

(No Model.)

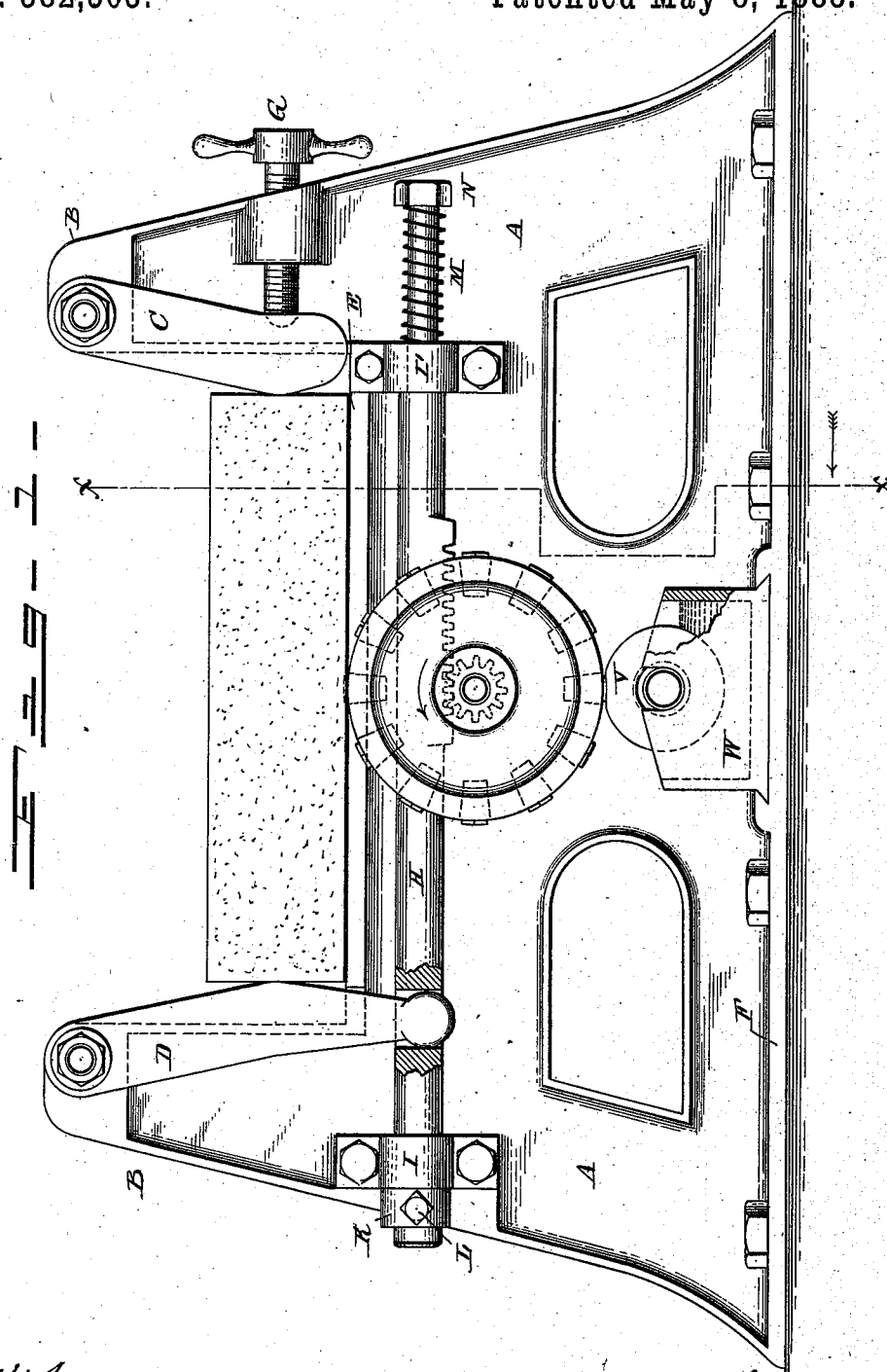
2 Sheets—Sheet 1.

