and at the junction of tlieside rack, B B.in combinition withthe
guards andguardrais, substantially guards andguard rails, substantially as and for the purpose speci-
fed.
47,090.-Harrow and Roller Combined.-Wm. H. Con-
verse, New Castle, Maine: verse, New Castle, Maine :
I claim the harrow, $E$, ntted in or to the frame, A, substantially as
shown, in combinatlon with the bent bar, $F$, provided with the plate.

 [This invention consista in combining a barrow with a roller and
arravging the former in such a manner that it may be readily arravging the former in such a manner that it may be readily clangled in it teeth, and also be capable of vielding to conform to the irregularitien of surface overwhich it may pass.]
47,091.-Railroad Car Brake.-David T. Cross, Cincinnati, Ohio
I claim the self. acting pawl,, $\boldsymbol{K}$, and its described or equivalent ac-
cessories, for the object set forth.
47,092.-Trunk Stay.-John M. Dalley, New York City : I claim the use of one or more curved bar. or plates moving upon
suitable guiding pins in the cover and body of a trunk or other case, arranged and oparating substantially as herein described and for
the purpose specfled.
sed Second. The combination with an ordinary hinge of the curved
bar, $\boldsymbol{h}$, ar anged together and operating substantially as and for the
purpose bar, $\mathbf{h , ~ a r r a n g e d ~ t o ~}$
purpose ipecifled.
This invention relates more particularly to traveling trunks, and consists in a peculia: combination of the hinge and stays, whereby they serve not only as clamps for strengthening the corners of the
trunk, but also afford much more reliable holding stays for the trank cover when open than the ordinarv ones hitherto employed. 47,033.-School Seat and Desk.-Wm. Disbrow, San Francisco, Cal.:
M, wiaith the standangement of the grooved bars, $K$, and sliding seat
and and desk, $A$, in the manner herein shown
|The object of this improvement is to facilitate the adjustment of the length and inclination of school desks, so that such furniture may be readily changed to suit the wants of pupils, enabling them to
preserve the best bodily positions for health, elc. This is one of the best inventions of the kind that has come to our notice.]
47.094.-Desulphurizing Ores.-M, B. Dodge, New York City:
Ccaim mixing the ore and salt in a drv state and a
teaming them within a close vessel in a perforated bottom
[This invention consists in treating auriferous or argentiferous ore ater it has been stamped with stear and common salf, in such and when the mixture is put into the desulphurizing furnace the full benefit of the salt is obtained, and the sulphur is effectually sedarated.l
47,095.-Pump Piston.-Wm. Foster Dodge, New York

 sald band, substantially us and or the purpese herein specitied.
Second, Apiston, composed of a bollow hell, A, having openings
a a, in its sides and a valve seat and valve at or near its bottom, an a surrounding band of leather or other soit elastic or flexible mate-
rial con Aned to the said shell between the said open ing , myeans
of rings, $\mathbf{c}$, the whole conblined sulstantially as and for the purof rings, $c, ~ c, ~ t h e ~ w h o l ~$
pose herein specitided.
47,096.-Protector for Baskets.-Philip Eley, New York City : I claim a metallle rame, adjustable or otherwise, applied to bas
keta, in the manner substantially as and for the purpose herein se
forth. 47,09
97.-Screw Steam Valve Cock.-Samuel D. Fales,
Central Falls, Smithfield, R. I.: I claim constructing the valve and valve seat for a steam or water
alve cock in the manner substantially as described, for the purvalve cock in th
p 3 ses spec fild.
47,098.-Railroad Draft Bar.-Remy Fiagel, Montgomery County, Pa.:
I claim the boxes, A A', springs, B B B ' $\mathbf{'}^{\prime} \mathbf{B}$, $\mathbf{B}$, rod, $\mathbf{C}$, bolt, $\mathbf{F}$, and shackle, (a, in combination with a bulfer, E, rigidly tixed the the plat
form of acer, the whole being constructcd, arranged and applide so form of a car, the whole being constructed, arrianged and applied so
as to operate toge ther, suthtantially ais described and set forth, for
the purposes specifided. 47,099.-Remedy for Disease in Trees.-Henry Furnel, Huntington, N. Y.
I cluin the eombliation of the herein-before mentioned ingredi
ents, for the purpose set forth, substantially in the proportions de
scribed.
47,100.-Mode of Rendering Wick Incombustible.-E. P. Furlong and E. M. Lang, Westbrook, Maine:We cladm a wick rendered incombustible by saturation or coating
ubstantially as described. Second, Saturating or coating a wick to $p$-event its combustion,
subsiantlally $\begin{aligned} & \text { as debcribed. } \\ & \text { Third, Rendering a wick incumbustible by saturation in plumbag }\end{aligned}$ rd, Rendering a wick

