No. 748,244. PATENTED DEC. 29. 1903.

A. W. WILLETT.

ENDLESS BELT DIE FOR BRICK MACHINES, &c.

APPLICATION FILED APR. 11, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

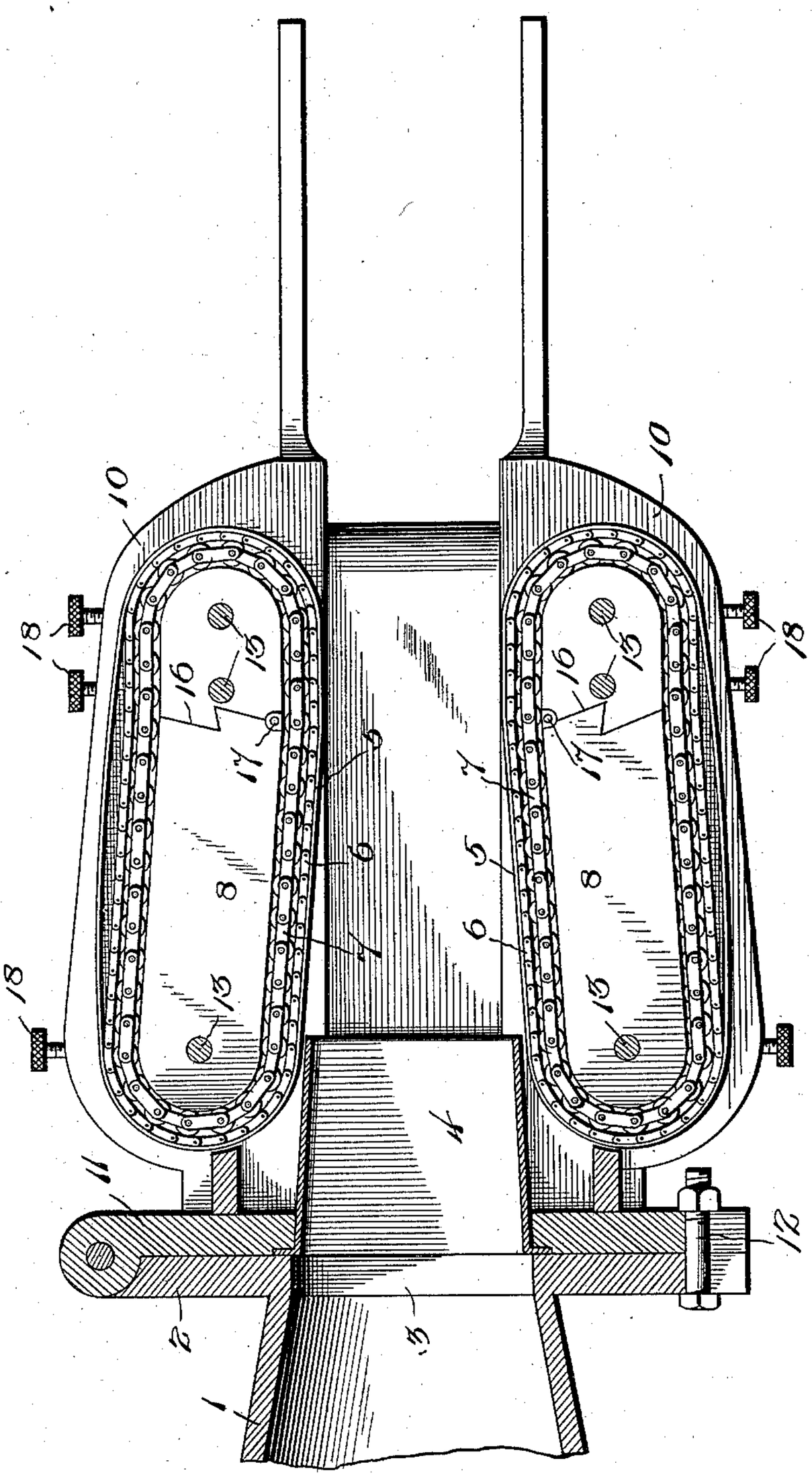

Fig. 1.

