## the english telegraphs.

## by azoraz b. przacont

## CONSTRUCTION OF THE LINES.

The construction of the English telegraph lines is uniformly excellent, and reflects great credit upon the Engineering Staff, in whose hands it is placed.
The timber used for poles is generally larch treated with sulphate of copper, or red fir creosoted.
The creosoting is accomplished by the Bethel process. The poles are placed in an iron receiver and the air exhausted from them, after which boiling creosote oil is forced into them by pressure. This process greatly increases the durability of the wood, pine and spruce being thus rendered as lasting as cedar. The offensive, but no

## on this account.

The poles are never creosoted until they have been stacked a sufficient length of time to be thoroughly dry.
The cost of creosoting includes a certain margin for loading into trucks, or on board a ship, which is alwaye stipulated for when the contracts are made.
It sometimes happens that a parcel of poles are exceptionally dry, in which case they are given an extra two pounds of oil per cubic foot, costing from six pence to eight pence per pole additional.

When poles are used, which are neither prepared with sulphate of copper nor creosote, they are well seasoned, and then painted, the butt ends being slightly charred from the bottom to a foot above the ground line, and tarred.
The cross-arms are made of English oak, two inches thick and twenty-four and thirty-three inches in length, and are placed alternately on either side of the pole. A twenty-four inch cross arm is placed on the front of the pole a foot from the top, and then a foot lower down a thirty.three inch cross arm is placed on the back of the pole, and so on. In some cases as many as seventeen wires are carried upon a single carries more than two wires, except on the double pole lines, carries more than two wires, except on the double pole lines,
where seven feet cross arms are employed, and four wires are supported upon each cross arm.
All the poles are provided with earth wires, or contact con. ductors for carrying the wet weather escape directly to the earth, instead of permitting it to leak into the neighboring wires. The earth wire consists a piece of No 8 galvanized iron wire, extending from the top of the pole to the bottom, and terminating in a flat coil attached to the foot of the pole, so as to expose as large a surface as possible to the earth. From the thick earth wire, branches, composed of No 10 gal . vanized iron wire, are carried in saw grooves sunk in the cross arms, and soldered to the insulator bolts. The work is performed at the factory before the cross arms are carried
out on the line. The earth wires sometimes project above out on the line. The earth wires sometimes project above
the top of the poles, and serve an excellent purpose as lighte ning arresters.
Great care is taken to keep the poles in a rigidly upright position ; and in addition to placing them well in the ground and tamping the earth thoroughly around them, they are well supported with stays made of wire ropes attached to iron rods, which run into the ground about four feet. Oads, double lines and slight curv
stays are employed.
insulators.
The insulators on the railway routes are uniformly of the Varley double cone brown ware pattern, and those upon the canals and highways of the single cone white ware, or porcelain. The Varley insulator is regarded as the best, but its greater cost has prevented its exclusive use.

THE CONDUCTORS.
The conductors employed upon the English lines are com. posed of zinc-coated iron wires of Nos. 4, 8, and 11 gage. The No. 8 gage- $0 \cdot 170$ inch diameter-is the size in general use: the No. 4 gage- 0.240 inch diameter-being employed
upon a few of the long circuits between the more important upon a few of the long circuits between the more important
points, while No. $11-0.125$ ineh diameter-is used for short lines only.
The method formerly followed of allowing the wires to pass freely through the insulators, and fastening them only at
distances of half a mile, has been a bandoned in favor of bind. distances of half a mile, has been abandoned in favor of bindbinding.

## JOINTING THE WIRES.

Great care is observed in the jointing of the wiree, which is invariably performed upon the line, no joints by the wire makers being permitted. The joint exclusively adopted is that known as the Britannia joint. This is made by slightly bending the ends of the two wires and placing them side by side for a distance of three inches, and binding them tightly together with No. 19 wire, and soldering them thoroughly. All joints are required to be soldered, whether the wire be old
or new, galvanized or plain. The leading.in wires at theoffces are insulated with gutta percha, covered with linen tape and varnished with a preparation made of linseed oil and Stork. holm tar. These wircs are re-tarred from time to time to pre vent decay.

