No. 796,191. PATENTED AUG. 1, 1905.

O. CONGDON & O. WUEST.

BRICK MACHINE.

APPLICATION FILED FEB. 21, 1903. RENEWED DEC. 30, 1904.

3 SHEETS—SHEET 1.

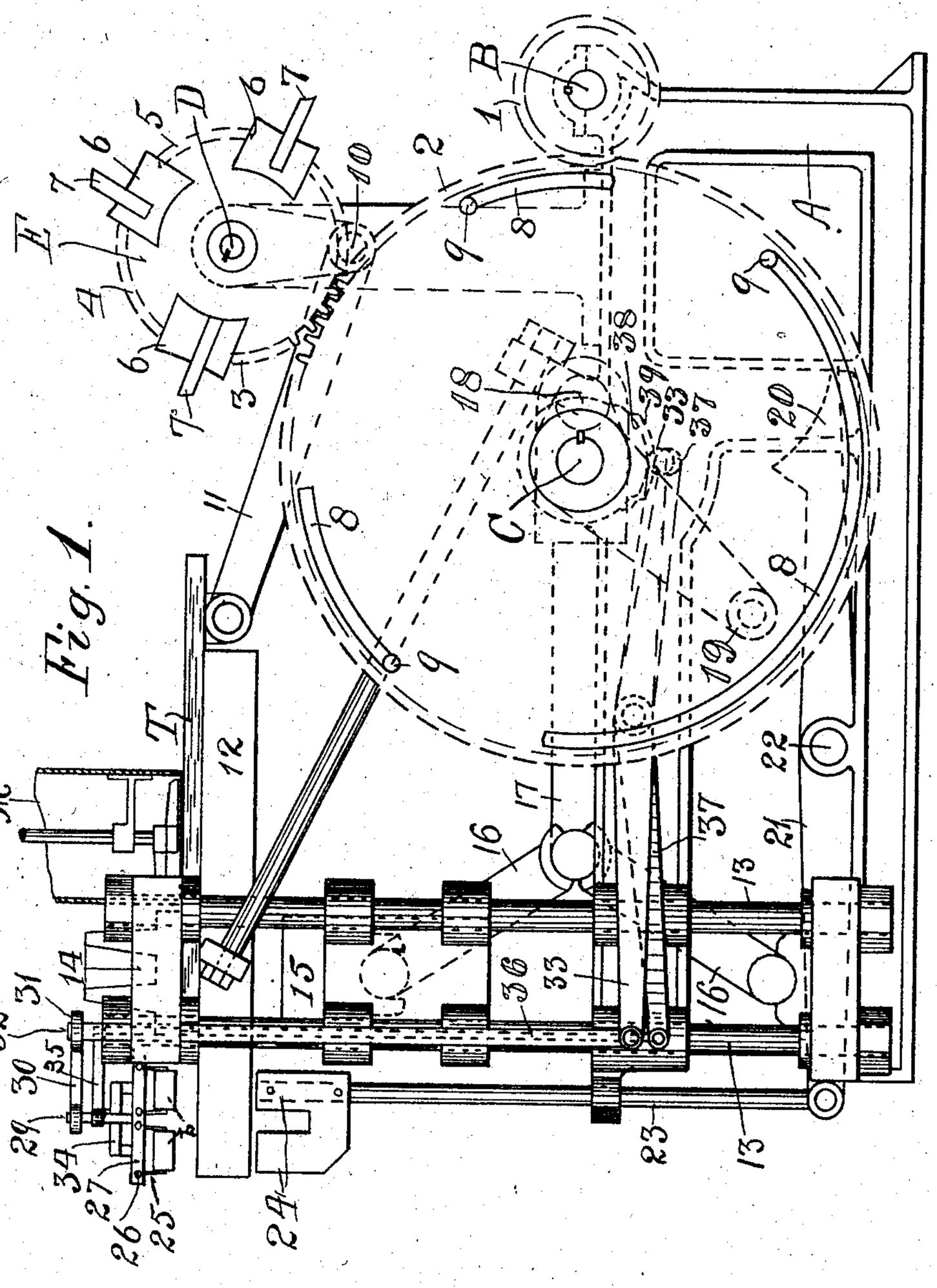

Fig. 1.

