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37,605.-Grinding Mill.-E. Brisson, Orleans, France : I claim, first, The mode of bushing or securing the spindle, D, in






[This invention consists in hanging both the runner and the stationism of the two stoneswill always be preserved and the stones made o operate much more effciently than hitherto, producing better echnically termed, and the stones also prevented trom being worn unevenly.]
37,606._-Lamp Burner.-Harvey Brown, New York City I , in combinination and connection by means of thelcog wheels, $\mathbf{D}$
$\mathbf{D}^{\prime}$, or their equivalent, with the spur wheel, $\mathbf{A}$, for the purpose of D, or their equivalent, with the spur whel, $\mathbf{A}$, for the purpose of
noving the wick, subktantially as described.
Second, ilaim the band, $\mathbf{B , \text { in }}$ combination with the perforated
burner, $\mathbf{B}^{\prime}$, (substantially in the manner and for the purpose set burner, $\mathbf{B}^{\prime}$, (substantially in the manner and for the purpose set
forthird, I claim the springa, $\mathbf{C} \mathbf{C}$, constructed, arranged and oper Third, I claim the springs, C C, constructed, arranged and oper
ated substantially in the manner and for the purposes set forth. 37,607.-Cartridge Box.-Francis Bush, Boston, Mass. : partitions providing such mane outer met matalic bor or case with one or more
working of the inner midining box, for the purpose specified. 37,608.-Steam Boiler Furnace.-Horatio Clarke, Ded ham, Mass.
I claim the grate constructed in a curved form, and arranged con-
centrically, or about so, with the curved fire surface of the boiler, subentrically, or about so,
stantially as described.
I claim a curved
I claima a curved grate in combination with a curved bridge, their
upper surfaces being arranged substantially as described, with the
fre surface of the boiler upper surf aces being arranged substantially as described, with the
fire surface of the boller.
And $I$ also claim the curved grate and the curved bridge, arranged with their upper surfaces concentric with the fire surface of the
bolier, in combination with jambs arranged in the inclined manne
with respen with respect to them, substantially as described.
37,609.--Centrifugal Governor.-J. C. Cline, Philadelphia, Pa. :
I claim the combination of the ball arms composed of tubes, $C$
and bars, $D$
$D$ and bars, $D$ D, or their equivalents fitted together, as described, the
spring, , the rods, $E E$, and slide, F , the whole arranged to operate
substantially as and for the purpose herein specified. 37,610.-Fire-extinguisher.-Alanson Crane, Fortress Monroe, Va.
1 claim the arrangement of the plug, E, to extend through the ex-
terior wall of the building, in combination with the locking cover or terior wall of whe tuid ing, in comb then
plate, g and with the arrangement
ing, as herein shown and described.
[The object of this invention is to get up a simple, cheap and reliable device for extinguishing fires in buildings, arranged so that the the building, and particularly so the exterior or from the interior o the building, and particularly so that the magistrate or fire depart-
ment have charge of the connections of said device outside the building.]
37,611.-Street-sweeping Machine.-John Critcherson, Boston, Mass. :
I claim attaching the fagots or broom material obliquely to the tion, with the depressions running obliguely across the arms, R, and
heconcave caps, b, secured by screws, which confine the said fagots the concave caps, b, secured by screws, which confine the said fagots
or broom material, as and for the purpose herein described.
37,612.-Car Coupling.-George Collyer, Philadelphia, 37,612.-Car Coupling.-George Collyer, Philadelphia I claim, first, The combination of the tumbler, $\mathbf{C}$, springs, $\mathbf{D}$, and grooves, a, substantially as descrined, Whereby operators are enabied
to uncouple the cars witrout moving the train backward or orward,
no matter how closely the tumbler and the detent of the coupling bar may be pressed toget ther.
Second, The employment of coupling bars such as shown in Fig.
having expansions, b, near the ends of the bars, which expansion
 Third, The employment of coupling bars, such as shown in Fig. 10,
having expanions, b, near the ends of the bars, with less lateral
breadth than the detent so that although one or more cars of the
train may eet off the track, the cars shall not be thereby uncoupled. 37,713.-Mode of Obstructing Rivers.-Aaron B. Cooley Philadelphia, Pa.:
Philadelphia, Pa.:
I craim obstructing rivers, harbors, inlets, \&c., by a series of angu-
sramors. constructed, chained to each other and anchored,
37,614.-Clarifying Saccharine Juices.-E. T. and E. O.
De Gemini, Paris, France : De Gemini, Paris, France
We claim the method of clarif ying saccharine juices herein shown
and described, which consists in subjecting them to the simultaneous action of molecular agitation, under steam, animal charcoal and
fuller's earth, substantially in the manner set forth. fuller's earth, substantially in the man
We also claim the employment ot th
described, for the purpose set forth.
[This invention fconsists in the treatment of saccharine juices with fuller's earth or clay and powdered bone-black, by introducing the said substance to juices and subjecting them to agitation, produced
either by means of stirrers or mechanical agitation, or by the introduction of jets of steam, or by both of these means combined.J 37,615.-Grain-conveyer.-Oren C. Dodge, New York City:
I claim, frrst, Delivering the grain at any desired point along the
Ine of atraveling belt, ,yibending said belisubstantially as speci-
fied, for the introduction of a hopper or chute.

