

lengthwise on the card. It represents the interior of a drawing room, a paneled wall, chimney piece, etc., forming the background. Two of the figures are seated at a grand piano, playing a duett, while a third one turns over the music; a fourth, standing near, leaning on the chimney-piece, apparently listens to the music; a fifth sits with an embroidery frame on her lap, engaged at work; another sits before a writing desk, or Davenport, writing a letter; while another stands by with a letter in her hand, apparently in conversation with the last. The scene is simple and domestic; a family group at home. The grouping is admirably managed, the photography exquisitely perfect and delicate, at once excellent in definition, light and shade and pictorial effect.

Another new style is a full-length *carte-de-visite* portrait of a gentleman, front view, and on the back of the card is pasted the portrait of the same person, in the same position but taken from his back, and this being reflected in a little piece of looking-glass placed in front of the back picture, you see the whole of the gentleman at one glance, both front and back view.

NEW INVENTIONS.

The following are some of the most prominent of the patents issued this week, with the names of the patentees:—

STOVEPIPE DRUM.—C. C. WEBBER, Calmar, Iowa.—In this stove drum are a series of flues to thrice convey the product of combustion from end to end. In connection with the central flue is an adjustable pipe, worked by a rod passing out of the top of the drum; by adjusting this a direct passage of products can be formed with the stovepipes, or by lowering it the circuit can be established.

CLOTHES-WASHING MACHINE.—PHILIP VAN BUSSUM, Henderson, Ky.—This invention consists in a novel construction and arrangement of the concave and the manner of applying the pressure thereto, whereby it is believed that a very simple and efficient washing machine is obtained.

HOLLOW AUGER.—J. H. SMITH, Pineville, Pa.—This invention consists of a frame or stock provided with an adjustable center rod, two adjustable jaws, operated by a right and left screw, and cutter.

CULTIVATOR.—ISAAC AVERY, Ottawa, Ill.—This invention consists in an improved draught attachment, whereby the device may be operated or drawn along by a moderate application of power, the plows moved either vertically or laterally, and the whole device placed under the complete control of the operator.

STENCH TRAP.—FRANCIS H. WILLIAMS, Syracuse, N. Y.—This invention consists in a sink, the interior of which is provided with an inclined apron extending over the edge of a tray in combination with a valve which closes the communication between the sewer and the tray in such a manner that water or other liquid poured down through the sink will fill the tray and then by forcing the valve open run down to the sewer, but as soon as the supply of water stops the valve closes down on its seat, and the water contained in the tray, together with the valves, prevent the escape of stench from the sewer through the sink.

This inventor has also secured another invention for a similar purpose, which consists in the arrangement of a siphon tube with a floating valve, in combination with the sink or waste pipes leading from the sink or sinks in a building and with a suitable pipe leading to the sewer in such a manner that by the liquid remaining in the lowest part of the siphon, and by the valve, the communication from the sewer back to the sink is firmly closed and the escape of stench from the sewer into the house or building is prevented, and at the same time the communication from the sink or waste pipes to the sewer is uninterrupted.

STOVEPIPE DAMPER.—B. F. COWAN, New York City.—This damper is a hollow spheroid and revolves within an enlargement of the same shape made in the pipe where it is used. The flattened sides of the damper and of the enlargement in which it revolves are parallel with each other, and are also open. The damper is suspended from points which are midway from its flattened sides, and its place of suspension in the pipe is likewise midway of the flattened sides of its enlargement, so that when their flattened sides coincide with each other, an opening is formed through the pipe and through the damper from side to side, and communication between the lower part of the pipe and the upper part is interrupted.

TRUNK.—LUTHER JACKSON, Newark, N. J.—This invention consists in the arrangement of spring stops on the ends of the inside cover or tray in such a manner that when the tray is opened it is retained by the spring stops, and not liable to close down spontaneously, to the great annoyance of the person packing or unpacking the body of the trunk.