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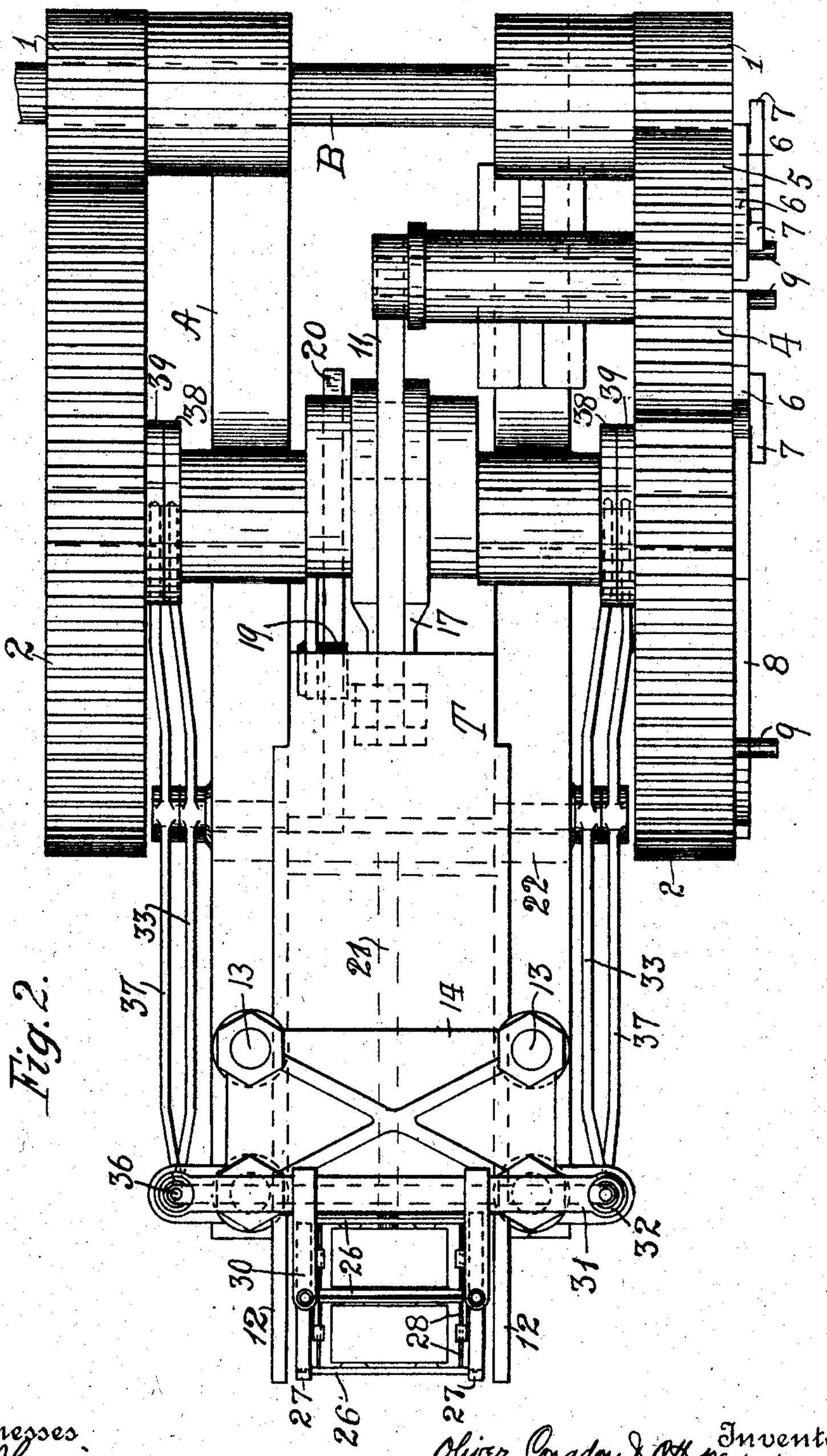

Fig. 2.

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3 SHEETS—SHEET 3.

