New Inventions.

New Amalgamator.

Among the many attempts to facilitate mining operations, which the Californian discoveries have prompted, there is one by Perry G. Gardiner, of this city, for which he asks a patent under the designation of "new and useful machinery for washing and amalgamating gold and other metals." Mr. Gardiner thinks he has added facilities to these operations with contrivances which he calls "rotary scourers." These are made to rotate, the one above the other, in scouring vessels, so as to bring pulverized quartz, or other forms of crushed ore in more minute contact with mercury placed in a "well" at the bottom of each vessel, than is attainable by other arrangements, as the inventor believes. The gain aimed at in this *series* of scourers, is such a gradual washing of the auriferous mass as shall control the too rapid escape of the earthy particles, and the water, whereby the lighter, because more minute, particles of gold would be lost, usually. As the wetted mass is carried from vessel to vessel, the quicksilver in each "well" catches a portion of the still remaining wet powder, until every appreciable atom is brought into chemical affinity, and thus secured.

Cotton Cleaner.

J. B. Mell, of Riceboro,' Ga., has made an application for a patent setting forth the advantages of a machine for cleaning cotton, in which there seems to be the promise of usefulness to the great cotton interest of the country. It consists in an ingenious relative and combined action of brushes and teeth with which rollers are armed. By the operation of these the pure cotton is rapidly taken from the mass of the feed, leaving the seed as well as the dirt behind. The card or teeth, and brush rollers, revolve in opposite directions, so that as the former raises the cleansed cotton, the latter sweeps it off, and it passes down the "discharge," and out of the box, without interruption. Thus, Mr. Mell assures those interested, his machine can be made to perfectly clean every kind of cotton that may be grown.

Improved Door Key.

William Damarel, of Brooklyn, N. Y., has obtained a patent for an extension door key upon a plan which suggests a degree of security to bedrooms. or other apartments when locked from within, of great importance, especially to the keepers of hotels, lodging houses, &c., but for which "outsiders," whether burglars or others, and fellow-lodgers whose organs of locality are too deficient to keep them from entering other people's rooms, "by mistake," will not be apt to thank him. The principle consists in giving the capacity of extension to the inside action alone, so that a readjustment of the key, by some person within is rendered an indispensable preliminary to the springing of the bolt, from the outside, by a skeleton or even a duplicate key.

Protection of Railway Embankments.

John Hinde, of Schenectady, N. Y., suggests a means by which to protect the surface grading and the embankments ot railroads. This he proposes to do by simply covering the surfaces with a coating of coal tar, which may be combined or not with sand, dust, gravel, powdered plaster, paint stuffs, or other substances of a similar nature. In this way he also proposes to protect railroad ties and other parts of the track, which it is desirable to shield from the weather or those accumulations of adhesive dust to which so many of our railways are subjected.

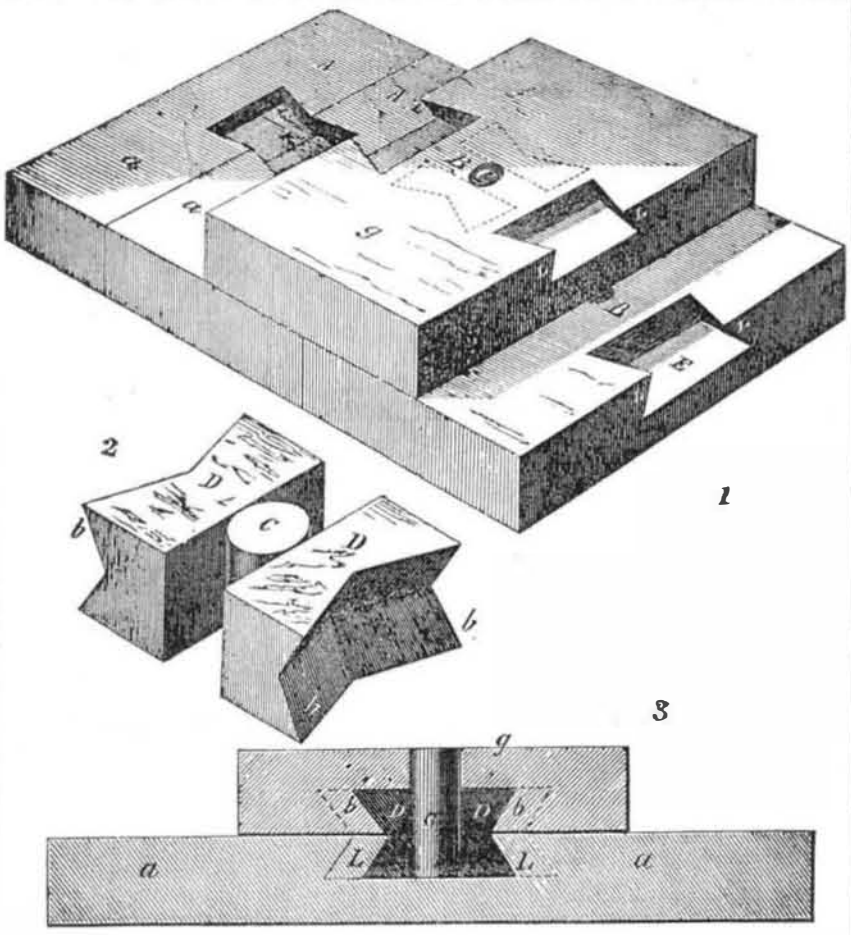
Pavement Foundations.

