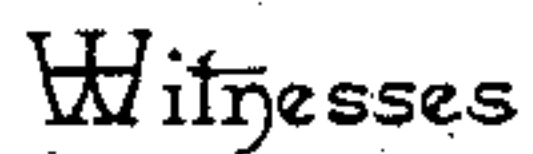


2 Sheets—Sheet 1.

No. 574,800.

Patented Jan. 5, 1897.



E. H. Stewart
V. B. Hillyard

By *W. S.* Attorneys,

Andrew J. Gwin

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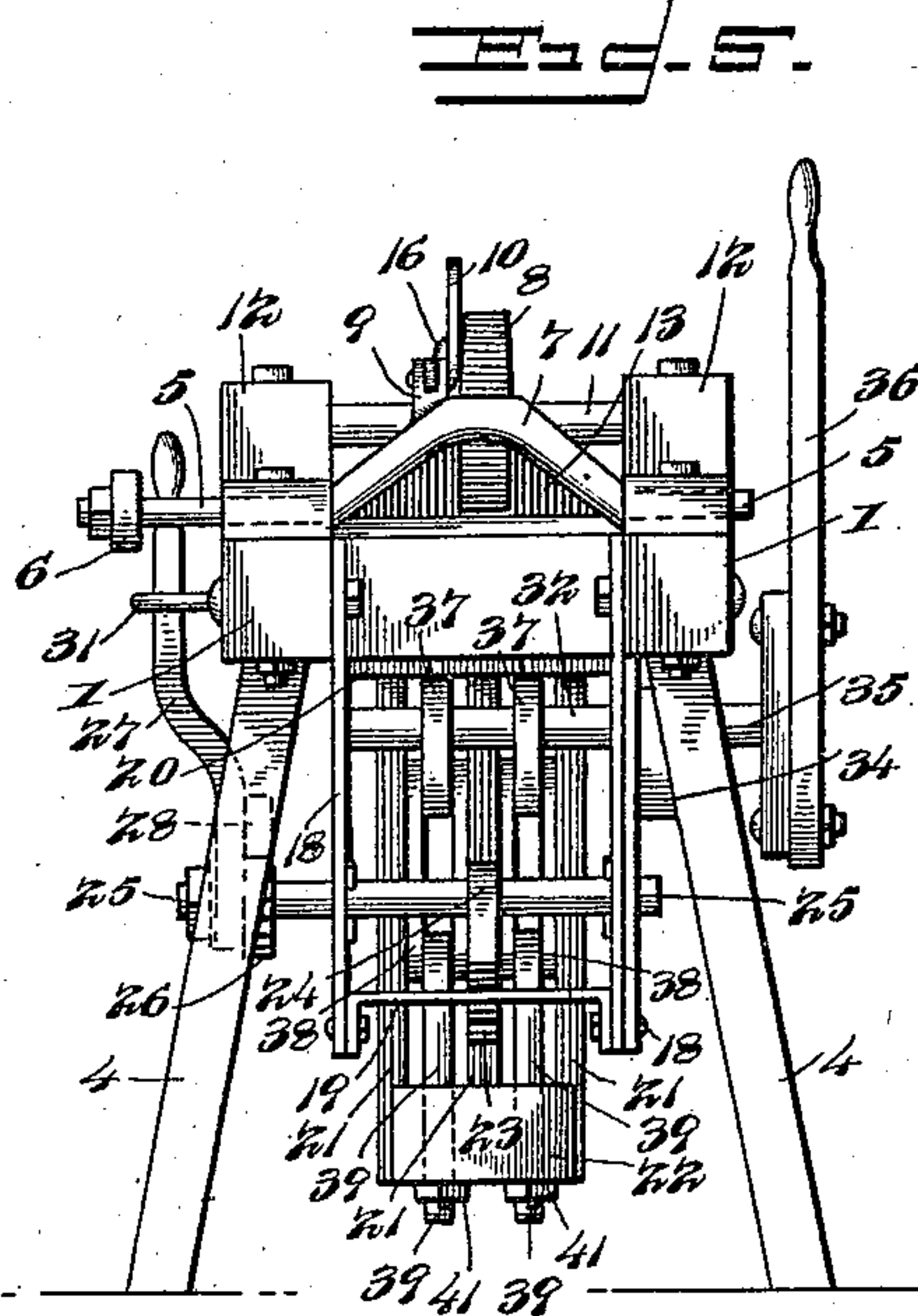
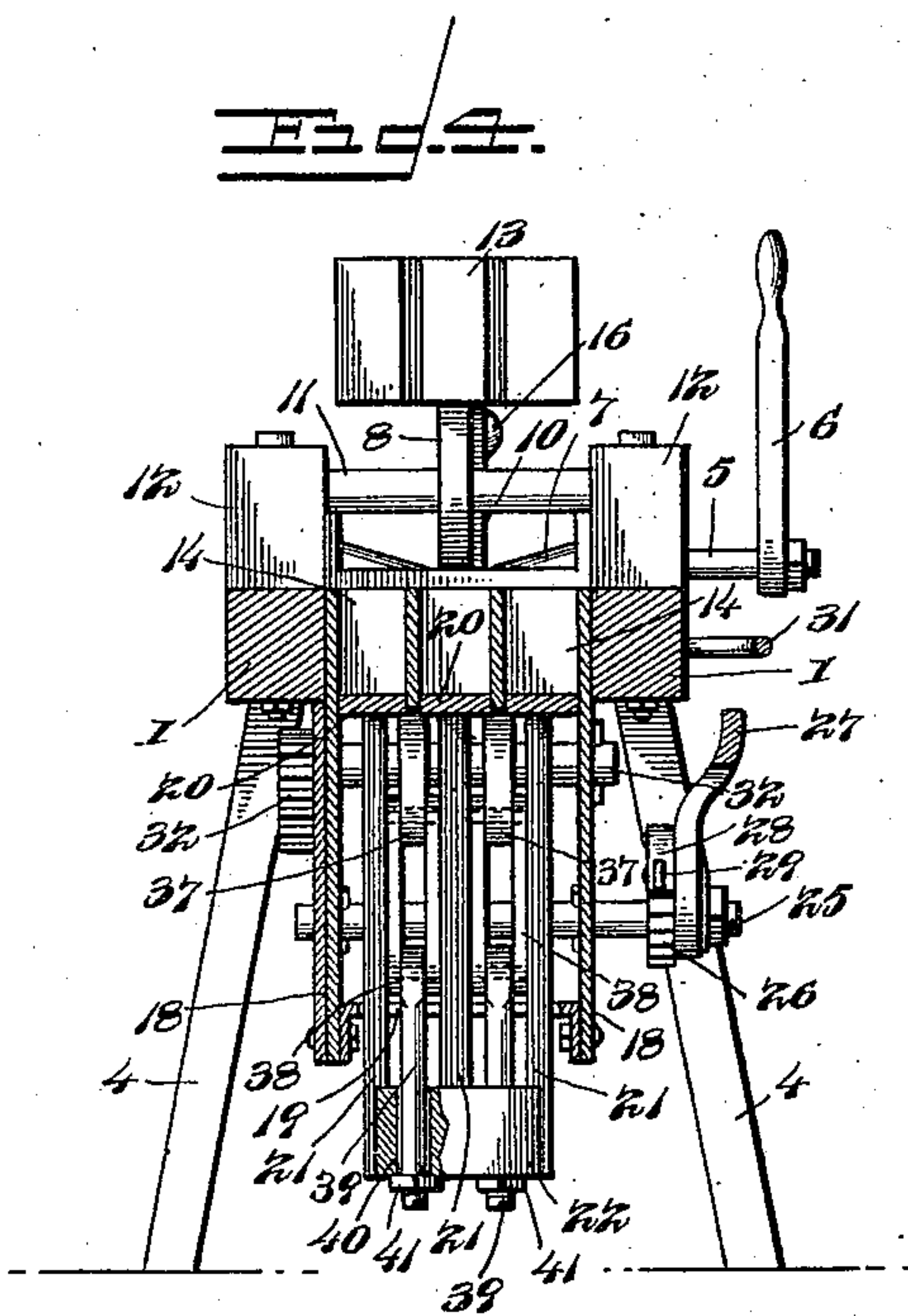
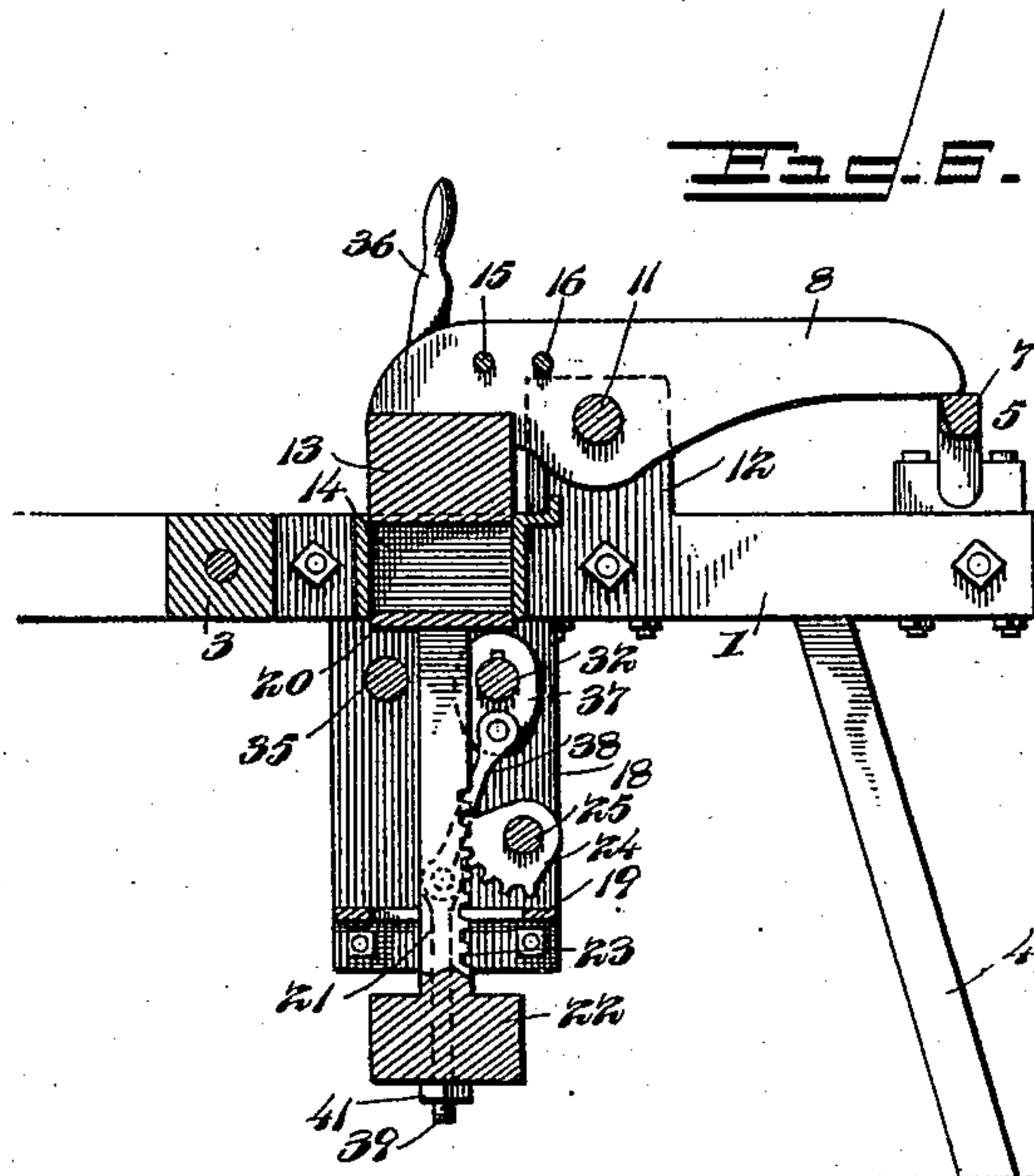
(No Model.)

