

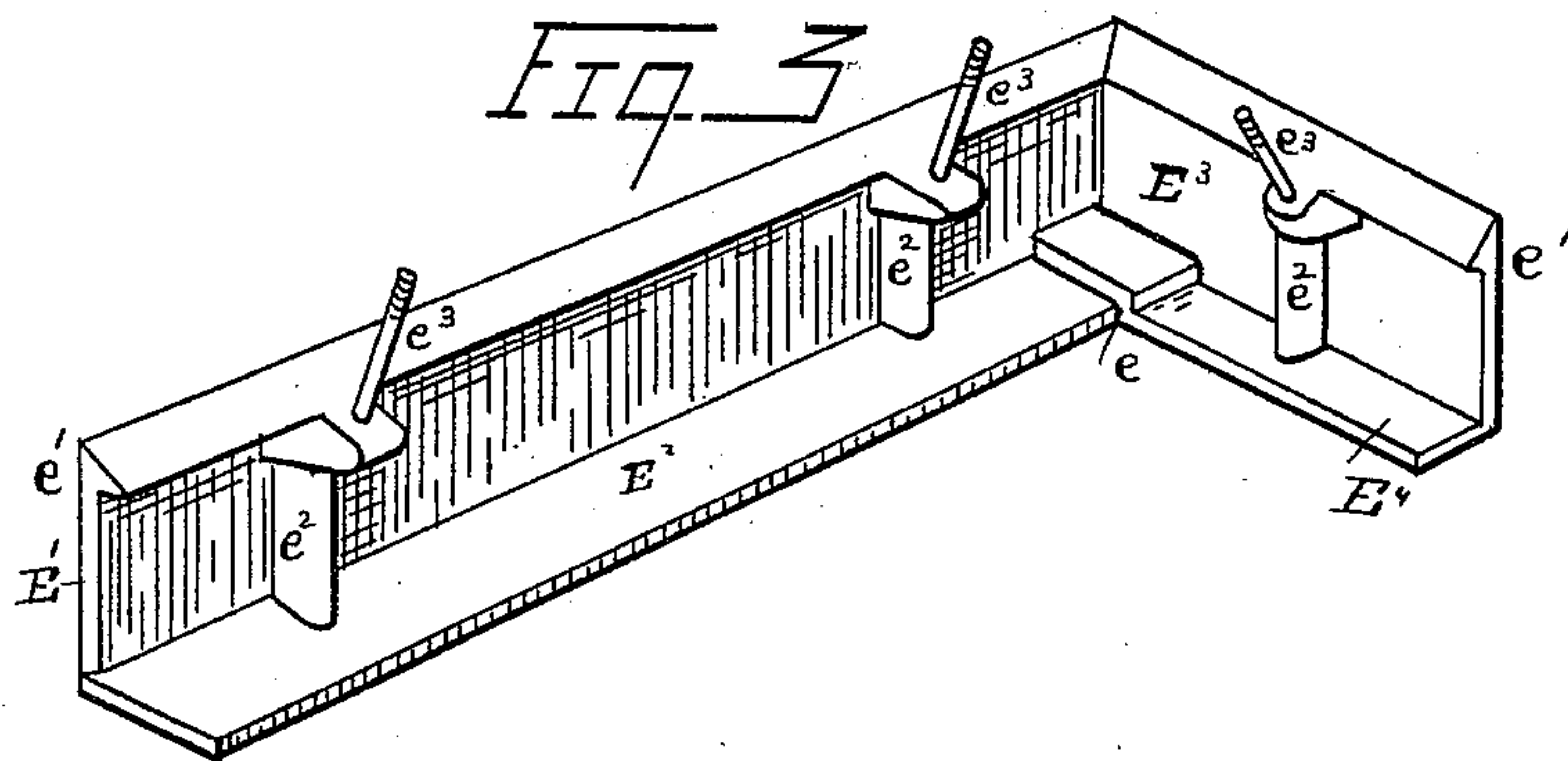
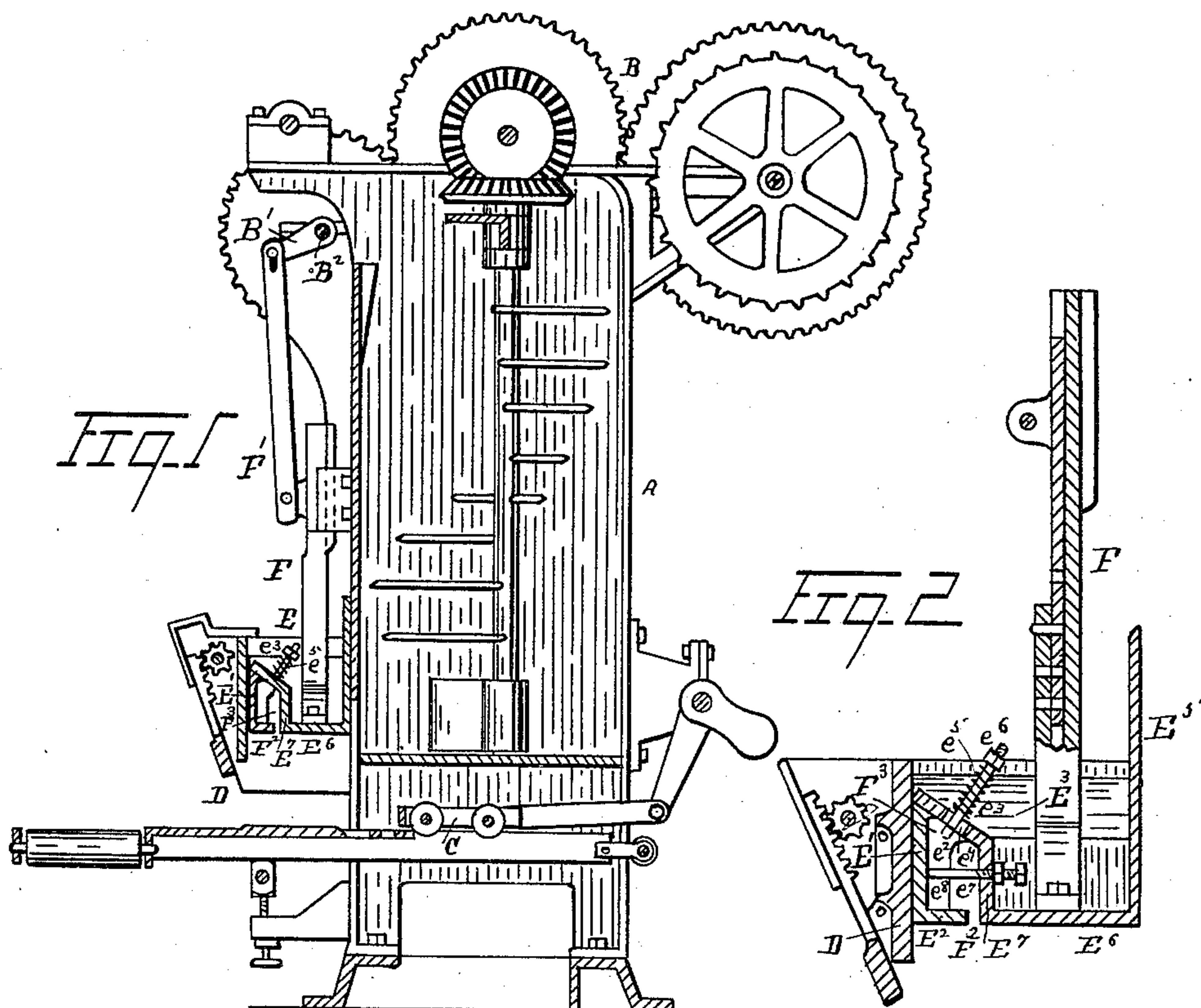
(No Model.)