THE OVER HOUSE WIRES.
The over house wires are erected in spans, supported by iron poles attached to cast iron saddles, which are fitted at the ridge of the roof. The poles are light and well stayed by wire ropes. In London, cables containing 50 insulated in the manner described above. The conductors in these cables consist of No. 22 copper wire.
At Newcastle on-Tyne, a strand composed of seven steel wires, of No. 16 gage and 454 yands long, is euspended over

The cables rest upon ebonite chairs attachedto the rope by means of ringe placed at distances of 12 feet apart.
The over house wires are used principally for lines which are leased by the Post Office Department to private firms or individuals for the transmission of messages on their own special business between offices, factories, etc., and which make a system of nearly 5,000 miles. -Journal of the Telegraph.

## The Chemical Clanmification or Iron.

M. Frémy, an eminent French chemist who has recently been studying further into the metallurgy of iron and steel, thinks that it would be of much more advantage to founders and metallurgists if commercial iron, which is still classed according to its physical properties, should be known with reference to its chemical characteristics, that is to say, in accordance with the verysmallquantities of carbon, sulphur, phosphorus, etc., which it may contain, and which chemical analysis would reveal. This chemical classification has for
some time past been in use in Krupp's celebrated foundery, where, in fact, nothing is left to chance. Chemists constant y analyze the crude materials and the fabricated products. The scientific and industrial element is intimately connected with the military. Artillery officers examine the manipulations and follow their every detail. Considerable sums are devoted to new experiments, made on the different alloys which may beg suitable for cannon, and of each metal tried there is compiled a record which indicates its chemical composition, its advantages, and defects.
According to M. Frémy's investigations, it appears that the best metal for guns is neither iron nor steel, but some combination of both.

## New Street Rallway Locomotive.

A trial recently took place on the Manchester, Sheffield, and Lincolnshire railway, between the Grange Lane and Tinsley stations, of a tramway engine, constructed by the Yorkshire Engine Company, upon L. Perkin's patent sys tera, for the Belgian Street Railway Company, Brussels. The novel features of this engine consist in its not emitting any smoke or steam into the atmosphere, and making comparatively little noise. The engine used steam at 500 lbs to the square inch, and maintained this pressure by natura draft without any difficulty. The engine is compound, and expands the steam to the most economical limits, and then condenses it by means of two air surface condensers placed one on either side of the machine. The engine can be driven from either end, all the driving gear being duplicate to obviate the necessity of turntables. The engine accomplished a apeed of fifteen miles per hour, drawing its full load up gradients varying from 1 in 200 to 1 in 80.-Iron.

## Ballooning Extraordinary.

Werecently published a note of Mr. Croce-Spinelli to the French Academy of Sciences, in which he indicated the belief that existence could be maintained at very high altitudes by aeronauts, if they should provide themselves with cylinders of oxygen, to be breathed in the highly rareled atmosphere.
M. Spinelli and Sivel have lately demonstrated the truth of this view by ascending in the Etoile Polaire, a balloon of 98,840 cubic feet capacity, to the immense elevation of 25,841 feet without inconvenience. The barometer level descended 11.7 inches, showing the abovealtitude, which is higber than that obtained by Gay Lussac and nearly equal to the point reached by Glaisher in his famous ascension. The thermometer at minimum marked $7 \cdot 6^{\circ}$ below zero Fah. The aeronauts, having taken with them all necessary instruments, made a number of valuable observations which, we learn
from Les Mondes, will shortly be communicated to the French Academy.

## Rain Cannonadea.

Mr. Edward Powers petitions Congress to authorize a eries of experiments to produce rain by artificial means, during dry seasons. This,he pointsout,may be accomplished by the firing of heavy artillery. In back numbers of the Scientific Ambrican, we have given many epecific examples of rain storms which have followed heary cannonades, n connection with various battles, during the late rebellion and European combats. There is reason to believe that the concussions of 'artillery, when sufliciently long continued, may have a condenaing or aggregating effect upon the aerial vapors, and so induce the fall of rain. When the nations
debt is paid, or specie payment resumed, we thint it might be well to burn some public powder as saggested by the present petitioner. Bu
postponed until then.