F Second, I claim a traveling belt for conveying grain, provided with
vertical or nearly vertical edges, forming a trough, substantially as set forth.
Third, claim the elastic edges 3,3 , of tha belt, $f$, sustained by the
metallic strips, 4,4 , substantially as specified. 37,616.-Grinding Edge Tools.-G. C. Eaton, Lockport,
 37,617.-Sewing !Machine.-G. L. Dulaney, Mount Jackson, Va.:
 set forth and descrised.
Second, I claim the special construction of the intermittent acting
shuttle, carrier device, i2 $\mathbf{2} 2 \mathrm{p} 2$, r2, Fig. 4, tingether with the gravila sutcole, carrier device, in 22 p2, ra, Fig. 4, thgether with the gravila
ing self-acting shuttie adjusting device, s2 t2 u2, Fig. 4, as shown and described. F4, Fig. 3 , constructed and operated in the manner Iain the self-acting gravitating pad, v2 v3 w2 2 w3, as
Fourthe
constructed and combined with the self-acing gravitating feed de-

 or depression, o4, Fig. \&, And the combina
tating, self-a.ting shutte.adjusting devic
tially as set forth, shown and described.
Sixth, I claim the vibrating lever, or slack-threadadjuster, 2 f 92 g 2 ,
Fig. 1, a as constructed, operated and combined with the needie bar or
arm arm, wxy z , and Figs. 1 and 2, substantially as set forth and de-
scribed.
Seventh, I claim the curved bar or tension device, y2 y2 z2, Figs. 1 , Seventh, I claim the curved bar or tension device, y2 y2 22, Figg. 1 ,
2and 3 , singly or in combination with the vibrating lever or silack
lake up device, f 2 in g2 h2, so asto produce the desired effect, in the manner as set furth, shown and described.
Eighth, 1 elaim the flexible, rotating, radial division de
c3 d3, Figs. 1 and 2 , as constructed, set forth and described.
37,618.-Moth Trap.-John Frew, Meadville, Pa. I claim a bee-moth trap consisting of an external case, A, cover,
B, porch, C, inner removable close box, D, provided with comb
rame, H, the whole being constructed, combined and arranged in rame, $H$, the whole being constructed, combi
he manner and for the purpose herein specified.
[The subject of this invention is a suitably-constructed box which eing supplied withold or inferior comb and placed near the inhab depositing its eggs, and will thus enable the apiarist to destroy the larva without in jury to the bees.]
37,619.-Doweling Machine for the use of Coopers.-
John German, Oriskany Falls, N Y. I claim, German, Oriskany Falls, N. Y.:
 passingaround them, in combination with tre slides, DD, having
horizontat tubes or bearings, n, at their upper ends, in which the ar-
bors, E, of.the bits are secured, the whole being arranged and ap-
 sed in coms, E, as and for the purpose specified.
7,620.-Construction of Ships-of-war and other Bat-
New York City
I claim the use of wedge-shaped timbers in connection with iron plates, for the purpose of remistisg projectiles, substantially as spect.
fied and in combination therewith I claimpo arranging the plate.
n one series that they cross those of another, substantially pat the manner and for the purposes set forth.
37,621.-Fishing Lantern.-Joseph Goodrich, Muscoda, 37,621.-Fishing Lantern.-Joseph Goodrich, Muscoda,
I claim. : I claim the arrangement of the adjustable reflector, A, and the
shaft, $K$, when used in connection with the box or frame of a lan.
lern, and constructed and operating substagatially as and for the pur-
pose specified and delineated pose specified and delinnated.
Second, 1 claim the index
Second, 1 claim the index spring, T T, when used
djusting the reflector, $A$, substantially as set forth.
37,622.-Beehiwe.-J. H. Graves, Rochester, N. Y. :
In claim the combination of the removable perforated bottom. B, cov-
 A, provided with the center piece, r, having the pasages, h h, amd forth.
I aiso claim the perforated alighting platform, $\mathbf{C}$, in combination
werforated bottom, B, substantially in the manner and for 37,623.-Washing Machine.-Jacob Hilborn (assignor to Harrison Haight), San Francisco, Cal.
I claim making the stationary corrugated concave or washboard of wassing machine adjnstable, substantially in the manner herein
described, so as to adapt the machine to operate on a large or small
uantity of clothes quantity of clothes.
Vertical reciprocating side washboards, $E$, and pendulum dashers, $\mathbf{D}$
substan substantially in the manner and for the purposes herein described,
I also claim the combination of the stationary wash board,
, the Paiso claim the combination of the atationary wash board, $B$, , the
vertical reciprocaling side wasboards, $\mathbf{E}$, and pendulum dashers, $D$,
substantially in the manner and for the purpose set forth. 37,624.-Sewing Machine.-J. G. Hollowell, Canandaigua, I laim, first, So constructing the needle cam, $\mathbf{I}^{\prime}$, and shuttle cam
$\mathrm{L}^{\prime}$, and so combining them witheach other and with the rockshaft for perating the needle and shuttle, that they will wiperate in proper re lation to each other to produce the sewing in which ever direction the
cam shaft, B, or driving wheel or pulley rotates, substantially as second, The teed cam, J, and presser cam, $K$, combined with each
stherand with the presser, $\mathbf{H}$, to operate upon the latter and produce other and with the presser, H, to operate upon the latter and produce
the teed movement in one directon or the other, according to the
direction of the revolution of the main shaft, driving wheel or driving 37,625.-Shutter Fastening.-Ambrose Hyde, Lima, N. Y.
 rigid position o hoid the shutter in place or to retain it disengaged
while the shutiter is removed, and operating substantially as herein specified.
37,626.-Plow.-Robert Jones, Waynesburg, Ohio
First, I claim the particular combination of the curved inner end did, the longitudinal slots, e e, and the transverse-siot, f, when the purposes herein specified.
Second, I also claim the
with the arm, h, and ears, i, and 1 , perman ently attached to a stand bination with the landside, C, mold-board, D, and share, E; all ar
ranged and connected in the manner and for the purposes set forth
[This invention relates to a new and improved plow of that clas which are provided with mold-boards tor turning a furrow silice form of a section of a screw.thread, whereby several advantages are obtained over the ordinary forms hitherto used. The invention also of the plow together ; to-wit, the mold-board to the shank, and the beam to the shank, whereby the mold-board may be readily detached When necessary, and either a cast-iron or steel mold-board used on jnsted so that its front end may be more or less elevated in a vertical jnsted so hat its front end may be more or less elevated in a vertical
planefor the purpose of regulating the direction of the draught and 37,627.-Lubricator,-Arthur J. Judge, Baltimore, Md. I claim, first, The construction of a chamber or reservoir to hold pressure prevents its escape, until expanded by the increased tem-
perature of the journal.
Second, The combination of the three parts, viz: "the reservoir or cup, the tube, and the socke in the manner and for the purposes 37,628.-Trip Hammer.-Lyman Kingsley, Cambridgeport, Mass.:
I clate, $R$, to admit of the the adjustment of the anvil, $P$, as described. [For an illustration and description of this invention, see page 376, ol. VII. (new series) of the Scientific American.]
37,629.-Forming Locks in Tin-plate.-Emmons Manley, Marion, N. Y.:
First, Providing fithe folding bar, F, with a semi-circular hub, d,
rooved to receive a semi-circular bearing, f , and all arranged subgrooved to receive a semi-circular bearing, f, and all arranged sub-
stantially as shownto admit of an open gace at one end of the bar,
F, to allow the plate to be adjusted laterally between it and the jaw, to allow the plate to be adjusted laterally between it and the jaw,
an hereln set forth.
second, The movable or adiustable jaws, $D$ ars Second, The movable or adjustable jaws, C D, arra nged in connec-
ion with the lever, $E$, as shown, to operate as and for the purpose Third, The combination of the folding bar. F, jaws, $C D$, and lever,
E, all arranged for joint operation as and for the purpose herein set
forth. 37,630.-Harvester.-James S. Marsh, Lewisburgh, Pa. : I claim. first, The linking devices described or their equivalents ap-
plied to the arms of the raking apparatus substantially as described. Second, The adaptation of a raking and reeling apparatus com-
bined, which revolves entirely around a vertical centre, for applica-
ton to he $\operatorname{cop}$ of the drive wheel substirime of a harvester at a point beloo Third, The use of the inner bearing of the drive wheel as the sup-
port of the certre on which the comblned rake and reel revolves substantiailt as described.
Fourth. The construction of the shaft or centre, $P$, of the rake and
reel, and ine iner segment of the drive. wheel in one.piece, in the mifh, The combination of the cam, $R$, hinged rake and reel bars
and adjustable links, so as to keep the rake and reel bars firmly in condrol with the grain in the field and on the platform substantially
as set forth Sixth, The arrangement of the sliding and turning spring pin, p,
incline, p2, loose bevel pinion,, , and the raking and reeling ap.
paratus, substantially as described. paratus, substantially as described.
Seventh, The ajdustable grain guard, $\mathbf{K}$, constructed substantially
as deribed, and applied to the inner front corner of the draft frame, 37,631.-Harvester.-James S. Marsh, E. \& C. C. Sharkley \& Peter Beaver, Lewisburgh, Pa.
r claim, first, The joint of the pitman and sickle constructed as de-
scribed, in combination with the guide, 10 , or its equivalent for the purpose set forth.
Second, The combination of the grain guide or guard, $K$, and the
standards of the reel and the reel, substantially in the: manner and Third. The cosbination of the seat base, C2, arranged over the
Trive wheel, with the in ner grain gaard or guide, K, whereby the raker can conveniently reach and rake of the grain at the front inner corner of the platform, as set forth.
Fourth, The arrangement and combination of the hollow bevel
wheel, $\mathbf{v}$, internally toothed ratchet, $\mathbf{x}$, and spring, $\mathbf{w}$, with the pinion Fheel, $v$, internally toothed ratchet, x, and spring, w, with the pinion
shaft, V, and lever, F; the whole consiructed as described and for the purpose set forth.
Fifth, The combination of the adjustable platform, $L \mathrm{M}$, bolt, t , adjusting aperture, t' and guide slot s, and the adjustable back beam,
Q arranged on springs, substantially an and for the purpose set forth,
Sixth, The springs, described and for the purposes herein set forth.
37,632.-Apparatus for Drying Grain, \&c.-Sylvester
Marsh, Chicago, Ill. : I claim the method herei
I claim the method herein described of drying grain, malt, hops, and other wimilar substances, by the employment in combina ion with
an artifcial blast of air over an anthracite coal or coke fire as set
forth, of upright drying chambers composed of pertorated plate or its forth, of upright drying chambers composed of perforated plate or its
equivalent.and when arranged for operation sibstantially in the man-
ner and for the purposes hereinbefore specified. ner and for the purposes hereinbefore specified.
37,633.-Defensive Armoy for Ships and other Batteries.-
Richard Montgomery, New York City : Richard Montgomery, New York City
I claim, first, The imbricated plates, E , and cor
I claim, first, The imbricated plates, $\mathbf{E}$, and corrugated iron, $\mathbf{D}$, in
combination with the columns or cylinders of vulcanized rubber, $\mathbf{B}$,
substantially as described. Second, Fastening together the imbricated plate, E, and corrugated
Sron, by means of the rod, $\mathbf{F}$, as set forth passing through the cor. rugations of each plate.
Third, The comblination of the imbricated plates, $E$, with the cor-
rugatea iron, $\mathbf{D}$, constructed and fastened substantially as set forth. 37,634.-Cog Wheel.-F."A. Morley, Sodus Point, N. Y. : I claim the insulating of the periphery or parts containing the
cogs by means of a stratum of a non-conductor of sund paced between said periphery and the centralparts of the cog wheel; sub
stantially in the manner and for the purpose set forth, 37,635.-Ship's Water 'Closet.-Peter .W., Neefus, New Y claim combin
 37,636.-Attaching Shafts or Poles to Carriages.-James

