

THE WYCKOFF WOOD PAVEMENT.

The accompanying engravings exhibit the construction of the Wyckoff wood pavement, for which the following advantages are claimed: Superior cheapness and ease in construction, with durability. It can be taken up for the purpose of laying water pipes, gas pipes, or other purposes, and relaid without injury.

Fig. 1 represents the upper surface of the pavement, and Fig. 2 is a section of the same.

The openings being irregular in form and position, afford a good foothold for horses, and being filled with gravel and cement from top to bottom, make a solid and easy roadway. The courses being irregular prevent sweeping out of the material between joints, and also produce less jar upon vehicles than regular courses.

This pavement is very simple in its construction, and not liable to get out of order, a split block being irregular in surface, gives the cement a better chance to adhere, forming a key, so to speak, which prevents their moving out of place. Split blocks are more durable than sawed, for the same reason that split shingles are better than sawed; they will repel instead of absorb moisture. The blocks are cut off the log, six inches in length, and split into an irregular shape, of sufficient size for openings to accommodate the horses' foothold. These blocks are then thoroughly saturated in boiling tar. Upon the street being properly graded, a close flooring of boards is laid down, both sides of which are previously mopped with a coat of hot tar, care

Fig. 1

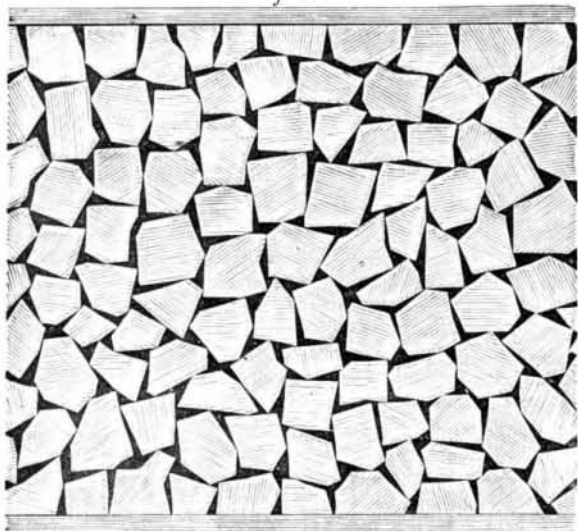
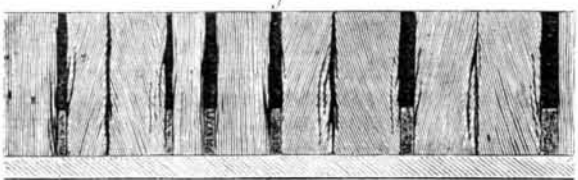


Fig. 2



being taken to make a perfectly even surface. Then upon this the tarred blocks are set up endwise, side by side against each other, without an intervening board partition, as is required by another method; and sawdust, tan bark, or any other fibrous material, is put in the crevices, to the depth of about one inch, which forms a perfect packing around the blocks, preventing the gravel from working under them. The remaining spaces are then filled up with heated gravel, and hot tar poured over it, after which the whole surface is cemented over with tar, gravel, and sand, which may be left on until thoroughly packed in the openings, which gives a hard, smooth surface. The longer it is used, the smoother and more compact it becomes, as the gravel and sand are being constantly tamped into the crevices. After a sufficient time has elapsed, the gravel and sand may be swept off the surface. It has been extensively laid down in the city of Elmira, and also in Pittsburgh, Pa.; Detroit, Mich.; Williamsport, Bellfonte, and Towanda, Pa.; at which places it can be seen and tested. Patented June 2, 1868. Further information can be had at the office of the Wyckoff Wooden Pavement Company, Elmira, N. Y.

Rating Steam Engines.

Messrs. Barnet, Le Van & Co., of Philadelphia, Pa., write us that they are glad we are agitating the question of uniform standards in rating steam engines. We are sure our views will also commend themselves to other manufacturers of steam engines. This firm has adopted a standard for rating, making the cut off at two-thirds stroke, and seventy-five pounds boiler pressure. The mean effective pressure, calculated from these data, should be, in a well constructed engine, 0.82 of the boiler pressure, or 61.40 lbs. We do not think this firm is the only one that is using some such standard of calculation; what we contend for, is, however, a uniform standard for general adoption and use.