## 47,101-Silvering Glass Pitchers.-John W. Haines

 Somerville, Mass.:-I claim the dropplng on of the hot glass on the outside rim of the
pitcher, and by means of suttion with the mouth expanding the Rolid piece of hot $y$ l.
as above described.
47,102.-Screw Driver and Tweezers.-D. Frank Hart ford, Boston, Mass.
First, I claim the wires, $\mathbf{k}$ k, and pin, i. or ther eauivalents, in
combination with the tweezers and screw driver, substantially as
and tor the purpose described. and tor the purpose described.
second, Throwing the point. of twe thers beyond the point of
the screw driver, by means of the spring, elc., , intstantially as set
 combination with the twe

47,103.-Machine for Cleaning Shect Iron.-Edmund A. Harvey, Wilmington, Del.: them and preventing them being oxydized thereby, by imm washing
atterward subjecting said sheer, to heat, and thus causing all inotst-
ure to be evaporated from their surface sul,
He to be eva porated from their surfaces. sulstantially as described.
Second the combination of the squezzing rollers, E E, and a heater
or quick ty drying the sileets, subsua.tials as described.

 Fifth, The heater, I, when used in combination with the brushe and feed rollers, and arr 1
47,104.-Screw Windlass and Capstan. - Henry Heit-
man, 1 rooklyn, N. Y., and John Radican, New York
First, We claim the gear wheels, V V, applied in combination with
the ear wheel, D, worm wheels, L L. captan, E. and windlas.,., II,
sulstantiall in the manner is hercin set torth. bo that the can tan
 a more or rivs powert
to be accon,hilished.
Second. The comin
 change of the pawli, F and G tlle capstan arrel can be used inde
pendenty or in connection whil the party 10 which motion is im
parted by the gear wheel, 1 .

47,105.-Cultivator.- George F. Hassenpflug and George Barnhart, Green Township, Ohio:
We claim the frame, a c, when constructed as described in combi
nation with the plow standards, b b b, the same being attached,
47,107.-Manufacture of Sweat Proof Paper Collar.-
James H. Hoffman, New York: James H. Hoffman, New York: composition, suasstantially as described, applied in the manner sub
com stantially set fort
47,108.-Car Coupling.-Edward P. Howland, Worcester, Mass.:
I claim the drop bar, B, made in shape substantially as herein
described. having a pin, c, and shoulder, o, near its lower end and described. having a pin, c, and shoulder, o, near its ower end and
when part of the esame is made wrth wrought iron, with metal cast
around it, substantially as and for the purpose set fortl. 47,109.-Governor.-W. F. Keeler, La Salle, Ind.
4, 109.- Governor.- W. F. Keeler, La Salle, Ind.:
Frdint, I claime combining with the balls and connecting arm of an en gine or other machine a eolumn of mercury k, resting upon a
disk or movalle bottom the case in which the mercury is inclosed, substantially as above described.
Second, $I$ also claim the combination of the mercury pauge, $O$,
with the closed case, $G$, the movabie disk, $I$, and the shatt, $B$, sub stantially as above described.
Third. aso claim the coinnation of the movable disk, I, and
shaft, B, with the closed case, G, for containing mercury, substan tially as described
Fourth, I also claim balancing or controlling the centrifugal force Fourth, I also claim balancing or controlling the centrifugal force
of the bails or other rotating aparatus or a governor for requlating
speed in maclinery by means of the weight of a column of mercury speed in machinery by means of the weight of a column of mercury
rising within a gage, o, upon the stationary trame, as herein de
scribed.
[This invention consists in a governor to regulate speed and indi cate speea a atained, wherein a column of mercury is employed to estore the moving parts to their normal condition, and to measure the speed or power attainad by the machinery to which the governor is attached.]

## 47,110--Melodeons.-William Kinnard and J. B. Dreher,

 We claim First, Hanging the door or panel to the case in comblnation with the treadles, substantially as and for the purpose de Second. We claim the arm, G and rod, $H$, in combination with
She levers, I and $J$, and swell, substantially as and for the purpose described.
Third, We claim the hinged panel, A, treadles, $\mathbf{B}$, in combination
with the arm, G, rod, H, and levers, I, substantially as and for the
purpose described. 47,111.-Stove Pipe Damper.-Hiram Kipe, Thornbury T claim combining with an ordinary stove pipe a wind wheel, Tr, a
spinde, , a nd ball governor, Q, for operating a throttle valve, v,
substantially as above described. [The ob.ject of this invention is to providean automatic valve ar rangement for usc in stove pipes for domestic use more especially and it consists in the application within the pipe of a wind whee hich operates the valve through an ordinary ball governor.] 4,112.-Mattress.-Robert Krause, New York:
I claim the application of a movable partial frame, adjusted by
screw and held in position by \&pring tongues, 10 any common mat
aress frame and spring bottom, br means of which frame screw an tress frame and spring bottom, br means of which frame, screw and
spring tongues any spring bed mattress an be turned into a com
 7,113.-Manufacture of Bolts.-William J. Lewis, Pitts burgh, Pa.:
Claim making bolts with square neck trom old iron by firs
st civing up or engarging that pirt of the rod intended for the net previous to the formation of the square, and subsequently squaring
that part by oompression or otherwise, without reg do the nature 7,111 - Poller Cleat for Trunks.-John A. Lieb and John Schmadel, Newark, N. J.: We clamm, as an improved article of maniu facture, the trunk cleat,
A, provided with rollers, b b, inserted in mortises, a a, all as herein
specified 47,115.-Heel and Toe Plate for Boots and Shoes.-Ir E. Loughborough, Pittsford, N. Y.:

I claim the external plate, b, when provided with projecting lips
and points, e, it being secured to the boot by the clampias lift land points, e, it being secured to the boot by the clamplag lirt ir
lint, f., winch are nailed on within the encircllog rim of the pate the
edge of the lifts being entirely protected from wear by the said rim
flange. or flange.
47,116.- Watches.-G. C. Marten, Cleveland, Ohio.:

 47,117.-Furniture Caster.-W. T. Mersreau, Newark First. I claim the ball or roller, B, prov ded with the Journals, b
When the same shall be constructed as shown, for the purpose speci Sed. C, and collars. d d2, whine the same
as shown. for the purpose set iorth
47,118.- Boiler Furnace.-J. A. Miller, New York:
First, I claim the slits or openinge, a a in in combination with th
horizonticyassarcs, E. in the side walls of the fire clamber and
with the ducts, D, in communication with the ash pit, substan, iall with and for thets, purpuse herein specitied. as and or the purpose herein speeilied.
Second. Giving the openings, a a an inward horizontal inclination
toward tie bridge wall or rear, of the fre clamber, substantially a
 sion of ar through the e side walls of the fire eliminetr, substantial
a a dor the purpose lierein speciffed.


 47,110. Manufacture of Packing for Pistons, etc.-Ivon We claim, First, rtie application of dry powdered substances to the
rous material forthe manufacture of packing in the manner abov escribed, or any other substantially the sacke, and which will pro Second, We claim the thbrous braided cover as applied to packing,
int manner and for the puipose athove described, or any other Thir ially the same, and which will ploduce the intended etere.t. Thirt, We claim the application of powdered substance to the fibe
bef ore it is maue into yarn. as above described, or any other sub
stantially the same, and which will produce the intended eff ect. Fourth, We clame, the whe of the cover made of one kind of f fber
and the inside o: filling made of another kind, without the use o powdered substance as above described. or any ot her substantially
the sanle, which will product the intended effect.
47,120.-Construction of Albums.-John D. Mets, Dubuque, Iowa:
I claim connecting together the leaves of bonks br means of strips
or leather, cloth, or the cquivalent thereof, appled substantially as
describels 47,121.-Mode of Taking Casts from the Face of Living Persons. Clark Mills, Washingiton,
I claim the mode of process herein described.
47,122.-Valves for Steam Engines.-Albert Morton
I claim the use of two port covers, C C', oneat each end of the
alve and connected togetluer by a rod or rods or their equivalents
in combination with the crosshead, $D$, and regulating rod, $\boldsymbol{q}$, con-
structed and operating substantially as and for the purpose set forth IThis invention consists in the use of two port covers one at each end of the valve connected together by a rod or ruds or their equiva valve in such a combination with a crosshead and s-rod either by hand or by the action of the governor, the steam is cut off at any desired point or the speed of the engine is regulated automatically if desired in a simple and effective way.]
47,123.-Refrigerator.-Owen E. Mosher, New York City:
Inalm combination of the ice chamber, B, trough, $\mathbf{C}$ and
water tank, $D$, when the said parts are constructed and arranged in
the manner and he manner and for the purposes herein specifled.
This invention consistsin applying a water tank to a refrigerator having an ice chamber fitted in it in such a manner that the water
in the tank will be kept at a low temperature and the water drawn from the tank as required for use. The object of the invention is to obtain cool water from a refrigerator without using the waste water from the ice chamber which always has an unpleasant flavor.]
47,124.-Baling Press.-George C. Paine, San Francisco, I claim, frst, The peculiar arrangement and construction of the
 of the vertical press box for the purposes de3cribed.
second, The levers, iN, and bars, n n, connected Second, The levers, $N$, and bars, n n, connected together and ap
olied to the top, K , of the press box as show n, in combination with