A. F. CRAMER.

AUTOMATICALLY ADJUSTABLE PLUNGER FOR BRICK MACHINES.

No. 427,972.

Patented May 13, 1890.



Witnesses

John Schuman.
Charles F. Salow.

Inventor

Anthony F. Cramer

By his Attorney

Newell S. Wright.

UNITED STATES PATENT OFFICE.

ANTHONY F. CRAMER, OF DETROIT, MICHIGAN.

AUTOMATICALLY-ADJUSTABLE PLUNGER FOR BRICK-MACHINES.

SPECIFICATION forming part of Letters Patent No. 427,972, dated May 13, 1890.

Application filed July 3, 1889. Serial No. 316,377. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY F. CRAMER, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in an Automatically-Adjustable Plunger for a Brick-Machine; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My present invention has for its object certain new and useful improvements in a brick-machine, and relates more particularly to a brick-machine for which United States Letters Patent were granted to me March 4, 1884, No. 294,368, and has reference more especially to the construction of the plunger operating in the press-box at the base of the machine. Heretofore as said press-box and plunger have been constructed and arranged the clay has been forced out of the press-box at the sides of the plunger, clogging and impairing the efficient operation of the machine.

My invention contemplates certain provisions whereby the fit of the plunger in the press-box will be adjusted automatically as required to overcome the above-mentioned difficulty.

