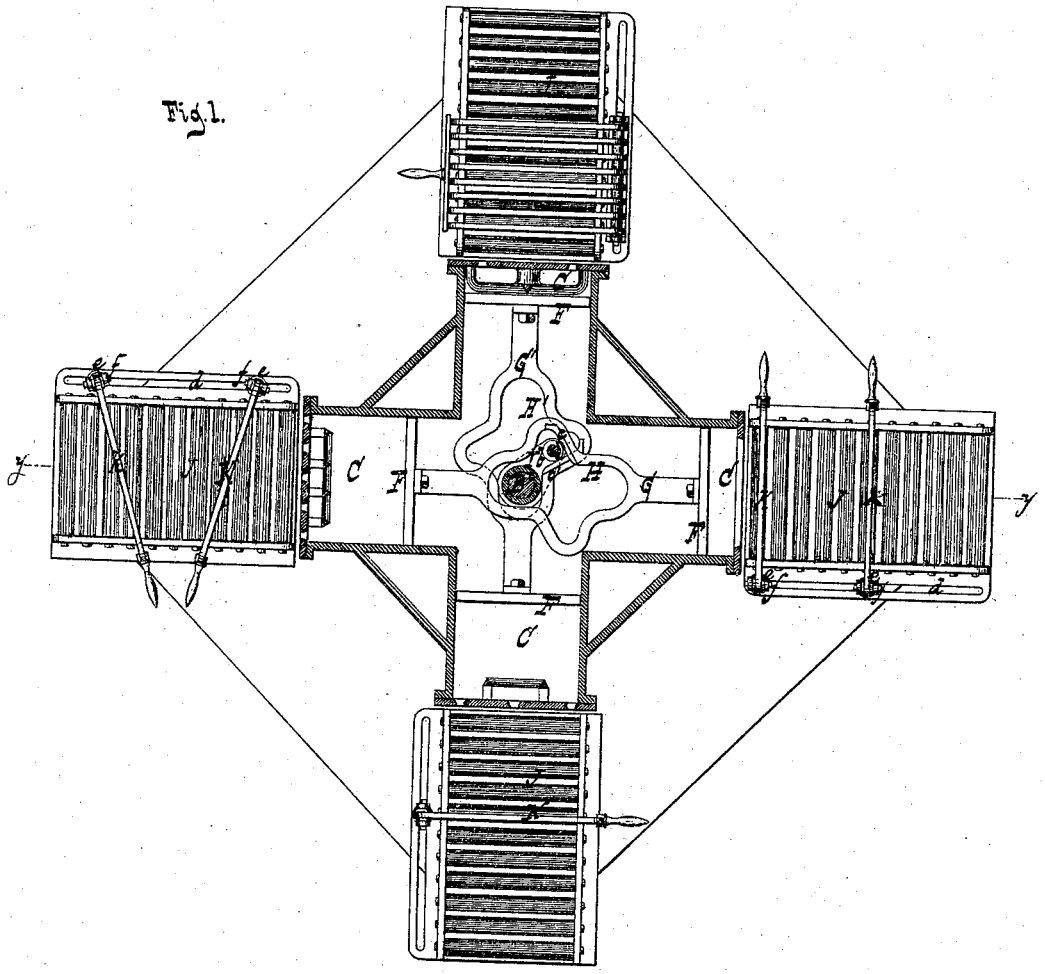
2 Sheets—Sheet 1.

F. J. KENNEDY.

BRICK AND TILE MACHINE.

No. 182,676. Patented Sept. 26, 1876.

Fig. 1.



Witnesses.

Otto Schofield.

Robt E. Miller.

Inventor.

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his attorneys

2 Sheets—Sheet 2.

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Fig. 2.