J. C. ANDERSON.

APPARATUS FOR GAGING BRICKS AND MARKING THEREON THE GRADE
OR COLOR THEREOF.

No. 382,503.

Patented May 8, 1888.



Witnesses,
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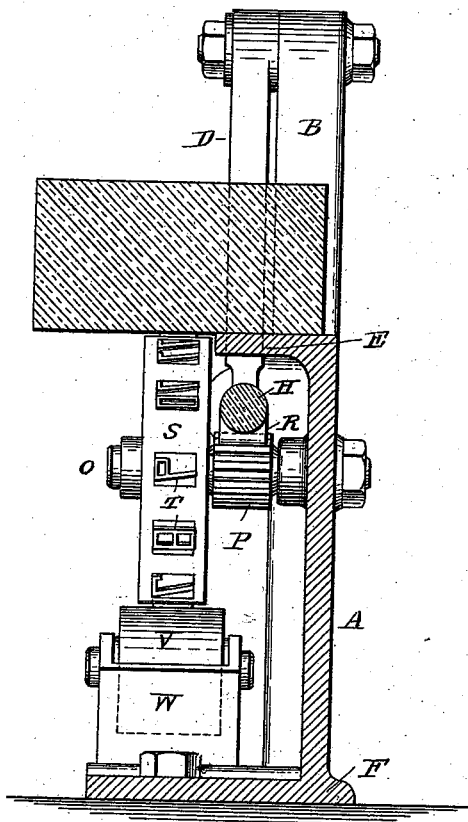
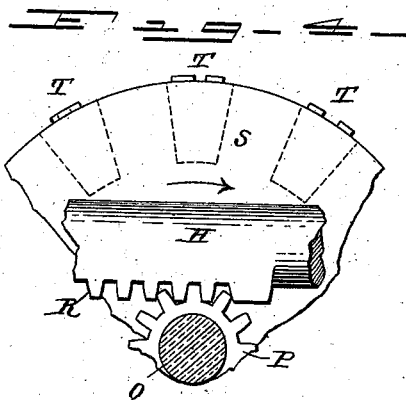
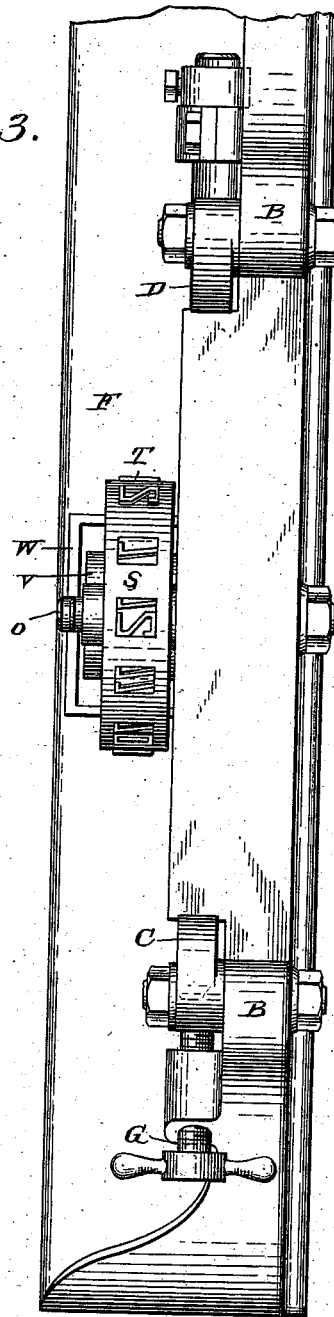


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF HIGHLAND PARK, ILLINOIS.

APPARATUS FOR GAGING BRICK AND MARKING THEREON THE GRADE OR COLOR THEREOF.

SPECIFICATION forming part of Letters Patent No. 382,503, dated May 8, 1888.