MUSICAL ATTACHMENT TO CAGES.—G. GUNTHER, New York City.—This invention consists in the application of a music box to a cage, in combination with a suitable detaching lever and rod extending in the interior of the cage in such a manner that whenever the bird jumps or steps upon the rod or stop lever, the music box begins to play, when wound up, and an agreeable surprise to the persons in the room is effected.

MACHINE FOR FLUTING WASHBOARD.—CALVIN J. WELD, West Warshoro', Vt.—The object of this invention is to provide mechanical means for fluting washboards, and it consists in a novel construction of devices for feeding the boards to the cutters; in raising the carriage when it is moved back, so as to keep the boards from interfering with the knives; in the holders that

keep the boards in proper position while their flutes are being cut, and in the construction of the knives or cutters that produce the flutes of the boards.

CASTER BOTTLES.—BURROUGHS BEACH, West Meriden, Conn.—This invention consists in arranging within the bottle and extending in the direction of its length, a center shaft or spindle, having a series of radiating arms, in such a manner that without opening the bottle, it can be rotated therein, and thus by means of its several arms thoroughly pulverize the salt or other article in it, so that it can be freely discharged through its perforated cap.

ARTIFICIAL HANDS.—J. F. MAGUIRE, East Boston, Mass.—This invention consists in a novel manner of hanging the fingers and thumb to the hand, whereby they can be made to firmly grasp and hold articles of various shapes and sizes, and the fingers can be operated independent of the thumb.

OIL WELLPUMP.—W. E. MORRISON and W. L. BETTS, Funkville, Pa.—This invention consists in attaching to the piston rod of the pump, above its upper valve, a cup-shaped vessel, perforated upon its sides and bottom, with its open end up. This vessel surrounds the rod, and is of a size to closely fit within the pump or well tube; and in the operation of the pump, it acts as a receiver for rivets or other articles falling through the well tube above it, by the presence of which heretofore much damage has been caused to the pump valves, etc.

INVALID BED.—HENRY CARDES, Bellville, N. J.—The object of this invention is to furnish an improved bed for hospitals, for use when the invalid is too feeble to be moved, in order to preserve the bed from becoming wet or defiled. It consists of a series of pipes, plane and concave plates, and a valve, combined with each other and with a bed or mattress.

BURGLAR ALARM.—R. M. WEBB, New York City.—This invention consists in so arranging upon the inside of a door, and with regard to the key hole of the lock in it, a device connected at its inner end with any suitable alarm that when a key is inserted in the door from the outside, or any tool used in the key-hole for picking or forcing the lock, the alarm will be instantly set free and sounded.

CURING ROLLER FOR CLOTHES WRINGERS, ETC.—J. B. FORTY, Roxbury, Mass.—This invention consists in curing a roller made of india-rubber or other vulcanizable gum on a hollow metallic core in such a manner that the heat is equally diffused throughout the entire mass of vulcanizable gum and the articles produced are of superior tenacity and toughness.

LAMP CHIMNEY AND SHADE.—J. H. CONNELLY, Wheeling, West Va.—By using a cylindrical glass chimney with a metallic cap piece, the durability of the chimney is greatly increased and liability to fracture by heat avoided. The cap piece is so formed as to constitute a most convenient means of applying the improved lamp shade to either the improved or common chimney.

SUPPORTER FOR WINDOW SASHES.—BURROUGHS BEACH, West Meriden, Conn.—This invention consists in a novel manner of operating the arms of the sash supporter, of that class having two arms hung upon a common center, whereby, when so desired, they can be both swung or turned, and in conjunction with each other, as to be entirely relieved from the sash.

CORSET SPRINGS.—SAMUEL H. BARNES, New York City.—This invention consists in forming the springs of corsets of two or more thin metallic plates, placed one upon another, and so fastened together that they can move upon each other in the direction of their length, as the springs are bent, whereby their flexibility and elasticity, as well as durability, are greatly increased.