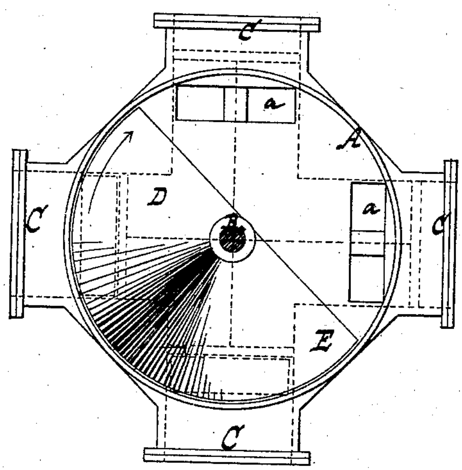
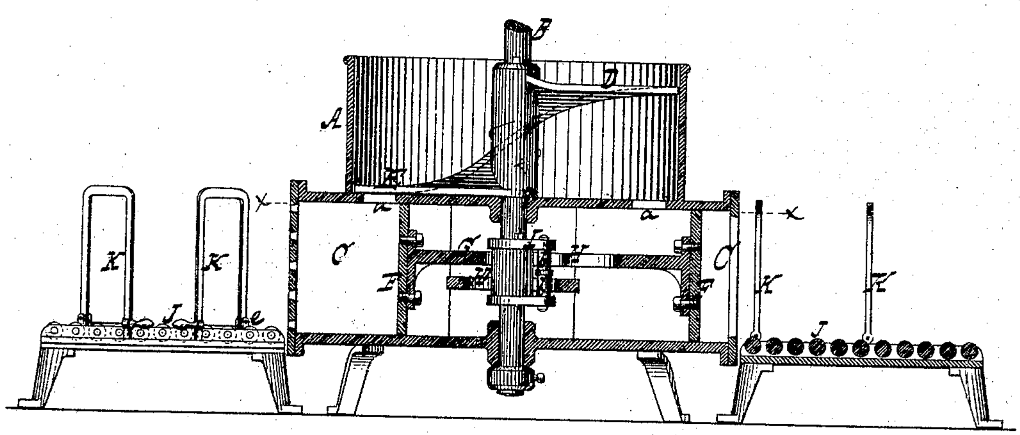


Fig. 3.



Witnesses.

Otto Hufeland

Robt E. Miller

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UNITED STATES PATENT OFFICE.

FRANCIS J. KENNEDY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN BRICK AND TILE MACHINES.

Specification forming part of Letters Patent No. **182,676**, dated September 26, 1876; application filed August 17, 1876.

To all whom it may concern:

Be it known that I, FRANCIS J. KENNEDY, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Brick and Tile Machine, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a horizontal section in the plane *x x*, Fig. 3. Fig. 2 is a plan or top view. Fig. 3 is a vertical section in the plane *y y*, Fig. 1.

Similar letters indicate corresponding parts.

This invention relates to certain improvements on that class of brick and tile machines which are described in Letters Patent granted to H. L. Huntington, December 15, 1874, No. 157,831, and which consists, essentially, of a series of press-boxes, which radiate from the axis of the tempering-shaft below the bottom of the tempering-tub, and which are provided with suitable throats, through which the clay is forced out, said bottom being provided with apertures through which the tempered clay is successively forced into the press-boxes by means of a spiral wiper on the tempering-shaft.

My improvement consists in the combination, with the spiral wiper, the radiating press-boxes, and the apertures leading from the tempering-tub into said press-boxes, of a covering-plate mounted on the tempering-shaft, and so arranged that it covers the apertures leading into each press-box during the time the follower of said press-box is forced outward, whereby the clay is prevented from being forced out of the press-boxes during the operation of pressing.

The followers of the press-boxes, which are situated diametrically opposite to each other, are connected by rods the central portions of which form cam-shaped cages, situated one above the other. In Huntington's machine a common wrist-pin, secured in a crank which is mounted on the tempering-shaft, acts on said cam-shaped cages, and imparts to the followers the desired reciprocating motion. This crank-pin is armed with an anti-friction roller, but during a certain portion of its movement this anti-friction roller acts on two or more of the cages at the same time, and, by its action on one cage, it would be turned in one direction, while by its action on the other cage beneath the first said roller would be turned in the opposite direction. The consequence of this arrangement is, that the anti-friction roller remains stationary, the bearing-surfaces are subjected to undue wear, and the power required for operating the machine is unnecessarily increased. This difficulty I have overcome by employing different anti-friction rollers mounted on the same, or on different crank-pins, so that each anti-friction roller can turn independent of the other, and thereby the wear of the working parts of my machine is materially reduced, and its operation is greatly facilitated. With the radiating press-boxes I have combined roller-platforms for receiving the compressed clay which issues from said press-boxes, and in the side rails of these platforms are slots or holes for the reception of hinged cutters, so that said cutters can be adjusted at any desired distance apart, and either in a square or in an oblique position, and the compressed clay issuing from the press-boxes can be cut up into sections of any desired length and shape.