My invention consists of the devices and appliances, their combinations and arrangements, as more fully hereinafter specified, and pointed out in the claims, and as illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a machine embodying my invention. Fig. 2 is a separate view in section of the press-box and plunger. Fig. 3 is a view in perspective of the front side and one end of the plunger.

I carry out my invention as follows: As illustrated in the drawings, A is the casing of a pug-mill embodied in my patent above referred to.

B is a series of gears for operating said mill.

C is the discharge-carriage, and D is the press-box located at the base of said mill. These features constitute no part of my present invention, as they may be of the usual construction heretofore employed.

E represents the plunger, F a connecting-rod, and F' a pitman engaged with said rod in the usual manner, and with a crank-arm B' on a shaft B², upon which one of the series of gears B is mounted. The plunger is constructed with an adjustable front wall E', provided with a flange E² at the base, and also with adjustable end walls, each corresponding to that shown at E³, which is also provided with a flange E⁴ at the base, the one flange at the end fitting upon the other, as shown at e. These adjustable front and end walls I call for convenience an "apron." The upper edges of said apron I prefer to broaden, as shown at e'. I also construct the upper face of said apron on an angle, as shown.

E⁵ is the rear wall of the plunger, E⁶ the base, and E⁷ an inner wall extending about the front and the ends of the plunger, the upper edge of which is preferably made flaring toward the front wall E', as shown, and upon an angle corresponding to the angle of the adjacent edge e' of the apron. I provide the apron with a series of ribs e², provided with threaded rods e³, the wall E⁷ having elongated perforations, as at e⁴, for the passage of said rods. Said rods are each provided with a spring e⁵ and an adjusting-nut e⁶, to regulate the tension of the spring as desired. Passing through the base of the inner wall I provide also a series of screws e⁷, having an adjustable engagement therein, said screws projected against the apron, as shown at e⁸. These screws are particularly intended for properly adjusting the apron in first starting a machine and limiting the inward movement of the apron. It will be evident that by properly adjusting said screws e⁷ and the tension of said springs e⁵ the apron may be set to form as tight a union of the plunger and press-box as may be desired.

To render the device automatically adjustable, a space is left open between the inner edges of the flanges E² E⁴ of the apron and the inner wall E⁷, as shown at F², sufficient to permit the clay to enter the space F³ between the apron and the inner wall of the plunger. This space becomes filled with clay obviously by the pressure of the plunger in the press-box.

As the plunger descends into the press-box it will be seen that the pressure of the clay

into the space F^3 will have a tendency to automatically force the apron tightly against the sides of the press-box, the adjacent angular faces of the inner wall and apron permitting the apron to crowd outward with the least degree of friction, the angular faces slipping one past the other. As soon as the pressure begins the operation automatically sets the sides of the apron out. At the same time the springs allow for any needed relief to prevent the apron from wedging too tight upon the wall of the press-box and producing too great friction. When the movement of the plunger is reversed, the consequent suction produced beneath the plunger in the press-box relieves the pressure of the apron against the adjacent walls of the press-box, so that the plunger has no friction in ascending. The apron will be permitted to slide inward on the angular face of the inner wall. In this manner the angular faces tend to prevent too great friction in connection with the springs, while also they facilitate the relief of the pressure on the upstroke of the plunger.

The springs serve to retain the apron against the sides of the press-box, as well as give relief.

What I claim as my invention is—

1. In a brick-machine, the combination, with a press-box, of a plunger having an adjustable apron provided with flanging bases and means of adjusting said adjustable walls, substantially as described.

2. In a brick-machine, the combination, with

a press-box, of a plunger having an adjustable apron and an inner wall, said inner wall and apron provided with angular adjacent faces, substantially as described.

3. In a brick-machine, the combination, with a press-box, of a plunger having an inner wall and an adjustable apron outside said wall, said apron constructed with an open base, substantially as described.

4. In a brick-machine, the combination, with a press-box, of a plunger having an inner wall, an adjustable apron, said wall and apron having adjacent angular faces, and a tension device uniting said wall and apron, substantially as described.

5. In a brick-machine, the combination, with a press-box, of a plunger having an inner wall, an adjustable apron provided with an open base, rods e^3 , engaging the wall and apron, provided with a tension-spring, and an adjusting device, said inner wall and apron provided with adjacent angular faces, substantially as described.

6. In a brick-machine, the combination, with a press-box, of a plunger, an apron, and a screw for limiting the inward movement of said apron, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

ANTHONY F. CRAMER.

Witnesses:

N. S. WRIGHT,

CHAS. F. SALOW.