HATS AND CAPS.—CHARLES L. RAHMER, Brooklyn, N. Y.—This invention consists in a novel mode of securing the sweat lining within a hat or cap, for the purpose of allowing its interior to be ventilated when worn, while at the same time, the edge of the lining so secured, and which comes in contact with the head will readily adjust itself thereto, without being in the least degree inflexible.

THE MARKETS.

The exports of specie from the port of New York since January 1st amount to \$49,363,138. For the week ending July 18, \$2,289,270. Gold has fluctuated considerably. On Monday, the 15th, it was at 148 1/2 per cent, but next day it was 150 and above. The rate of interest was lower than before. Call loans are readily adjusted at 5 per cent.

ASHES.—Pots are quite dull, but with continued light receipts, prices are supported; the sales are a few small lots at \$25@28 3/4. Pearls are unsettled, and offered at lower rates, and we hear of no business.

BRICKS.—Common Hard have advanced to \$10 50@11 50. Croton and Philadelphia are unchanged at \$14@15 for the former, and \$40 for the latter.

CEMENT.—Is in steady demand at \$1 75 cash.

COFFEE.—Laguayra, 17c.; Java, 2 1/2c. gold, 32c.@33c. currency.

COPPER.—Detroit, 33c.; Portage Lake, 33 1/2c.

COTTON.—Fair demand. Ordinary, 25c.@26c.; middling, 32 1/2c.@37c.

FLOUR.—Common brands, \$8 30@10; Genesee extra, \$10 30@13 50; Canada, \$8 70@10 20.

MEAL.—Rye, \$6 75@7 40; corn, \$4 75@5 10.

GRAIN.—Corn, 82c.@83c. medium Western; 83 1/2c.@84 1/2c. extra; Oats, 50c.@51c.

HIDES.—The market is dull, but prices are very firm. The sales are 1,900 Buenos Ayres, 2 1/2c., at 13 1/2c.; 600 Montevideo, 2 1/2c., 18c. gold; 2,000 do., 2 1/2c., 26c. currency; 5,247 Rio Grande, 2 1/2c., 16c. gold, 20 days; 200 Wet Salted do., 6c. do., and 2,500 Texas, 2 1/2c., on private terms.

IRON.—The market for Pig is quite firm, but there is not much demand at present, and the business is small; we only notice 300 tons Glenarneck Scotch, part at \$47, ex ship; small lots Glenarneck and Garsherie, \$18@18 1/2, and 100 tons No. 1 American, part for export delivery, \$44 cash. There is no change in prices of Bar Iron store, and the demand is light.

LATHS.—Are firm, with sales of 1,000,000 Eastern, at \$3 25, three months.

LEAD.—The market for Pig has become quiet, and while the advanced prices are supported, yet it is scarcely as strong as last week; we notice sales of 300 tons Spanish and English, at \$7 25@7 50 gold; some choice brands of English are held at \$7 75. Bar, \$11 75, and Sheet and Pipe \$11 44 @ 100 lb.

LEATHER.—The market for Hemlock Sole continues moderately active, and prices remain very firm. We quote Rio Grande and Buenos Ayres Light Weights, 32c.@33c.; Middle do., 31c.@35 1/2c.; Heavy do., 36c.@37c.; California Light, 31c.@32c.; Middle do., 33 1/2c.@34 1/2c.; Heavy do., 34c.@35c.; Orinoco, 4c., Light, 30c.@31 1/2c.; Middle do., 32c.@33c.; Heavy do., 29c.@32c.; Slaughtor Upper in Rough, 3c.@3 1/2c. Oak Sole is active at previous prices. French and American Calf Skins are in fair demand and firm.

LIME.—Rockland is in fair demand, with sales of 3,000 bbls. at \$1 50 for Common, and \$2 10 for Lump, cash.

LUMBER.—There is a good demand for Eastern Spruce, with sales of 465,000 feet at \$23@26, usual terms.

MOLASSES.—Cuba (clayed and Muscovado mixed), 50c.; Muscovado, 52c.@55c.; Demerara, 85c.@75c.; Porto Rico, 65c.@80c.