In the drawing, the letter A designates the tempering-tub, through the center of which rises the shaft B, which receives a rotating motion by any suitable mechanism. In the bottom of the tempering-tub are a series of apertures, *a a*, which lead down into the press-boxes C C, situated below said bottom, and extending in radial directions from the tempering-tub. In the example represented in the drawing four press-boxes are shown, which are arranged in pairs, each pair consisting of two boxes, situated diametrically opposite to each other, but the number of press-boxes may be increased to six or more, if desired. On the shaft B, close above the bottom of the tempering-tub, is mounted a spiral blade or wiper, D; and, as the shaft revolves, this wiper forces the clay from the tempering-tub successively down through the apertures *a a*, into the press-boxes C C. With this spiral wiper is combined a covering-plate, E, which may be made solid with or separate from said wiper, and which is firmly secured on the shaft B in such a position that it covers each of the apertures *a* during the time the follower in the corresponding press-box is forced outward. By this arrange-

ment one and the same covering-plate prevents the discharge back into the tempering-tub from every one of the press-boxes, and the mechanism of the machine is simplified. Each of the press-boxes is fitted with a follower, F, (see Fig. 1,) and the followers of each pair of press-boxes are connected to each other by rods G G′, the middle portions of which form cam-shaped cages H H′, embracing the shaft B. On this shaft is mounted a crank, I, the wrist-pin of which is armed with two anti-friction rollers, *b b′*, one situated above the other, (see Fig. 3,) the anti-friction roller *b* being so situated that it acts on the cage, H, while the anti-friction roller *b′* acts on the cage H′. As the shaft B rotates a reciprocating motion is imparted to the followers, and the operation of pressing is effected.

By referring to Fig. 1 of the drawing it will be seen that during a certain portion of the motion the roller *b*, by contact with the working-face of the cage H, revolves in the direction of the arrow marked on said roller, while at the same time the roller *b′*, by contact with the working-face of the cage H′, revolves in the direction opposite to said arrow. It is therefore essential that said rollers *b b′* shall be made detached, one from the other; for, if one and the same anti-friction roller is caused to act simultaneously on both cages H H′, said roller is prevented from turning round during a certain stage of its motion, the result being an undue wear of the working parts, and a waste of power. The working faces of the cages H H′ are protected by shoes *c c′*, which, when worn out, can be replaced by others without disturbing the remaining portions of the machine. In the example shown in the drawing the anti-friction rollers *b b′* are mounted on one and the same crank-pin; but they may be secured on different or detached crank-pins without deviating from my improvement. Outside of each of the press-boxes is situated a roller-platform, J, and the compressed clay, on issuing from the mouths of the several press-boxes, is deposited on, and supported by, said platforms, where the same is cut up into sections of the desired length. In the side rails of the platforms J are slots *d*, (or a series of holes may be substituted for said slots,) and in these slots are fitted the screw-shanks of standards *e*, which form the bearings for the fulcrum-pins *f* of the cutter-frames K. By this arrangement the cutter-frames can be readily adjusted at any desired distance apart, either in a rectangular or in an oblique position, and the compressed clay can be cut up in sections of any desired length, with square or oblique ends.

I distinctly disclaim everything shown and described in the above-named patent of Huntington, of which I am part owner.

What I claim as new, and desire to sec re by Letters Patent, is—

1. The combination of radiating press-boxes C C, followers F, arranged therein, the tempering-tub A, having apertures *a* in its bottom, through which the clay is supplied to the press-boxes, its vertical shaft B, and the spiral wiper D, having at its lower end a plate, E, the whole constructed to operate as and for the object set forth.

2. The combination of detached anti-friction rollers *b b′*, with the cages H H′, followers F, and press-boxes C C, substantially as and for the purpose described.

3. The combination, with the platforms J and cutting-frames K, of side rails provided with slots, or a number of holes, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 5th day of August, 1876.

F. J. KENNEDY. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.