

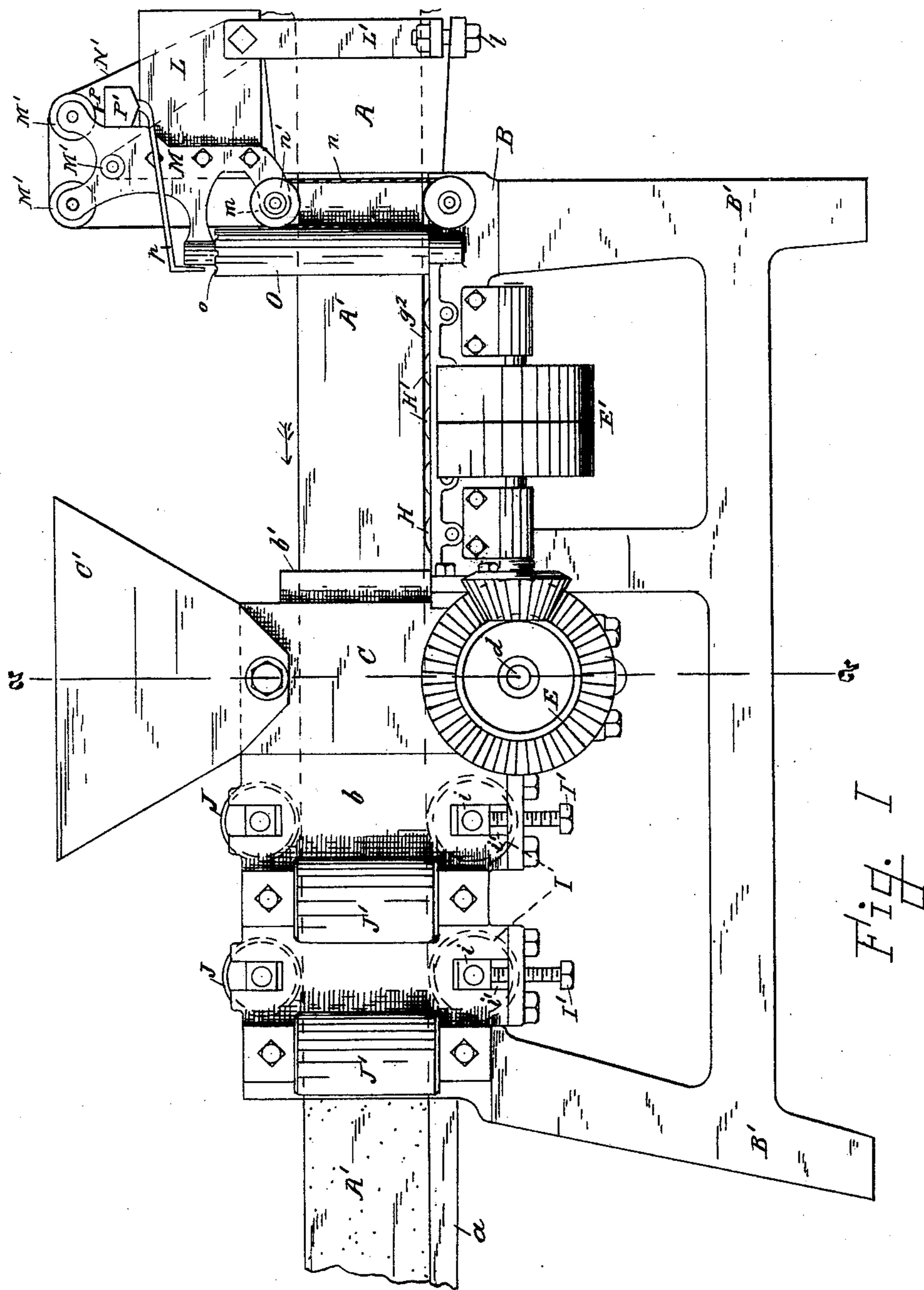
(No Model.)

4 Sheets—Sheet 1.

L. ROLL.
BRICK SANDING MACHINE.

No. 414,329.

Patented Nov. 5, 1889.