Northrup, Zachariah Loomis \& Giles W. Clark, We claim the arrangement and combination of the double and
ingle clip bars, cand d, with the corresponding depressions in each and when the single baris made whole and connected with the
double clip and with the $T$-headed thill or pole-iron fitting and work-37,637.-Artificial Leg.—Dubois D. Parmelee,_New York City,
I claim, first, Fastening the bucket, A, of an artificial limb to the
tump, by means of atmospheric pressure, substantially in the manner specified.
Second, The knee joint, $\mathbf{c}$, constructed of two cglinders, de, clasps,
f double concave sector, g , and elastic band, h, all arranged and perating substantially in the manner andjfor the purpose herein Third, Dividing the toe-piece, $G$, in two
Fourth, The and for the purposeset forth.
Fourth, The arrangement of the stems or tails, $\mathrm{m}^{*}$, projecting from he under side of the toe-pleces, mm min in combination with the bands, o, adjustable by a metal clasp, por or its equiralent, all con-
batructed and operating substantially in the manner and for the purpose described.
37,638.- Pump.-A. N. Parkhurst, Peoria, Ill.:
metaim a pump constructed of wood and baked clay having a cast. formed of the baked clay attached to the wooden part, A, and to the Hons of the pipi
herein set forth.
[This invention relates to an improved pump of that class in which the piping is composed of wood and the cylinder of baked clay. The bject of the invention is to obtain a more durable pump of the kind specified, than any hitherto used, and without any more expense in construction or manufacture of the same.]
37,639.-Composition for Slate Surface, Blackboards claim the combination of the ingredients and
T ciaim the combination of the ingredients and proportions, sub
stantaily as set forth, constituting the composition and its applica
tion in the manner and for the purpose specffied.
37,640.-Making Horse-shoe and other Nails.-Benjamin
W. Peirce, New Bedford, Mass. :
I claim the combination of the rotary cam, $D$, its slid ing shaft, ${ }^{\text {B }}$
and reacile lever, $\mathrm{C}_{\text {, with }}$ a series of hammers of dies, $\mathrm{G} \mathrm{G}^{\prime} \mathrm{H}^{\prime} \mathrm{H}^{\prime}, \mathrm{a}$ the nischarging mechanism, fand ame manism for severing or outiong $\underset{\substack{\text { degeribed. } \\ \text { And } \\ \text { in }}}{ }$