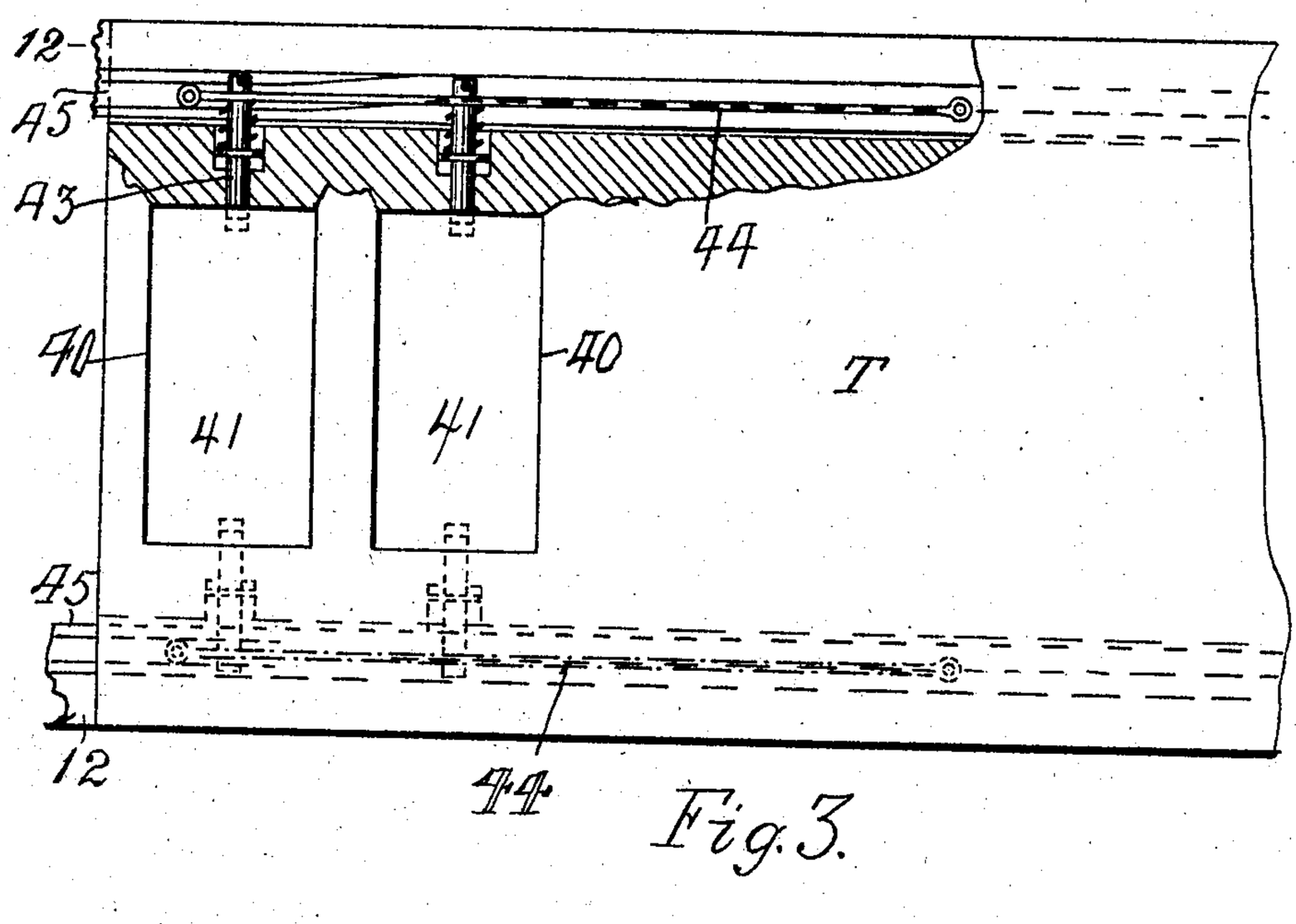
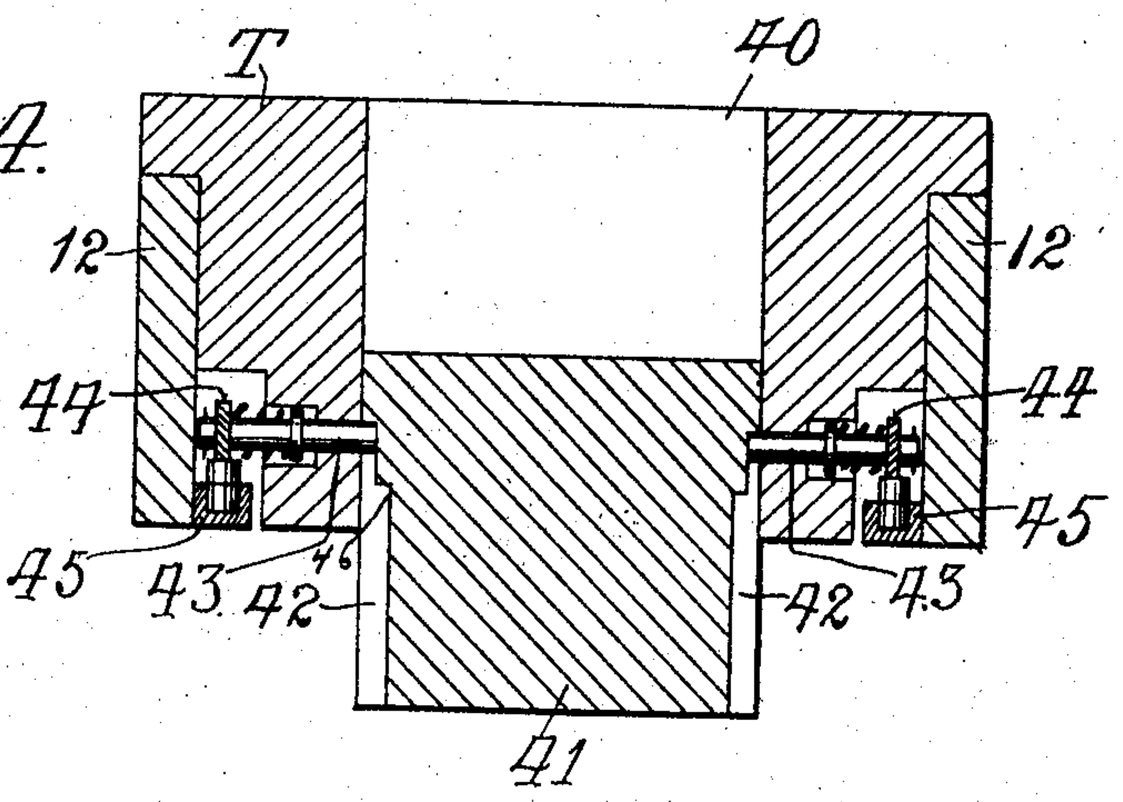


