

(No Model.)

2 Sheets—Sheet 1.

J. D. PACE.
BRICK MACHINE.

No. 520,023.

Patented May 15, 1894.

FIG. 5.

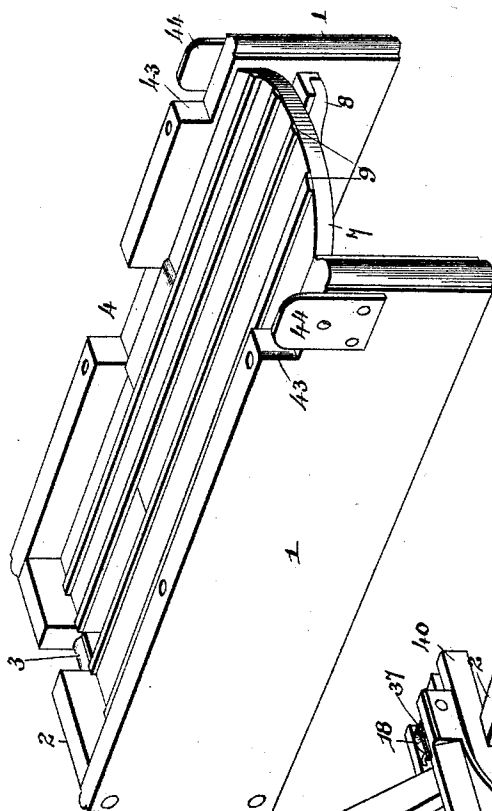
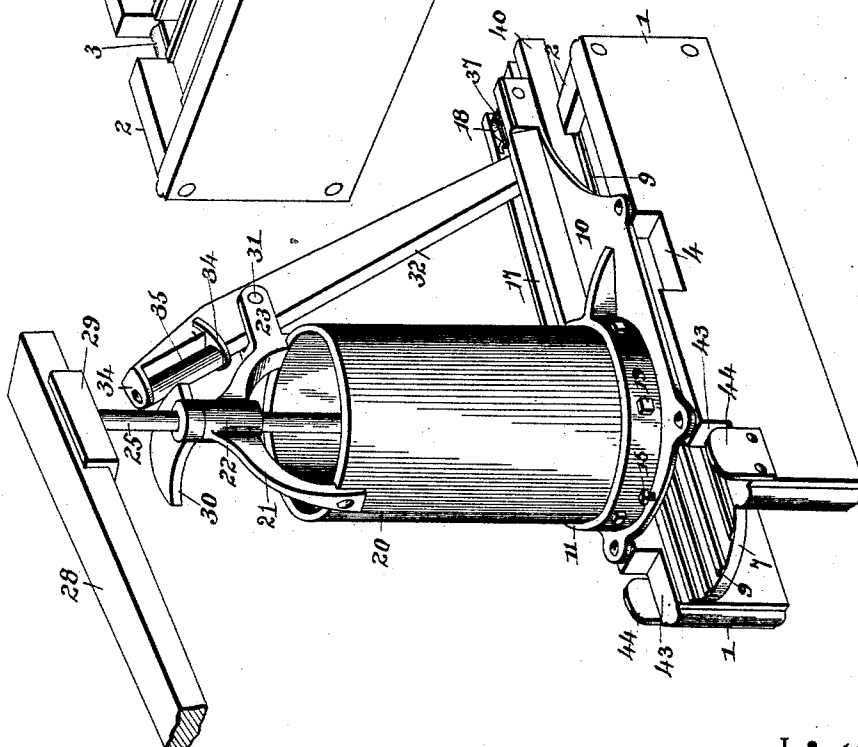


FIG. 1.