## A Chance for Inventorm.

The attention of parties desiring to invest in patents is directed to the announcement of Mersrs. F. A. Hull \& Co. manufacturers of the Danbury drill chuck, published in our advertining columns. This invention'was fully described and illustrated on page 214, Vol. XXIX. of the Scientific AMe RICAN, and is a three-jawed lathechuck so constructed that all the jaws are simultaneously moved, in radial directions, by the revolution of a single right and left hand screw. The action is direct and positive, and, it is claimed, cannot clog, set, or in anywise get out of order.
We are informed that, since the placing of the article upon the market, it has met with a ready sale, and has given general eatisfaction. The owner, desiring to dispose of the patent in order to devote his efforts to a more important enterprize, offers the same at quite a moderate price. Judging rom the representations of the manufacturers, we presume hat any one, having the requisite capital, will find the invest ment highly profitable.

The St. Louts Bridge. - The iron work is now complete, wo weeks in advance of the contract time. A grand banquet has been given by the Keystone Bridge Co., contractors, to their employees, some 200 in number, at the Grand Central Hotel. The approaches will now be hastened to completion, railroad tracks laid, and carriage ways finished as speedily as possible; and the indications arethat the bridge will be thrown open to public trafic at a much earlier day than was antici. pated.
(2tcent Gutcricau aud foreigu æe,atents.
Improved Stone Pavement.
erg, Columbus, Onto.-This invention is an improve
Andreas Etchenberg, Columbus, Ohto.-This invention is an improve-
ment in stone road beds, and corsists in arranging an upper vertical lager nent in stone road beds, and corsists in arranglng an upper vertical laye
With a hortzontal layer of flat stones. Both break joints to insure a greate degree of stability of the individual pte
or rravel ts used to fill the interstices.
Harrison W. Curts, Philadel phla, Pa., aselgnor to Joseph L. Ferrell, same place.-This inventlon consists of an arrangement of the idie pulleys nsed
for turning a driving belt out of a right line for a belt shifter by mounting for turning a driving belt out of a right line for a belt shifter by mounting them on a a winging frame in a line c.
the two llnes in which the belt ruas.

Improved Grain Tally.
ge moves forward and backward on gulde ralls between stop plns. A measure in retalned to position on the carrlage by pegs, and placed under the spout of the thresbing machine, pasaing under cross bars for equalizing the grain in the same.
The attendant moves the carriaga in one dircetion, when one measure The attendant moves the carriage in one direction, when one measure is
filled, and empties the same whtle the other mcasure is filled from the alled, and emptles the same whtle the other mcasure is illed frox the
apout. He then moves the carrlage back, taking of the Wout. He then moves the carriage back, taking of the second measure
when full, and repeats this operation, a reglistering device keeptag a corect tally of the grain measured ott, forming thus a very conventent selfacting apparatus for counting the number of measures.

Improved Thill Coupling.
J. Ruseell Little, Jamatca Platns, Mass.-Thts is an Improved coupling or connecting thills or a pole with the axle of a carilage. A retaincr
which 18 a small bar of iron, the ends of which work in slots forned in the oke of an axile cllp, when pushed into the forward ends of its slots, comes so far over the hook head of the thill fron as to prevent the sald thill iron frombeng ralsed from the bolt. The retainer is held forward by a spring,
which will allow ft to be pushed back when it is dealred to attach or detact Which will allow

Improved Bobbin Winder for Sewing Machines. Moses Cook and Moses $\mathbf{G}$. Cook, Ashield, Mass.-This invention consiste a drum with a reversing cam groove for working the traversing gutde for ward and back along the spool has the necessary slow motionlmparted to it by a pawl and a frictlongriptng atrap. The pawl la workedby an eccentrtc on the bobbing turntng shaft, which recelves motion from the seming machine wheel by a friction wheel. An adjuatling ocrew regulates the extent of the pawl's movements so as to turn the drum fast or slow, accordtng to
the atze of the threads, and the drum has a frittion strap and spring for holdtag it when released by the griptng apring. The bobbin has a apring on its aptade for fastentog the thread to it at the begining. The spoo holder has a tension apring to regulate the unwinding of the thread rom it.
Impr
Improved Comblned Gang Plow, Cultivator, and Chopper.
Jonn J. Watrous, Weat Point, Ga.-This inventon Jonn J. Watrous, West Pofnt, Ga.-This invention has for its object to
urntsh an Imploved machine whtch may be readly adjusted for breaking up and bedding land, and for cultivating and cbopplig the crop. By aultable construction no tongue is required, which enables the machine to be turned In a very small space, and the chopper ts operated by its advance The chopplng hoes may be conventently adjusted to work deeper or shalower in the grouud, as may be desired. The chopper may be easily ralsed rom the ground, and thus prevented from worktng, and, when not required
or use, may be detached. The plowi may be adjusted to work ahallower or deeper in the ground. Any desired number of plow beams may be used according to the kind of work to be done. Suitable construction also allows the rear ends of the plow beams to have a free vertical movement. Improved Pitman.
George L. Jones, Vanville, . Wis.-This invention consists in a pltman having a alde-notched eye at each end, and a collar bushing combined with
a pln secured at both ends by a nut. By this construction, a washer aud pin secure the pltman can be forced farther upon the pina to take up the wear, by sccemingup the nut.

