

(No Model.)

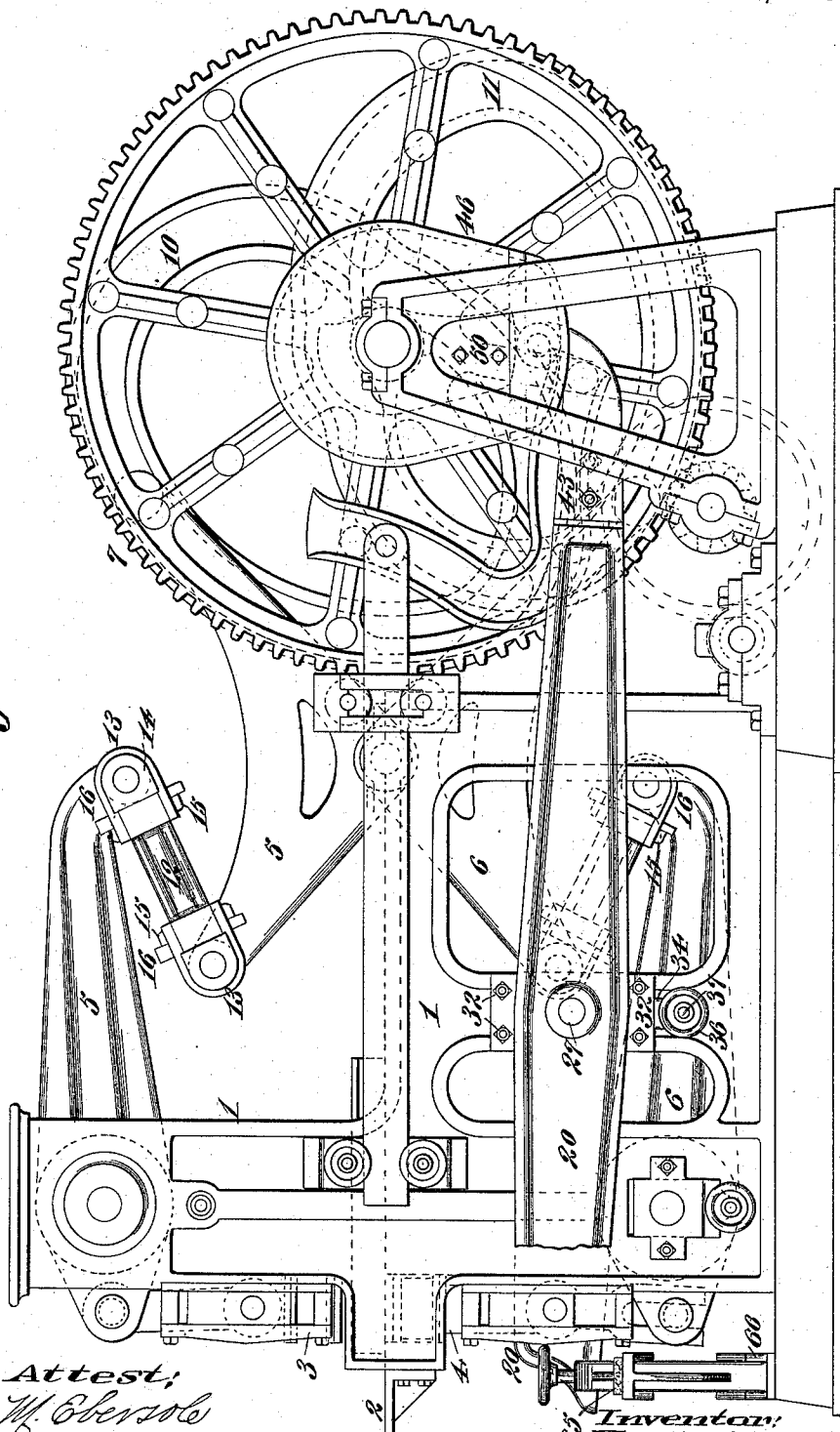
2 Sheets—Sheet 1.

E. FERNHOLTZ.
BRICK MACHINE.

No. 535,280.

Patented Mar. 5, 1895.

Fig. 1.



Attest:
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UNITED STATES PATENT OFFICE.

EMIL FERNHOLTZ, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
JACOB STOCKE AND HENRY C. BECKMANN, OF SAME PLACE.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 535,280, dated March 5, 1895.

Application filed January 2, 1894. Serial No. 495,318. (No model.)