Witnesses

Jas. H. McLaughlin

M. S. Duval

Inventor

Jefferson D. Pace

By his Attorneys,

C. A. Snow & Co.

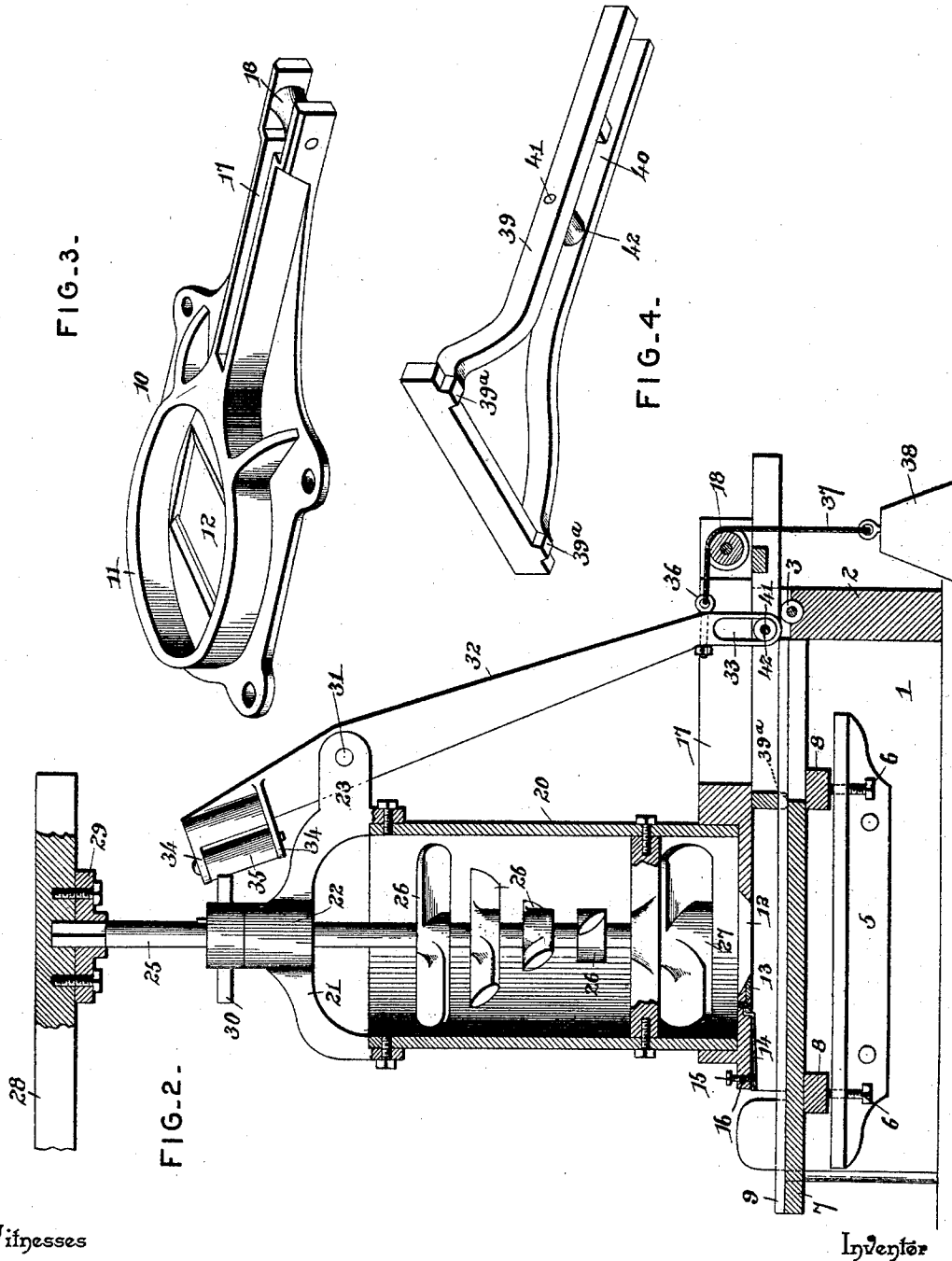
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2 Sheets—Sheet 2.

J. D. PACE.
BRICK MACHINE.

No. 520,023.

Patented May 15, 1894.



Witnesses

James H. McEachron
W. S. Duval

Inventor

Jefferson D. Pace
By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JEFFERSON DAVIS PACE, OF SHREVEPORT, LOUISIANA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,023, dated May 15, 1894.

Application filed February 24, 1893. Serial No. 463,567. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON DAVIS PACE, a citizen of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented a new and useful Brick-Machine, of which the following is a specification.

My invention relates to that class of brick-machines embodying a vertical stationary pug-mill or hopper, a rotatable stirrer and feed-shaft, and a mechanism for moving under the discharge opening of said hopper or mill a series of brick-molds, the same being filled with clay during their passage thereunder.

