

No. 649,792.

Patented May 15, 1900.

R. ANTHONY.
BRICK MACHINE.

(Application filed Sept. 9, 1899.)

3 Sheets—Sheet 1.

(No Model.)

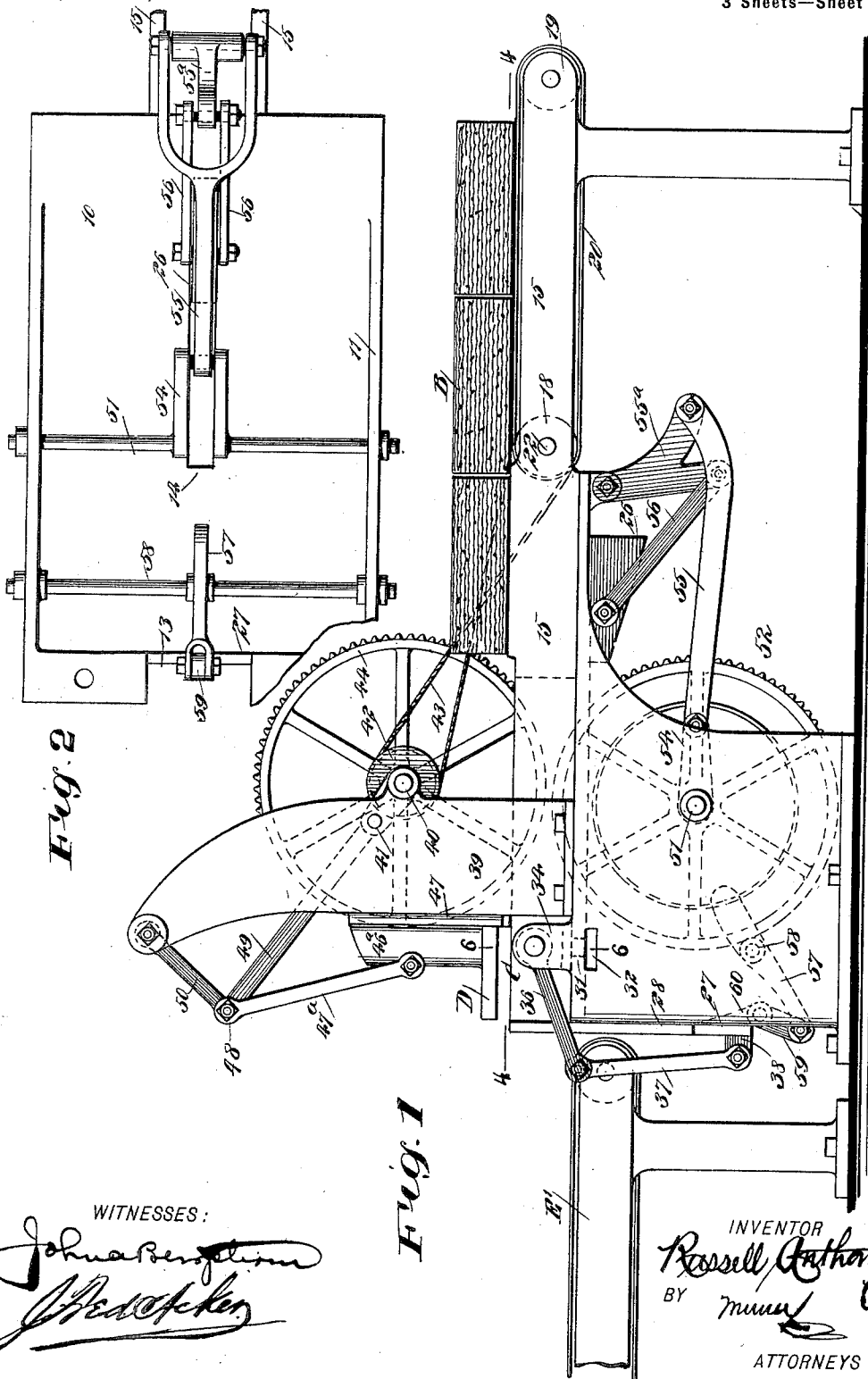


Fig. 2

Fig. 1

WITNESSES:

John Benjamin
Stecher

INVENTOR
Russell Anthony
BY *Munn*
ATTORNEYS

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Fig. A

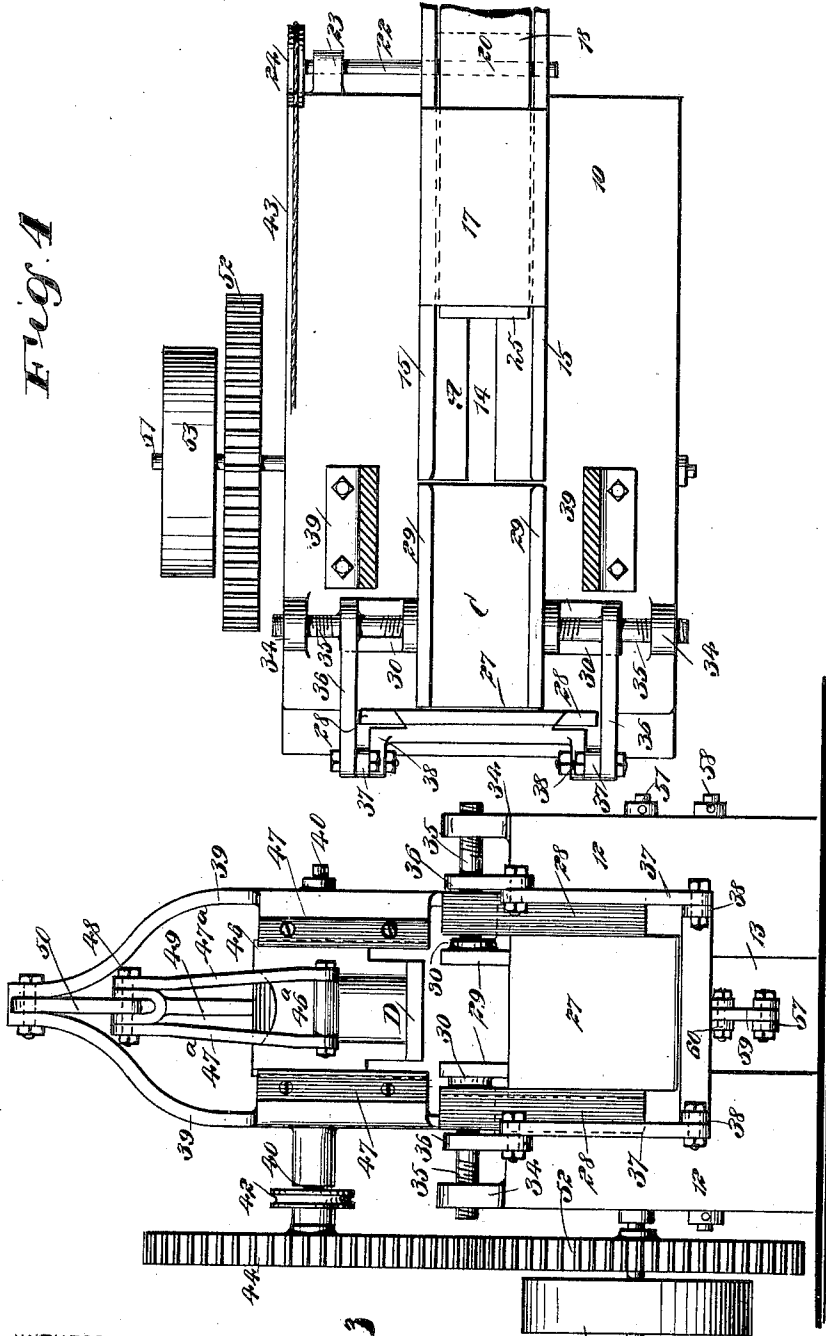


Fig. 3

WITNESSES:

John A. Reynolds
Wm. A. H. H. H.

INVENTOR

Russell Anthony
BY *M. W. H. H.*

ATTORNEYS

No. 649,792.