WITNESSES:

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W. Allen

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BY

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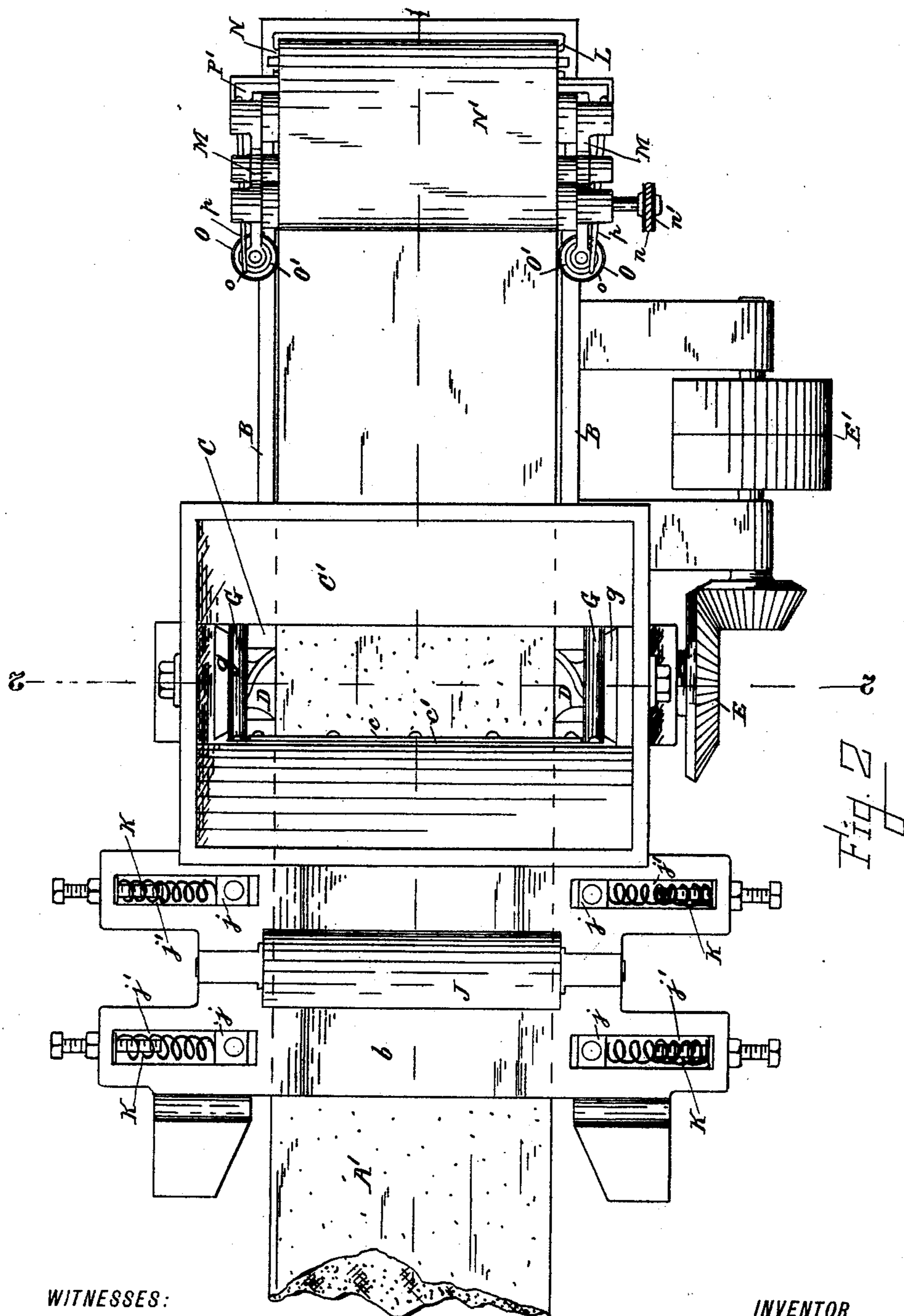
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