POISONOUS CHEMICALIZED WOOD.—Mr. John O. Connell, whose communication in regard to the poisoning of workmen by chemicalized wood, in the erection of a railroad depot, recently appeared in these columns, now writes that the wood was prepared by a process known as the Foremaniger Patent. Another victim has since died. We have sought to find this patent in the published reports, but have failed, and can therefore give no details of the process.

STRONG'S PATENT FIREPLACE.

The accompanying engravings represent an improvement in fireplaces, patented by James C. Strong, of Buffalo, N. Y., Sept. 21, 1869. The object of the invention, which is constructed on correct principles, is to increase combustion by a consumption of the gases which in ordinary fireplaces mostly pass off through the chimney.

The back of the fireplace recedes from the bottom toward



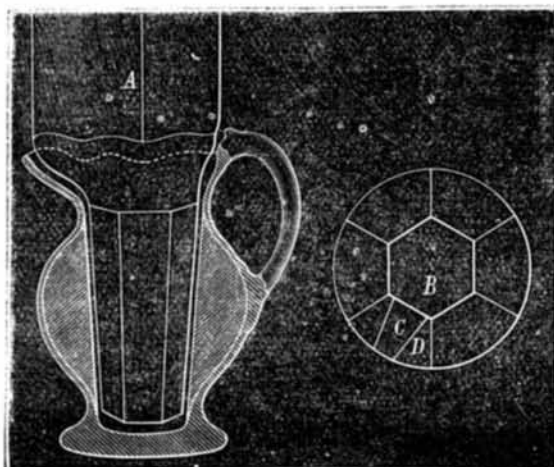
the top, as shown in both engravings, thus forming a deep space or chamber above and in rear of the fire basket, in combination with an inclined corrugated top, inclining upward from the back toward the front. Back of this recess or chamber is an air chamber, supplied with air by means of two apertures, *b b*, under the fire basket. From this air chamber many small holes are perforated through the back of the fireplace, *a*, through which currents of heated air are continually distributed into the back of the fire, thus supplying the gases evolved by the burning coal, with much more oxygen than they could receive from the front alone, at a place where the temperature is always high enough to ignite them, thereby creating more perfect combustion, and, of course, obtaining more heat from the same amount of fuel.

The corrugations in the top, more clearly shown in Fig. 2, retard the gases in their passage to the throat of the chimney, and keep them rolling back into the fire, thus giving more time for them to unite with the oxygen. The inclination of the top assists greatly in reflecting the heat into the room. The consuming of the gases greatly lessens the amount of smoke, so that this fireplace can be used in chimneys that sometimes smoke with an ordinary open fire. These fireplaces are made for both hard and soft coal; the only difference being that the fire baskets for soft coal should be much deeper on the bottom than those for hard coal, simply to give more room for the soft coal; but hard or soft coal will burn equally well in either kind of fireplace.

This fireplace has taken the first premium at fairs wherever exhibited, and has given perfect satisfaction to all who have tried it. Any information respecting the fireplaces may be obtained by addressing the patentee, James C. Strong, Buffalo, N. Y.

PIERCED CORES IN METAL CASTING.

Mr. William Porteous sends us the accompanying diagram showing how the castings exhibited by Mr. Lankenheimer



at the recent Cincinnati Exposition were made. The engraving shows the principle as applied to casting a cream pitcher.

The core is made in pieces, similar to those of a hat-block with bearing, *A*, Fig. 1, to rest in the sand. The central part of the core, *B*, Fig. 2, is hexagonal, and, when withdrawn, the

pieces, *C* and *D*, are taken out and the remaining pieces can then be removed.

We are quite certain this principle is not a new one in the making of cores, but it may, nevertheless, give a useful hint to many of our mechanical readers. Mr. Porteous, who sends the drawing, is the maker of the articles mentioned as exhibited at Cincinnati.