Improved Machine for Making Animal Shoes.
Willam Hamillon, Fallsburg, assignor to James L. Lamoree, Grahamville. N. I. -This iavention consists of an anvil, trip hammer, and two side ham ers, for hammering the shoe on the sides and edges. The anvil is fat on the top, and the hammer has a face which is the same form in outilne a that of one side of the shoe to be made, but wider, so as to Insure the ham.
mering of the upperside of the blank over all its surface. The hammer ts also beveled or tnclined to vary the thickness of the shoe and produce the requisite shape for the top. One of the side hammers is sha ped in respect of the contour of its face to correspond with the required shape for the outer edge of the shoe; the other is shaped to correspond with the inner dge, and both rest on the face of the anvil, and work toward and from each other to hammer the edges of the blank. These hammers perform way when the trip hammerfulls, to give the necesaary space for ot between them which is required by the greater width of the hammer than that of he blank. Theside hammers areoperated by thehelve of the trip hammer one being connected directly to an arm projecting from Its axis by a rod or hank, so as to be harown forward when the hammer rises, and the other elag connected to the same arm by a slmilar rod, and an intervening rock rition of the trip hammer. A bar la arranged on the trip hammernelve, 10 he actedog by the tappot wheel for ralalng the hammer, whicb eald bar ta ointed to the shank, and arraneed to swingoat of the path of the tappeta o throw the hammer out of gear, and fnto their path to put it in rear agaln.
George W. Burr, East Line, N. T. This invention La an improvement in he class of catches for door and gate latches, which are made vertlcally ssume in consequence of shrinkage, awellings, or other cause. The invenLon conslats in combining a $T$-shaped catch with a slotted holder or guard late, which is secured to the gate post by screws, so that br means thereo the catch Improved Corn Plow.
Jeremlah F. Trout, King allow an outward lateral movement to the lower part, with a apilng on the outside and alever on the fnside. The draftbars, which are attached to the frame and run along through slots in the plow stocks, are connected o the stock by wooden ptns, which are prepared, in respect of their The stocks an as to break readllyif the plows encounter too great resistance. break. Improved Ice Machine.
Thomas F. Peterson, Macon, Ga.-This invention consists of a boller, condensing coll and coollag tank, recelver, freeztng coll and tank, and pumps, all comblaed and arranged so that the ammonlacal gas expelled
from the boiler by heat ts compressed and condensed in the condensing coll, and then, after paening through the recelver, ta let into the freezing coll, and then, after pacoing throngh the recelver, is let into the freezing
coll, 80 as to expand thereln and freeze the water in the tank by taking up con, $o$ as to expand thereln and freeze the water in the tank by taking ap
the heat from it. It then pumped directly into the boller agatn for re. peating the process, and takes witb it the heat obtained in the freeser, and ande utilizen it inctood of vasting it.
 den, asmé place.-There 18 an anvil die and a hammer die for hammering down and reductigg the end of the tabe to be inserted. In the plece to be
welded on, or tor recelving the ferrule on the end to be fitted in the tube. The antil die has a part of its concare face made on a clrcle enough larger to equal the thicknees of the metal of which the tube 18 made, go
that the mandrel on which the tube tit to be bammered, belng entcred in
the the end to be reduced, will hold the tube. When hammered by the dite, it
will reat thereon, so as to be autably contracted and reduced, and not
 alone. A Ahoulder on the under part of the envil die forms the gage for
length. The anvid die and hammer de for welding the tubes together are

