RECENTLY PATENTED INVENTIONS.

## Engineering.

Feed Water Heater.-George T Munday, Brenham, Texas. This heater has an arrangement of distributing troughs so located as to evenly dis-
tribute the water over tubes in thin atreams or a thin tribute the water over tubes in thin streams or a thin
sheet, to quickly heat it, the conetruction being such that the tubes and troughs maybe easily removed for cleaning purposes. In operation the hive steam circulates freely brough the tubes, heating the water nearly to the temscrature corresponding with the boiler pressure, any
scale forming on the outer surfaces of the tubes falling upon a wire cloth screen from which it may be readily

Carbureter. - George G. Schroeder, Washington, D. C. This is a portable apparatus for carbureting atmospheric air by easily vaporizable liquid
aydrocarbon or oil, the body of the apparatus resembling ordinary gascmeters forming a part of gas plants, and onsisting of an air receiver and gasholder of adjustable other fibrous material which temporarily holds the other fibrous material which temporariy bolds the
liquid hydrocarbon and through which air is drawn and then forced back again, to form gas suitable for illumination or heating. The sponge or equivalent material
is chemically treated to produce a superior quality of permanent gas, and the application of heatio unneceesary and entirely dispensed with.
railvay Appliances.
Car Coupling.-Philip Bogler, Alamosa, Col. This is a coupling of the drop pin and link type, adapted for the automatic coupling of two meet-
ing cars, and permitting of conveniently uncoupling them from either side without having the trainmen go between the cars. A gravity block is pivoted in the chamber of the drawhead, which bas top and bottom openings, the block having a forwardly extended toe, a recess adapted to hold the uncoupled link, and a table flange that is per-
forated to drop the pin when the block is rearwardly forated to drop the pin when the block is rearwardly
rocked, and sustain the pin at the rear of the perforation rocked, and sustain the pin at the rea
when the block is forwardly rocked.
Angle Cock.-William J. Waldron, Fort Worth, Texas. To prevent tampering with the air brakes of any car of a train, or the turning off of the air
at the rear end of the tank of the engine, without first at the rear end of the tank of the engine, without first
having the release made by the engineer or some one in charge of the engine, this inventor has devised an improved angle cock, and also provided a locking device adapted for attachment to the bottom of any angle cock or valve now in use. A handled valve or plug turning
in the angle cock bas an opening in its bottomin which in the angle cock has an opening in its bottom in which
is adapted to enter the piston rod of a locking device is adapted to enter the piston rod of a locking device connected with pressure under con
and independent of the train pipe.

## Electrical.

Electrolitic Apparatus. - Charles W. Fielding, London, England, and Louis B. Walker,
Elizabeth, N. J. To facilitate the separation of precious metals from base metals, and to separate from metals menerally foreign metals, or materials, this apparatus has, in combination with anode and cathode plates, spherical blocks of non-conducting substances, there being upper and lower blocks, the upper blocks of a pair having a flexible connection engaging over the top of the plate and the lower blocks being suspended from the upper and at the other side against an adjacent cathode and each cathode is placed in close contact with an anode, so that no electrolyte in the tank can paes between them.
Electric Wire Sleeve Connec-trons.-Samuel Olsen, New York City. To faclitate
the twisting of these connections this inventor has dethe twisting of these connections this inventor has de-
vised a tool that may be operated with a back and forth movement, similar to that of a ratchet wrench, thus the tool commonly employed in this work. The movable jaw is automatically drawn toward the other jaw by a spring, and extended outward from the shank are push pins, which the operator presses against with his thumb or finger to release the tool from a sleeve and secure a new hold.
Steam Gage.-John O'Connor and C. A. Turner, New York City. This steam gage is ar-
ranged with a dial over which an index travels to indicate the steam pressure in the boiler, and an electric contact is arranged in the path of the index, including an electric circuit and an electrically operated device con-
trolled by the cloped circuit. The excessive rise or fall trolled by the cloesed circuit. The excessive rise or fall
of the steam pressure in the boiler will be at once indicated and an alarm sounded, and on the excessive rise of pressure the valve or damper will be opened to reduce the
raught through the chimney
Boiler Alarm.-The same inventors have devised an alarm to give warning of the excessive
rise or fall of the water in the boiler. In a cylinder having its upper and lower ends open to the boiler adjacent to the water level rises and falls a float, there being at the upper and lower ends of the cylinder stems adapted
to be moved outwardly by pressure from the float, and these stems engaging contacts which include an electric circuit and suitable alarm devices. The device is very simple and inexpensive, readily applicable to boilers
of various kinds, and is capable of adjustment to sound the alarm at any desired water level.