 purposes heren set forth.
tourth, The connection or the pintles of the hinges of the side do ors, 0 , by means of the pulleys, Pl pr the hinges of the side
stantially as and for the purpose specifice. and chain, $\mathbf{Q}$, sub 47,125.-Apparatus for Refining and Distilling Petrole-
um.-James Perkins and Wm. H. Burnett, Newark $\underset{\text { First, }}{\substack{\text { N. } \\ \text { W. }}}$
First, We claim the combination of the receivers, $C$ and $K$, with
the agitator, $N$, and $s^{\prime}$ diment recerver, $M$, substantially in the manner and for the purposes deserited.
second Wee claim the combination of the parts, C E K K $N$ and $\mathbf{O}$
sbstantially in the manner and for the purpose described. Third, We claim thu ike of the exhaust pump, H and $R$. in com
bination with the d.brling and condensing apparatu described sub
stantially in the manner and for the purposes set forth 47,126.-Feed Wheel as a substitute for Ratchets o Pawls.-0. C. Phelps, New York City:
II claim the combination of the shifting apparatus above described 47,127. -Percussion Cap-holder for Fire Arms.-Rufus
S. Pickett, New Haven, Conn.:
 second, I claim the combination ot the endless belt with the
guide, man, and cup, I, wen the whole is constructed, and fitted for
use substantially as herein descrileed. use substantially as herein described.
47,128. - Harvesters.-Amos Rank, Salem, Ohio:
Fist. I claim the combination of a hinged platiorm with a guard
f. and ruard levers, h h, when the rear ends ot sald wevers are at
tached by a sliding connection to the platform substantlally as de

 Third, The arms, b b, applied at the ends of the gu deerylved. g, nitivitan
tially as described.
47,129.-Churn.-John Rankin, New York City:
4irs. - Iclaim the use or employment of a blower for forcing
flast of air into the churn box, substantially as described, in conibi nation with twoscrew dashers, arrangela one above the other and so
as to create accircuiation of the cream, all as and for the purDose as torra her ein beffre.
set focond, I also clalm the employment in combination of pur serew dashers, one above the other, when one feeds from the mildole to
ward each end, and the other feeds from each end toward the
 47,130.-Steam Boiler.-Edwin Reynolds, Mansfield, Conn.: claim arrangement nd constrnction of a boiler substan
tially as described.
47,131.-Machine for Cuttıng Tobacco.-F. W. Ritter
hoff, C. A. Colquitt and William Mulchahey, New Yoff, C. A. Colquitt and William Mulchahey, New
 47,132.-Process for Preserving Wood.-Louis S. Rob
bins, New York City: I claim, the process
I claim the process herein described for preserving wood trom
mold and decay, the same consisting in frist removing the sur mold and decay, the same consisting in frist removing the sur
face monstur from the wood and then changing and siturating the
same with hot oleaghous vapors and compounds substantially as
len Lerein described.
ot so reving the surfuce moisture from wood by means of hot
olentinous vapors substantially as herein described. 47,133.-Oil Well Pump. - John B. Root. New York Cit,
I claim, frst the emnloyment, in an oil well, of an additional tube so arranged and spplui in combination with the oil tube and an ex haustinger pump, that while it permits the exclusion or water from
the lower part of the well by means of the esed bar. it provides fo
the escape of the gaves from the well, substantially as herein dc second, The arrangement of the tube, , surrounding and con
Sected with the upper jpart of the well substantially as herein de
seribed, whereby the oif tulueand oil pump may be removed without cribed, whereby the oif
disturbing the seed bay.
46,134.-Churn.-Sarah E. Saul, New York City:

(This invention relates to a new and improved churn of that clas in which a rotary dasher is employed, and it consists in a dasher of uch construction in connection with sliding covers, and also in con ection with an angular cream box or receptacle; and further in th employment of a hand rest with a crank, wherehy it is believed tha pecified ] lages are obtained over ordinary churns of the clas 47,135.-Clasps for Clothing.-Chandler Seaver, Boston Mass.:
I claim mimproved clothes fastener attachment, the same con
sisting of the plates, a and $d$, and the stud, $f$, they belng constructed


47,136.-Base Burning Stove-S. B. Sexton, Baltimore 47,136.-
Md.:
First. 1 c


Second, A chamber, D, with a valvular botto mand escape plpe, d,
arragged owr the coal supply cy linder or mag azine of a base burn-
log atove substantially as
arranged over the coal supply cylinder or mayazia
log otove substantialy as deecribed.
Third The drant fluc. $c$. when carried out of the top of the Third. The draft flues, ce, when carried out of the top of the
chamber, and conducted into a chamber, a, having an ascending
flue leauiling out of it substantially as described.