NAILS.—Cut, 6 1/2c.@7c.; Clinch, 8 1/2c.; Forged Horse, 32c.@34c.; Pressed do., 22c.@24c.; Copper, 50c.; Yellow Metal, 33c., 2 1/2c., 20c.; and Ship and Boat Spikes, 7 1/2c.@8c. for 5 and 6 inch, and 7c.@7 1/2c. for 6 1/2 and 8 1/2 inch, net cash.

SUGAR.—Hard white, 16 1/2c.; soft white, 15 1/2c.@15 3/4c.; yellow, 13 1/2c.@14 1/2c. cash. Raw sugars—Cuba, 9 1/2c.@12 1/2c.; Clarified Porto Rico, 11 1/2c.@14 1/2c.

WIRE.—Telegraph, 9c.@10c. for Nos. 7 and 11, and for hoop skirt, 55c. for No. 13 covered, and 50c. for an uncovered.

WOOL.—State and Western fleeces, 50c.@60c.; pulled, 57 1/2c.

ZINC.—9 1/2c. less 4 per cent. for gold.



J. U. R., of Pa.—The largest monitor is the *Dictator*.
J. W. C., of Ill.—Persons who preserve fruit and vegetables, acknowledge that green peas are very difficult to keep. We have seen specimens of what were called "fine," but they did not strike us as a success. Perhaps some of our readers will tell us the best way.

W. J. W., of Ill.—We published a recipe scarcely a month ago to prevent dampness on brick walls.

J. J. W., of N. B.—Siphons of so great a length as yours are apt to cause trouble by air collecting in the highest part. It is a question whether it will supply the boilers even in number and 36 feet long. The way to find out is to measure the boiler evaporation for a given time. We cannot tell without more facts.

M. P., of Mass.—Many engines are now run by water instead of steam.

G. S. B., of Mo.—You have made a confusion in terms. The common eolian harp is acted upon by the air, but an eolian attachment to a piano is another thing, and is made to imitate the peculiar tone of the wind instrument.

F. E. H., of —.—If you will look in the back numbers of the *SCIENTIFIC AMERICAN*, you will find a good deal upon the time to cut timber. That cut in the months of August, September, and October, is found to be the hardest, heaviest, and most durable, by actual experiment.

C. J. H., of N. Y.—We have examined your valve and its arrangement. Will not the steam leak through about the diaphragm as much as it would by unequal expansion of the valves? This trouble is very much overrated.

N. C., of Wis.—Any respectable hardware firm will sell you genuine emery.

A. D., of Ind.—We have used plain collodion to give an insulating coating to copper wire, with good results. Gun cotton and the dried collodion film are among the best known electrics. There is no such coated wire on sale.

R. J., of N. J.—An ordinary jackknife seems generally to be the most handy instrument for removing the tin-foil caps from bottles. This so-called tin foil is lead foil with a very thin skin of tin, and costs only about 30 or 40 cents per lb.

IMPORTANT DECISION IN INTERFERENCE CASE.

BEFORE THE EXAMINERS-IN-CHIEF ON APPEAL.
S. H. Hodges for the Board.

Interference between the application of Wait and Phelps, and that of A. Witherell.

No testimony was filed in this case by either party. On reference to the oaths of invention filed with the application, that of Witherell was found to bear date one day previous to that of Wait and Phelps; and, in accordance with the practice of the Office, the question of priority of invention was therefore decided by the Examiner in his favor.

On inspecting the files anew, however, it appears that the authority of the Justices of the Peace, who administered the oaths, is not certified by the County Clerk of their County, in either case, nor by any other officer who is shown to have the custody of their commissions. This was once required by the regulations of the Patent Office, but is no longer insisted on in practice. It is perfectly competent, no doubt, for the Office to dispense with it in *ex parte* hearings, and receive as evidence of the oath, the unsworn jurat of the magistrate, without inquiring into his authority. If they are satisfied, no one else can well complain, in such cases. But, when the question is between adverse parties, it is to be tried upon the usual rules of evidence, modified by such positive regulations as the Commissioner may prescribe. Among these rules of evidence, it is well settled, that the certificate of a Justice of the Peace, to an oath, is not admissible in trials at law, unless his official character is established under the seal and signature of the officer who has the legal custody of his commission, or is otherwise legally cognizant of his character.