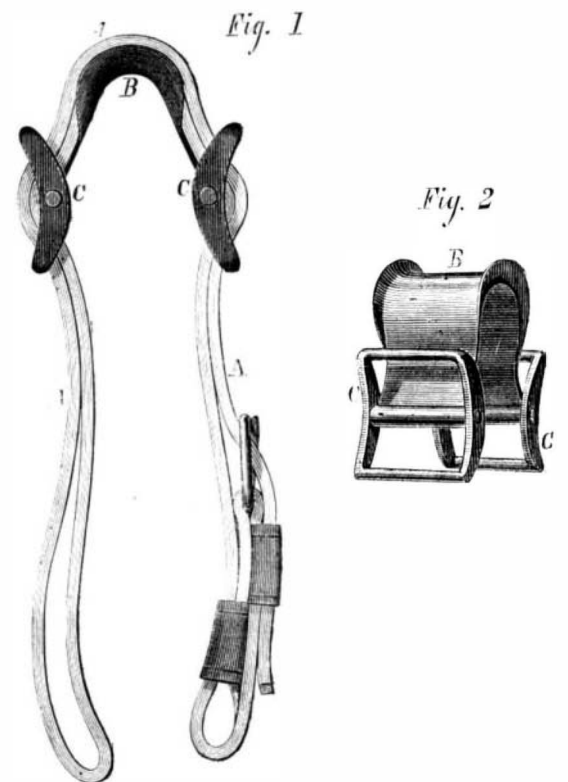
IMPROVED BREAST-STRAP PROTECTOR FOR HARNESS

Our engravings show an improved method of protecting the breast straps of harness, by which they are saved from rapid wear. It consists in the combination of a curved shield with two links, which are hinged to the ends of a shield, and clamp the latter to the breast strap.

Fig. 1 is an edge view of the whole attachment and Fig. 2 a side view of the shield with the links. *A* represents the breast strap, and *B* the curved metal shield, placed against the inner side of the breast strap, and its curvature being such as to fit the strap, as shown in Fig. 1.

To the ends of the shield are pivoted central cross-bars of the two links, *C*. These links are made of iron or other suitable material, in the form shown in Fig. 2. Their sides are slightly bent, to give the peculiar shape shown in Fig. 1.

The strap is drawn through both links, and rests against the outer surface of the shield. As draft is applied, the links firmly clamp the shield against the strap. The ring of the neck yoke will wear against the shield instead of cutting away the strap as has hitherto been the case. Instead of merely being drawn through the links, the ends of the breast



strap may be attached to the outer ends of the links. The strap would in that case, extend from the link to the collar, and thence forward through the link and around the shield, the action of the apparatus being the same as in the other method of attachment above described.

Patented, Sept. 6, 1870, through the Scientific American Patent Agency, by Lorenzo R. Ward, of Ward's Corners, Iowa.

PERPETUAL MOTION.

We shall commence in our next issue a series of illustrated articles on Self-Motive Power. We have ample material for extending the subject through the year 1871, but shall continue their publication no longer than they are likely to prove of interest to our readers. For many of the designs and descriptions we shall lay tribute to a recent London work, edited by Henry Dircks, C.E. Others will be obtained from local sources, many of which possess most melancholy interest to those who have expended a life of study and a fortune in pursuit of the chimerical "Perpetuum Mobile."

How to Stop the Leakage of Gas-Taps.

Many people are annoyed by the slight leakage of gas-taps, causing an offensive odor deleterious to health in the apartments where they are placed, and also increasing their bills. In many cases they may easily remedy the evil without sending for a plumber or gas-fitter. To do this they should turn off the gas back of the meter; then take out (a screw driver is all the tool required) the plug. Next light a wax, sperm, or paraffin candle, and drop the melted wax, sperm, or paraffin upon the surface of the plug, till it is covered with a thin layer. Next, screw in the tap, and in nine cases out of ten the leak will be stopped, and remain stopped.

THE manufacturers of Berlin who have given employment to German workmen expelled from Paris, are said to be extremely well satisfied with the result. A great number of handsome and useful objects, known as *articles de Paris*, can be already produced in Berlin, quite as elegant as those of the French capital, and considerably cheaper. We believe the French will one day discover that they made a grand blunder in driving beyond their frontiers an industrious population who have so largely contributed to the prosperity of France.