The principal difficulty encountered in paving, where the costliness of the material and labor makes it important to secure durability, is the procurement of a proper foundation. This may be seen illustrated by the frequent depressions in some of the most costly and carefully laid flagstones in cities. J. B. Wickersham, of this city, has applied for a patent for an improvement in the foundation of pavements, whereby he assures the interested that this difficulty can be obviated. His plan consists in first laying a bed of gravel or broken stone, on which a framework of interlaced iron is placed. The paving blocks, when placed upon the iron, are said to not only. distribute their weight equally in all directions, but to extend the distributed weight over areas greater than their own, and thus to prevent any one block from sinking and dragging down the rest, which is a very excellent feature.

New Mortising Machine.

Edward Kyle, of Newville, Pa., is the inventor of an improvement in mortising machines, which he has taken the usual steps to patent. It combines a vibrating cutter stock, bed-piece, clamps, &c., and proposes to entirely obviate, with an improved chisel, the choking from the mortise chips, which are made to pass upwards through the slot, without the interruption and consequent annoyance and loss of time otherwise encountered.

LOCKING STONES IN FOUNDATIONS OF LIGHTHOUSES.



We herewith present an illustrated description of an improvement for locking stones for the foundations of such structures as lighthouses, bridges, &c., for which a patent was granted to John P. Avery, on the 25th of last April (1854.)

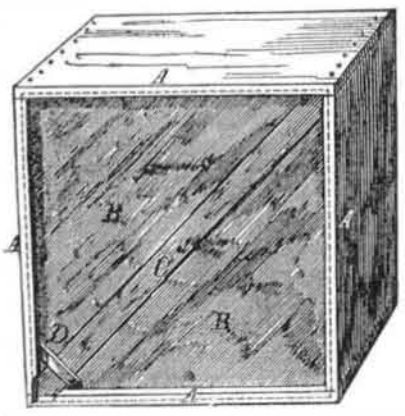
Figure 1 is a perspective view of this system of locking stones, showing one stone placed upon two others, and the whole locked together—the dotted lines showing the form of the dovetails. Fig. 2 is a perspective view showing the dovetails or locks, and the manner in which they are forced apart, when it is desired to lock the stones together, and fig. 3 i sa vertical section showing three stones locked together—two below and one above. The same letters refer to like parts.

a a a represent the bottom stones of a foundation, for instance, in which dovetail slots, E E E, of a suitable depth are cut, or half that of the dovtails; the said slots being open on the sides which are placed opposite each other, and made wider at their bottom than at their top, thereby forming an inclined projecting lip, L, under which the flanges, *b b*, of the dovetails, D D, fit snugly when the key, G, is driven between the dovetails. In figs. 1 and 3 a stone, *g*, is represented placed on top of the foundation stones, *a a*, and the whole secured together; this stone has a slot, E, similar to those in A A, cut in its bottom surface, and of the same depth, as half the hight of the dovetails. Thus it will be seen that when these stones are put together, the dovetails will hold equally on each as they fit the same depth in one as in the other. After these dovetails have been placed in the bottom slots, the top stone is placed over them and caused to fit in its slot, E. After this is done, the key, *c*, or its equivalent, which passes through the hole, B, in the top stone is driven between them, and they are forced apart, which causes their flanges to fit snugly and securely under the inclined projecting lip, L L. By this arrangement of the double wedge flanged dovetails, constructed as described, and uniting the two adjoining stones in the lower course with the stone which breaks joint with them in the upper course, the stones in the two courses are firmly and expeditiously fitted together, the specified flange-form of the dovetails, when the key is driven home, serving most effectually to draw the stones in the two courses together, face to face, thus making tight the horizontal joint between the courses, and simultaneously making tight the vertical or end joint, as specified, so that the two courses are made expeditiously to become one solid mass, as it were, the flanged dovetails acting as clamps to keep the two courses together.

