

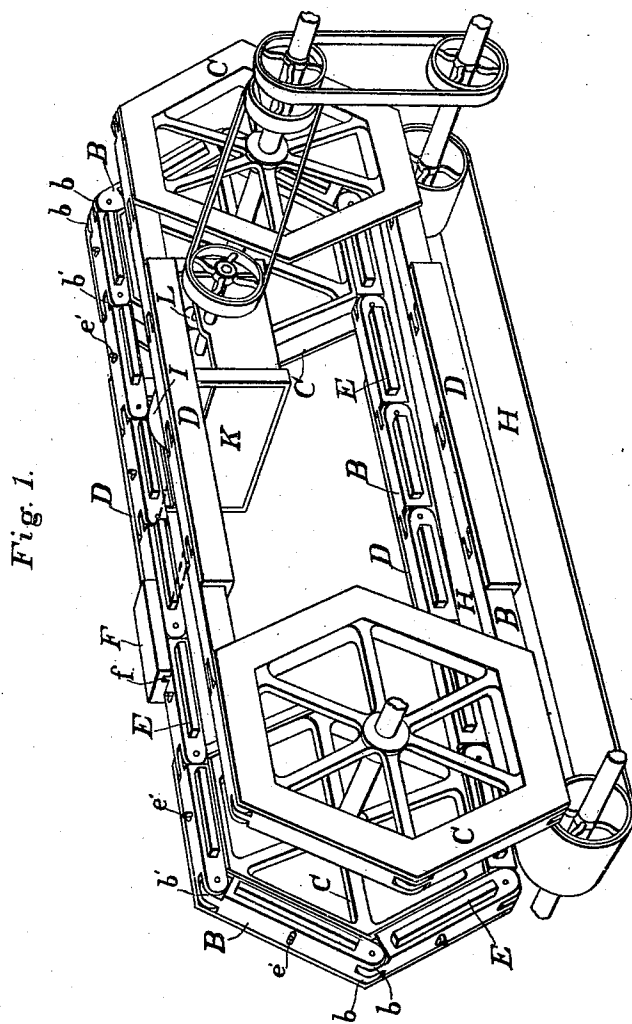
(No Model.)

3 Sheets—Sheet 1.

I. BROOME.
TILE DECORATING APPARATUS.

No. 532,636.

Patented Jan. 15, 1895.