Application filed January 9, 1888. Serial No. 260,140. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States of America, residing at Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Devices for Indicating the Color of Brick, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a new and useful mechanism for sorting brick of different colors and marking the same so as to indicate their grade or shade of color.

The object of my invention is to provide a mechanical device by which the brick as they are taken from the kiln will be measured and marked to indicate their grade or shade of color, whereby the services of skilled sorters are dispensed with and the handling of the brick greatly facilitated.

My invention consists of a receptacle or open frame having a rigid and a movable jaw, between which the brick are placed, and a marking or printing device automatically operated by the movement of the movable jaw.

In the drawings, Figure 1 is a front view of my machine. Fig. 2 is a sectional view on the line *x x* of Fig. 1. Fig. 3 is a top or plan view. Fig. 4 is a detailed view of a portion of the printing or impression wheel and rack-bar for operating it.

In explanation of my invention it may be proper in this connection to state that all fine grades of pressed brick, although made in the same mold, with same amount of clay, and with uniform pressure, vary in shades of color from light to dark red, in proportion to the intensity of heat they receive in the firing or burning, which depends much on the position in which the different courses are placed in the various kinds of kilns used in burning. The lighter brick in color are those that receive the smaller degree of heat, the brick becoming darker where the more intense heat is brought to bear upon them. The best skill yet attained in the construction of kilns and firing the same thoroughly fails to give any line of uniformity by which the brick can be taken from the kiln and piled in separate piles each of which will be of a uniform shade

of color. It has become necessary, and the universal practice is, to remove the brick from the kilns to suitable sheds, which must be arranged to allow a good strong light to fall upon the face of the piles, and expert sorters who have a good eye for color are employed to sort these bricks one at a time, comparing each brick with the face of those in the various piles. This, it will be understood, requires not only skill, but a special eye for color, which is scarcely found possessed of by one man in several hundred, and as a consequence enormous prices are not only paid for this kind of labor, but business hampered very much on account of not being able to obtain suitable men educated for the work. Usually the red brick are sorted into twelve (12) different piles, representing twelve (12) separate shades of color, which are numbered on the books and advertised as No. 1, 2, &c., No. 1 being the lightest in color and No. 12 the darkest; but heretofore no means have been employed for designating or marking the brick themselves as to color, so that they could be identified by others when delivered in the market to the respective buildings, and it often happened where different shades of color were to be used in the walls of the same building, although care has been taken to ship in separate lots, a general mixing up would occur at the building, and thus the walls would often be built in patches or splotches, and no end of confusion and annoyance occurs in this way.

By my invention I have effectually overcome the above difficulties by the conception of a mechanism which not only sorts the bricks to their proper color, but stamps and prints thereon the proper number. For a more correct understanding of my invention it will be necessary to explain another point which takes place in the firing of brick—viz., the shrinkage of clays.

It will of course be understood that all of the clays, whether the bricks are made by the wet or dry process, shrink in the firing in proportion to the amount of heat they receive, the shrinkage of the clays when treated by the dry process, however, being considerably less than those produced by the wet process.

The shrinkage on red brick—that is, between the lightest and darkest colored brick—is three-fourths of an inch. The No. 1 brick, which is the lightest, is three-fourths of an inch longer than No. 12, which is the darkest. Now, when you divide this shrinkage into twelve parts, you have one-sixteenth of an inch difference in length of each number or shade of color.

I find in comparing the numbers and measurements that I can get more accurate color results by measuring to size than by depending on the eye in sorting to color.

Referring to the drawings, A indicates a frame or support, made of cast-iron or other suitable material, provided with the projections B, on which are pivoted the jaws C and D. The frame between the projections B is provided with a shelf or table, E, to support the brick, and a flange or base, F, by which it is secured to any suitable base. The jaw C is held in place and rendered adjustable by means of set-screw G, so that in cases where different kinds of brick are made from clays having more or less shrinkage than the standard brick the machine may be adjusted to the shortest of its kind, and then the same rule of gaging and numbering will apply. The jaw D is longer than the jaw C, and projects into an opening in the sliding bar H, said bar being loosely mounted in suitable supports, I and I', which are bolted to the frame A. One end of the bar H is provided with a sleeve, K, which is adjustably secured to the bar by a nut or bolt, L. The object of said sleeve is to prevent the bar from being drawn too far to one side by the action of the spring M.