 Is of constderably greater length than the hammer die, to avold angular
indentations in the gurface of the tube. They also nave a mandrel. The tubes are presented from the rlkht hand filde, and held by the other end th
the hand of the attendant, to be turned and shifted $\begin{aligned} & \text { bout, as required. }\end{aligned}$
Improved Watchmaker's Tray.
Lrman B. Miliken, Snco, Me. -The object of this inven
Lrman B. Milliken, Suco, Me.-The object of this invention tis to furnish for the obe of watcomakers a conventent and handy tras, which enables
the workman to take down a watch movement and keep the diferent the workman to take down a watch movement and beep the different
wheels, each with its corresponding bridge, plas, and screws, separate, so

 with a serlise of concare indentationg, and a central raited
whle the detached parts are arranged separately around the aame.
Slmeon Smith, Jr., Newburgh,Teon. $\rightarrow$ Thistanvention
nation, with hopper and seed disk of a with compresible material bentnd appring, to teep the epace full to tox. the graln to pass under the pad frecly, and prevent any catching and cut ting or breaking of the gratn.

James R. Lidasa, Che cutting metal formed of two cutter bars connected by gtrapa to a hand
lever. and the cutters so shaped that bolta and rods of varylng ize, Ahape snd conAguration mas be cut with equal facility.

## Improved Knob Latch.

Walter Varab, New Haven, Conn.-A milled head being turned, a mleeve (os tis spiral slot, in which in pin) movea another bieeve tnwardly or out. spindlemay be connected with or difeconnected from the hub that operate the bolt.
 quite an amustng game may be played, serving, according to the fnventor,
to llluatrate, on a mall

 and the number belig optonal. A bottom hinged gate ts held acrosa the

 betng opponite or tn alignent, but each one occupylog a medlan positton
between the $t w o$ neareat posta of the opposite row. The balls will be rebetween the $t$ two nearest posts of the opponte row. The bails will be re.
tarded more or leat hy the posta, as well as diverted from their courne, but
 throush the three rows of posta to and over a second hurde.e. In passing
 medtate cross row of poats. They will now pee over another hurdie and
 enabing the one arrivitig artat to be accounted the winner and to acore
the ligheat number or count in the game, while others are allowed a count the highent number or connt in the game, wim
accordtag to their relative time of arrival.

Improved Gas Stove.
Willam G. Stelnmetz, New
Charles witteck and willam $G$. Stelnmetz, New York city.-The base part of the stove contains four buraere, and tie draft pasaggos are ar-
ranged above the same. The burner neareat the supply plpe produces the maln dratt through the pasagea, and lis, therefore, allowed to burn contin.
ually with a full supply of gas, while the auply of the other barners io ually with a full sapply of gas, while the aupply of the other barners is
cegulated bya aultable stopcock. A horzzontal partition plate separates the lower part of the base from the apper part, which forms whth the top
plate the combuation chamber. The parttion 18 vertically adjuatable to plate the combuation chamber. The parttion 18 vertically adjutable th
slota. The admbsion of alr to the combotion chamber ts accomplished through the perforations along the apper part of the base. The quan-
tity of air reaulred for the full combustion of the gas ts regulated by the higher or lower position of the partition of which the siota are par. tallly opened or closed. The buraers connect with the combuation cham-
ber by plpes which open tnto metallic extenation burners which extend
 glota, through which the blae heating names of the gas teane. A large air hole it arranged in the base for the admaston of $a$ stronger current to the larger coaing of the main burner.

Improved Ear Tube.
Henry B. Auchnclosa, New York city. - This invention conatits of as
tube arranged in any seat of a hall, charcb, or stmilar public building, and haring a rannel-ahaped month, eacilly adjabtable to sult the histo of the ear of the aner. The lower end of the tube 1s desigued to pase down
through the seat, and be connected with a tin tube paeolng beneath the seato or fioor, and pasasing up near the speaker's deak, where 12 shonld
then terminate In a funnel-shaped moath.