 rouadin gthe chamber, ${ }^{\text {, }}$, subbstantially as descri bed.
Fifth, The applicatlon of a supplemental grate, S , to the magazine Fifth, The applicatlon of a supplemental grate,
of a base burning stovesubstanilally as described.
47,137.-Manufacture of Propellers.-James Sutherland, New York City:
I clafon constructinga propeller out of two parts by forming the
hub of each part substantialily as herein sbown and de scribed and
ditting the two parts together as and for the purpose set forte hub of each part substantially as herein shown and de scribed
titting the two parts together as and for the purposes set forti.
TThis invention consists in constructing the propeller in two part $y$ so forming the hubs of each halr that the cams it together and be forged of wrought iron and producing a propeller of superio trength, llghtness and durability.]
47,138.-Machine for Distributing Fertilizers.-J. H. Ihomas and P. P. Mast, Springfield, Ohio: First, We claim the slats or strips, , , suspended from the bar, B and projecting down thrugh the opening In the bottom of the top
per. A, Fhenconneter attie bottom by bar, $d$ substantlally as an
for the purposen set forth. Or the purposes Bet forth
Second, The shafts, C , pro
and for the purpose describe
 and for the purpose described.
Third The slats, $C$, as arranged in combination with the bar, $D$,
and bottom pleces, F and F , as and for the purpose set forth. 7,139.-Device for Raising and Lowering Lock Gates. -William Thomas, Ottawa, Ill.:
I claim the combination of the block and tackle, the roller levers,
atchet wheels, the pawls, the springs and frame of the machine ratchet whee's, the pavls, the springs and frame of the machine
beling operated and used as herein before set forth for the uses and
purposes aforesaid.
47,140.-Medical Compound.-John Thurmon, Pike County, Mo.:
47,141.-Insulator for Telegraph.-S. F. Van Choate New York City:
I claim, irst, the combination of the cavity, $A$, face plate, $D$, and Second, The wooden $\begin{aligned} & \text { bracket, B, plate, } D \text {, and hook, } C \text {, as above } \\ & \text { combined when coated with the composition as above, and for the }\end{aligned}$
courposes set forth combined when coa
purposes set forth.
7,142.-Addreasing Machine.-N. E. Warren, Cleveland, Ohio, and G. W. Warren, Hillsdale, Mich.: siring, A , in combination with the adjustable head, D , when arrang Scond, Welaim the pall, $\mathrm{F}^{\text {, }}$, rock shaft, L , slotted $\mathrm{rm}, \mathrm{L}$, and
auljustable rod, $J$, in combination withthe quod ratchet, $i$, operating
 ranged and operated as and for the purposes specilied.
47,143.-Railway Carriage.-True West, Roxbury, Mass.

 47,144.- Fiectro-magnetic Musical Instrument.-Lo
renzo Wesson, Chillicothe. Ohio
with variable po wer orecex pressionetic ay automatically playing music tery power exerted on the magne ts to accord with the number o
magnets in use or with the strenth of sound required, in any man ner, substantially as set forth.
Sconu, I claim a music boar
Scconu, I caing a mosic board, B, provided with independentmor closerype, acting upon or constituting circuit breakers or circuit
arosern or grern the tone, power or length of sounds
produced by means of electro magnetisin.
 ircuils, by wlicn any of the said magnets may be put in action a
 pose set orth.
 substannaill as described, to open communication between the al
47,145,--Churn,--IIenry P. Westcott, Seneca Falls, N. Y.:
 pose set forth.
Second, It clatm the use of a bellows. B, or itsequivalent. in combi-
nation with the recei ver and dasher haft, in the manner and for the purpose substantially as set forth. for the purpose set forth, and, form of upper dash shown nd de
Fourt) f elamim the pecuiar form
scribed, tor the specifc purposes set forth. 17,146.- Pump.-Joseph F. White, Keene, N. H. N, provided with triaugular valve chambers, A, with a rotatin pump tube, carrying hollow radial arms, E, which with a partatial ro
tary motion, in horizontal directions, and are provided with double ary motion, in horizont al directions, and are $p$,
act $n g$ val ves, supstantially as above described.
[This invention consists in a double-actlng force pamp, in which which rotates with the plstons.]
47,147.-Apparatus for Dividing Sugar in Blocks.-Wm I H. Whitmore, Boston, Mass:
eparators, arranged substantially in manner and so asto operate a
.
7,148.-Oil Ejector.-George L. Witsel and Edward Burke, Philadelphia, Pa.:
 Becond, Connecting both the exha usting encines to a lever, whict
ecoives a rapld vibrating motion, substantially as and for the pur-7149-Bow
7,149.-Bow Pin for Ox Yoke.-Orville O. Woodruff, Killingworth, Conn.:
I claim the combination of the two levers, A A, constructed with
pnas, D, substatianili, as and so as to operate in the maner and
for the purpose specified. or the purpose pecified
7,150.-Window Cord Pulley.-Wm. C. Ames, Hartford Conn., assignor to Landers \& Smith Manufacturing Co., New Britain, Conn.:
I claim as a new and cmproved article of manufacture, viz. a
window or sain cord pulley case, having the face plate, a midway
or nearly so, of the case, a, to to be attached to the back
or nearly so, of the case, a, to to be attached to the back slde of the
inb casling of the window frame, substantially as described.
47,151.-Mode of Weaving Fabrics with Button Hole Henry A. Ayling), Boston, Mass.:
I claim the improvement in weaving suspender webbing etc., to reed haring a const
tailly as set forth.
47,152.-Mangle.-Josee Johnson, New York City, as signor to John War
spring, O, an d the links, N, with the rollers, B' and B, and the frame
A, substantla ly as and for the parpo se set forth. 47,153.-Seed Drill.-Griffith M. Murphy (assignor to Lyman S. Paine), Lewisburgh, Pu::
I claim, First, A sliding or transferable spring, g, whereby the
power required to throw the drill tube out of working position may, power required to throw the drill tube out of working position may,
at the wil of the operator, be increased or diminished, substantials as described.
Second
Second, The arrangement of the lever, C , entirely above the drag
bar $A$, substantially as descr ibed. thin The combination of the drilltooth, B, drag b r, A, lever, C
and arring,
47,154.-Shaft Coupling for Carriage.-Francis B. Mors New Haven, Conn., assignor to Frederick C. Day ton, JF.,
I claim, as a new article of manufacture a shafi coupling. com
posed of a jack or stationary part, forged with two eyes, mid a cav ity for retalnlng an elas tic presser, an elisstic presser fand a plain
head with one eye, when nonstructed, combined and fitted for use,
47,155.-Forming Skeleton Skirt.-Datus E. Rugg, Ne York City, assignor to himself, F. S. Otis, Joseph I. and J. O. West, Jedediah Wilco \& Co., and Henry Richardson:
I cla im the methodh er en specited of shaping or forming ladies
skelon on birs by susaining the hoops lithe proper position rea
tively, while bein con connected together by tapes, galloons, or their
equivalents, 47,156.-Railway Car.-Signor Vallo (assignor to himself and Joseph Chapman), Philadelphia, Pa.:
claim, First, Connecting the foot pieces,
E
 Second, Combining the spring seats, $\mathbf{H} \boldsymbol{H}$ H $\mathbf{H}$, with the bars, $G G$,
by means of the pins, $e$ e $e$ e on the inner edges of the said seats, Thirdit The combination and a arrangement of the foot pleces, $\mathbf{E} \mathbf{E}$
 and guards, L L, to prevent the said foot pieces swinging tor ward by
the motion of the cars, and alsot oallow them to be borne aga st
the wheels at the proper time, substantially in the manner described nd for the purpose set forth