Witnesses
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

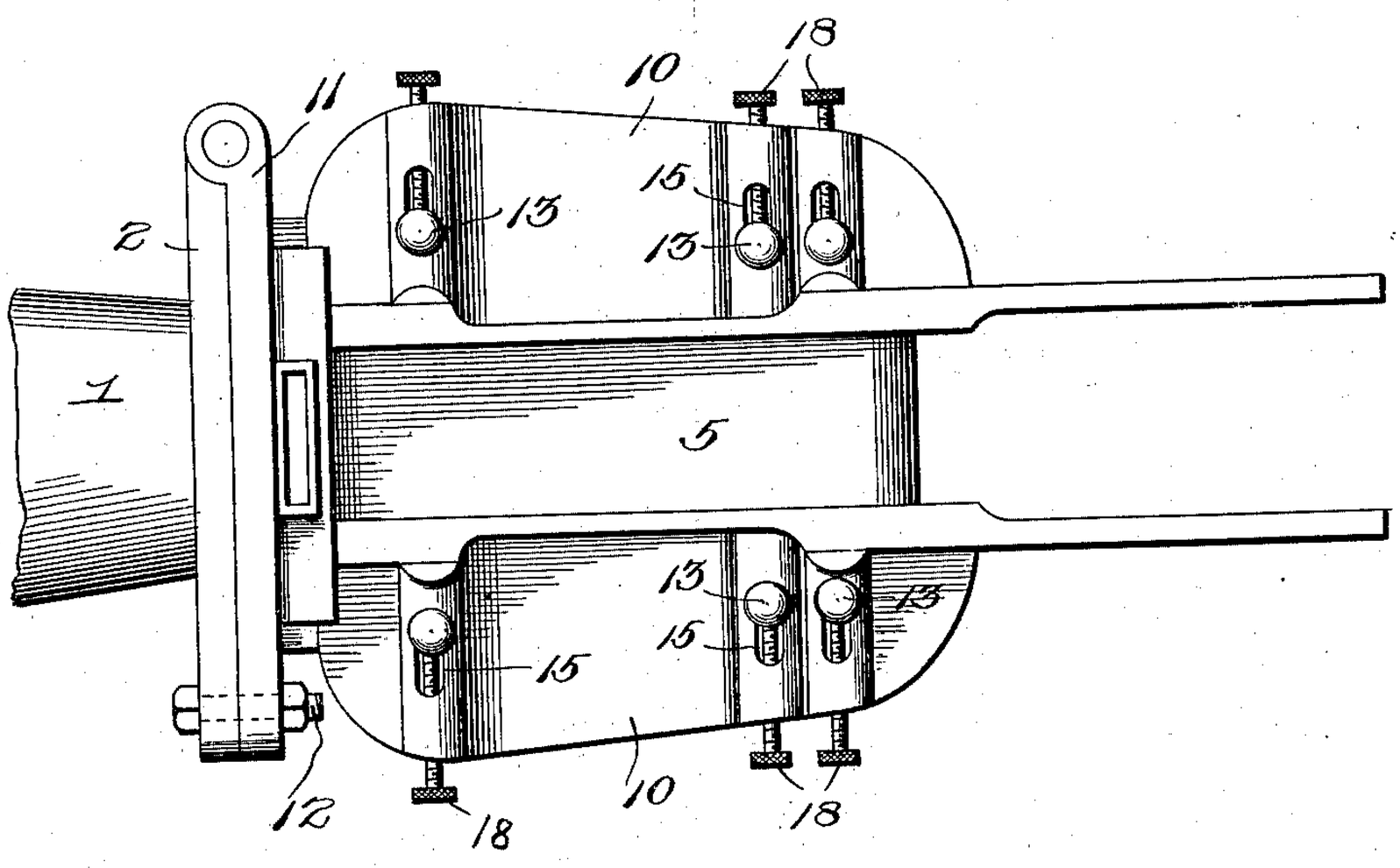


Fig. 3.