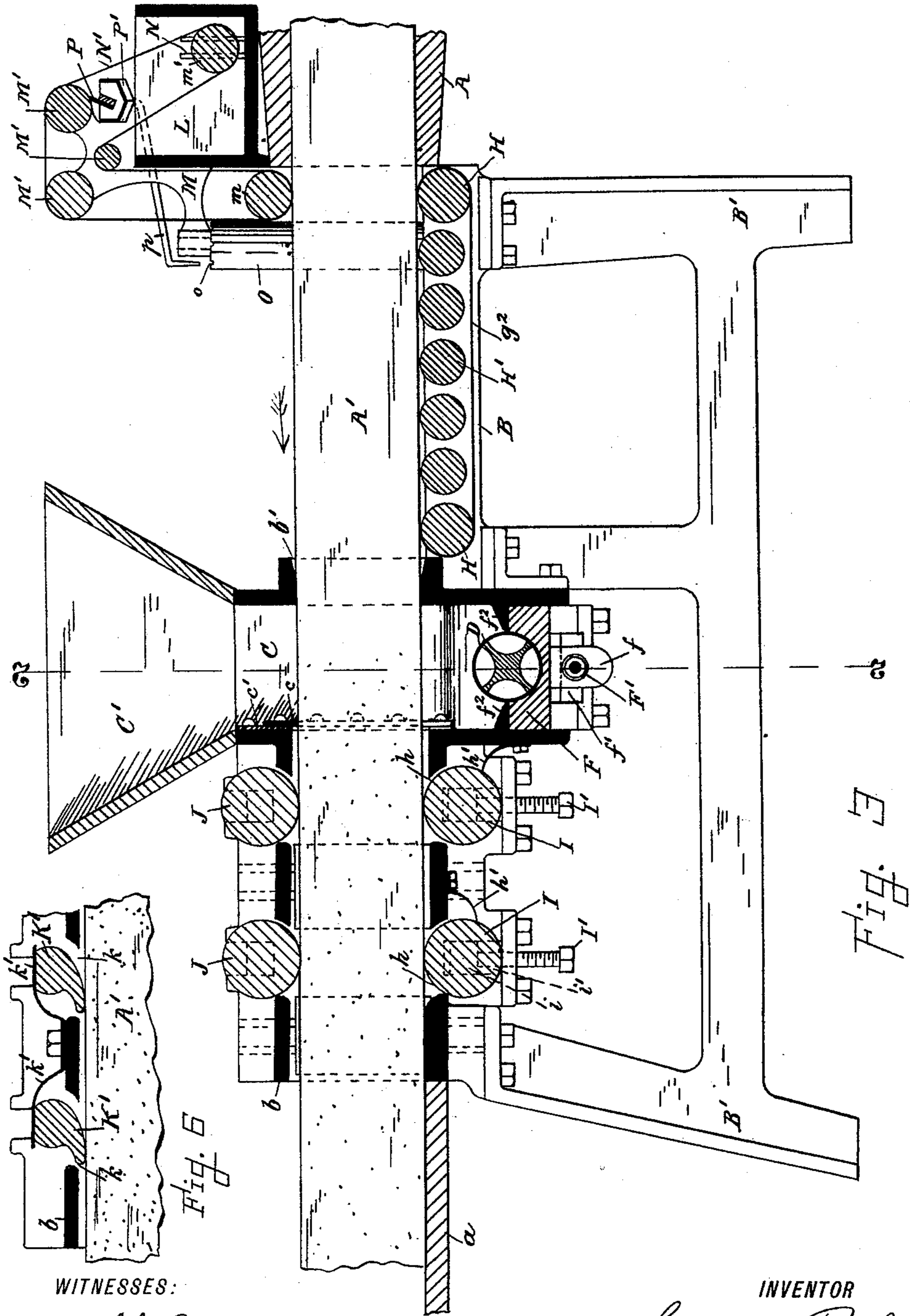
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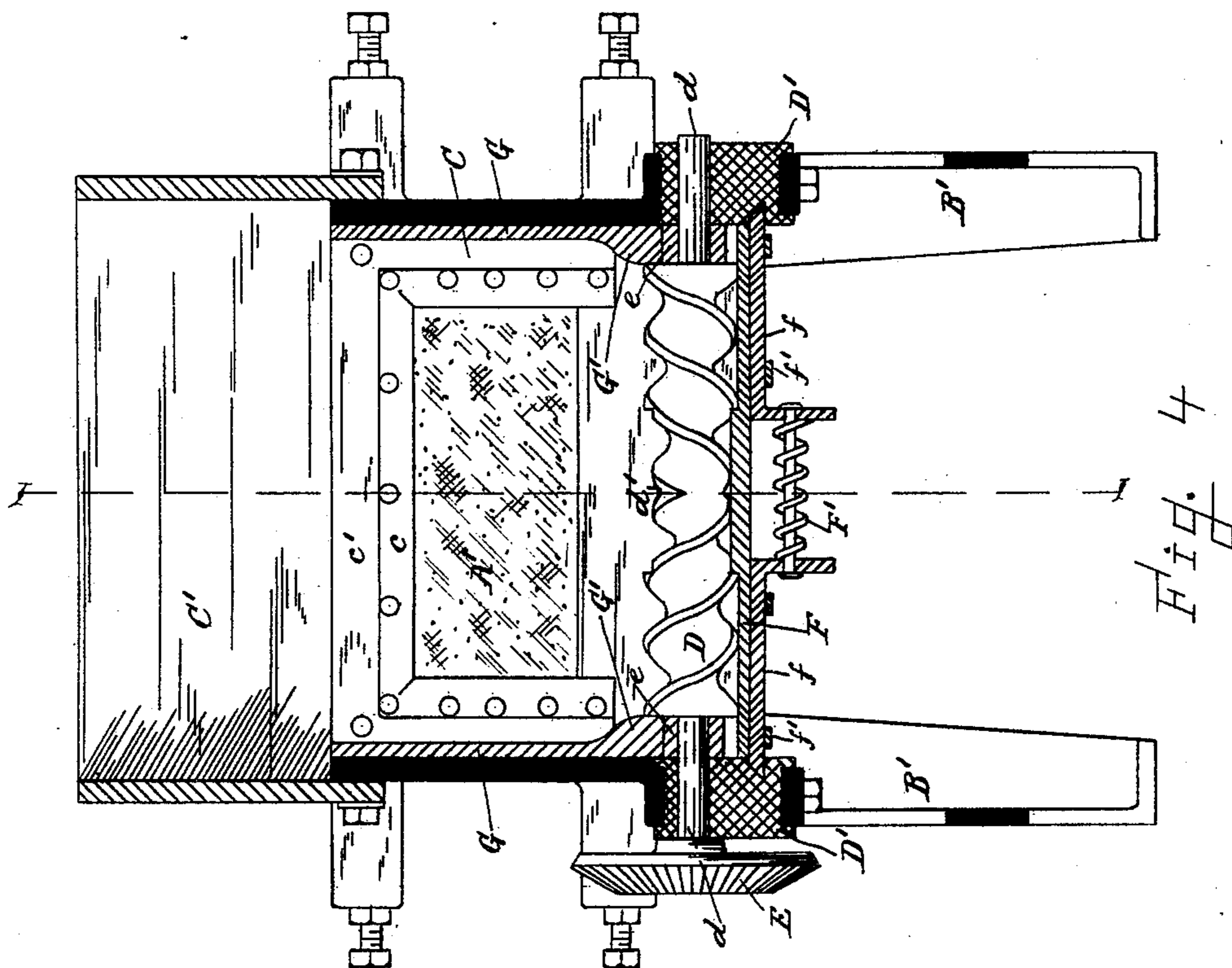