The objects of my invention are to provide a machine of this class adapted to be operated either by mechanical or horse-power; to be of cheap and simple construction, and to include therein means for automatically feeding the molds successively under the discharge opening of the mill or hopper, smoothing the clay therein, and discharging said mold thus filled at one end of the machine, said mechanism to be operated through suitable connections operated by the mechanism employed for operating the mill.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a brick-machine constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a detail in perspective of the base-plate. Fig. 4 is a similar view of the plunger. Fig. 5 is a similar view of the base, the plunger, the base-plate, and mill being removed.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention, I provide a suitable base, which in this instance comprises a pair of vertical side-sills 1, which are connected near their rear ends by a cross-sill 2, having its upper end recessed and provided with an anti-friction roller 3, horizontally disposed. One of the sills 1 is provided at or about its middle with an opening 4, the same being adapted to receive the empty molds which are in a manner hereinafter described

fed under and to the discharge-opening in the hopper. To the inner sides of the sills 1, there are secured opposite horizontally-disposed cleats or rests 5, and the same are provided with a series of vertically-disposed adjusting screws 6, which extend upwardly from the cleats or rests and support the mold-receiving table 7. The mold-receiving table 7 is provided upon its under side with cross-cleats 8, which rest directly upon the adjusting-screws, and the upper side of said table is provided with a series of longitudinally-disposed anti-friction bars 9, over which the molds may readily slide.

Surmounting the upper edges of the sills 1 is the base-plate 10, the same being bolted to position, for which purpose it is provided at its opposite edges with perforated securing-flanges. At its center the plate has formed thereon an annular raised collar or wall 11, the same being provided at intervals with bolt-holes, and within said collar or wall the base-plate is provided with a rectangular discharge-opening 12, whose upper edges are inclined or beveled and whose front edge has secured thereunder a knife 13, whose beveled edge is uppermost and forms a continuation of the edge of the opening. In front of the knife there is secured to the under side of the base-plate a spring-plate 14 to strike the molds, the front free edge of such spring-plate being coincident with that of the base-plate and borne upon by means of an adjusting-screw 15 which passes through the perforation 16 formed in the base-plate and in which said screw is threaded. By means of this screw it will be seen that the spring-plate may be adjusted, that is more or less depressed into the path of the discharge-passage of the machine. The front end of the base-plate is projected to the corresponding ends of the sills, that is to a point slightly beyond the cross-sill 2, and said projected end is provided with a slot 17, the rear end of which has journaled therein slightly beyond the cross-sill 2 a grooved roller 18.

Seated within the annular collar or wall 11 and bolted thereto by means of bolts 19, is a cylindrical hopper or pug-mill 20. This pug-mill or hopper 20 is surmounted by an inverted U-shaped yoke 21, whose ends are bolted to the upper ends of the hopper at diametri-

cally-opposite sides, and said yoke is provided at its center with a vertical bearing 22, and has an arm 23, formed at one side of one of its branches, said arm being bifurcated in the manner shown.

Located in the bearing of the yoke is a vertical rotatable shaft 25, the same extending down to a point opposite the opening 12 in the base-plate, and at its upper end extending from above the yoke. The shaft at a point below the yoke is provided with a series of oppositely-inclined radially-disposed beveled knives 26, the same being arranged spirally upon the shaft and combining to form a series of stirrers and also a feed-anger, which constantly feeds the clay, as the shaft is revolved, toward the lower end of the mill. The lower end of the shaft is provided with an auger-like feeding-blade 27 which forces the clay through the opening 12 in the base-plate and presses the said clay into the molds that are arranged thereunder, in a manner hereinafter described.

The shaft may be operated by any suitable motor; in the present instance I have provided the same with a sweep-arm 28, whereby the same may be operated through horsepower, said arm being secured to the upper end of the shaft through the medium of a socket 29.

Fixed upon the shaft between the yoke and socket is a quadrant-shaped cam 30, to push lever 32 out at top and in at bottom to shove mold out, the same being designed to revolve with the shaft. Pivoted between the bifurcations of the arm 23, as shown at 31, is a lever 32, whose lower end extends below the base-plate and through the slot 17 therein at which point it is provided with a slot 33; and whose upper end is provided upon its inner edge with a pair of vertically opposite bearing-lugs 34, in which is loosely journaled a friction-roller 35. An eye 36, is formed on the outer edge of the lever 32, and a rope, chain or cord 37, is connected to the eye, depends rearwardly over the grooved roller 18, and down from the rear end of the machine, where it is secured to a retracting-weight 38, the same being designed to normally retract or draw outward the lower end of the arm 32 and consequently press the upper end inward against the cam of the pug-mill shaft.

Mounted for reciprocation over the table and under the base-plate, is a Y-shaped plunger 39, the same having a longitudinal slot 40, provided with a transverse-pin 41, upon which an anti-friction roller 42, is mounted, said pin and roller passing through the slot in the lower end of the lever 32, whereby said lever and plunger are loosely connected. The front end or head of the plunger is of a width agreeing with the discharge-opening in the base-plate, and is provided upon its under side with guide-lugs 39^a, which take in grooves or between the ribs 9 of the table.