 anethere while to tose of the other pair may. be in the act of approach
ing one and 37,641.-Device for Closing Mail Bags.-George M. Rhiondes, , East Hamilton, N. Y.
 37, 442 2- - Bridge.-I Isaiah Rogers. Washington, D. C.
 other suitable means for the furmation
tially as herein shown and described.
Second, In comtination with a brid
Second, In combination with a bridge constructed substantially as
above described, I claim the inverted arch, $L$, employed in the man an abument between iwo adjacent arches. [The subject of this invention is a bridge composed of a peculia part great strength and rigidity, reduce the weight and cost of the part great strength and rigidity, reduce the weight
37,643.-Pawl for Hay Presses.-Lorenzo D. Rundell South Westerlo, N. Y.:
I claim the compound pawl formed by the lever, g, and body part, d
ointed together at $h$, and acting in the mar.ner and for the purpose ointed
37,644.-Valve for Steam Engines.-Peter Shearer, Read ing, Pa. : their equivalent, in combination with the cover, $F$, applied to each 37,645.-Tompion for Fire-arms.-R. ${ }^{\mathbf{7}}$ G. Shurtleff, Spring. field, Mass.
having the the tompion, $A$, with its silits, $D$, and cellindrical int erior, $E$
spring, $K$.
37,646.-Door Bolt.-H. S. Smith, Brooklyn, N. Y.:
E, flited on the knob-spindle or rod, $\mathbf{C}$, the above parts being sped in and for the purpose set forth.
[This invention consists in providing the bolt with a shoulder near Its back end, and having a spring applied to the spindle of the knob of the bolt in such a manner that when the bolt is shoved forward to will bestent, the spring will force the 8 houlder of the bolt back nd of the the edge of the hole or bearing in which the shouldered end of the boit works, and thereby cause the.bolt to be detained in a
forward position, forming a lock or fastening for the bolt; the bolt being disengaged or freed from the bearing afuresaid, by drawing utward the knob previous.to shoving it back.
37,647.-Preserve Jar.-Charles F. Spencer, Rochester, N. Y.: I claim the combined arrangement and construction of the double.
lianged cover, $B$, packing ring, $b$, and jar-neck seat, $a$, one tlange, $f$, lianged cover, B, packing ring, b, and jar-neck seat, a, one tlange, $f$ other flange, g, nearly filling and closing the circle w,
substantially as and for the purposes herein specified.
37,648.-Stencil Plate,-Samuel C. Sumner, Boston, Mass. I claim the holder, A, with its holes, $\mathbf{C}$, silts, d , and bars, c , in com 37,649.-Car Coupling.-Nathaniel A. Tucker, Burlington, I claim confining a coupling $\operatorname{lnk}$ in a recess located below two
matching curved surfaces one of which is stationary, aud the other matching curved surfaces one of which is stationary, a
37,650-Apparatus for obtaining Profiles of Submarine
Beds.-C. Van Horn, Springfield, Mass
I claim the employment or use of a tracing rod, $G$; fitted within a
ubbe, E,oran equivalent guide, and arranged with a sliding frame
 platform oi a a coniguration corresponding tor the bed to rest on the
same and receive or support the caissons or foundations of piers,
bridges, dc.
[The object of this invention is to obtain an apparatus or device by which a correct measurement or draughts may be obtained of the prominences and depressions of rocky or other hard sub-marine bed nto which piles cannot be driven forthe construction of piers, bridges dc., and by which measurement on draughts a platiform may be constructed so as to conform or fit s
caissons of piers, bridges, \&c., \&c.]

37,651.-Connecting Shafts or Thills to Sleighs.—Jacob C Walter, Leonardsville, N. Y.:
In combination with the mechanism or its equivalent for chang.
ing the relative position of the shafsor thills, laterally; I claim the de-
vices or vices or their equivalents for changing or setting the thills forward
or back substantially as described.
37,652.-Rock Drill.-J. B. Wayne and Wm. Evered, Detroit, Mich. We claim the manner of tripping the stem by means of the notched
or donble cams, C, thereby ailowing the lever or pincher to drop,
while the fulcrum-sleev is suppred and graualiy allowed to de-
scend on the cam, substantially as set forth. 37,653.-Spring for Carriages.-William Wharton, Birm Ingham, England
I claim a combination of spring plates secured together or embedded
with each other by the pauliar form or forms of the edges thereof, with each other by the pesuliar form or forms of the edges thereof
such plates not being dependent on sita and pins or studs to secure
them in position laterally, essentially as hereinbefore described. 37,654.-Track and Switch for Street Railways.-William Wharton, Jr., Philadelphia, Pa.
 for the purpose specifed
37,656.-Mowing Machine.-John D. Wilber, Poughkeep: sie, N. Y.
axle, A, ais show, in comphnation with the semicircular bar, G , also oit at some distance on each side of the draing, e e, attache