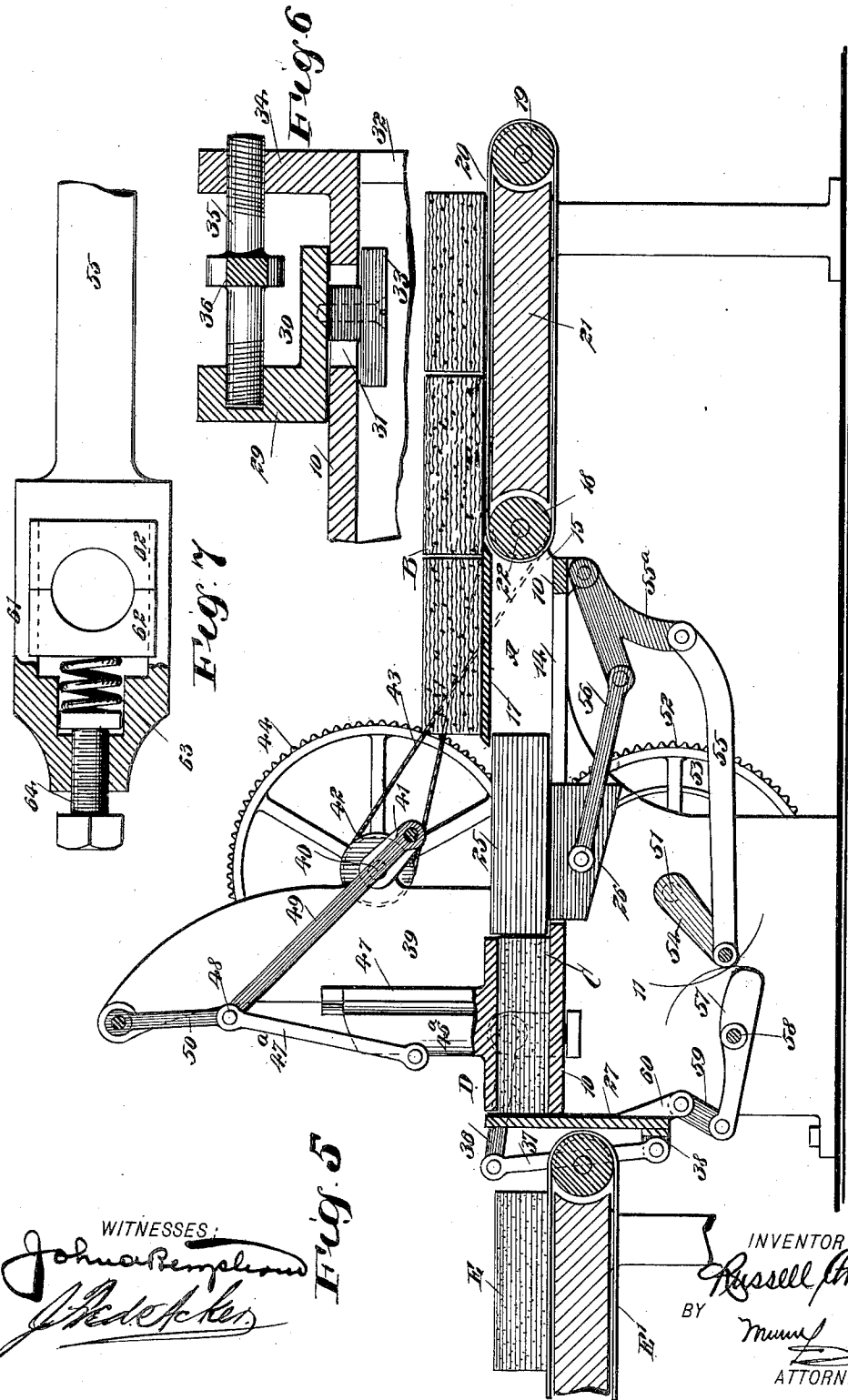
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(No Model.)

3 Sheets—Sheet 3.



WITNESSES:
John B. Remond
Charles

Fig. 5

INVENTOR
Russell Anthony
 BY
Munn
 ATTORNEYS

UNITED STATES PATENT OFFICE.

RUSSELL ANTHONY, OF WORTHAM, TEXAS.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 649,792, dated May 15, 1900.

Application filed September 9, 1899. Serial No. 729,941. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL ANTHONY, of Wortham, in the county of Freestone and State of Texas, have invented a new and Improved Brick-Machine, of which the following is a full, clear, and exact description.

One object of the invention is to provide an effective, yet simple and durable, machine especially adapted to receive bricks from a stiff-mud mill and re-press them and also to provide a means whereby the machine will be automatic in its action.