At the front end of the machine the sills 1 are recessed as shown at 43, so that they are

on a level with the table, and rising from the opposite sides of the sills coincident with the recess is a pair of bumping posts or knock-plates 44 to loosen mud in molds.

This being the construction, the operation of the invention is as follows: The clay is fed in the upper end of the pug-mill in the usual manner and the machine is started, whereby, as will be obvious, the clay is stirred or worked and fed positively toward the lower end of the cylinder or mill and forced down through the opening 12. An attendant standing at the side of the machine feeds the empty molds successively through the opening 4 and into the path of the plunger, which is normally retracted by the weight connected with the lever 32. By the time that the mold is fed into the machine the cam begins to act upon the upper end of the lever, pressing said upper end outward and consequently the lower end inward, thus forcing the plunger forward and with it the empty mold until the same arrives under the discharge opening in the base-plate. Here a temporary arrest of the movement occurs, during which the clay is fed and packed into the mold; the plunger retracted; a new mold is fed in front of the same, and in the subsequent advance of the plunger the first mold is pushed forward and the second mold takes its place to receive its quantity of clay. The advance of the first mold under the knife serves to carefully smooth off all the surplus of clay, which drops down through the ribs 9 on the table, and hence does not impede the progress of the mold through the machine. The spring-plate 14 may be regulated to smooth the contents of the mold, and also to lend a certain amount of resistance to the advance of the mold. As the mold emerges from the rear end of the machine it is received by another attendant and its contents are loosened by a knocking of the mold against one of the spring knocker-plates at the sides of the machine, after which the brick is ready for drying.

It will be seen that the operation for making brick may be carried on as fast as the pug-mill may be turned and molds fed into the machine and removed therefrom. It will furthermore be seen that the retraction of the plunger is occasioned by the lever becoming uninfluenced by the cam which passes beyond the lever and the action of the weight in withdrawing the same.

From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a machine of cheap and simple construction adapted to work and positively feed the clay from the mill into the molds, filling the same accurately, smoothing them off, and delivering them at the rear end of the machine, and that the mechanism for stirring and feeding the clay also serves to operate the plunger or mold-feed.

Having described my invention, what I claim is—

1. In a brick-machine, the combination with
a base having an opening, the upper edges of
which are beveled, a cylinder arranged over
the opening, a feed-shaft mounted in the cyl-
inder, means for operating the shaft, a knife
arranged at the front edge of the opening and
having its beveled side forming a continua-
tion of the edge of the opening, and a spring
plate carried by the base in rear of the knife
and serving the double function of furnishing
a slight resistance to the advance of the mold
and smoothing off the contents of the same,
of a reciprocating plunger arranged under
the knife, and means for operating said plun-
ger, substantially as specified.

2. In a brick-machine, the combination with
a base having an opening, the edges of which
are beveled, a knife arranged adjacent to the
edge of the opening and having its edge form-
ing a continuation thereof, a pug-mill or cyl-
inder surmounting the base over the opening,
a feed-shaft arranged in the cylinder, and
means for operating the same, of a reciprocating
plunger arranged under the base, a flat
spring arranged under the base in rear of the
knife, and a regulating-screw passing through
the base and bearing upon the free-end of
said spring, substantially as specified.

3. In a brick-machine, the combination with
the opposite sills, the base-plate arranged
thereon, an opening formed in the sills, a dis-
charge-opening formed in the base-plate in
rear of said opening in the sills, and annular-
walls surrounding the opening of the base-plate,

an extension formed at the rear side of the
base-plate and provided with a slot, a roller
loosely mounted in the extension, a table ar-
ranged under the base-plate, a plunger mount-
ed upon the table and having a slotted rear
end, of a cylinder mounted in the annular
wall and bolted thereto, a feed-shaft arranged
in the cylinder, a yoke having a bearing ar-
ranged upon the cylinder and receiving the
feed-shaft, means for rotating said shaft, a
cam carried by the shaft, a lever pivoted at
one side of the cylinder and operated upon
by the cam, a pivot-pin connecting the lever at
its lower end with the plunger, a rope, chain,
or cord connected to the lever and depending
over the pulley, and a weight secured to the
lower end of the rope, substantially as speci-
fied.

4. In a machine of the class described, the
base having its side sills provided with cleats
or rests 5 and adjusting-screws 6, combined
with the mold-receiving table 7 having the
cross-cleats 8 which rest upon the adjusting-
screws, the upper side of the table having a
series of longitudinally-disposed anti-friction
bars 9, substantially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

JEFFERSON DAVIS PACE.

Witnesses:

W. G. BONEY,
E. N. HENDOR.