Second, The combination of the draft pole, $F$, attached centrally $t$ the main frame; the cutting apparatus, $D$ E E, placed cend cenlly in fron length and so placed as to separate the single-trees, $S$ S , to a distanc greater than the length of the cutting appara
[The object of this invention is to obtain a mowing machine in which all side draught will be avoided, and one which will leave the cut grass in a loose, light state, be of easy draught, and capable of venience of cutting around a piesa of grass.]
37,057.-Grinding Die for Nail Machines.-G. B. Wiggin and J. W. Hoard, Providence, R. I.
wheels, $\mathbf{A}$ and $B$, with the movable
scribed, for the purposes specified.
37,658.-Water Meter.-Henry Burt (assignor to himself C. S. Titsworth and T. W. Loweree), Newark, N.J.: I claim, first, Effecting the movement of the valve by means of $i$ wo pieces with V-shaped ends and a spring, combined with the piston, to
operate sulbsiantially as herelp descried.
Second, Combining the valve with the lever, $G$, or its equivalent, on Second, Combining the valve with the lever, G, or its equivalent, on
which one the V.shaped ends is formed or to which it it attached
and which is subject to the direct action of the piston, by means of .
lever, E, bet ween which and the said lever, $G$, or its equivalent, lost and which is subject to the direct action of the piston, by means of a
lever, E, between which and the said lever, G, or its equivalent, lost
motion is provided in order to effect the whole movement of the valve notion is provided in order to effect the wh ole m
very $q$ uickly, substantially as herein describ ed.
[This invention consists in a certain novel system of valve-operating e openings of the ports after the stroke of the pistou in change e openings of ports after the 7,659 M
659.-Mechanical Movement for Lamps.-F. B. De New York City
I claim the general arrangement and combination of the mechan-
ism herein described, and its use and application for the purposes set 37,660.-Suspended.
37,661.-Explosive Projectile for Ordnance.-L. D. Gerardin (assignor to himself and William Howeth), Jer sey City, N. J.:
I claim hating the outer wall of the shell composed of a series of
ings placed one upon the other, and clamped together between the ead and base plates, substantially as herein shown and described. 37,662.-Corn-sheller.-George Goewey (assignor to him-
self and William Bailey), Philadelphia, Pa.: self and William Bailey), Philadelphia, Pa.
I clain the employment of two rollers, B B, both revolving in one
direction and havingtwo or more rows of teeih arranged siirally, for
lhe purpose of revolving the ears of corn said hie purpose of revolving the ears of corn, said rollers being used in
combination with a concave, E, having teeth thereon arranged spit combination with a concave, E, having teeth thereon arranged spi-
rally, the teeth on the concave and the teeth on the rollersoperating conjointly to shell he corn from the cob, and pass the latter out at the
tail of the machine. an of the m
7,663.-Packing for Piston and Other Rods.-John John-
son, Roxbury, Mass., assignor to himself and H. D. son, Roxbury, Mass., assig
Ward, Cambridge, Mass.
I claim the arrangement of the packing rings within the gland or
stuming-box corer, substantially as herein described, whereby the land or cover is made ta rings, and in which they can be applied and removed, and provision
is made for the admission of the steam or other fluid that is tobe on
fined to act upon the outer peripheries of the rings, substantially as Ined to act upon the outer peripheri
and for the purpose herein specibed.
37,664.-Butter-worker.-Marvin Sweet, Sidney, N. Y.
 other suitable material, withoit protuberancee, when the said parts
are constructed and arranged to operate together in the manner and for the purposes herein specifed.
Second, the combination of the screw wheel, S, double cog- Whee
8, and rack, , employed to communicate motion irom the revolving
 et forth.
37,665.-Device for Preventing Door Keys from being
turned.-Amos Westcott, Syracuse, N Y turned.-Amos Westcott, Syracuse, N. Y.: I claim the combination with the curved, elastic, slotted, sliding
late, of the handle, $k$, pin, $h$, and hole, $h^{\prime}$, employed in the manner described, to secure the said sididing plate in the position
the key, but admit of its ready movement from within.
[This simple device is applied to the inner side of a door to prevent the possibility of turning the key from the outside by means of any

37,666.-Washing and Wringing Machine.-G. L. Witsel (assignor to himself and Clement Cresson), Philadel Firstly, I claim
Forstly, I claim the vibrating dasher, D, composed of the perforated when constructed, combined with and operating within a reservoir
sibstantially as and for the purpose described. Scondly, The arms, H H, connected together by the cross-bar. I,
ar anged on and hung to the reservoir and connected to the siliding
boxes it, of the roller, bexes, 11 ,
set forth.
37,667.-Balloon.-T. L. Shaw, Omaha City, N. T.: I claim a balloon constructed, arranged and operated substantially 398.-Concentrating RE-ISSUES.

Jr., Amenia, N. Y. Patented Aug. 19, 1856. Re issued May 13,1862 :
I claim, first. The within-described process, or method of operation, or-arranging the alb uminous particles, in combin nation with the evapo e-arrag the fuil, in rucuou, substantinlly as set forth.
second The
Second, the preparatory coagulating and re-arranging of the a lbu
men, when this is done as a part of the operation of makiog concen-
trated or condensed milk.
1,399.-Elastic Door-guard.-W. N. Clark, Chester,
Conn. Patented Nov. 17, 1857 :
I claim the above-described india-rubber or elastic gum guard, when held in place by the esc utcheon, or its equivalent, as heren described
for the purposefor protecting wall, doors, a nd furniture, substantiall 1,400.- Machine for Shaping Irregular Surfaces in Wood J. W. Goodman, of North Dana, Mass., assignees of July 22, 1845, and extended :
he tracing roller or rollers, the rotating cuting or planing cylinder and the means for turning or holding the block of wood to be fash oned, as described, or the equivalents of them, or either of them
the said combination being so organized, substantially as described,
that by tis mode of operation the block of wood to be fashioned can etter or planing cylinder, whose axis is at right angles, or nearly so With the axis of the biock of wood, so as to cut the wood longitudin
ally, while by a longitudinal movement the block of wood is gradually and by another movement at rige other on eangles ther face or in succession
cuthing action is caused to follow the irregular lines of the pattern cuthing action is caused to follow the irregular lines of the pattern
thereby producing a polygon of any desired number op sides of any
desired confgration longitudnally and with all its sides of similar
[This invention pertains to that class of machinery which has for its object the reducting of plain or rough blocks of wood to any de in its operation and results, from those which have heretofore been ontrived.]
1,401.-Refining Iron by means of Blasts of Air.-Chris tian Shunk, Canton, Ohio. Patented May 17, 1859 : molton crude iron from the ore, or from the remelted pigiron, to iommingle the gases orphe air with the parices or the fint iron and nnt refined iron or steel, and malleable semil. steel without the use of
fuel to keep up combustion, sneh conversion being effected by the gaseous mater or
Secondine Imparting a rotary ors spiral motion to the molten iron, by
or during the introduction of the air blast, substantilally as set forth Third, I claim the a pplica tion or the flux or solvent in the manner