Improved Cam Sulde for Sewlng Machines.
ev Ard And wnilam Randel, Troy, N. Y. This invention of a block of steel or other materlal on the end of the needie arm which Works in the cam groove, so constrncted as to allde in the groove as 8
subbtitute for the roller commonls used. The block tis divided tinto two separate pleces, whose exterior faces are shaped so as to allow them to Blide freely llong the varying angles of the cam, and the intierlor racee are
 seep them apart to take up the elack that mayoccur by wear, and cauce them to fill the groove at all time

Improved Lamp.
 Trith a finnge having a polygonal periphery suapended above the plane, turn by catchtng upon the table or other subjacent artucle, just after the throws the lamp back, and cautee it to regain its equillbrium, or affords the person who has caused the accident time to seize it before demare to
done. .
 hoor trimmer, by which the horie's hoor maty be neatly pared on the fat
part, cleaned Irom the dirt, and trimmed at the outer edRe, so that the
 wardils to a point, and serves with its end for paring and cleaning the hoof while the lower part te s sed, in conneotion with a econd smaller ourred


Improved Spring Shank for Boots and Shoes.
Emil Briner, New York ctty.-This 1 an 1 Improved apring shank, is not only stronger at the polint of greateat stratn, and more fexible a the fore ende, but which may alioo be adjuated to variong degrees of elas.
ticity, as required. Two ppring shanks, of equal length and strengtt, are apread at the front ends, and are connected by a central pirot. Holpa are their front ends without weakentng the heel part.

## Improved Plow.

Ed ward Walter, Sallabury, Mo.-The upper part of the atadard 18 bifrr.
 an nut and washer. The beam tis ralsed or lowered as the nut is turned and thereby the share elevated or depressed scocodingly. The increased ing rod, wh below the beam.

## Improved Bax Holder,


 supporting gtandard, In whlch alldee adjatablythe end of the curved ateel
arme which spread sultable angles, Into a connecting spring.hoop, over which the hem of the bag 18.
hoop.

Improved Organ Coupler.
Charles W. Fossler, Adeline, Ill, asalgnor to himself and Chritetlan Fose er, asme place.-This timproved organ coupling cerice con itsts of a plvoted
 on throwing the platiorm up, the beys will come in contact with the arms
mhen depresed, and therebs couple the correaponding when depreesea, and therebs
nally depresead by the keys.

## Improved Grading Apparatus.

 rovive in bearings in a frame ataked to the ground, and to conneted hevel gearlng with a pulley around whlch passes an endless chatn. The
casin also pasees around a grooved pulley, pliveted to one end of an arm. the other end of which has a hole formed through it to allow it to be place apona post. The otherpartof the chasin 18 held out of the was by paseing arond a
wnich 18 formed a hook or eye to enable the end of a rope to be conve. niently attached to tit. The ropepasses over a pulleyplvoted to a bow, Fhich th passedo ver the end ofa screw post. The line 18 h held inplaceupon
 the arms of the plate, and thus bold the sald line. The Hine holder thus
 recelve wooden handee, and with eara to recelve the dratt chet whit connected with the endleas chatn. The scrapers mas ye illed and emp.
 om one place to another
Improved Apparatue for Feeding Steam Boilers With Air.
Martin E. Bollinger, Littlestown, Pa. AAn alr plpe leade directly from the feed pump to the boller trough a heating coll surrounding the fire, to
 to let of the pressure for a short tume when atarting. The ateam pipe enters the steam dome above the water inne. The plpe for the circulation


## Improved Variable Exhaust Valve.

David $\mathbf{H}$. Seamon, New London, Conn.-The valve is in the form of hollow trancated cone reversed, and 18 seated on the upper end of a trabe.
Gulde rode, rigidly connected with the valve by mean of arma, pasi through eara of the tube, and are connected with a semticicle on the end of a lever which extends baccs to the engine room, ao that the valve mas
be operated by the engineer or fremain as occaston may require. For pro-
 duclng what ti known as a "sharp" expanat or steam Into the chimney,
the ralve 1 s sept closed, so that all the gteam passea through the ralve. For $A$ less tharp exhauat, the valve tiraticed $\overline{\text { Bo }}$ as to make an annular open ar opening 18 graduated in alze to allt the exigenclea of the case, the leve betngarranged so that the valive may be get and held in any deaired poit tion.
 $\Delta$ renne Hotel. New Fork city - - Thit invention consiats in conneoting
 corresponding to that of one end of the locklag bolt. The fastentng attached to the door bymeans of a acrew bolt. and has a lip itting over
 ourh and jagged notchon and points to make it mpoosible to cut out the cord, 11 preferred, and, when uaed, the seal punch mas be dispensed with as thegleas will have to be broken to work the panh pln ; and when the look 18 saluated fort he use of the $\operatorname{swinging~hasp,~the~month~will~be~culta~}$ bly arranged for allowing the broven piecp of ghon of fall out.