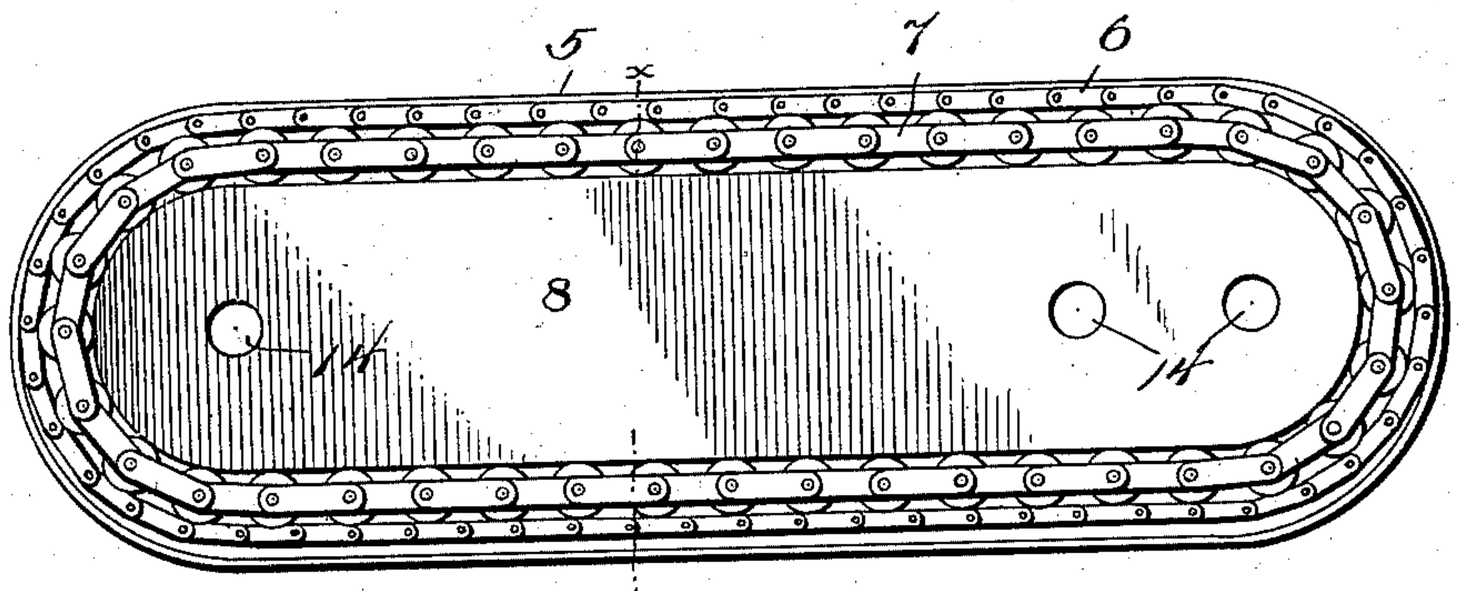


Fig. 4.

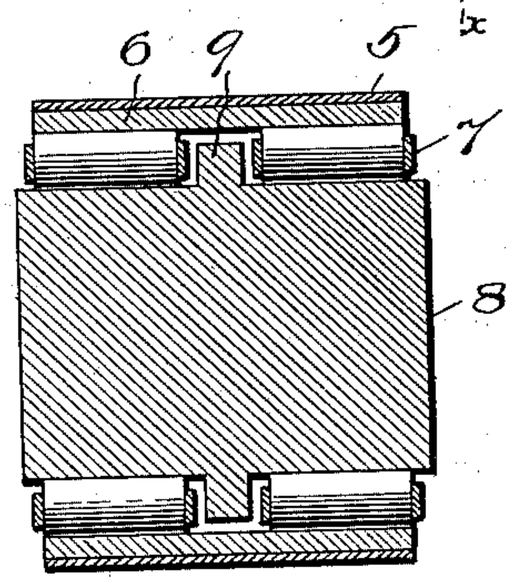
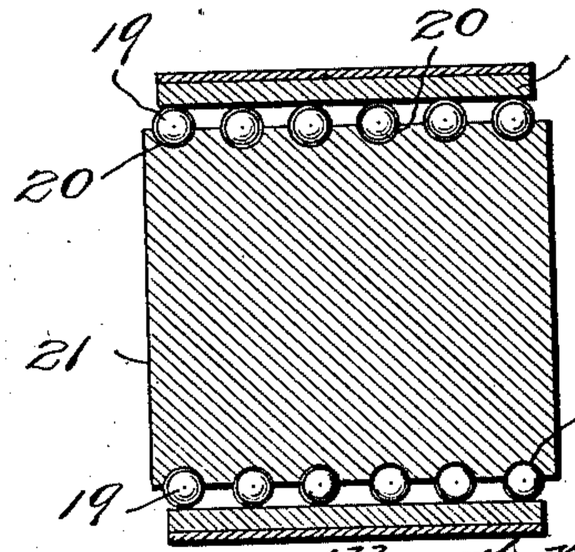


Fig. 5.