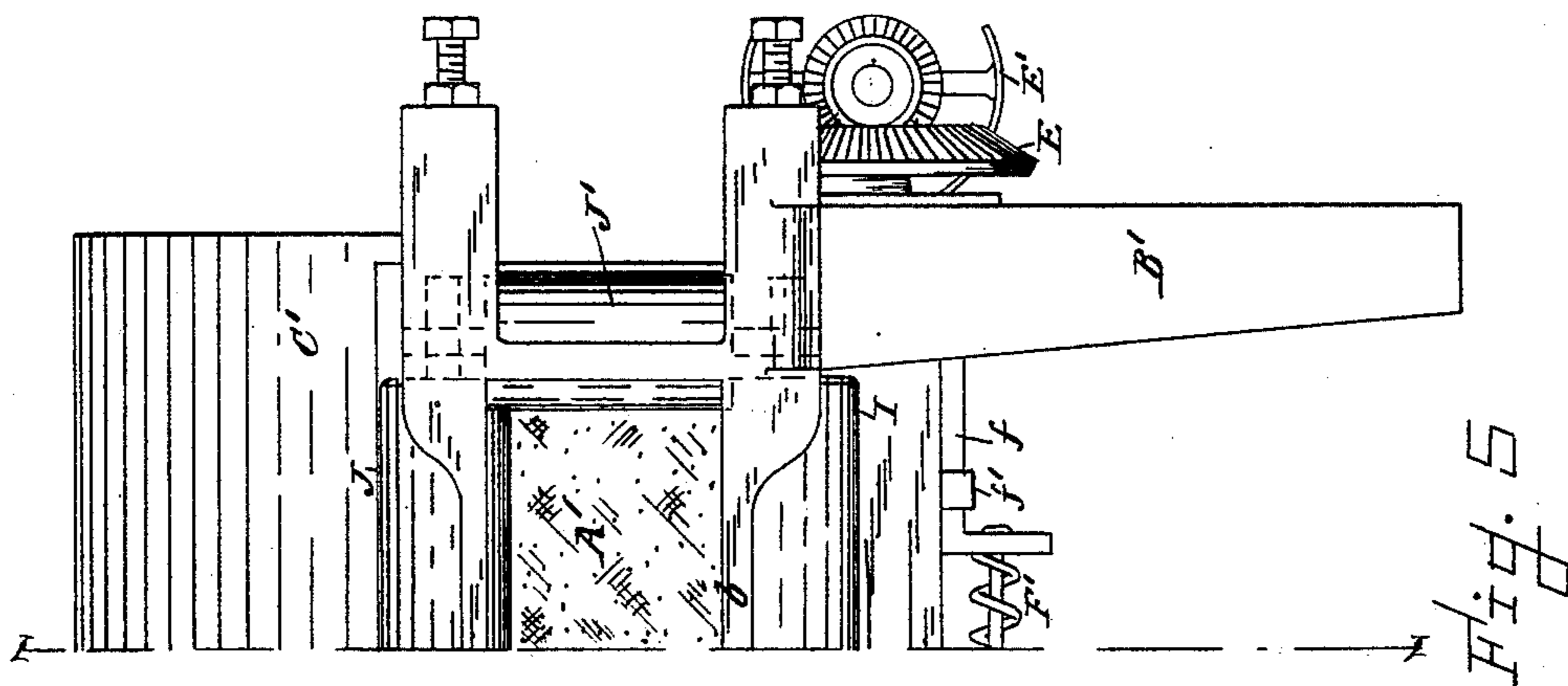
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UNITED STATES PATENT OFFICE.