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

OLIVER CONGDON AND OTTO WUEST, OF BROOKLYN, NEW YORK, ASSIGNORS TO SAMSON BRICK COMPANY, OF KINGS COUNTY, NEW YORK.

BRICK-MACHINE.

No. 796,191. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed February 21, 1903. Renewed December 30, 1904. Serial No. 238,876.

To all whom it may concern:

Be it known that we, OLIVER CONGDON and OTTO WUEST, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Brick-Machines, of which the following is a specification.

This invention relates to machines for making bricks and the like, and has for its main object the provision of a simple, strong, and durable machine capacitated to feed the material to the mold, to move the mold to a press where the material in the mold is compacted by pressure, and then to move the mold to a point where an ejector pushes the brick out of the mold and the brick are then removed by hand or otherwise.

Another object of the invention is the provision of means for automatically catching the brick as they are ejected from the mold.

Other objects will appear hereinafter.

To these ends the invention consists of features of construction and combinations of devices hereinafter described, and more particularly pointed out in the appended claims.

One form of the invention is illustrated in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a machine in which the invention is embodied. Fig. 2 is a plan view of the same. Fig. 3 is a view, on a larger scale, of parts shown in the preceding figures; and Fig. 4 is a detail view.

In the drawings the reference A marks a suitable framework in which the moving parts are suitably mounted. B is a drive-shaft, and C D are shafts journaled in the frame A.

The shaft B has drive-gears 1 fast thereon, which mesh with gears 2, fast on the shaft C, while the shaft D has an intermittent gear E fast thereon, which meshes with the gear 2. The gear E is divided into three segments 3 4 5 and has three locking-plates 6, fast thereon, opposite the intervals between the toothed segments 3 4 5, while starting-arms 7 are fastened to the said plates 6. The gear 2 is provided with locking-flanges 8, which are adapted to coact with the segments or plates 6, and with pins or arms 9, which coact with the levers 7 to start gear E.

The bed or mold-carrier T is connected with a crank 10 on the shaft D by means of a rod 11 and is supported and guided by the fixed ways 12. The rails or ways 12 are supported from the standards 13 by the head or platen 14, which is fast on the standards 13.

15 designates a ram, which is operated by a toggle 16, link 17, and the crank 18 on the shaft C. The ram 15 is guided by the said standards 13 in its up-and-down motion.

19 marks a crank on the shaft C, which coacts with the cam end 20 of the lever 21, fulcrumed at 22 to lift the rods 23 and the ejector 24 at the proper times.

The mold-carrier or bed T is provided with molds 40, and dies or followers 41 are fitted and slide up and down in the molds 40. The dies 41 are grooved at 42, and the bed T has spring-pins 43, mounted therein to project into said grooves 42 to retain the dies in place. The pins 43 are operated or controlled by levers 44 and cams 45 on the rails or ways 12. The grooves 42 may be shouldered or deepened at 46 for a purpose hereinafter set forth. The ram 15 and also the ejector 24 coact with the dies 41 in ramming and in ejecting, as will hereinafter appear.