1,402.-Refining Iron.-Christian Shunk, Canton, Ohio Patented July 12, 1859:
receive molten fron from a smelting or re-melting furnace, and decar
bonize the same by the application of an air blast in any manner, sub stantially as heren described, for the production of steel or refined
tron. 1,403.-Cupola and other Furnaces.-Addison Smith and kenzie, of said New York City. Patented Aug. 25, 1857 : curved sides, substantiaty as described and for the purposes set forth
Second, The arrangement ot a contimuous air chamber, in comble Second, The arrangement of a continuous air cha mber, in comb
nation with a cupola and.opening for the introduction of a continuous sheet of air to the fuel, substantially as described and for the purposes
set forth. In combination with a
Third, Third, In combination with a crpola, provided with a continuous air chamber, substantially as described, enlarging that part below the
tweer, whereby the capacity of the cupola is increaed., a nd perfect
circulation ot air to the full obtained, substantially as des cribed and specified.
1,404.-Door Spring.-A. J. and K. E. Storms, Nyack,
N. Y., assignees of E. P. Torrey and W..B. Tilton, of N. Y Y assignees of Patented Sept. 8, 1857 :
New York City. Paim, frst, Placing the nothed wheel, $\mathbf{D}$, between the jaws, We claim, first, placing the notched wheel, $D$, bet ween the jaws,
c, of the bracket, A, substantially as and for the purpose shown and described. Extending the square end of the torsional rod, F, clear
Second, Exter
hrough the jaws of the bracket, A, as and for the purpose specibied. Third, The arrangement of the pivoted stopplate, E, in combina.
thon with the notches, a. in the javz of the bracket, and with the
not ton with the notches, a. in the jaiva of the bracket, and with the
notched wheel, $D$, all constructeda and operating substantially in the
manner and for the purpose set forth.
1,405.-Water Wheel.-John Temple, W. M. Mills and A.
L. Stout (assignees of said John Temple), Middletown Ohio.-Patented Feb. 8, 1859
I claim the construction and use of the scroll sluice-gate, B C ap.
plied to operate with a water wheel, iu the manner substanitilly us
I also claim, in combination with the hinged sluice-gate, B C, the
guard, A, as and for the purpose described. sard, A, as and for the purpose described.
I also claim the levers. $K$, and ring, J, centrally arranged above the
luice chest, for simultaneously operating a series of sluice chest, for simultaneousl roperating a series of gates in combi-
nation with the gates, and actuated by mechanism substantially as

1,406.-Process of Manufacturing Water-proof Cement Pipes. Thurlow Weed, Albany, N. Y., and P. S.
Paris, France. Patented May 24, 1859. Ante-dated Dec. 30, 1857
I claim the prncess of rorming pipes or tubes of rolls of paper, or
ot her tissue. and bitum in ous mastic by drawing or rassing the paper, other tissue. and bitum in ous mastic hy drawing orpa ssing the pa per,
or other tissine, through the liquid mastic, and rolling it up to the re
quired thickness on $\Omega$ mandrel to cause the several windmgs and the nterposed mastic to nuite, substan tially as described.
And what is finally claimed is the for ming of such pipes or tubes
on apper sleeve, or cylindrical tube fitted to the outer surface of the n a paper sleeve, or cylindrical thbe fitted to the outer surface of the
mandrel substantially as described, by means of which the pipes or or
ubes when made can be readily sllp ped off from the mandrel, as set orth.
407.-Water and Air-proof Pipes from Bituminous Ce-
ment.-Thurlow Weed, Albany, N. Y., and P. S. Shel-ment.-Thurlow Weed, Albany, N. Y., and P.S. Shel-
tod,
Paris, France. Mass., assignees of A. F. Fatented May 24, 1859. Ante-dated Dec. 30, 1857
I claim the new manufacture of pipes or tubes composed of several
hicknesses of paper, or other tissu $e$, rolled up and the several thicknesses or windings united by interposed bituminous mastic, substan

1,408.-Process of Manafacturing Water-proof Cement Pipes.-Thurlow Weed, Albany, N. Y., and P. S.
Paris, France. Patented May 24, 1859. Ante-dated Dec. 30, 1857
I claim, first, The mandrel on which the pipe is formed by yinding, mastic or cement, and the cylinder on which the mandrel rolls, and
which arries the paper, or oher tissue, throngh the liquid mastic or specified. The rotating mandrel and cylinder on which it rolls, in
Second. The combination with the movable sleeve put on the mandrelt substan.
tially as and for the purpose of preventing the pipes, when formed,
from adhering to the rom adhering to the mandrel.
And, third, The combination of the rotating mandrel, the cylinder
on which the mandrei rotate, the kettle or other vessel for containing the liquid mastic or cement, and the guide or equivalent meanis
for guading the sheet of paper or other tissue, substantially as de.
scribed.

Camphene Lamp.-E. B. Horn, Boston, Mass. Patented Feb. 6, 1849 : I claim the manner in which I construct the fountain, in order to ides or shells of the fountain, that is to say, I claim an internaltrans luent side or shell, in combination with an external concentric side
or shell, whether the said two concentric translucent sides of the said
cuntain be connected together by a translucent or opacque bottom.

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PATENTS FOR SEVENTEEN YEARS.