LEONARD ROLL, OF WILKES-BARRÉ, PENNSYLVANIA.

BRICK-SANDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,329, dated November 5, 1889.

Application filed January 16, 1889. Serial No. 296,492. (No model.)

To all whom it may concern:

Be it known that I, LEONARD ROLL, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne, and State of Pennsylvania, have invented certain new and useful Improvements in Brick-Sanding Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to brick-sanding machines; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed, whereby four sides of the bricks are covered with a coating of non-adhesive material—such as sand or loam—so that they may not stick together in burning and so that they may have a greatly improved appearance.

In the drawings, Figure 1 is a side view of the sanding-machine. Fig. 2 is a plan view of the same from above. Fig. 3 is a longitudinal vertical section through the machine, taken on line 1 1 in Fig. 2. Fig. 4 is a vertical cross-section through the machine, taken on line 2 2 in Fig. 1. Fig. 5 is an end view of one-half of the delivery end of the machine; and Fig. 6 is a sectional view of a portion of the machine, showing a modification of the devices for pressing the sand upon the surface of the clay.

A is the clay-delivery spout of a brick-machine, which may be of any approved construction, and *a* is the table upon which the clay is delivered preparatory to being cut into bricks.

A' is the rectangular body of clay which passes through the spout onto the table, as in the ordinary operation of a brick-machine. The devices for sanding the surface of the clay are interposed between the said spout and table, and at the clay-delivery spout there is provided a device for moistening the surface of the clay before the sand is applied to it, as will be hereinafter more fully described.

B is the frame of the machine, supported on legs B', and *b* is a rectangular open-ended guide-box for the clay to pass through. This box is provided with a flaring mouth *b'* where

the clay enters and a sanding-chamber C immediately behind it.

C' is the hopper for the sand or other material which is to be applied to the clay, and this hopper is secured directly over the sand-chamber C. The small end of the flaring mouth *b'* fits close against the clay, and the sand is prevented from passing down the box *b* in too great a quantity by the wiper *c*, formed of india-rubber or other flexible material and secured to the end of chamber C by means of the sheet-metal frame *c'* and suitable bolts.

The sand is applied to the bottom of the clay by the double spiral conveyer D, mounted upon shaft *d*, journaled in bearings D' in the frame of the machine. The center portion *d'* of the conveyer is made smaller in diameter than the ends in order that the sand may be fed evenly and so that a surplus of sand may not accumulate at the middle of the conveyer. The conveyer is revolved by means of the beveled-toothed wheel E on the end of shaft *d*, which is operated by a beveled pinion and fast and loose belt-pulleys E', as shown in the drawings, or the screw conveyer may be operated by any other convenient means. Collars *e* are secured upon shaft *d* to prevent the sand from getting into the bearings.

F is the removable bottom of chamber C, hollowed out to fit the conveyer, and provided with bolts *f*, sliding in loops *f'* on its lower surface.

F' is a spring between the bolts *f*, which forces them outward and keeps their ends in recesses in the frame, thereby supporting the removable bottom until the said spring-bolts are drawn back by hand.

Lugs *f*² are formed upon the end walls of the chamber C for the bottom to bear against when in position.

The sides of chamber C are provided with dovetailed slots, and G are removable slides, provided with projections *g*, sliding in the said slots.

G' are projections on the bottoms of the slides, which projections partly fill up the space between the sides and the clay, thus regulating the amount of sand passing down to the screw conveyer. When the material

is changed, the slides G can be withdrawn and other slides inserted in place of them, with projections G', adapted to regulate the size of the spaces to the kind of material or sand
5 used.

H are rolls journaled in the frame between the flaring mouth of the sanding-machine and the spout from which the clay issues. A conveyer-belt g^2 passes around the rolls H,
10 and the clay rests upon the belt.

H' are rolls of smaller diameter than rolls H and journaled in the frame in a similar manner. These rolls pass through the loop of belt g^2 and prevent its upper surface from
15 sagging under the weight of the clay.

I are a pair of rolls journaled in boxes i , sliding vertically in grooves i' in the frame.

I' are screws for causing rolls I to bear against the under side of the clay in box b ,
20 which is provided with openings h for that purpose, and h' are scrapers secured to any convenient rigid portion of the machine and bearing against the rolls for keeping them clean.

J are vertically-sliding rolls journaled at the top of box b in a similar manner to rolls I and bearing on the top of the clay by their own weight or with the assistance of springs or screw-pressure, if desired.

J' are vertical rolls arranged in pairs on each side of the box b . Each roll J' is journaled in sliding blocks j , arranged in the slots j' , and K are spiral springs for causing the rolls J' to bear against the clay, suitable open-
35 ings k being provided in the box for the said rolls to project through.

When a very fine sand or loam is used and it is desired to give the bricks a very smooth surface, non-revoluble rolls or slickers may
40 be used in place of revoluble rolls and pressed against the clay in a similar manner. An illustration of this is shown in Fig. 6, where the slickers K' are provided with springs k' and are adapted to take the place of the vertical rolls J'. The rolls or slickers press the sand firmly into the surface of the clay in box b , and the clay passes onward onto the table a , where it is cut up into bricks by any approved devices for that purpose.