2 Sheets—Sheet 2.

A. J. GWIN.
BRICK MACHINE.

No. 574,800.

Patented Jan. 5, 1897.



Inventor

Andrew J. Gwin

Witnesses

E. H. Stewart
V. B. Hillyard.

By Two Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ANDREW J. GWIN, OF MINDEN, LOUISIANA, ASSIGNOR OF ONE HALF TO
S. G. WEBB, OF SAME PLACE.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,800, dated January 5, 1897.

Application filed March 31, 1896. Serial No. 585,638. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. GWIN, a citizen of the United States, residing at Minden, in the parish of Webster and State of Louisiana, have invented a new and useful Brick-Machine, of which the following is a specification.

This invention relates to that class of machines for making brick by hand and aims to increase the output of machines of this character without requiring additional labor or imposing extra work or requiring a special effort on the part of the workman.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a machine constructed for effecting the objects of this invention, showing the lever bearing the cap for closing the upper ends of the molds in locked relation. Fig. 2 is a view of the reverse side, showing the said lever thrown into an upright or vertical position. Fig. 3 is a top plan view of the machine, the parts occupying the relative position shown in Fig. 2. Fig. 4 is a transverse section on the line X X of Fig. 3, looking in the direction of the arrow. Fig. 5 is an end view of the machine. Fig. 6 is a vertical longitudinal section on the line Y Y of Fig. 3, the cap being closed and the end portion of the frame being broken away.

Corresponding and like parts are referred to in the following description and designated in the several views of the accompanying drawings by the same reference-characters.

The frame for supporting the operating parts may be of suitable construction, and is shown as comprising longitudinal beams 1, an end bar 2, and an intermediate cross-bar 3, and this frame is supported upon legs or uprights 4. A crank-shaft 5 is journaled in bearings at one end of the frame, and its pro-

jecting end is provided with a handle 6, by means of which the crank-shaft is turned in its bearings. The crank portion 7 of the crank-shaft is flattened on its outer side to secure an extended bearing between it and the lever 8, and a lug 9 extends about radially from the crank-shaft and is cleft at its outer end to receive a link or arm 10, which is pivotally connected therewith. The lever 8 is secured to a short shaft 11, which obtains bearings in pillow-blocks 12, secured to the longitudinal beams 1, and the inner end of this lever is supplied with a cap 13, which closes the upper ends of the molds 14. Pins or studs 15 and 16 extend laterally from the short arm of the lever and are about in horizontal alinement when the cap 13 is closed, and one of the pins, as 16, is headed to overlap the sides of an L-slot 17 in the front end of the said link or arm 10, so as to retain the latter in working and operative relation. The horizontal portion of the L-slot 17 is sufficiently long to enable the link or arm 10 to have a longitudinal movement, so as to permit the crank portion 7 to clear the outer end of the lever 8 prior to the tilting of the latter to elevate the cap 13.

When the pin or stud 15 reaches the vertical portion of the L-slot, a continued movement of the link or arm 10 will cause the latter to pull upon the part 15 and tilt the lever 8, so as to lift the cap 13, thereby uncovering the molds. Upon closing the cap 13 the part 15 will travel in the vertical portion of the L-slot 17, and after the cap is closed the arm 10 will move a distance to enable the crank portion 7 of the crank-shaft 5 to come beneath the outer end of the lever 8 and hold the latter in locked relation, the pins or studs 15 and 16 traveling in the longitudinal or horizontal portion of the L-slot 17.