To all whom it may concern:

Be it known that I, EMIL FERNHOLTZ, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Brick-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in brick machines; and my invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a side elevation of my improved machine. Fig. II is an inside view of the adjustable cam. Fig. III is an edge view of same. Fig. IV is a vertical section of same. Fig. V is a detail view of one of the extensible levers for ejecting the bricks. Fig. VI is an edge view of same. Fig. VII is a transverse section, taken on line VII—VII, Fig. VI. Fig. VIII is a detail, vertical and transverse section, showing part of the frame of the machine; showing the adjustable blocks for moving the ejecting levers at their fulcrum, and showing the wedges for moving the blocks. Fig. IX is a detail, inside view showing part of the frame of the machine, and one of the blocks. Fig. X is an outside view of same. Fig. XI is a detail view, showing the adjustable connection between the lower plunger and the outer ends of the ejecting levers. Fig. XII is a top view of one of the connections between the pressing levers. Fig. XIII is a similar view, showing a slight modification. Fig. XIV is an elevation of the stop for limiting the descent of the lower plunger. Fig. XV is a perspective view of part of the cam for moving the discharging levers.

Referring to the drawings, 1 represents the frame of the machine.

2 represents the table, in which the mold is placed, as usual.

3 represents the upper plunger and 4 the lower plunger.

5 represents the levers for moving the upper plunger, and 6 the levers for moving the lower plunger, to press the bricks.

7 represents one of the master-wheels for operating these levers.

8 represents the charger, and 9 the cam for moving the charger.

10 represents the cam for moving the upper plunger, and 11 the cam for moving the lower plunger.

The parts thus far mentioned are the same in construction and operation as the corresponding parts in Patent No. 509,302, issued November 21, 1893, to myself, Henry C. Beckmann, and Jacob Stocke, and these parts need no special explanation or description here.

As a new means of connecting the adjacent ends of the levers 5, and the adjacent ends of the levers 6, I employ for each connection a block 12, having straps 13, which surround the journal boxes 14 of the levers. At each end of the block there is a gib 15 and a key 16. By tightening on the keys 16 any wear of the boxes 14 is taken up, and any lost motion is thus prevented.

In Fig. XII I have shown a pair of gibs and keys at each end of each block 12, while in Fig. XIII I have shown a single gib and key at each end.

20 represents the ejecting levers, which, as shown in Fig. I are connected to the lower plunger after the manner shown and described in the patent referred to.

In Fig. XI, the boxes 21 of the lower plunger fit in the openings 22 of the levers, as in said patent, but beneath the boxes are wedges 23 which are adapted to be moved in or out by means of a hand-wheel 24, (the hand wheels being connected to the wedges after the manner shown in Fig. VIII, which will hereinafter be particularly referred to,) and over the box is a plate 25, against which the lower end of a screw 26, passing through the top of the lever, seats. By loosening on the screw 26, the box 21 can be adjusted, and then the screw may be tightened so that the box will be held snugly between the plate 25 and the wedge 23, so as to move longitudinally of the lever, as the latter moves on its pivot.

The levers are fulcrumed or pivoted at 27 by a rod 28, (see Fig. VIII,) which passes across the machine. The rod passes through blocks 29, fitting in openings 30 in the frame of the machine, the outer surface of the blocks having flanges 31 which cover the openings 30, as

shown in Figs. VIII and X. The flanges 30 have slots 32 for the passage of bolts 33 that connect the blocks to the frame of the machine, by passing through the flange 31. (See Figs. I and X.) Beneath the blocks 29 are wedges 34 having down-turned, outer ends 35. 36 represents hand-wheels fitting on the threaded ends of pins 37, which are fixed and held in the frame 1, as shown at 38. The hubs of the hand-wheels have grooves 39, to receive down-turned ends 35 of the wedges. By operating the hand-wheels, the wedges can be moved in or out to raise or lower the block 29, (and thus raise or lower the pivots of the levers 20,) and when the blocks are adjusted they are held by the bolts 33. At the inner end of each lever, there is a joint 40, preferably formed by reducing the adjacent ends of the two parts, and forming a groove 41 in one of the parts to receive a tenon 42 in the other part. (See Fig. VII.) The two parts are connected by bolts 43 fitting in slots 44 in one end of the parts. By loosening on the nuts of the bolts 43, the levers may be lengthened out or shortened up, and then by tightening on the nuts they are held to their adjustment. The extreme inner end of each lever is provided with a friction roller 45, which is engaged by the cams 46, mounted on the shaft of the master-wheels, and which serve to operate the levers. Each of these cams is made of two parts, so as to be adjustable. 47 represents one of the parts, and 48 the other part. By making the levers adjustable in length the rollers 45 may be adjusted lengthwise of the levers, after the parts are put together, to bring them into the proper position relatively to the cams 46, so that the cams will operate upon the levers at the proper time.