Another object of the invention is to so construct the machine that the bricks to be treated will be fed to the machine by a suitable conveyer and conducted one after the other to the press-box, released from the pressure of the box and its follower, and removed from the box to a second conveyer, which will conduct the finished bricks to any desired point.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved machine, illustrating the follower in position to force the finished brick from the press-box and carry a second brick into the said box. Fig. 2 is a bottom plan view of the body portion of the machine. Fig. 3 is a rear elevation of the machine. Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 1. Fig. 5 is a central vertical section through the machine, the follower being shown in position to receive a brick to be pressed, having carried one of said bricks into the press-box. Fig. 6 is an enlarged sectional view taken practically on the line 6 6 of Fig. 1, illustrating the manner in which the sides of the press-box are rendered adjustable; and Fig. 7 is a partial plan view and partial sectional view of one of the pitmen employed in the movement of the follower of the machine.

The frame of the machine consists of a table 10, supporting-sides 11 for said table, and a supporting-back 12, the said supporting-back having an opening 13 extending through

it from top to bottom. The table 10 is provided with a central longitudinal slot 14, (shown best in Fig. 5,) which slot extends from a point near the center of the table to a point near the forward end of said table. In fact, the said slot extends from the press-box C, to be hereinafter described, nearly out through the forward end of the table 10. Parallel plates 15 are secured on the upper face of the table 10, one at each side of the center of the table, as shown in Fig. 4, and these plates are at each side of the slot 14 of the table, extending the length of said slot outward beyond the forward end of the table. The space between the plates 15 constitutes a slideway A for a follower 25, to be hereinafter described. The extended portions of the plates 15 have rollers or drums 18 19 journaled between them, which drums or rollers carry an endless conveyer-belt 20, adapted to travel in direction of the table, and a suitable guide-partition 21 is located between the stretches of said belt 20. One of the drums or rollers 18, preferably the inner roller, has a shaft 22, that extends to one side of the table, as shown in Fig. 4, a suitable guide 23 being provided, and this shaft 22 carries a pulley 24 at its outer end. A top plate 17 extends from one side plate 15 to the other at the forward portion of the table, and said top plate constitutes a cover for a portion of the slideway A. This top plate 17 is practically of a length corresponding to the length of the follower 25, hereinafter referred to, since when the follower 25 is in its initial position in the slideway A it will be beneath this top plate 17, as indicated in dotted lines in Fig. 4. The follower 25 is adapted to receive bricks B, fed from the mill or other source of supply through the medium of the conveyer 20, said bricks B being forced lengthwise of the cover-plate 17, as shown in Fig. 5, and when the follower 25 has its forward end only beneath the cover-plate 17 the movement of the bricks is so timed that one of said bricks will be received upon said follower, and at the forward movement of the follower the said brick will be forced therefrom into that portion of the slideway A occupied by the follower in its rearward position, so that at the next forward movement of the follower, if a brick be in the press-box, the brick in the slideway, which is the next brick to enter said

box, will force the brick in the box out therefrom as the follower again moves forward, the press-box being then in suitable condition to permit the free exit of the pressed brick, as will be hereinafter described in detail. The follower 25 is guided in its movement by a fin 26, that extends from its bottom through the slot 14 in the bed or table 10 of the frame, as is best shown in Fig. 5.

10 A slide 27 is mounted to have vertical movement in suitable ways 28, located on the back 12 of the frame, as shown in Fig. 3, and this slide when in its upper position constitutes the rear end of the press-box C, the bottom 15 of the said box being the rear end portion of the table 10, as is also shown in Fig. 5. The sides of the press-box are adjustable to and from each other and consist of plates 29, unattached to the table; but each side plate 29 20 at its center is provided with an angle-iron 30, as shown in Figs. 3, 4, and 6. The horizontal member of each angle-iron is mounted to slide over a transverse slot 31 made in the table 10, and each slot 31 is in communication 25 with a lower and wider slot 32 produced directly in the sides of the table, as illustrated in Figs. 1 and 6. The horizontal member of each side plate 29 of the press-box is provided with a T-shank 33, (shown in detail in Fig. 30 6,) the vertical member of which moves in the slot 31 and the horizontal member below the table, and this horizontal member may be projected outward through the slot extension 32, when so desired, to carry the side pieces or 35 plates of the press-box quite far apart.