Improved Device for Checking Horsees.
Ray,Colambus, KY,-Two brldiecheck rotl pulleys
Edwin R. Ray,Colambus, Ky.-Two bridie check rolia pulieya and a pulle
 to theotber, with the pullega revolving thereon. The oheok roina of the
 difference in the diameter of the bridia and atrap
a purchaee on the btt, which controls the borse.

Improved Machine for Upaetting Tyres.
Mathas Schon, Eng!iantown, N. J.- Thisia a mashine for upsetting of hortentng wa gon tyre or iron bars of other descriptions that mas be ope
ated by oneman. A trand has oneach fide a bar. Theesebara eupport


 ing the latter, po mer is applited to one of the gripe jawa which irto atrikee the tyre, when the other jaws are also caused to grtpe the tyre. The tyre Is in a heated date, between the twojaw, and is frmly held, ao that it can
have no longitudtnal motion, by the operator, whlle, with hio left hand, he grappa a cam lever, and forces the morable javo and head toward the other jaw. Thie movement canseas tre jointed bar to torn outward on ita hinge cyre reats thereon. In oase it bende apward, it may be forced down with a

## DavidMosman, Improved Door Bell.

 and to tita angle e it plvoted the hammer. The short arm of the hammer
projecta do
din projecte down into a mlot in the abank of the standara, and to tots end it The Inner part of the rod is $a$ nut, which atriker agannot the bave of the
oracket to 1 mlt the movement of the rod, and than regalate the force with which the hammer strikes the gong. $A$ wather prevente the ald nut
from belog tarnod upon the rod, and thas morta out of place by the con-

George C. Crum, Barr's Store, Inloved This Anve. ery ample mode of openiog a gate from the back of a ane in a novel and Improved Carrisge Curtain Fantening.
John Bannthr and Dantel H. Rhodes. Hempatead, N. F.-This invontio a fastening for carriage curtalas which will hold securelly, and to not
lable to become accidentally unfastened. Small slotted metallic plate are attached to the curtain at sultable potnts on the aldes and botom.

 - Iorod Unver Jor

Improved Universal Joint.
Hiram Prtcher, Fond du Lac, Wis - Tuns tarention relates to apparatus
asedfor conveging power and motton by meane of rods from the motor to the machtinery driven ; and it consists in a aniversal jolnt formed of cup plece and a head plece, with tntervening rollers. The ooter ends of
the rollers are made contcal, to prevent undue friction. The rollers re. rolve independently of each other ss they arc touched by the head, and Int allows the two couplthe rods to be placed st an angle with each other without Increasing the friction. The purpose for wilch this jotut
is more espectally dealkned is for connecting horse powers with thrshta

## achines.

Improved Vebide Wbeel.
Benjamtn Pearanan and Horace w. Pearran, Newburyport, Mass.-The oint tis made so far from the mildale of the epace between two of the spokes
hat the end of one segmentwill be supported by the spoke, and by cuttun the end or makitig the joint on a bevel, the other segment tis caused to art at the sey or an arch on the other segment, and be thas aupported. Whill
the jotnt tim made bevellig, the bolt tis pased through at a right ankle with
 dowellng the ends together

Improved Shoemaker's shoulder Tool.
 ing the edges of the eole and the ball edges of the heel, In which fle-cut raced diaks of hardened steel are ccmbined with the rubblog blade, 80 as $t$ The disks are adjuatably attaehed to be shifted around as they wear dull and several diaks of didicrent thlc crnesees are cone
nterchangeable for soles of different thicknesses.