47,157.-Brush.-Albert M. White (assignor to himself
and Barnard Larvey), Port Chester, N. Y.: I claim the mode of securing the several bunches of bristles in the solid back of a brush, by means of sepa
plied substantia lly as berein described.
4,158.-Apparatus for Concentrating Liquids.-Chas A. Wood, Dorchester, Mass., assignor to Daniel C
Hood, of the same place, and W. H. S. Jordon Hood, of the same $p$
West Roxbury, Mass.:
I clatm as an improvement in vacuum pans the pan, A, in comb terial, operating substantially as set forth. for the purpose specised
I also claim an elantic packing for the joints of vacuum pans, op I also claiun the within-described apparatus for conducting liquids

4,159.-Buckle.-Charles E. Woodman and Charles B
Hatfield (Assignors to Charles E. Woodman), Bos ton, Mass.:
We calaim the combination and arrangement of the holding bar, ${ }^{\text {b }}$
nd the straight.edged tongue, c , with the bar, $a$, the overlapping
onge,, , and the buckle frame We also claim the combination and arrangement ot the compound
What or doulte tonam the, Cond
Cnd the buckle frame.
We also claim the combination and arrangement of the compound
rdouble tongue, $c$, the bar, $b$, or its equivalent, the bar, $d$, and the
frame, A claim the combination and arrangement of the cross bar
We also
with a single tongue and an over iappling tongue, and the buckle , with a single tongue and an overiapping tongue, and the buckle We also claim the constructlon of the overlapplng tongue with a and for the purpose set forth.
We also claim the combination of the connections, $e$ e, with the
to cross bars, a b, and the tongue, $B$, applied to them, the said bars two cross bars, a b, and the tongue, $B$, applied to them, the said bars
and the buckle frame, a; specitied. 47,160.-Preparation of Materials to be Used in the Alexander A. Croll, London I claim, First, The combining the neutral salts referred to or as bsh mixture in the purifying apparatus, for the purification of gas substantially as described.
second, I clame the une or application of the chloride or sulphate
of manganese referred to with charcoal or wood sawdust, as a disin f mang
[This inventionrelates to combining neutral salts, or salts as nearly eutral as convenlent, with wood, sawdust or other absorbent or ellular matter, and employing such micture after it has been llowed to cool, for the purlecation of gas.]
7,161.-Cork Pull.-Frans Gustavus Bielefield, Berlin Prussia, and Charles C. E. Schwartz, Hamburg: We claim the combination of the rod, $\mathbf{B}$, the metallic spring, C
and the button, D , substantially as and for the purpose specilied.
4,162.-Drying and Charring Peat.-Fred'k Ludewig Hahn Danchell, London, Eng
I claim, First, The improved arrangement of the apparatus fo
rying blocks of peat, as shown and described in reference to sheet 1 , d particularl' the arrangement of the endless bands and rollers
second, The arrangement and distribution of the air passages of Laptly, The application of a stcam blast for producing the requi
ite currents of air fordrying and charring peat or other cartoona 47,163.-Breech-Loading Fire Arms.-Cyprien Chabot Philadelphia, Pa.:
I claim, in combination with the hinged breech block swinging
upw ard and for ard, the lever, H, and itslatch hung thereto, but so otion independent thereof, and the sprin bolt, e, for the purpose of locking the breech block when down, anc
or unlockingi by the same motion that raises up again, as herein
escribed and represented.
47,164.-Windlass for Tightening Ship's Standing Rig I claim the frame, d, suspended by the eye. e, from the rope or a hand spike
poses specifled
47,165.-Platform Scales.-James H. Conklin, York
town, N. Y.: I claim, the combination of the lever, A, with the other parts, C set forth.
47,166.-Steam Pressure Indicator.-W. M. Davic and Charles T. Webber, Janesville, Wis.:
We claim the arrangement of the scroll spring, e, the cylindrica forth.
47,167.-Washing Machine.--John H. Duck and Erwin We claim the Elinin, IIl