In the course of the proceedings against Aaron Burr, an affidavit of his character, sworn to before such a magistrate, in New Orleans, was excluded upon two grounds, one of which was, that the certificate of the Governor, which stated that a man of the name bore that character, did not also state that he was the person signing the jurat. In *Dunlap vs. Waldo*, 6 N. H. R., 450, a deposition was offered, which had been taken before a Justice of the Peace in New York, and his authority was certified by the Clerk of the County in which it was taken. It was objected to as not sufficiently authenticated, and the necessity of some such voucher was distinctly recognized by the Court in a very full and elaborate discussion. But it appeared further, that in New York the County Clerk has the custody of the proper evidence of the magistrate's official character, and of his having taken the oath; and upon that ground only was the deposition admitted. There can be no question as to the insufficiency of the oaths in the case before us, as evidence between litigating parties. They must therefore be laid aside, and resort must be had to other testimony. No other means of ascertaining the dates of the invention by the respective parties remains except the filing of their applications. That of Witherell's was received in the Office on the 25th of February 1862; that of Wait and Phelps on the 14th of the same month. The latter must, accordingly, be adjudged the first inventors.

As there are reasons for supposing that this determination may operate upon Witherell as a surprise, he ought to be allowed an opportunity to introduce testimony upon the question, and to have a new hearing for that purpose.

The decision of the Examiner is reversed, and Wait and Phelps are declared to be the first inventors of the device in controversy.

Washington, D. C., Nov. 25, 1862.

Improved Car Coupling.

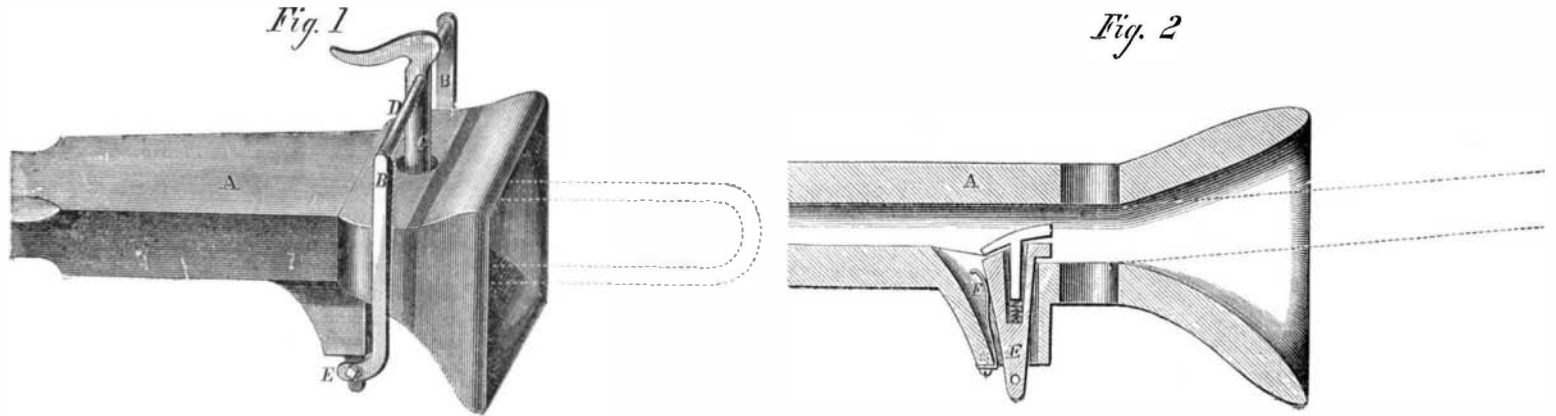
There have been many accidents, some of them fatal, in coupling cars in the ordinary manner, and a number of attempts have been made to devise some efficient self-acting coupling, which would obviate the necessity of getting between the cars in the operation, but as none of them have been extensively adopted by railroad companies, it may be inferred that the difficulties in their use outweighed their apparent advantages. The engravings herewith presented illustrate an improved coupling, which, the inventor says, "works beyond my best expectations, being simple and not liable to get out of order. It is said by practical railroad men, who have seen it,