Witnesses

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No. 748,244. Patented December 29, 1903.

UNITED STATES PATENT OFFICE.

ALLEN W. WILLETT, OF PERKASIE, PENNSYLVANIA.

ENDLESS-BELT DIE FOR BRICK-MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 748,244, dated December 29, 1903.

Application filed April 11, 1903. Serial No. 152,192. (No model.)

To all whom it may concern:

Be it known that I, ALLEN W. WILLETT, a citizen of the United States, residing at Perkasie, in the county of Bucks and State of Pennsylvania, have invented certain new and useful Improvements in Endless-Belt Dies for Brick-Machines, &c.; 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 machines and devices for the formation of bricks, tiles, pipes, &c., from clay or other plastic material, and has for its object to reduce to a minimum the friction of the column of clay passing between the compressing and forming die from the discharge-outlet of the mixing-chamber of the brick-machine. This is accomplished by providing a compressing and forming die which not only presents extended traveling, compressing, and forming surfaces, but also adjustable to present the surfaces of least resistance.

The invention further has for its object to provide a thoroughly compressed, condensed, and compact brick with smooth surfaces and well-defined edges.

Referring to the accompanying drawings, in which similar figures of reference indicate like parts, Figure 1 is a side view of the invention in longitudinal section, showing the location and arrangement of the parts of the die embodying my invention. Fig. 2 is a plan view. Fig. 3 is a detail view, in side elevation, of one of the castings and movable parts of the die. Fig. 4 is a view in cross-section on the line *x x*, Fig. 3. Fig. 5 is a modification thereof.

1 is the tapering discharge funnel or chute end of the clay-mixing chamber, (not shown,) provided with the flanged end portion 2, having an opening 3 therein.

4 is a slightly-tapering discharge-chute projecting from the opening 3 and between the rear ends of the movable parts of the presser-die, formed by two pairs of elongated traveling presser belts or bands 5, of suitable metal, such as sheet-steel, but preferably of sheet-brass. Each endless belt 5 is mounted on an endless flat-linked metallic chain 6, which in turn is mounted on an endless roller-chain 7, resting on an oblong casting or support 8, and a longitudinal ridge or flange 9, which separates the pairs of roller-chains 7, there being two of these chains on each casting or support 8. The castings or supports 8 are each mounted in a frame or support 10, mounted at its rear end on the hinged gate 11, secured by a bolt 12 adjacent to the chute 4, each frame or support 10 terminating at its forward end at the traveling belt, (where the pressed bricks are cut off and carried forward.) The castings or supports 8 are mounted in the frames 10 by bolts or pins 13, mounted in holes 14 in the casting and projecting into slots 15 in the frames 10. The upper and lower castings 8 are separated vertically, as at 16, into two parts, forming a short forward part and a long rearward part hinged at 17. To regulate the size of the passage-way between the surfaces presented by the endless belts 5 for the column of clay expressed from the mixing-chamber, the castings 8 are made adjustable by means of screw-pins 18 bearing against the pins 13 in the slots 15, and also to accommodate and direct the said column of clay the rear or long part of the castings 8 may be adjusted by the screw-pins 18 at that point.

It will thus be seen from the foregoing description that the pressing and forming die is composed of two lateral and forming surfaces forming a passage-way through which the column of clay expressed from the mixing-chamber passes. By adjusting the rear portions of these surfaces, as explained, the proper entrance-angle is maintained to prevent the clay from clogging, and by presenting the elongated traveling presser-surfaces at the proper adjusted position apart not only will such elongated traveling surfaces avoid friction of the column of clay, but also the column of clay will be all along its surface equally compressed and made compact and smooth, so as to afford a brick thoroughly pressed, compact, and with smooth edges.