Above the ejector 24 are pairs of clamping-jaws 25, which extend downward from the shafts 26, journaled in bars 27. The shafts 26 are provided with arms 28, by means of which the jaws are opened and closed, as hereinafter set forth. The bars 27 are fast on rods 29, which in turn are fast to arms 30. The arms 30 are fast on a cross-head 31 between tubular rods 32. The rods 32 are guided in head 14 and are connected with side levers 33.

The arms 28, above mentioned, are moved simultaneously by rods 34, which project from a head 35, guided by the rods 29. The head 35 is fast to rods 36, which pass inside of the tubes 32, said tubes being slotted to allow the head 35 to pass freely. The rods 36 are operated by side levers 37.

The shaft C is provided with cams 38 39 for operating the levers 33 and 37, as hereinafter described.

The operation of the above-described mechanism is as follows: In the position of the parts shown in Fig. 1 the bed T is being returned to the right after the discharge of bricks *b*, the segment 3 of gear E being in mesh with the gear 2. When the bed T has got into position under the pug-mill or mixer M, which is mounted on the head 14, the segment or plate 6 and a flange 8 have come into

coaction for locking the gear E against rotation until the pin 9 at the end of the flange 8 acts on the lever 7 to start gear E to rotating, and thus throws segment 4 into mesh with gear 2. During this time the mixer M fills the molds with material, and afterward the segment 4 moves the bed or table T from under the mixer M to a position over the ram 15, whereupon a plate 6 and a flange 8 again lock the gear E against motion, and during such locking of the gear E and bed T against motion the crank 18 operates the toggle 16 to force ram 15 against the bottoms of the dies 41 and moves these upward, thus compressing the material in the molds between the dies and the platen 14. Thereafter the toggle is lowered by the continued motion of the crank 18. As the dies 41 are forced upward, as described, the shoulders 46 pass above the pins 43, and these pins are thereupon forced under said shoulders, and thus hold the dies up after the ram 15 falls away. Thereafter a pin 9 coacts with a lever 7 to throw segment 5 into mesh with the gear 2, and the table 2 is moved outward and brought to rest above the ejector 24 as the plate 6 between the segments 5 and 3 coacts with the corresponding flange 8—to wit, that shown at the right in Fig. 1. While the table T is at rest over the ejector 24, the crank 19 operates the lever 21 and moves the ejector 24 upward against the dies 41, and so moves the last upward to force the bricks from the molds out of the molds. At the same time the pins 43 may pass beneath the dies 41, so as to hold the latter up should the crank 19 release the lever 21 before the next operation is completed. The cams 38 39 now lower the brick-catching mechanism and cams 39 act on the side levers 37 to raise the rods 36, which by means of the head 35 and rods 34 close the jaws 25 on the bricks *b*, after which the cams 38 operate the levers 33 and cams 39 operate the levers 37 to lift the bricks clear of the table T. Thereafter the pin 9 strikes the corresponding lever 7 and throws the segment 3 of gear E into mesh with the gear 2 and the table T is returned to position under the mixer M. The cams 39 release the levers 37, and so allow head 35 to descend, thereby releasing the clamps 25 as an attendant receives the bricks.

The invention is not limited to the precise form thereof shown in the drawings and particularly described above.

What is claimed as new is—

1. The combination of a to-and-fro-moving mold-carrier, a pug-mill or mixer and a fixed platen arranged above the path thereof, said platen being at one side of said mill, a ram and an ejector arranged below said path, the ram beneath said platen and said ejector beyond the platen from said mill, a crank-motion for actuating said carrier, and intermittent gearing for actuating said crank.

2. The combination of a to-and-fro-moving mold-carrier, a pug-mill or mixer and a fixed platen arranged above said path thereof, a ram and an ejector arranged below said path, intermittent gearing for actuating said carrier, and automatic clamps and lifting mechanism for catching and lifting the brick on their ejectment from the mold, substantially as described.

3. The combination of a to-and-fro-moving mold, a die therein provided with shouldered grooves, pins, spring-moved inwardly, for engaging in said grooves to retain said dies, levers for moving said pins outwardly, and fixed cams for actuating said levers, substantially as described.

Signed at Brooklyn, in the county of Kings and State of New York, this 23d day of January, A. D. 1903.

OLIVER CONGDON.
OTTO WUEST.

Witnesses:
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DENNIS J. CLARE.