of springs for expanding the rings of cylinder packings. The springs must be set when the cylinder is cold, and while working their tension is affected by the difference in temperature between the ordinary atmosphere and steam. The rattle of loose piston rings while the engine is working, and the loss of steam, and consequently of power, by ill-fitting packing is vexatious. Devices have been contrived to admit steam to the interior of the piston to act as an expander of the rings, but they are usually complicated and liable to derangement. The object of the improvement illustrated by the engraving is to make the use of steam for this purpose economical and effectual.

inner surface of the ring. The ends of the plugs or cylinders, H, act as check valves, alternately on the inner face of the head and the follower, according to the motion of the piston. The arrows show the direction the steam takes in the forward stroke. It will be seen that the steam cannot fill the inside of the head, neither can it find a passage through. It must expend its expansive force directly on the rings themselves. Patent pending through the Scientific American Patent Agency. For further information address Bernard Jacobs, Selma, Ala.

Are You Insured?

The total amount of property destroyed by fire in

**PARSONS'S CAR COUPLING.**

to be the best self-acting coupling they have seen, as the common pin and link can be used with it."

Fig. 1 is a perspective view of the coupling complete, and Fig. 2 is a sectional view of the same, showing the catch pin. A is the draw bar or shell, of cast iron as usual. The bars, B, Fig. 1, are of round or half-round iron, and slide up and down in slots cut in the sides of the shell. They are connected at the top to the pin, C, by the bar, D, and are curved under at the bottom and meet at the catch pin, E. It will be seen that when the pin, C, is raised, the catch pin, E, is also raised, and the head catches on the edge of the V-shaped space, and is held in position by the spring, F, thus sustaining the pin in its elevated position.

The operation is simple. The link passes in, and striking against the catch pin, drives it back, thus letting the link pin drop, while the catch pin, at the same time, falls out of the way. The subsidiary pin, G, drops into a hole in the catch pin, at the bottom of which hole is a coiled spring. This is intended to present a higher surface to the action of the link, so that when it is presented at an upward angle it cannot pass over the head of the catch pin without striking. The subsidiary pin is kept from lifting out by means of a key.

A shoulder is cast upon the inside of the shell back of the link-pin, which prevents the link from passing into the back of the space in which the catch pin plays. This secures the catch pin from injury. The back of the head of this pin is beveled so that the link, in uncoupling, cannot catch it, but will slide over the top. The seat of the link is on an incline and the mouth of the shell unusually flaring, especially on the lower lip, to insure the entrance of the link at all angles.

This improvement was patented Feb. 13, 1866, by J. H. Parsons, Quincy, Mich., whom address for further information.

Improved Piston Packing.

There is always more or less annoyance in the use

A represents the "spider" or piston, in which the rod, B, is secured in the usual manner. C is the follower, fastened in the ordinary way, by bolts, the heads of which are shown at D. A circle or annular ledge, shown at E, supports the inner ring, F. This ring is in two semicircles, one end of each furnished with inward-projecting lips which project toward the center in radial spaces which divide the rim, E, into two parts. These lips are to retain the inner ring in place. This ring is beveled or inclined on its outer surface from the center to the edges, and on its outside circumference are fitted the outer rings, G, which are sawed obliquely across in segments in the usual manner. Their edges are ground to the inner surfaces of the head and follower steam tight. It will be seen that any pressure from the inner ring

this country, during the past six months, is estimated at \$44,000,000. The insurance companies have suffered heavy losses, but with few exceptions they have faithfully responded to every call. We advise all property owners to get their buildings insured. They have no other reliance against losses by fire.