47,168.-Mining and Tunneling Machine.-Herman Haupt, Cambridge, Mass., and J. Y. Smith, Alexandria, Va.:
First, we claim the pick or series of picks in combination with a
mechanlsm for imparting rotary motion thereto, to operate in the
manner manner and for the purpose substantially ae herein set forth.
Secozd, We claim the method herein described of mounting then

 Fourth, We claim the method of hanging the rotary pick disks in
a swinging frame so arranged in relation to the gear mechanism as man terfering with their rotation.
Firth, $\ln$ combinaton with the swinging frame and rotary plcks, we claim the method herein described of adjusting or feeding the
picks up to the work as the operation progresses independently of pche maln frame of the apparatus, substantially as set forth. h ,
Sixth, We clasim the combination with the rotary picks, held as de scribed in a swingling fiame, of a meccanii. $m$ for faterally recipro Sorth.
Seventh, We claim the stationary cutter in front of the swinging
rame under or between the rotary picks, for the purpose of remor
 the gear mechanism so as to receive from the prime mover and im
prt to the picks rotary movement, substantially as herein set 47,169.-Beehives.-William Henschen. Hennepin Co. Minn.:

## 

 7,170.-L Lubricating the Packing of Stuffing Boxes, etcMiller, We claim the application of the substance, mode and materia
above described to the stuffing boxes or other jont of engines $\mathbf{o}$ material.
second, we claim the application of the above material to othe material to other
cot lon and lemp saturated with it.
Third, We claim the application of above material, or any other
substantlally the same, to the rod or stuming box, or to the packing substantialy the same, to the rod or stumnng hox, or to the packing
theref, ty using it throurb the cylinuer of eng eng or any other
aplication thereof wherety the rod will carry the sail material to application thercot whereby the rod will carry the sail material to
the packing. the packing.
Fourth. We
the various patent packings.
Fiff h, We clatm the mode and material alove described, or any other substantally the same, and material allove described, or any
etfect, as a coveror coating in place of mulin or oce the the intended ropenacking, as applicable 1 n tace packing made of powdered and
forous substance, or instanc . Sixth, We claim the above described
packing of pistons of engines and pumps
47,171.-Braiding Guide for Sewing Machines.-Louls Planer, New York
a spring, $L$, to operate in the manner and for the purpose herein Second, The arrongement of the aet screv, M, with spring, L, for
Segulating the pressure of the spring egulating the pressure on the sping upon the thaidin passing under
the bottom of the groove, J , substantially as herein set forth. 47,172.-Ground Augur.-David Ring, Damariscotta, Iclaim, Antedated March 261865 .
om cutters, $h$ and $j$, substantially as set forth, and for the purpose described.
second, Rendering the borer expansible by means of the oblong
slots, $\mathbf{f}$, substantially as described. 47,173.-Lamp for Burning Oil.-Thomas S. Speakman, Camden, N. J.:
I claim, First, The use, In combination with lamps for burning
animal, vegetable or mineral oils or fatty matters, of a wick, or itB equivalent, for conveying to the flame a supply of water substan-
tielly as and for the purpose hereln set for th.
Second, The use of the beat of the flame for producing the aqueous pornd, The uss of the beat or the
47,174.-O1l Ejector.-L. W. Turrell, Saml. Stanton and We claim, First, A contrivance for :
We claim, First, A contrivance for raising oll like that herein berore describeed that is to say, one wheren the oil is drawn up
througha central passage or tobe, around which 1 Isan annular passage
or tube through which the compressed alr is made to act upon the or tube through which the compressed alr is made to act upon the
oil subssantill w in the manner and ior thc parpose dessiribcd
Second, The manner of securing the internal tube, F, within the sinecond, The manner of securlig and the internal tube, Fe, within the
internal tube, A, by means of the perforated disk, $E$, and the couphaternal tube, A, by means of the perforated disk, E, and the coup
ling clamp, C, ', mabstantiallily as described.
Third disc Third, The, manner of securing the tube, J, in Its position by means substantially as described.
Fourth, Thin stumng box. in combination with an interal and
an external tube, arranged in the manner and for the purpose above
and

47,175.-Writing Tablet.-Thomas Weaver, Harrisburg,
Pa.:
I claim, First, The construction of a tablet attachment for the writing surface under the pen or pencil, whose parts are so propor

 n the manner as herein described and set forth. of the metacarpal
Third, The combination and joint operation



 plate shown in Fig. 6 , which has the groove, J, the pad, 1, , the bands,
a be eyclets, 12 and 3 , and buttons, $\mathrm{U} U \mathrm{U}$, operating in the manner
as and for the purposes herein set forth. 47,176.-Movable Fire-place with Gridiron Attachment. I claim the movable free. place, constructed with narrow sides, to In pace in the naturc of a false door, in the doorway of the cooking
stove, and to be used in connection with the adjustable folding grid
Iron suspended before it.