50 In order that the sand may more readily adhere to the clay, the surface of the clay is moistened as it issues from the spout A.

L is a small water-tank clamped to the said spout by strap L' and bolts l , or otherwise
55 supported above the clay in any convenient manner.

M are side plates bolted to the tank, and M' are three guide-rollers journaled between the upper ends of the side plates. A distributing-roller m is journaled at the lower end of the plates, and m' is a roller which is free to slide up and down between the vertical guides N inside the tank.

N' is a belt which passes over all the rollers
65 and is brought in contact with the upper surface of the clay by the roller m . Motion is

imparted to the belt by the cord n and pulley n' , mounted upon one of the roller-spindles, a similar pulley being secured upon the spindle of the end conveyer-roll H under the
70 clay for the lower part of the cord to pass around. The moistening device may, however, be driven by toothed gearing, if desired, or in any other convenient manner.

The sides of the clay are moistened by vertical rollers O, journaled in the frame B and in the plates M.

O' are annular water-grooves in the top ends of rollers O, and o are notches through which the water may pass from the grooves
80 to the surface of the rollers.

P is a scraper bearing against one of the upper rollers for collecting water from its surface. This water drips off the scraper into the trough P', and p are pipes at each end of
85 the trough, which conduct the water to the grooves O' in the end of the rollers.

The under side of the clay is usually moist enough; but it can be moistened, if requisite, by wetting the conveyer-belt g^2 . The water
90 applied to the surface of the clay sinks into it while the clay is passing over the conveyer and forms a plastic outer surface, into which the sand can easily be pressed by the devices for that purpose, as before described.

What I claim is—

1. A horizontal sand-chamber secured between the delivery-spout and the cutting-off table of a brick-machine, and having its front and rear ends adapted to bear against the
100 clay issuing from the said spout, whereby the sand filling the interior of the said chamber and surrounding the clay adheres to the surface of the clay as it passes longitudinally through the said chamber, but does not run
105 out at the ends of it.

2. The combination, with a sand-chamber provided with openings at each end for the clay to pass through, of water-distributing devices, such as rollers, for moistening the
110 surface of the clay before it enters the said chamber, so that the sand may adhere to the clay.

3. In a brick-sanding machine, the combination, with a rectangular open-ended guide-box provided with a flaring mouth fitting close against the clay and a sanding-chamber of greater width than the said mouth for the clay to pass through, of a hopper for the sand over said sanding-chamber, so that the cham-
120 ber is kept filled.

4. In a brick-sanding machine, the combination, with the sanding-chamber adapted to inclose a solid body of sand in close contact with all four sides of the clay, of the flaring
125 mouth fitting closely to the clay at the front of the chamber, and the open-ended guide-box behind the chamber, of larger size than the mouth, thereby permitting the sand to pass out from the chamber in a thin coat-
130 ing adhering to the surface of the clay.

5. In a brick-sanding machine, the combi-

nation, with the sanding-chamber adapted to inclose a solid body of sand in close contact with all four sides of the clay and provided with an entrance-mouth fitting closely to the clay and a rearward exit-opening of larger size than said mouth, of a flexible wiper secured to the inside of the sand-chamber around the said rearward opening for regulating the passage of the sand.

6. In a brick-sanding machine, the combination, with the sanding-chamber adapted to inclose a solid body of sand in close contact with all four sides of the clay and provided with an entrance-mouth fitting closely to the clay and a rearward exit-opening of larger size than said mouth, of an india-rubber sand-wiper bearing against the top and sides of the clay and a metallic frame for securing the said wiper to the inside of the sand-chamber around the said rearward opening.

7. In a brick-sanding machine, the combination, with a sanding-chamber for the clay to pass through, of a removable bottom under the said chamber for letting out the sand when required.

8. In a brick-sanding machine, the combination, with a sanding-chamber for the clay to pass through, having lugs on the lower part of its end walls, of a bottom piece bearing against said lugs and withdrawable bolts for securing the said bottom piece in position.

9. In a brick-sanding machine, the combination, with a sanding-chamber for the clay to pass through, of a removable bottom piece for the chamber, provided with loops on its under side, bolts sliding in said loops for securing the bottom to the chamber, and a spring for preventing said bolts from working backward.