A bracket 34 is located above the outer end of each slot 31, and each bracket 34 is connected with a side plate 29 of the press-box C by a screw 35, and each screw is provided 40 with a right-hand thread at one end and with a left-hand thread at the opposite end. Each screw is further provided with an arm 36, since when the slide 27 is dropped, as shown in Fig. 3, to permit the outward passage of a pressed brick the downward movement of the slide automatically causes the sides of the press-box to move in opposite directions, thus freeing the side portions of the pressed brick. This is accomplished by 50 connecting the rear ends of the arms 36 with the bottom side portions of the slide 27 by means of links 37, as shown in Figs. 3 and 5, suitable lugs 38 being provided to that end at the lower portion of the slide. The rear 55 end of the follower 25 when the follower is in its rearward position constitutes the forward end of the press-box.

A plunger D is adapted to enter the press-box and re-press or compress the brick contained therein, and said plunger is operated 60 by the following mechanism.

A standard 39 is secured on the table at each side of the press-box C, and these standards are preferably rearwardly curved at their 65 upper ends. The standards are provided at their forward edges with bearings, in which a shaft 40 is journaled, the shaft having a crank-

arm 41 about centrally between the standards, and at one end of the shaft a pulley 42 is located, which is connected by a belt 43 70 with the pulley 24 of the conveyer 20, and the shaft 40 at the same end is provided with a gear 44, adapted to be rotated by mechanism to be described farther on in connection 75 with the actuating mechanism of the follower 25. The plunger D is connected with an upwardly-extending plate 46, widest at the upper portion, and this plate is adapted to slide in ways 47, extending inwardly 80 from the rear edges of the standards 39, as shown in Fig. 3. The plate 46 is also preferably provided with a central longitudinal boss 46^a, and links 47^a are pivotally attached to this boss, as shown in Fig. 3, being 85 connected at their upper ends by a suitable pivot-pin 48. On this pin, between the links, the upper bifurcated portion of a pitman 49 is pivoted, the lower portion of said pitman 49 being connected with the crank-arm 41 of the shaft 40, and a link-arm 50, likewise 90 mounted on the pin 48, is pivotally attached to the upper central portions of the standards 39, as shown in Figs. 3 and 5. Thus it will be observed that by the rotation of the shaft 40 and the connection between this 95 shaft and plunger the plunger is raised and lowered and when lowered may be made to tightly press any object in the press-box.

The main driving mechanism consists of a shaft 51, journaled in the frame of the machine below the table 10. This shaft 51 carries a gear 52 at one end, which meshes with the gear 44 on the upper shaft 40, and the shaft 51 at the same end likewise carries a pulley 53, adapted for belt connection with 105 any source of power. A crank-arm 54 is formed at the central portion of the shaft 51, as shown particularly in Fig. 5, and the rear end of a pitman 55 is pivotally attached to the crank-arm 54, while the forward end of the pitman 55 is forked, as shown in Fig. 2, 110 and the forked end of the pitman is pivotally connected with the downwardly-extending member of an angle-lever 55^a, fulcrumed to the under side of the table, usually near the forward end of the slot 14 therein, while the other member of the angle-lever 55^a is pivotally connected by links 56 with the fin 26 of the follower 25. The pitman 55 is provided 115 with the fork above referred to in order that the links 56 may have free downward movement as the crank-arm 54 is carried in a forwardly direction, as shown in Fig. 1, and when the crank-arm is carried in this direction the follower 25 will be within the covered 120 portion of the slideway A. When the crank-arm 54 extends horizontally rearward, the follower 25 will be in position to form the forward wall of the press-box C, and as the crank-arm descends the slide 27 being in the 130 lower position shown in Fig. 3 said crank-arm will carry the slide up to form the rear wall of the press-box, as shown in Fig. 5, holding it in this position until the plunger D

has operated to press the brick beneath it. This movement is accomplished by moving a lever 57 upon a fixed shaft 58, the forward end of the lever being in the path of the crank-arm as it descends, and the rear end of the lever is connected by a link 59 with the back of the slide 27 through the medium of an extension 60. Thus it will be observed that the slide 27 will be held in position to form a portion of the press-box as long as the link 54 engages with the lever 57 and that when the slide 27 is raised the arms 36 are carried upward and the sides 29 of the press-box are brought to a proper position. When the crank-arm 54 is released from the lever 57, the slide 27 will drop by gravity, or especial means may be provided for carrying it downward, but as the slide travels downward the arms 36, connected with the screws 35, are drawn in the same direction, and the sides of the press-box are moved in direction of the sides of the bed, thus leaving the pressed brick free.