In brick-machines where there is friction of the column of clay with the walls or surfaces of the die the movement of the column of clay is retarded and the compression and formation is uneven and irregular, resulting in imperfect and defective bricks. By this

invention these objections are overcome. Moreover, with this construction of moving parts of the die, as herein set forth, no driving mechanism is employed, thus affording a simple and economical construction.

In Fig. 4 is shown a modification of the roller-chain construction in which instead of a chain rollers or balls 19 are employed, located in sockets or grooves 20 in the casting 21.

While I have set forth a specific construction of parts in the movable parts of the die, I do not limit myself thereto, as they may be varied without departing from the essential features of the invention.

It is obvious the invention may be used with brick, tile, or pipe machines by adapting such machines with the die herein set forth.

Having thus described my invention, what I desire to claim and secure by Letters Patent is—

1. In a brick-machine, a forming-die, consisting of adjacent, endless, traveling, elongated presser-surfaces, or dies, forming a passage-way for a moving column of clay, and continuous back supports, maintaining the presser-surfaces in an even unyielding position, as herein set forth.

2. In a brick-machine, a forming-die, consisting of a number of adjacent, endless, traveling, elongated presser-surfaces, or dies, forming a passage-way for a moving column of clay, with opposite presser-surfaces, or dies adjustable toward each other, throughout their length, said presser-surfaces having continuous back supports, as herein set forth.

3. In a brick-machine, a forming-die, comprising two pairs of adjacent, endless, traveling, elongated presser-surfaces, a portion of said elongated surfaces projecting to the rear of the discharge-spout, thus forming an elongated passage-way for a moving column of clay, substantially as described and for the purposes set forth.

4. In a brick-machine, a forming-die, comprising a plurality of adjacent, endless, traveling, elongated presser-surfaces, a portion of said presser-surfaces being laterally adjustable independent of the other surfaces, for forming an inclined passage-way for a moving body of clay by the convergent faces of said presser-surfaces.

5. In a brick-machine, a forming-die, comprising a plurality of endless, traveling, elongated presser-surfaces, secured to the discharge end of the machine, said elongated surfaces surrounding the discharge chute or end of the machine, and forming a longitudinally-elongated passage-way for a moving column of clay, each of said elongated presser-surfaces being propelled only by the moving body of clay, substantially as described.

6. In a brick-machine, a forming-die, consisting of a number of adjacent, endless traveling, elongated presser-surfaces, or dies, adjustable toward each other, and each partly adjustable at an angle, said dies forming a passage-way for a movable column of clay, as herein set forth.

7. In a brick-machine, a forming-die, composed of a number of adjacent, endless traveling, elongated presser-surfaces, or dies, each consisting of an oblong support; endless roller-chains mounted on said support; an endless flat-link chain, mounted on the roller-chains; and an endless metallic band, mounted on the flat-link chain; the several dies forming together a passage-way for a column of clay to pass through, as herein set forth.

8. In a brick-machine, a forming-die, composed of a number of adjacent, endless traveling, elongated presser-surfaces, or dies, each consisting of an oblong support; endless roller-chains, mounted on said support; and an endless metallic band, mounted on the flat-link chain; certain of the said oblong supports being formed in hinged sections, with means for adjusting the entire support to or from adjacent support, and also adjusting part of the support at an angle, as herein set forth.

9. In a forming-die for brick-machines, a presser-surface, or die, consisting of an oblong support; a pair of endless traveling roller-chains, mounted on said support; an endless flat-link chain, mounted on said roller-chains, and an endless metallic band, mounted on the flat-link chain; the oblong support being mounted in a frame, and formed in hinged sections, and means for adjusting the support in its frame, and also adjusting part of it at an angle, as herein set forth.

10. The combination with the mixing-chamber, and discharge-opening of a brick-machine, of supports mounted adjacent to said discharge-opening, and endless, traveling bands, adjacent to each other, and forming presser-surfaces or dies, and constituting a passage-way for the passage of a column of clay, and means for adjusting said bands toward each other, and also partly at an angle, as herein set forth.

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

ALLEN W. WILLETT.

Witnesses:

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HARRY E. GRIM.