Witnesses
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Ly. Benjamin

Isaac Broome,
Inventor,
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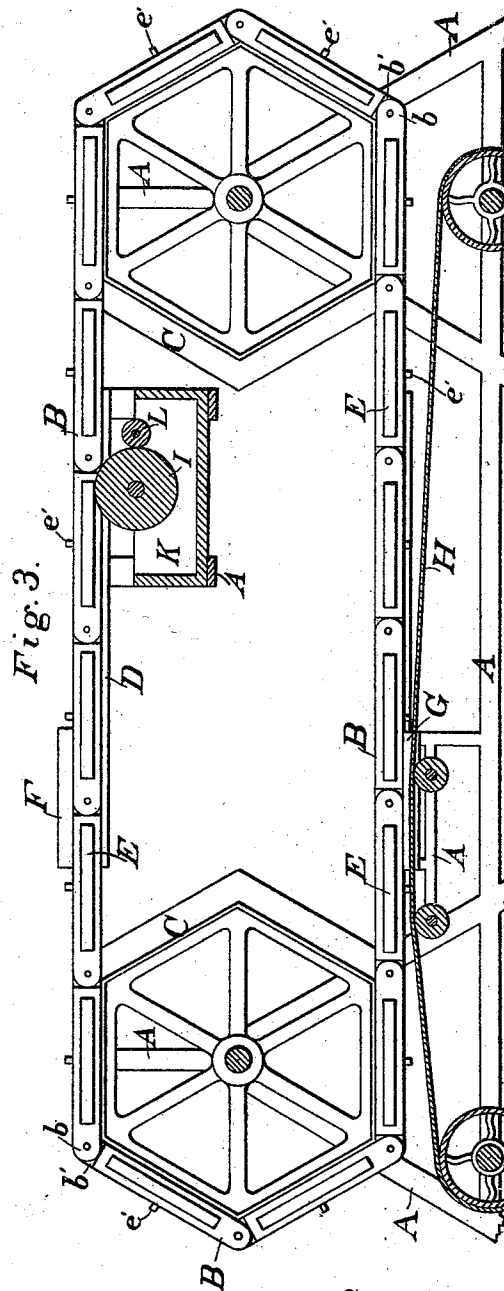
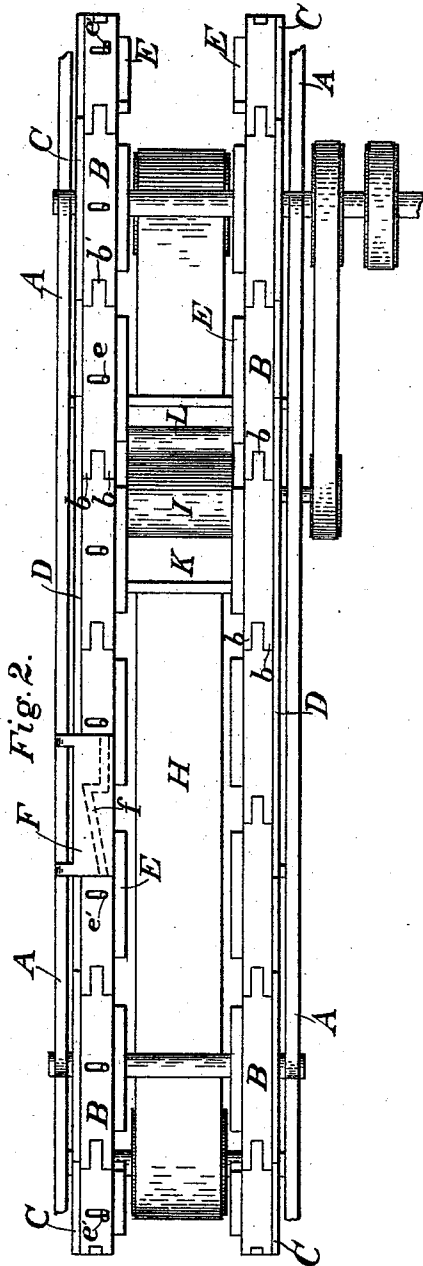
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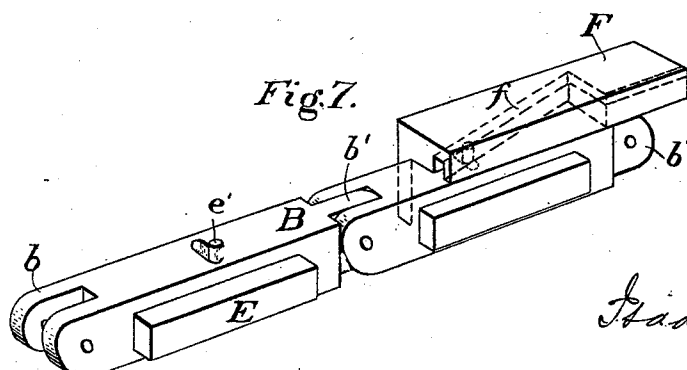
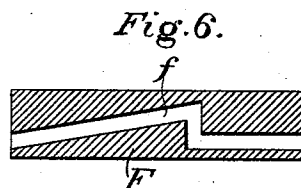
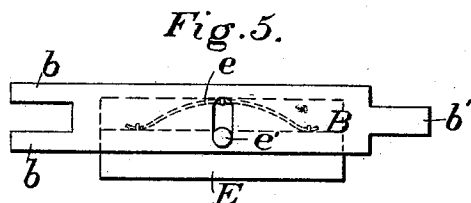
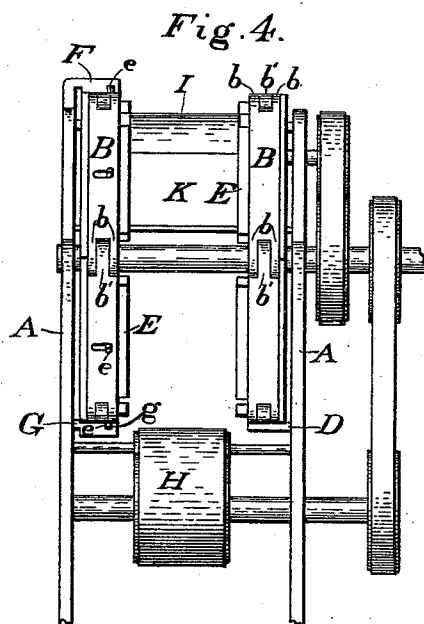
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

ISAAC BROOME, OF BEAVER FALLS, PENNSYLVANIA.

TILE-DECORATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 532,636, dated January 15, 1895.

Application filed November 16, 1893. Serial No. 491,082. (No model.)

To all whom it may concern:

Be it known that I, ISAAC BROOME, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Tile-Decorating Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for painting, and its object is to glaze or otherwise finish the decorative face of an architectural tile, or other cognate article, by passing such face over and in contact with a mechanically operated roller, upon the felted or otherwise flexible surface of which the glazing or decorating liquid, wherein the roller is partially immersed, is mechanically spread.

The apparatus to be hereinafter described is a development from and an improvement upon the apparatus secured to me by Letters Patent of the United States numbered 493,244, but the changes of construction and arrangement are numerous and substantial, so that to enable others skilled in the art to make and use the present apparatus, it is deemed necessary to set it forth in full as constituting in and by itself a new and complete invention.

Briefly stated, the invention consists in a pair of thick, endless, parallel, counterpart traveling belts, which carry the tiles in a single file, grasped between the proximate edges of the belts, over the decorating roller, and thence beyond and downward, and underneath their former position, and in the reverse direction, to deliver them, decorated faces upward, upon a conveyer, which removes them from the sphere of decorative operations.

In the accompanying drawings the same letters denote the same parts in the several views.