In operation let it be supposed that one brick is in the press-box and another brick is in position to enter the box, the follower engaging with the forward end of the second brick or is in its normal position shown in Fig. 1. It will be remembered when the follower moved forward to its normal position the slide 27 dropped and the sides of the press-box were carried outward. At the next or rearward movement of the follower said follower will force the second brick against the one in the press-box, thus forcing the pressed brick out from the box, the second brick taking its place and the pressed brick E being received upon a suitable conveyer E' at the rear of the machine. Just prior to the follower reaching the forward end of the press-box the crank-arm 54 will have acted upon the lever 57 and brought the parts of the box to their closed or molding position and the plunger will have descended and pressed the brick beneath it. At just about this time the rearmost brick B in the chain of bricks to be compressed will have been forced from the plate 17, covering the slideway A, upon the upper surface of the follower, and as the follower moves rearward and the parts of the press-box are also moved to release the pressed brick the next brick to be pressed and now carried by the follower will slide therefrom into the slideway as the follower is carried beneath the said covering-plate 17.

In Fig. 7 I have illustrated a slightly-modified form of the rear end of the pitman 55 or that end which is adapted for engagement with the crank-arm 54, and in this modified form of pitman 55 a closed yoke 61 is formed at its rear end, in which a box 62 is mounted to slide, made in two sections, and one of these sections is controlled through the medium of a spring 63, located within the yoke and bearing against said section and against the inner end of a set-screw 64, carried by the rear end portion of the said pitman. In this manner the boxes 62 may be made to fit

the crank 54 more or less snugly and friction is reduced to a minimum.

Having thus described my invention, I 70 claim as new and desire to secure by Letters Patent—

1. In a brick-press, a press-box having movable cooperating parts, mechanism for shifting the side parts to and from each other, 75 means adapted to move an end part of a box in a path at an angle to the path of the side parts, a device for supplying the box with material, and a mechanism for actuating said device, arranged to control the combined 80 shifting mechanism.

2. In a brick-press, a press-box having a fixed bottom, sides movable to and from each other, and an end arranged for vertical movement, a follower constituting the opposite 85 end of the box, controlling devices for the end parts of the box, and means for adjusting the side parts with reference to the movements of the end parts of the box, as set forth.

3. In a brick-press, a press-box provided 90 with a fixed bottom, sides movable to and from each other, and a sliding end, a lifting mechanism for the said end, a trip for the lifting mechanism, and a connection between said sliding end and sides, whereby the sides 95 and end move simultaneously to assemble or to separate the movable parts of the box, as described.

4. In a brick-press, a press-box having a fixed bottom, sides movable to and from each 100 other, and a vertically-adjustable end, adjusting-screws for the said sides, arms attached to the adjusting-screws and connected with the said adjustable end, and means, substantially as shown and described for raising 105 and lowering the said adjustable end, thereby causing the said arms to impart movement to the said adjusting-screws, as described.

5. In a brick-press, the combination, with a 110 bed, a press-box erected on said bed, having sides adjustable to and from each other, and an adjustable end, a mechanism for controlling the movement of the sides through the movement of the said end, and means for imparting movement to the said end, of a support, a follower held to travel on said support 115 to and from the said box at an open end thereof, an actuating device for the said follower, adapted to control the means for operating the adjustable end of the press-box, a plunger having movement to and from the 120 press-box in a direction at right angles to the movement of the follower, and a mechanism for actuating the plunger, the arrangement 125 of said mechanism being such that the follower approaches the box when its parts are connected and leaves the box as its parts are separated.

6. In a brick-press, the combination, with a 130 table, a slideway mounted on the said table, a conveyer located at one end of the slideway, a press-box located at the opposite end of the slideway, having its end facing the

slideway open and its sides and opposite end
adjustable, a cover for the slideway adjacent
to the said conveyer, a plunger adapted to
enter the press-box, a toggle mechanism for
5 raising and lowering the said plunger, a crank-
and-pitman connection between said toggle
mechanism, and means for driving said crank
from said drive-shaft, of a follower having
end movement in said slideway to and from
10 the said press-box, a crank formed upon the
drive-shaft, a lever pivoted to the said table,
a pitman connection between the said lever

and said crank of the drive-shaft, a link con-
nection between the said lever and the said
follower, means for moving the sides of the 15
press-box by the movement of its adjustable
end; and a shifting-lever for said adjustable
end, controlled by the movement of the crank
on the drive-shaft, as described.

RUSSELL ANTHONY.

Witnesses:

C. J. TURNER,
J. T. SAUNDERS.