M is a spring which is coiled around the other end of the bar H, one end of which is held against the support I' by means of the nut N, the tension of said spring being also regulated by means of the nut N. The office or function of the spring M is to return the bar H to its original position after the pressure has been withdrawn from the jaw D.

O is a shaft secured in suitable supports in the frame A, and on which is mounted a pinion-wheel, P, which meshes with the teeth or rack R, formed on the under side of the bar H.

S is an impression or type wheel mounted on the shaft O, in the periphery of which the type T are secured, said type being formed of rubber or other suitable material and representing numerals or letters, as may be required.

V is an inking-roller mounted on the box W, said roller being made of rubber or other suitable material and adapted to be readily removed from the box in case it should need to be cleaned.

The box or well W is designed to hold the ink or other substance for inking the type which forms the impression on the brick, the bottom of said box being beveled off to engage with beveled lugs on the base, and by which means the box is held securely in position.

The operation of my device is as follows: The brick as they are taken from the kiln

after being burned are passed by the workman between the jaws of the machine, which are adjusted to allow the No. 12 brick, which is the shortest one of the series, to fit snugly between the same, in which case it rests upon the No. 12, which comes in position to print the number on the side of the brick. In case the brick should be one-sixteenth of an inch longer, the spring of the sliding bar will yield to the pressure at the left-hand side of the machine, the rack of the sliding bar connecting with the pinion fixed to the shaft of the impression or number wheel and will rotate the wheel one-twelfth, which will bring the No. 11 in position to register against the brick and print thereon the number, and so on up to the longest or No. 1 brick.

The machine is intended to be placed in position in the kiln close to the wheelbarrow upon which the brick are transported to the yard, so that as the workman picks up each of the brick to pile them on the barrow he simply passes them between the jaws, allowing them to slide down onto the number without taking his hand from the brick, and then passing it onto the barrow, the force of less than the gravity of the brick being requisite to operate the machine. The number then serves as a guide to the men in placing them in their proper piles, and afterward as a guide in shipping the same and to the workman in placing them in the building.

Ordinarily the bricks are taken from the kiln as soon as they are cool enough to handle, and while they are still warm, so that the ink or other material used in marking the brick will be readily absorbed, and thus the smearing or blurring of the numbers is obviated.

One or more inking-rolls may be used, they may be arranged around the printing-wheel, so as to insure the proper inking of the type; or the operator may push the rack-bar over by hand, so as to bring Nos. 10, 11, 12, &c., in contact with the inking-roll prior to inserting the brick into the machine.

What I claim, and desire to secure by Letters Patent, is—

1. In a machine for indicating the color or grade of bricks, a receptacle for the brick having a movable portion and a marking mechanism, substantially as described, operated by said movable portion, whereby the marking of the brick to correspond to its size and color is automatically and mechanically performed, as set forth.

2. A machine for indicating the color or grade of brick and marking the same, consisting of an open frame having a rigid and a movable jaw between which the brick is placed, a sliding bar to which the movable jaw is attached, and a numbering or printing wheel operated by the sliding bar to bring the proper number or character on the wheel into printing position, as set forth.

3. In a machine for indicating the color or grade of brick and marking the same, the

frame A, having the projection B, to which the jaws C and D are pivoted, the jaw D being secured to the sliding bar H, said bar being provided with teeth R and actuated in one direction by the spring M, in combination with the pinion-wheel P, type-wheel S, and inking-roll V, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

J. C. ANDERSON.

Witnesses:

L. W. SINSABAUGH,
ALEX. MAHON.