Figure 1 is a side perspective of the apparatus; Fig. 2, a top plan of the same; Fig. 3, a longitudinal interior section thereof; Fig. 4, an end view thereof; Fig. 5, a plan view of one of the grips; Fig. 6, a horizontal section through a part of one of the grips, and Fig. 7, a perspective detail.

A represents the frame of the machine, to be of any suitable form and dimensions, and

provided with any needed brackets, standards, slots, recesses, apertures, and other projections, offsets and inlets to support or otherwise accommodate the movable or fixed parts of the apparatus.

B represents any of the grips forming the pair of endless, parallel, traveling, tile-carrying belts already mentioned, each provided at one end with a pair of orificed arms, *b*, and at the other with a single centrally placed, orificed arm, *b'*, which enable the grips to be pivoted one to another in a flexible chain.

C represents the set of four sprocket wheels, in front and rear pairs, that carry the gripping belts.

D represents fixed guides between the front and rear sets of sprocket wheels, that support and direct the gripping belts as they travel between the two sets of wheels. Projecting laterally from each grip is a jaw, *E*, which, on one of the two belts, has an in and out, horizontal motion, and in the grips of this belt a spring, *e*, back of the jaw, presses the jaw out, and this pressure insures a firm grip of the tile when caught between the faces of a co-operating pair of these jaws. Each of these movable jaws is surmounted by a peg, *e'*, which projects through a crosswise slot in the top of the grip. It is evident that if this peg is pressed backward, the jaw will be drawn in; a movement necessary both to the grasping and releasing of a tile. The jaws of the grips on the opposite belt are fixed and those grips have not the peg and spring described.

Fixed above and over the track of the gripping belt having the movable jaws is an oblong block, *F*, whose position is toward the feed end of the bed, in advance of the decorating roller. In the under face of this block is a deeply cut, longitudinal eccentric groove, *f*, which admits the pegs projecting from the grips as they advance toward the decorating roller, and by its oblique, outward direction compels them to draw in the jaws of the grips till a tile can be placed between any opposite pair of jaws, after which a sharp, rectangular, inward turn of the groove permits the springs behind the movable jaws to clip the tile between the jaws and then the peg traverses a straight path in the groove till it emerges from the block. A counterpart block, *G*, in reverse position, is fixed beneath the other

block, and likewise beneath the gripping belt, just over the conveyer belt hereinafter described, in order to release the decorated tile so that it may be removed from the machine, and the groove, *g*, of this block is a counter-

part of the other groove.
H represents an endless belt of the ordinary kind, traveling beneath the pair of gripping belts for the purpose of receiving the tiles that have passed over the decorating roller and carrying them away from the machine.

I represents the decorating roller, journaled and partly immersed in the tank K, within the machine frame, that holds a glazing or decorating liquid; and L is a spreading roller, journaled but not immersed in the tank and in contact with the decorating roller for the purpose of distributing the liquid evenly over the face of the decorating roller.

The machine is to be operated by the customary system of shafting and belting, arranged, connected and co-ordinated according to the judgment of the machinist who fits up the apparatus, as controlled by the local circumstances of the site.

I claim as follows:

1. An apparatus for painting the decorative faces of architectural tiles, consisting in the combination, with a proper frame and an ordinary system of motor belting and shafting, of the tank supported within the frame; the decorating roller journaled and partly immersed in the tank, the spreading roller journaled in the tank and in contact with the face of the decorating roller; the guides fixed longitudinally upon the upper and lower parts of the frame; the sprocket wheels, arranged in pairs toward the respective ends of the frame; the pair of gripping belts mounted and moving upon the sprocket wheels and guides aforesaid, each grip forming a link of a belt, provided with the described orificed arms at its ends; the jaws seated and moving in the grips, and those on one of the pair of belts having each the spring at its back, and the peg projected from the

top of the jaw through the upper surface of the grip; and, lastly, the upper and lower oblong blocks, fixed to the frame of the machine, in advance respectively of the decorating roller and the place of release of the decorated tile and in the track of the said gripping belts carrying the aforesaid movable jaws, and each block having the described, longitudinal eccentric groove formed in its inner face, the whole substantially as and for the purposes set forth.

2. The combination, in a tile decorating machine, of an ordinary supporting frame, and system of motor gearing, with the sprocket wheels arranged in pairs at each end of the frame; the grips, linked into a pair of flexible belts, mounted tandemwise and progressing upon the set of sprocket wheels, each grip having the inwardly projected jaw, and all the grips of one belt being hollow and having a crosswise slot in the top of each such grip, and the jaws projected from such hollow grips having an in and out motion, and each such jaw being backed with a spring, adapted to throw the jaw out from the grip, and having, further, a peg fixed to the top of the jaw and projected vertically through the slot in the grip; the pair of oblong blocks, fixed to the frame of the machine, in the track of the belt of grips having the movable jaws, and each block having the eccentric groove in the inner face thereof, and the longitudinal guides, fixed to the frame between the two pairs of sprocket wheels and in the lines of progress of the two traveling grip belts; all substantially as described, for the purposes of engaging, carrying and releasing an architectural tile during the process of decoration, as fully set forth.

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

ISAAC BROOME.

Witnesses:

THEO. LAMPERT,
S. C. GORMLY.