## DESIGN.

2,041.-Show Case.-George Q. Pragnell, New York Claim th
I

REISSUES
1,926.-Shirt Collar.--Vm. E. Lockwood, Philadelphia Pa., assignce by mesne assignments of Walte claim so indeeting shirt collars made of a fabric composed or paper and mixlin, or an cquivalent filluic, that the inden
represent the stitelics of an ordinary dressisel linen collar
,927.-Shirt Collar.-Wm. E. Lockwood, Philadelplula
Pa., assignec by mesne assignments of Walter Hunt. Pateuted July 25, 1854:
claim a shirt collar made of a fabric composed of paper and


## ATENTS

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oetent attorneys, to see if they are not likely to inninge some exis lng patent, oefore making large investments. Written opinions on he validity of patents, after careful examination into the facts, can be hau for a reasonable remuneration. The price for such services is alwass settled uponin advance, af cer knowiag the nature of the in eit Row, New York
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fessional engagements.

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Communications and remittances by mail, and models by express (prepaid) should be aalressed to MUNN \& CO. No. 37 Park Row. New York


Correspondents who wish information from us through this column must, as an evidence of good faith, sign their names to their letters. We throw aside all anonymous communications W. C., of N. J.-We don't know what the "trap process" of tempering springs is. One way to temper them is to make them hard first and then draw the temper in hot sand heated to 550 or 500 degrees, at which temperature they are dark purple to blue. Oil or tallow smokes at 470 degrees, and takes fire when a light is presented. At 570 degrees it goes out when th light is withdrawn.
R. B. C., of Mass.-It is not new to make a ratchet dril with vertical teeth; such drills were made and sold fifteen year E. W. D., of Conn.-The wisest and the most learned men are always the most ready to admit their errors, while th greatest fools and ignoramuses are the ones to nasist most strongl that they never make mistakes. In the case referred to, all tha was said was that the boat with the pulley engine ran faster than the one with the crank engine, but you must know that it is very easy for interested parties to conduct such experiments so as to show any result they please.
T. W. D., of Cal.-Petroleum is composed of the same clements as India-rubber, viz.: hydrogen and carbon. It is probable that by the destructive distilation of india-rubber part of it might be converted into oin closely resembling some portions of petroleum, but we know of no fact that would suggest the possibility of convertingpetroleum into india-rubber.
Horace, of Pa .-To calculate the power of a steam engine multiply the area of the piston in inches by the pressure per inch in pounds, the product by the length of the strokein feet, this product by the number of strokes in a minute, and divide by 33,000.
J. S., of N. S.-For cotton machinery of all kinds address Whiting \& Sons, Northbridge, Mass
Nassau, of N. J.-It is rather a complicated problem but it seems to us that the oscillations must be continuous. Critic, of R. I.-The earth in its rotation on its axis turns one degree in four minutes; bodies, therefore, at the equa tor are carried along about seventeea miles in a mirute from west to east. Portions of the earth nearer the center are also movin around from west to cast, but with less velocity. If a hole wer made through the center of the earth at the equator and a ston were dropped into it the stone would continue its castward motion at the rate of seventeen miles a minute till it came to portions of the earth moving in the same direction but with less velocity hole.
B. H. M., of N. H.-India-rubber varnish for cloth should be of vulcanized rubber
L. W. S., of Mo.-You can procure a newspaper file suitable for the Scientific American from alfred Goulding, Wor cester, Mass
J. P. V., of Cooksville.-Your improvement seems to be new, andwe should think a patent could be obtained forit. In what State do you reside
. G. F., of Ohlo.-You have the right spirit. An inhim.
J. S. E., of Wis.-We cannot admit to our columns a communication that prejudges a case that may involve litiga c. C., of D. C.-We cannot publish your letter, for the reason that it mirht prejudice the rights of the patentecs in ad vance of a judicial decision. The patent must stand on its own merits, without any interference on our part
S., of Ind.-We have credited you $\$ 1$ on account of your subscription. The article to which you refer was prepared expressly for our paper or we should ar hav por ticle on natural and mental phllosophy would be acceptable.
J. W. H., of N. Y.- You can procure soluble glass of Lewis Feutchwanger, No. 55 Cedar street, lhls city. We believe the emery wheels made with It are rendered insoluble by having
the least possible excess of alkali, so that hot water is required for the least pos
. D. M., of N. H.-The sample which you send us we take to be very chin tin foll pasted upon paper.