## Mining

Concentrator.-Patrick H. McGowan, Denver, Col. This concentrator is for working all valuable minerals having greater gravity than their gangue, especially free milled gold, ores from stamp mills, auriferous gravel or sand placer dirt. The pan bas
a bottom of annular steps descending toward the center, a bottom of annular steps descending toward the center,
where there is a discharge opening, each step having at whs inner edge a standing flange or dam, while a rotary disk has depending agitators over the steps of the pan, a conical distributer forming the top of the disk and a a conical distribater forming the top of the disk and a
feed hopper opening upon the distributer. Each of the annular steps is provided with readily removable receptacles containing quicksilver.

## Mechanical.

Lubricator.-Clarence W. Nash, Union Bridge, Md. This is an oil cup in which the feeding of the oil is effected by the intermittent opening
of a valve automatically operated by the momentum or centrifugal action of the valve when mounted on the wrist pin of a crank or other revolving part. Within a suitable casing adapted to be ecrewed upon a wrist pin
or other support is the oil cup, extending centrally or other support is the oil cup, extending centrally
through which is a sleeve and nut through which slides through which is a sleeve and nut through which slides
a valve stem projecting above the top of the nut and carrying a conical valve below, playing between its seat In the caeing and the superposed lower end of an ad-

Stone Dressing Machine. - James M. Malone and James D. Perkins, Marble Hill, Ga. dress stone for forming columns and provide them with straight or twisted flutes on their peripheries. The machine is in the form of a planer on which reciprocates a
bed above which is an adjustable tool carrier, there being spindles in bearings on the bed to support the stone, a well as a rack and mechanism for revolving one of the pindles, the rack being held stationary during part of
Embroidering Machine.-Arsène Carpentier, Caudry, France. This machine permits the
application of the Jacquard mechanism with perforated cards to the automatic operation of the frame for carryto guide or operate the pantograph in reading the design, enabling the production to be augmented and rendered more economic. A reciprocating actuating frame is movable independently of the work holding frame, but may be coupled therewith, and movable droppers of different width are arranged between the actuating frame tent of the reciprocating tent of the reciprocating movement of the actuating
frame, there being mechanism for selecting the droppers. Sheet Metal Seam. - Gustavus F. Bauman, Louisville, Ohio. For sheet metal stove pipes
and similar articles this invention provides an improved seam of such a kind that the operator may readily close the sides of the article so that the seam will not be exposed to the heat passing througb. It is an external ongitudinal closing seam terminating near its ends in a lock seam, one of the members having an inwardly and backwardly turnedflange engaging a slot in the inner portion of the other member, and the springy nature of
the sheet metal drawing the two members into proper position after engagement.
Last.-Arthur M. Leighton, Everett, adapted to facilitate repairing boots and shoes, fitting varying sizes and widths and the contours or indentations of the insole produced by the feet of the wearer. It has an adjustable toe plate and heel piece, with an intermediate part having pivotal connection with the toe
plate and notched connection with the heel part, there plate and notched connection with the heel part, there
being also a detachable bunion piece and various other attachments.

## Agricultural.

Landside for Plows. - George C. Christenson, Newberg, Oregon. According to this im-
provement, the landside is made with a bottom edge whose heel is beveled upward and rearward to form a
fulcrum for swinving the plow in a vertical plane when fulcrum for swinging the plow in a vertical plane when
bearıng on the handles. It is designed to give the plow. bearng on the handles. It is designed to give the plow.
man better control of the plow and prevent it cutting too deep into the ground when plowing on hills or uneven ground, and also to make it easier to pass the plow poin ground havingroots, rocks, etc.