Side plates 18 depend from the longitudinal beams 1 and are connected thereto in a substantial manner, and are united at their lower ends by a horizontal plate 19. The molds 14, of suitable shape and in any desired number, three generally being employed, are located at the upper ends of the plates 18, and a plunger 20 operates in each mold, the plunger-rods 21 being connected at their lower ends by a cross-head 22, which is of sufficient

weight to cause the descent of the plungers when the latter are released after ejecting the molded bricks. One of the plunger-rods, preferably the intermediate or middle rod, is provided with cog-teeth 23, which mesh with a correspondingly-toothed segment 24 on a shaft 25, obtaining bearings in the plates 18, and by means of which the plungers are quickly elevated to eject the bricks after the latter have been molded. A ratchet-wheel 26 is secured to a projecting end of the shaft 25, and a lever 27, loosely mounted upon the projecting end of the shaft 25, is provided with a pivoted dog 28, connected by means of a rod 29 with a hand-latch 30, to be thrown into engagement with the teeth of the ratchet-wheel 26 when required, so as to turn it and the shaft 25 to eject the bricks when required. A keeper 31 is applied to the longitudinal beam 1 adjacent to the lever 27 and serves to limit the movements of the lever and support it when not in use.

A shaft 32 is journaled in the plates 18 near their upper ends, and its projecting end has fitted thereon a toothed cam 33, which meshes with a corresponding and companion toothed cam 34, held upon a shaft 35, similarly journaled in the plates 18 and provided with an operating-lever 36. The shafts 32 and 35 are placed about in the same horizontal plane and are spaced apart a distance to receive between them the plunger-rods 21. Elongated plates or arms 37 are keyed to the shaft 32 and come opposite the spaces between the plunger-rods, and are connected by links 38 with stems 39, operating loosely through openings 40 in the cross-head 22. The lower ends of the stems 39 are threaded and project beyond the cross-head 22 and receive nuts 41, which are adjustable thereon, so as to limit the vertical movement of the plungers when the lever 36 is operated to compress the brick-forming material in the molds 14 between the cap 13 and the plungers 20.

The clay or other brick-forming material is supplied to the molds 14 by hand or in any other convenient way, and the lever 8 is operated by means of the handle 6 and the arm 10 to lower the cap 13 upon the molds, so as to close their upper ends, the cap being held in place by the crank portion 7 engaging with the outer end of the lever 8. The lever 36 is now actuated and through the toothed cams 33 and 34 turns the shaft 32 and lifts the stems 39, thereby bringing the nuts 41 into engagement with the cross-head 22 and elevating it and the plungers and compressing the material in the molds. When the bricks have been properly molded, the cap is elevated and the lever 27 operated to lift the plungers through the instrumentality of the toothed segment 24 and the cog-teeth 23, thereby pushing or ejecting the bricks from the molds. The bricks are removed from the plungers and are transported to the kiln in any convenient way to be cured and burned. Upon operating the hand-latch 30 to disen-

gage the pivoted dog 28 from the ratchet-wheel 26 the plungers will descend by the weight of the cross-head 22 and the mass of the plungers and their rods.

Having thus described the invention, what is claimed as new is—

1. In a brick-machine, the combination with a mold, and a lever bearing a cap to close the mold, of a shaft operatively connected with the lever to actuate it to cause the cap carried thereby to close or uncover the mold as desired, and having a crank portion to be brought into engagement with the lever when the mold is closed so as to hold the cap in locked relation, substantially as set forth.

2. In a brick-machine, the combination with a mold, and a lever bearing a cap to close the mold, of a shaft having a handle and lug, a link having pivotal connection at one end with the lug of the shaft and having an approximately L-shaped slot at the other end, and a pair of pins 15 and 16 on the lever and operating in the said L-shaped slot of the link, substantially as set forth for the purpose described.