The Judges on Building Materials, at the Seventh Exhibition of the Mass. C. M. A., in the city of Boston, Sept., 1853, reported as follows: "The Committee consider this a valuable improvement for the construction of sea walls and lighthouses, and award a Bronze Medal."

More information may be obtained by letter addressed to John P. Avery, Norwich, Conn.

New Lid for Packing Boxes.



The annexed figure is a view of an improvement in the construction and fastening of lids of packing boxes, &c., and the same plan may also be applied to barrels. A is a box, represented with a croze around its interior sides near the top, for the reception of the two angular parts, B B, which forms the lid. A bar, C, fits over the seam of these two angle pieces and holds them down as shown, while the small turn button, D, fixed on a pivot pin, is turned round, and one end pushed into the groove, holding all secure. This is a neat, cheap, and convenient way of fastening packing boxes, barrels, &c., especially those which have to be inspected, such as flour, sugar, tobacco, &c. The contents can be inspected, and the head removed without removing a hoop, or drawing a nail. A model can be seen at this office. The inventor is Charles Williams, Warren, Va. He will be at 71 Courtlandt St. this city, for a month, to make arrangements with parties respecting his improvement.

Lubricating Oil.

F. S. Pease, 61 Main street, Buffalo, N. Y., has sent us for trial a specimen of oil, which we have very thoroughly tested upon the press on which the "Scientific American" is printed, and we think it is an excellent article for lubricating any kind of machinery. It is certainly superior to any thing which we have ever tried for the purpose. It is also recommended as a good article for purposes of illumination, and if sold cheap enough we should suppose it might become generally used.

Improvement in Parallel Motion.

John M. Thompson, of Taunton, Mass., has been endeavoring to render some service to the operators of beam engines, through an improvement in parallel motion, and has taken steps to secure his improvement by patent. He proposes to obtain the desired parallel motion by connecting a piston link to one end of a radius rod, whose other end is attached to a crank, which works on a rock shaft placed under the center of the beam, and receives its motion from it by means of proper gearing This belongs to an important class of inventions.

Security of Axe Helves.

An improvement in the mode of securing axes to their helves is jointly claimed by H. N. and J. C. Bills, of Windham, Ct. They insist on the impossibility of any axe, to which their plan is applied, ever flying off the handle, because the eye must break before a separation can take place. The contrivance is simple, and the object is merciful as well as useful. The claimants have applied for a patent.

Music Printing Press.

The printing of pieces of music from plates has hitherto been performed like all copperplate printing, by hand. That is, the ink is first rubbed on the plate by a roller, then wiped off by a cloth, so as to remove all the ink from the surface, and leaving only the cavities of the plate filled up. James F. Starrett, of 31 Hudson Place, 34th street, this city, has invented a press for printing music by power. The plate is wiped by a revolving cloth, and the bed for carrying it round under the impressing cylinder, although secured to a central rotary shaft is so arranged as to carry the plate in a straight line, while the impression is being made. The receiving table has a peculiar motion, it rises and falls with the weight of the copies received, and vibrates so as to receive the title page copies at one side, then comes round and receives the printed music on the other side. The press is very ingeniously constructed, and calculated to save an immense amount of labor.

Ship Building in New York.

There has been launched at the port of New York, since January 1st, 44 steamers, 32 ships, 9 barks, 6 brigs, 14 schooners, 1 sloop and 1 barge, total capacity, 86,031 tuns. The number of vessels to be launched at that port this year is calculated to exceed that of 1854 by 20,000 tuns.

Pure Milk in Paris.

A most rigid surveilance is kept up in Paris, and in all parts of the country from whence the capital is supplied, over the milk which is forwarded for the consumption of its inhabitants. Thirteen farmers have just been condemned to fines of one hundred francs and under, and one to eight days' imprisonment, for sending milk mixed with water.