10. In a brick-sanding machine, the combination, with a chamber adapted to be filled with sand for the clay to pass through and having its ends fitting against the clay, of a stirring device—such as a screw conveyer—inside the said chamber for bringing the sand into contact with the under side of the clay.

11. In a brick-sanding machine, the combination, with a sanding-chamber for the clay to pass through, of a double spiral conveyer for the sand, journaled in the base of the chamber under the clay.

12. In a brick-sanding machine, the combination, with a sanding-chamber for the clay to pass through, of a double spiral conveyer having its middle portion smaller in diameter than its ends and journaled in the base of the said chamber, whereby the sand may be evenly applied to the under side of the clay.

13. In a brick-sanding machine, the combination, with a sanding-chamber provided with rectangular openings at each end of smaller area than the chamber and adapted to fit closely to the clay which passes longitudinally through it, of removable plates placed longi-

tudinally between the sides of the said chamber and the clay for varying the width of the sand-space.

14. In a brick-sanding-machine, the combination, with a sanding-chamber for the clay to pass through, provided with vertical dovetailed grooves in its sides, of plates provided with rear projections sliding in said grooves and with front projections for regulating the passage of sand between the said side plates and the clay.

15. In a brick-sanding machine, the combination, with a rectangular open-ended guide-box provided with a sanding-chamber for the clay to pass through, of pressing devices—such as rolls or slickers—projecting through openings in said box behind the sanding-chamber for causing the sand to adhere to the clay.

16. In a brick-sanding machine, the combination, with a horizontal rectangular open-ended guide-box for the clay to pass through, of the vertical rolls journaled in sliding spring-actuated bearing-blocks and projecting through openings in said box, said rolls being arranged opposite to each other and pressing against the sides of the clay.

17. In a brick-sanding machine, the combination, with a horizontal rectangular open-ended guide-box provided with openings for the rolls in each side, of the lower rolls provided with screws for adjusting them, the upper rolls, and the spring-pressed vertical side rolls, all the said rolls being journaled in sliding bearing-blocks and adapted to press upon the clay in the guide-box.

18. In a brick-sanding machine, the combination, with a rectangular open-ended guide-box provided with a sanding-chamber at one end, of a flexible wiper secured to the end of said chamber for removing superfluous sand from the clay passing through said chamber, and pressing devices—such as rolls or slickers—projecting through openings in the said guide-box behind the sanding-chamber for causing the sand to adhere to the clay.

19. In a brick-sanding machine, the combination, with the conveyer for receiving the wet clay, of a water-tank supported at one end of the conveyer, the side plates secured to the said tank, guide-rollers journaled between said plates above the tank, a roller pressing on the upper surface of the clay on the conveyer, a roller in the water-tank, and a belt passing over the said rollers and conveying water from the tank to wet the surface of the clay.

20. In a brick-sanding machine, the combination, with the conveyer for receiving the wet clay, of a water-tank supported at one end of the conveyer, the side plates secured to the tank, guide-rollers above the tank and driven direct from the conveyer, a roller pressing against the upper surface of the clay, a roller free to slide vertically between guides in the water-tank, and a belt passing over the

said rollers and conveying water from the tank to wet the clay.

21. In a brick-sanding machine, the combination, with the conveyer for receiving the
5 wet clay, of a water-tank supported at one end of the conveyer, a belt passing over a revolving guide-roller above the tank and over a roller submerged in the tank, a scraper collecting water from the surface of said guide-
10 roller, a drip-trough under the scraper, pipes connected to the drip-trough, and vertical rollers receiving water from said pipes and distributing it against the side surfaces of the clay.

22. In a brick-sanding machine, the combination, with the conveyer for receiving the
15 wet clay, of the vertical rolls journaled at one end of the conveyer against the clay and provided with annular channels and notches at their top ends, and the pipes for supplying water to the said annular grooves. 20

In testimony whereof I affix my signature in presence of two witnesses.

LEONARD ROLL.

Witnesses:

S. C. STRUTHERS,
S. G. THOMPSON.