Red of Sorghum.

It is a fact long known, that sorghum contains a red coloring-matter. The following is the process used by Mr. Winter to extract it:—

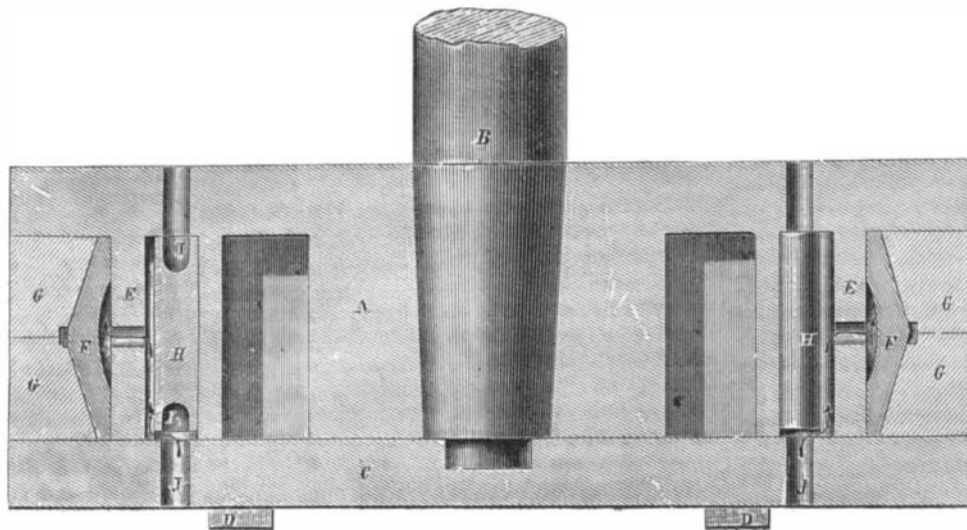
The canes of the sorghum are stripped of their leaves and reduced to a pulp in a rolling mill, and well pressed, to extract the juice from them. The juice is used to make sugar or alcohol. The ligneous tissue soon begins to ferment rapidly. Care must be observed to prevent too rapid fermentation, because by an elevation of temperature, the mass will become putrid. When the operation has well proceeded, and the mass, after fifteen days, has acquired a red or brown color, stop the fermentation by drying, and grind the matter to divide it.

To isolate the coloring matter, infuse the powder for twelve hours in cold water, which dissolves a little coloring property. Press the mass strongly and put it to macerate with a very weak caustic lye, filter, press, and saturate the liquors with sulphuric acid. The coloring matter is separated in red

flakes, which are collected on a filter, washed, and dried. This color is nearly pure, very soluble in alcohol, alkalis, weak acids, etc.

To dye silk and wool with it, use the ordinary tin mordant. Mr. Winter has noticed that the dyes made with this red resist the action of the light, and a moderate bath of hot soap. The extraction and uses of this coloring matter are known and practiced in China, where sorghum is cultivated on a large scale.—*Bulletin de la Soc. d'encour.*

In 1740 only 17,360 tons of iron were made in England, and no less than 2,275 tons were imported during the same year, from America.

**JACOBS'S PISTON PACKING.**

outwardly would have a tendency not only to force the outer rings against the inside of the cylinder, but also to press them firmly against the head and follower. This outward pressure is effected by steam. In lugs cast in the spider, just inside the circular ledge on which the inner ring fits, are holes reaching from the inside of the follower to the inside of the head, in which are loosely-fitting cylinder plugs, H, with a drilled recess at each end, as at I. A semicircular or concave recess, forming a part of this hole, connects by small apertures in the head and follower with one through the annular ledge, E. Now, if steam is admitted at J, it finds its way to the outside of the ledge, E, and fills the annular recess, F, on the