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preliminary examinations at the patent office. The service we render gratuitously upon examining an invention on has been presented there but is aninion based upon knowledge we may acquire of a similar invention from the records in
our Home Office. But for a fee of $\$ 5$, accompanied with a model or drawing and description, we have a special search made at the United taining a patent, \&c., made up and mailed to the inventor, with pamphlet giving instructions for further proceedings. These prelim pamphlet, giving iastructions for further proceedings. These prelim. inary examinations are made through our Branch Omce, corner of F sons. Many thousands such examinations have been made through this office. Address MUNN \& CO., No. 37 Park Row, New York.

## hOW TO MAKE an APPLICATION-EOK A PATENT.

 Every applicant for a patent must furnish a model of his inventio if susceptible of one; or, if the invention is a chemical production he must furnish samples of the ingredients of which his composition consists, for the Patent Offic e. These should be securely packed, the inventor's name marked on them and sent, with the Government fees, by express. The express charge should be pre-paid. Small model rom a distance can often be sent cheaper by mail. The safest way o remit money is by draft on New York, payable to the order o MUNN \& CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New Yorkcor espondents; but, if not convenient to do there is but little risk in sending bank-bills by mail, having the letter registered by the master. Address MUNN \& CO., No. 37 Park Rowr New YorkThe revised Patent Laws, enacted by Congress on the 2 d of March 861, are now in full force, and prove to be of great berieft to all par les who are concerned in new inventions.
The duration of patents granted under the new act is prolonged $t$ seventeen years, and the Government fee required on filing an appli cation for a patent is reduced from $\mathbf{\$ 3 0}$ down to $\mathbf{\$ 1 5} . \therefore$ Othercharige n the fees are also made as follows

| On filing each application for a Patent, except for a design. <br> On issuing each original Patent. <br> On appeal to Commissioner of Patents. <br> On application for Re-issue. <br> On application for Extension of Patent. <br> On grancing the Extension <br> On filing a Disclaimer. <br> On filing application tor Design, three and a half years. <br> On filing duplication for Design, seven years. |
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The iaw auol:shes discrimination in fees required of forelgners, ex epting matives of such countries as discriminate Bian, English the United States-thus allowing Austrian, French, Bel Canadians, to njoy all the privilas of patent system cases of designs) on the above terms. Foreigners cannot secure their in ven ions by filing a caveat; to citizens only is this privilege accorded. During the last seventeen years, the business of procuring Patent for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN \& CO., in connection with the publication of the SCIEN'TIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the inventors throughou he country, we would state that we have acted as agents for at least TWENTY THOUSAND inventors! In fact, the publishers of this aper have become identified with the whole brotherhood of inven ors and patentees at home and abroad. Thousands of inventors for whom we have taken out pateats have addressed to us most flatter ing testimonials for the services we have rendered them, and the wealth which has inured to the inventors whose patents were se IFIC A MERICAN would state that we never had a more efficient corps of Draughts men and Specification Writers than are employed at present in our xtensive offices and we are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.
caveats.
Persons desiring to file a caveat can have the papars prepared in the shortest time by sending a sketch and description of the invention, at Government fee for a caveat, under the new law, is $\$ 10$. A pam hiet of advice regarding applications for printed in English and German,

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Communications and remittances by mail, and models by express prepaid), s

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We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings documents, \&c. Our success in the prosecution of rejected cases has een very great. The principal portion of our charge is generally lef dependent upon the final result.
All persons having rejected cases which they desire to have pros espond with on the subject, giving a brie tory of the case, inclosing the official letters, \&c

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We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction 29 Boulevard St. Martin, Paris ; and 26 Rue des Eperonniers, Brus be think we can safely say that three-fouritis of all the . We the itizens are procured through European Paten Inentrs will do well to bear in mind that the English law does not limit the issue of patents to inventors. .. Any one can take out a pat ent there.
Circulars of information concerning the proper course to be pur sued in obtaining patents in foreign countries through our Agency, he requirem orincipal office, No. 37 Park Row, New York, or any of our branch oflices.

## 4

A. M. B., of Mich.-Many inquiries of a business nature are made of us, from time to time, which we do not consider ourselves called upon to undertake to answer, unless the corresponden information. reply to your inquiries; and it is reptise, vertise, through our ollun of Notes and Queries," a dealer in publis and bare paid 0 Il. Few newspaper publishers in the United States are more wiling to accommodate unreasol the Scientich apo in in this respect. We hope fou the Scientific American worth what it costs you.
M. S. O., of Mass.-You inquire how much power there is in a rectangular magnet three feet in diameter and four inches in thickness; and you also wish to know what weight it will draw on a carriage. A magnet of such a great size has never yet been made. The power of a magnet does .not depend upon its mass, but resides on the surface, and no person can tell you the amount of attractive power in a magnet from its size. Two permanent magnets of the same size oftentimes differ greatly in power. A small magnet ex. hibits more attractive force, proportionately, than a large one. The strongest magnet described is one which was worn by Sir Isaac Newton in a finger-ring; it lifted 150 times its own weight A horse-shoe electro-magnet, one inch long (which is entirely differen from a permanent magnet) has ifted 420 limes its own weight.
E. K. B., of Va.-There are no recorded experiments published respecting the pressure exercised by the explosion of gases. Hydrogen gas charged with carbon and the gas derived from naphtha are the same in nature and substance. When hydrogen gas is mixed with three volumes of atmospheric air it explodes almost instantaneously when ignited; but one volume of pure oxygen mixed with two of hydrogen produces a more violent explosion. By assuming the expansion of combustibles to be 1,728 times that of their original bulk, the full pressure of exploded naphtha would be equal to 25,000 pounds on the square inch.
. H., of Vt.-We have not received the paper containing a notice of the iron-ore bed to which you refer. The value of ore can only be ascertained by experiment conducted by a competen
person. Good steel can be made from all our American magnetic iron ores.
F. J. C., of Philadelphia.-You will find a spray steam boiler, such as you suggest, described on page 185, Vol. VII (new series) of the Scientific American. Water exposed to an extendry) healing surface evaporates into the atmosphere (il the temperature. A low temperature of steam indicates low pressure. S., of Pa.-We cannot guarantee to furnish back numbers at any time during the year. It frequently happens that we run out of certain numbers long before the close of the yeer. You R. D., of Ill.-We do not see why your draught should be bad; the chimney is high enough certainly. You had better see if there is no defect in the setting of your boiler or some other local cause which afects the drais the of any valueuntil we know more about it. Our impression is that it would be beneficial.
S. W., of Pa.-Your communi cation is upon an interesting subject, but there are some parts of it so obscurely treated that we cannot understand your meaning, hence it cannot be published. L. E. A., of S. C.-We are obliged for your good opinion and the information you send us, but it comes too late to be of service. Be so kind as to forward any
R. E. R., of Pa.-You will find a hot-air engine illustrated on page 97 , present volume of the Scientific American, which we think very highly of. Wilcox's air engine is illustrated on page 161 Vol IV (new series), of the Scientific American.
L. C. R., of N. J.-The idea you suggest, in reference to the cancelation of postage stamps, is to simply use the old stamp as now, except that you slide one end of $1 t$ over the edge of the letter, so that it may be torn off at the Post-office. The plan will not work. Not one person in a hundred would ever put stamps on in that way K. H.
. K. H., of N. Y.-The amount of pressure upon the Thise of an exhausted receiver is 15 pounds on the square inch. tained called one atmosphere. A perfect vacuum cannot be obsure is whally the vacuum in the condenser of an engine.

## Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, February 11, to Wednesday February 18, 1863 :-
T. C. McK., of Tenn., \$46; B. R. A., of N.Y., \$40; S. B. C., of N.Y., 10; J. W. C. H., of Denmark, \$20; W. P. W., of N.Y., \$20; C. O. F., of Maine, $\$ 20$; J. H., of Ohio, $\$ 14$; D. J. O., of Pa., $\$ 15$; P. D., of N. Y., $\$ 30$; L. B., of Wis., $\$ 25$; J. W. B., of Ind., $\$ 25$; W. D. G., of Va., $\$ 16$; H. B., of Iowa, $\$ 15$; J. A., of Ky., $\$ 12$; G. \& V., of N. Y.,
$\$ 16$; Z. W., of Cal., $\$ 150$; W. H. H., of Cal., $\$ 25$; W. A.D., of Ohio $\$ 20$; I. L., of N. Y., $\$ 20$; J. L. A., of N. Y., $\$ 45$; I. S. S., of N. Y., $\$ 22$; A. F. N., of N. Y., $\$ 10$; J. M. A., of Mass., $\$ 10$; L. $\downarrow$ D., of
$\$ 15$; G. G. H., of Ill., $\$ 15$; B. L.W., of Mass., $\$ 29$; W. P., of Md., $\$ 25$; J. C. H. of Mass., $\$ 45 ;$ D. \& T. W., of Cal., $\$ 25 ;$ J. McL., of Ohio,
$\$ 12$ T T. D. R, of N. Y. $\$ 10 ;$ T. C., of R. I. $\$ 30$; B. F. S., of Iowa $\$ 16$; A. B., of N. J., $\$ 15$; J. W. of Iowa, $\$ 45$; J. N., of N. Y., $\$ 20$; W. S. T., of Iowa, $\$ 20$; G. T. L., of Pa., $\$ 56$; J. H. B,, of Mass., $\$ 10$; W. T. R., of N. S., $\$ 25$; M. D. H., of N. Y., $\$ 16$; T. K., of IIl., $\$ 15$;
J. F. J., of N. Y., $\$ 16$; G. H., of R. I., $\$ 15$; M. V. D., of N. J., $\$ 10$;
J. K., of C nn., $\$ 56$; A. A. G., of N. Y., $\$ 16$; A. W., of Ill., $\$ 15$; W D. S. , of N.Y., \$25; S.T., of Mass., \$16; H. B., of England, \$19; W. F. of Mass., $\$ 32$; P. J. C., of Conn., $\$ 16$; L. A., of Wis., $\$ 15$ : J. H., of
N. Y., $\$ 32$; G. G., of Iil., $\$ 10$; S. C. K., of Mass., $\$ 15$ F F. W. G., of N. Y., $\$ 32$; G. G., of Ill., $\$ 10$; S. C. K., of Mass., $\$ 15$; F. W. G., of
N. Y., $\$ 36$ L. W., of N. Y., $\$ 26$; T. B. V., of N. Y., $\$ 26$; B. F. H., of N. Y., $\$ 36$; L. W., of N. Y., $\$ 26$; T. B. V., of N. Y., $\$ 26$; B. F. H., of
N. Y., $\$ 16$; J. Van D., of N. Y., $\$ 15$; T. R. C., of Mo., $\$ 15$; R. S. C., N. Y., $\$ 16$; J. Van D., of N. Y., $\$ 15$; T. R. C., of Mo., $\$ 15$; R. S. C.,
of Iowa, $\$ 16$; D. C. S., of Conn., $\$ 25$; J. C. H., of Mass., $\$ 30$; E. J. W., of N. Y., \$26; J. T., of N. Y., $\$ 26$; J. B. W., of R. I., $\$ 16$; D. D. C., of Mass., $\$ 16$; H. B. M. \& Son, of Mich., $\$ 15$; J. H. F., of Mass.,
$\$ 15$ J. Wr., of Ky., $\$ 20$; J. D., of Ill., $\$ 26$.

- Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and theirinitials are not to be found in this list, they will please notify us immediately, and in. form us the amount, and how it was sent, whether by mail or ex. ess.
Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent
Oflice from Wednesday, February 11, to Wednesday, February 18 1863:-
B. R. A., of N. Y., (2 cases); J. C. H., of Mass.; W. D. S., of N.Y.; S. S., of N. Y. ; D. T. K., of Tll. ; J. D.. of Ml.; T. B. V., of N. Y.; I. L. R., of N. Y. ; F. W. G. of N. . L. W T. D. R., of N. Y. ; J. K., of Conn., (2 cases) ; W. P., of Md.; W. T.


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The publishers of the Scientific American have just prepared, with much care, a pamphlet of inturnation about Patents and the
Patent Laws, which ought to be in the hands of every inventor and
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The character of this useful work will be betterunderstood after read. ing the following synnpsis of its contents:-
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$\begin{aligned} & 74 \text { Beekman street, New York, or } 55 \text { and } 57 \text { FIrst street, Willams- } \\ & \text { burgh, L. I. }\end{aligned}$
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