Improved Mechantsm for Actuating Panches.
 projection upon tis side, ftting into ald notches, and a loose collar, combination with the gearing by which the machine is operated. By ope ating the lever the wheel 1 18 turned in elther direction, whichg ves motion
o the gearing. The pecullar construction of the lever and nothed to the gearing. The pecullar constroction of the lever and notched whee a new purchase, so that immense power may be applied by a series of tuc ceasive efforts untll the desired eftect has been accomplished. This power
when applled to a punchting preas, enablea the punch to oe readly torc when applled to a punching press, enables the punch to De readlly force

Improved Operating Mechanism for Hatches.
.
Winlam S. Harrit, Brookivn, N.Y. -This in vention relates to the holstin
 ope, chast, rods, or other device employed for connecting the hatch co from the topmost downward, and pasting throung a notcc or ere in then,
of pecullar construction. There is a knot above and belo the cover, 10 revelt the rope trom. Hith though the wit betprplaced such a distance apart as to allow of such little play of oope as mas be needed to each cover. The object is to elinplify th

Improved Loes Turner.
Willam E. Hill, Eree, Pa.-This ts an improved log turner, which 1 applited to the lop, and the rolilig motion of the log 19 produced by the con
tinuous motion of the ppur wheels wille allowing a t the asme time the immediste interruption of the rollt E . and the placing 1 posithon of the log for aming; the rolling mechanism to
then carried back to reat on the supporting frame out of the way of the haw. Wheellinith pivoted spura are provided for almultaneously ralida
 ported on s aupplemen tars cishioned frame and thrown 1 to gear with the diting power by sultable lever mechanism, which carries the wheel ap
oward the log. The brake ts applied by a goke with eccentric, band, and ever connection to the uppor wheel, ts lever servigg the twosold parpos of operating the brake and forctng the log into exact $p$.
on the carriage, and throwlag the log turner tnto gear.

Improved Music Loat Parner.
Lebanon, N. $\mathbf{H} .-$ This invention conalita of fingera, for
George sweatt , Lebanon, N. H.-This
turalig the sheeto, provided with a clrcular toothed base, and arranged one above another, on a vertcal plyot in a chamber, tin or below the mustc basd, along whlch a toothed bar to made to illde for ihrowing the finkere,
aid bar havilar a row of teeth for each finger arranged to operate them uocesaively. There are foot treadees, for midag the tooh hed bar for war and backward with pailesa, to be turned by them, and cord connecting aeld pullegs with the bar to move it by betng preased on them, one tread right to left, and the otber being to turn them back agann, when it mas be required to do so. The mnsic rack 18 adjantable forward and backword
celatively to the ingera. for turaling the leaven, and th held up to them bs springe, so chat the leaver between are esiwaso heid in the proper relatio othe ingere, whether the book be thick or thin

## Improved Portable Fence

James M. Wallis, Rocky Comport, Mo.-This is an Improved atas for Yencea. One brace is set in an Inclined pontitlon and extends to the top of
he fence. The foot brace, the lower end of which reats upon the ground the fonce. The foot brace, the lower end of which rents apon the ground,
is atsched to the other orace, near its middie point. To the braces are attached vertical bara. When the atays are applied ion rall fence, the fon befence atsched in such a position that it rasy bara are used, and the ends of the ralls of the adjacent panels are place apon each other alternately. The top ralla ane placed above the brace trat mentioned, a block belng notched and atted into the apace be

Improved Dumping Wagon.
Charles Campbell, Cambrige, Wis.-The hind part of the bottom is st tached to a roller, suapended under the box aldes. The front end rests on a crose barf satened to the box sides, and the rear end la held up by $a$ honk.
The hounds of the hind truck are fastened to the cross bar. The fore fart of the b bar, so as to be detached when the load is to be discharged to let the crosind end of the fore part of the bottom down. The connection is made by a
staple which passea up through the bar so as to be fastened by a long rod Which mildes in from thasideof the wagon box, mo that itcan readily be rou which alides in fro
in and taken out.

Improved Apparatus for Puddling Iron.
Joseph Davies, Rnozville, Tenn.-This invention consista of two pud-
ang tools, one revolving and the other having a reciprocating notion within a rotary farnace. It is belleved that, by the rotation of the hearth In this manner, the padding toolsoan be worked by power in a simple way,
beasase the iron ta brought to them by the hearth; and by ualdg Dower beciase the iron is brought to them by the hearth;
detrea toola, the puddier't labor to maub lewened.