49 represents the cam groove in which the roller 45 fits and works, the central portion 50 operating upon the roller to move the lever, and the outer flange 50^a serving to control the movement of the lever too far in either direction. The part 48 of the cam is connected to the part 47 by means of bolts 50, 51 representing the joint between the two parts. One part of the cam is provided with slots 52, through which the bolts 50 pass, to permit the adjustment of the cam. The part 48 of the cam has a portion 53 which projects into a recess in the central part 50 of the cam. The working face of the part 50 of the cam, in raising the levers to eject the bricks, is from A to B, and the part from B to C holds the lower plunger in its raised position while the bricks are being moved from over the mold. Now if it is desired to lift the lower plunger a little higher, it is done by simply loosening on the nuts of the bolts 50, and moving the part 48 of the cam slightly away from the part 47, (see Fig. XV) and then the nuts being tightened the two parts will be held firmly together. This moves the surface from B. to C farther from the shaft opening D of the cam, so that the inner end of the lever will be moved lower, and the plunger

elevated higher before it rests, to permit the bricks to be moved from over the mold by the charger.

The flange 50^a of the cam has a zigzag joint 51, as shown in Fig. III and the roller 45 on the lever extends across the part of this joint which is lengthwise of the flange, so that the flange will always have a bearing for the roller, either on the part 60 or the part 61, notwithstanding the cam may be lengthened out so that there is a space at 62 and 63. In like manner the part 53 of the cam is connected to the part 50 by a zigzag joint 51, and the roller 45 will extend across the part of this joint, which is lengthwise of the cam, so that the cam will always have a bearing for the roller, either on the part 70 or the part 71, notwithstanding the cam may be lengthened out.

65 represents a stop located in front of the machine, and against which the outer ends of the levers 20 impinge to arrest the descent of the lower plunger. This stop is the same as the corresponding part in the patent referred to, with the exception that in the present instance I place a rubber bumper 66 beneath the movable part of the frame 67, so as to increase the yielding effect or elasticity of the stop.

The operation of my machine is as follows:— The master wheels are set in motion, and the upper and lower plungers operated by the levers connected to them and the cams on the master wheel, which operate the levers. The bricks are ejected from the molds by means of the levers pivoted at the sides of the machine and operated by the adjustable cam carried by the master wheel. When the mold becomes worn and the bricks are not raised high enough to be ejected, by the ejecting plunger the cam carried by the master wheel is lengthened which causes the inner end of the ejecting levers to be depressed a little farther and consequently the outer end to be raised. When such adjustment becomes necessary the pivot of the levers is changed as is also the position of the rollers in their outer ends so that the relative arrangement of the different parts of the machine will not be changed; also when the connections between the levers operating the plungers become worn they may be tightened and lost motion prevented.

I claim as my invention—

1. In a brick machine, the combination of a lower plunger, levers for lifting the lower plunger to eject the bricks, and means for moving said levers; said levers being extensible in length, substantially as set forth.

2. In a brick machine, the combination of a lower plunger, levers for lifting the lower plunger to eject the bricks, and means for moving the levers, each of said levers being formed in two pieces connected by bolts, so as to be changeable in length; substantially as and for the purpose set forth.

3. In a brick machine, the combination of

a lower plunger, a lever for moving the lower plunger to eject the bricks, and a cam for moving the lever; said cam being made in two parts bolted together, and having a zigzag joint between the parts to form a continuous bearing surface, the lower part of the cam having a portion 53 set into the part 50 of the cam, substantially as and for the purpose set forth.

4. In a brick machine, the combination of the lower plunger, a lever for lifting the lower plunger, and a cam for moving the lever, said cam being formed in two parts, with a joint 51, and secured together by bolts 50 fitting in slots in one part of the cam, and said cam having an outer flange 50^a, with a zigzag joint 51; substantially as and for the purpose set forth.

EMIL FERNHOLTZ.

In presence of—

CARRIE EHLMANN,
CHARLES EHLMANN.