3. In a brick-machine, the combination with a mold, and a lever bearing a cap for closing the mold, and having a pair of laterally-projecting pins, of a shaft having a crank portion and a lug, a link pivotally connected at one end with the said lug and having in its other end an approximately L-shaped slot to receive the pins on the lever, and means for turning the said shaft in its bearings to operate the lever to close or uncover the mold and to bring the said crank portion into engagement with the lever when the mold is closed so as to lock the cap in place, substantially as set forth.

4. In a brick-machine, the combination with a mold, and a plunger operating in the mold, of parallel shafts, complementary cams secured to the parallel shafts and having their opposing portions toothed and intermeshing, a lever applied to one of the shafts, an arm secured to the other shaft, a stem having loose connection with the plunger, an adjustable stop on the stem to engage with the part of the plunger through which the stem plays, and a link connecting the stem with the aforesaid arm, substantially as set forth.

5. In a brick-machine, the combination of a mold, a plunger operating in the mold and having a cross-head, parallel shafts, complementary toothed cams secured to the shafts and intermeshing, a lever applied to one of the shafts, an arm secured to the other shaft, a stem slidably mounted in the said cross-head, a link connecting the stem with the arm on the said shaft, a stop adjustably mounted on the stem to engage with the cross-head and move the plunger, and means for moving the plunger independently of the intermeshing toothed cams and the connecting mechanism between the said cams and the cross-head, substantially as set forth.

6. In a brick-machine, the combination with

a mold, and a plunger provided with a rod having a toothed portion and a cross-head, of a stem operating through an opening in the cross-head, a nut mounted upon the projecting threaded end portion of the stem and adapted to be brought into engagement with the cross-head, means for moving the stem to actuate the plunger, a shaft, a toothed element secured to the shaft and meshing with the toothed portion of the plunger-rod, and means for turning the shaft to actuate the plunger-rod independently of the said stem, substantially as set forth.

7. In a brick-machine, the combination with a mold, a plunger operating in the mold and having its rod formed with a toothed portion and a cross-head, a stem operating through an opening in the cross-head and having an adjustable portion to be brought into engagement with the latter, and means for moving the stem to advance the plunger in the mold, of a shaft, a toothed element upon the shaft meshing with the toothed portion of the plunger-rod, a ratchet-wheel secured upon the shaft, a lever loosely mounted upon the said shaft, a dog pivoted to the lever, and a hand-latch carried by the lever and having connection with the dog to throw it into or out of engagement with the teeth of the ratchet-wheel, substantially as set forth for the purpose described.

8. In a brick-machine, the combination of a series of molds, and a corresponding series of plungers operating in the molds and having their rods spaced apart and connected by

a cross-head, one of the rods having a toothed portion, stems operating through openings in the cross-head, a shaft having arms which are in connection with the said stems, means for turning the shaft to advance the plungers to the work, a shaft having a toothed element meshing with the toothed plunger-rod, and a lever adapted to actuate the last-mentioned shaft to eject the bricks from the molds, substantially as set forth.

9. In a brick-machine, the combination of a series of molds, a corresponding series of plungers having their rods spaced apart and connected by a cross-head, stems operating loosely through openings in the cross-head and having portions to engage with the cross-head, a shaft having arms opposite the spaces between the plunger-rods and operatively connected with the stems, a second shaft, complementary toothed cams secured upon the two shafts for decreasing the leverage and increasing the effective force for operating the plungers to compress the bricks, a third shaft having a toothed element to engage with a toothed portion of a plunger-rod, and means for operating the last-mentioned shaft to eject the bricks from the molds, substantially in the manner set forth for the purpose described.

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

ANDREW J. GWIN.

Witnesses:

J. M. REAGAN,
J. B. MIMS.