## Miscellaneous.

Vulcanizing Wood.-John T. Lloyd New York City. To prepare wood with a compound of creosote and other antiseptics to resist animal or vege
table attacks, this inventor bas devised a treatment which consists in subjecting the wood in a closed chamberto the direct action of a still or stagnant body of live,
wet steam, at a temperature of from $3255^{\circ}$ to $500^{\circ} \mathrm{F}$., wet steam, at a temperature of from $325^{\circ}$ to $500^{\circ} \mathrm{F}$.,
whereby the substances contained in the wood are conwhereby the substances contained in the wood are con-
verted into insoluble antiseptic compounds, which are veld and permanently fixed in the fibers by the steam
Fifth Wheel.-Samuel K. Paden, Pulaski, Pa. This is an improvement on a formerly patented invention of the same inventor, according to which the skeleton upper part of the fifth wheel has a
recessed circular rim and a flat diametrical bar with an annular boss projecting downward from its center, ther being parallel flanges projecting upward from the sides of the bar and parallel vertical reach fianges having a web or bottom bar all constructed integrally. The improved
construction gives great strength to the center of the upper part of the fifth wheel when it is most required, and the upper and lower parts turn freely on each other
and may describe a complete circle although beld firmly and may describe a complete circle, although held firmly together by clips.
Vehicle Wheel.-Alexander Pinover New York City. To make a very strong wheel, particu-
larly adapted for bicycles, tricycles, etc., and a wheel in which new spokes may be readily inserted in place of cording to which the bub consist of this invention, ac shell portions, the base portions of the two sections having grooves, and when secured together, forming sockets for the ends of the spokes. which are held in place by
screws. The spokes are preferably tubular, and their outer ends are seated in metal sockets or thimbles in th wooden rim.
Corne
Corner Iron for Frames. - Matthew Lynch, New York City. This is a flat triangular plate
having two integral depending flanges, each corner iron having two integral depending flanges, each corner iron
having an oblong aperture whose edgesslightly converge and adapted for engagement by a stud on either end of a connecting link. The improvement is especially adapted for stiffening the corners of light wooden frames supporting scenery on the stages of theaters, and for de-
tachably locking together any desired number of such frames when required.

Leveler and Grader.- Daniel W. Jones, Salt Lake City, Utah. The frame of this machine carried by front and rear rollers, and on the frame beam carrying at one end a scraper is pivoted between the rear posts, and treadles are connected with the front end of the lever beam where they may be pressed on by
the'feet of the driver, to bring the scraper bard against the ground. The scraper is adjustable by means of chains to different angles, thus making a grader, and the scraper may be removed and replaced by
such as rake heads, markers or furrowers, etc
Meat Holder. - Charles P. Loughridge, Nevada City, Cal. This is a simple and durable firmly holding a ham while cutting slices or sawing a bone, without danger of the ham slipping or moving on
the table. It consists of a frame of two metal plates ad the table. It consists of a frame of two metal plates adjustably held on each other and formed with downwardy extending flanges at one end to engage the sides of the table, the other end of one plate having an upward
bend to engaye the side of the ham, while a pin on the other member engages the shank of the ham and yet permits of conveniently shifting it ae desired.
Notz.-Copies of any of the above patents will be furnigher by one the patentee, for title of invention, and date
send name of of this paper.

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For logging engines. J. Mundy, Newark, N. J.
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some's concrete system. 758 M Onadnock Block, Cbicaro. some's concrete system. 758 M Madnock Block, Chicano.
Wet Tool Grinder, Sensitive Drils, for all light work, especially adapte
Canastota, N. y
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## \%aticutainaries

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give date of paper and give date of paper and page or number of question.
IIIIIrica not ansered in reasonable time should
be repeated; correspondents will bear in mind that some answers require not a little research, and,
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to may be had at the office. Price 10 cents each.
ooks referred to prompty supplied on receipt of
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marked or or labeled.
(6952) J. E. S. says: There is a worm or horer working in the tops of trees in some of the apple
orchards in this section; it gnawsoff the limb square, so orchards in this section; it gnaws off the limb square, so
that it drops over. We found one limb with a hole in the that it drops over. We found one limb with a hole in the
heart extending up. Upon splitting the limb with a knife heart extending up. Upon splitting the limb with a
we found the worm. I send section of the limb containing the worm, also other samples of limbs cut off by
the worms. Will you please tell us, through the columns of the Scientific American what the worm is and how to destroy it? A. Answer by the Unityd States
Department of Agriculture. Upon examination the twigs prove to be infested with the common twig proner, no perfect remedy against this insect, and the best plan no perfect remedy against this insect, and the best plan
will be to collect and burn the twigs as soon as they fall, in order to kill the worms which they contain. It will also be a good plan to cut off from the trees and bu
the twigs which show the least sign of infestation.
(6953) T. W. L. T. asks if amalgamated zinc will resist the action of a bichromate of potash so-
lution. Will amalgamated zinc have the same effect as plain zinc in battery for temporary lighting purposes? A The zinc is attacked and will be soon dissolved in grea part if left in the solution. Always use amalgamated zinc; plain zinc is qnite unsatiefactory and dissolves rapidy
by local action, evolving a disagreeable odor and me by local action, evolving a disagreeable odor and me
chanically disseminating acid in the form of flime spray

## INDEX OF INVENTIONS

 Por which Letters Patent of :United States were Granted August 25, 1896,

## and EACH BEARING THAT DATE.

 566,660
566,427

