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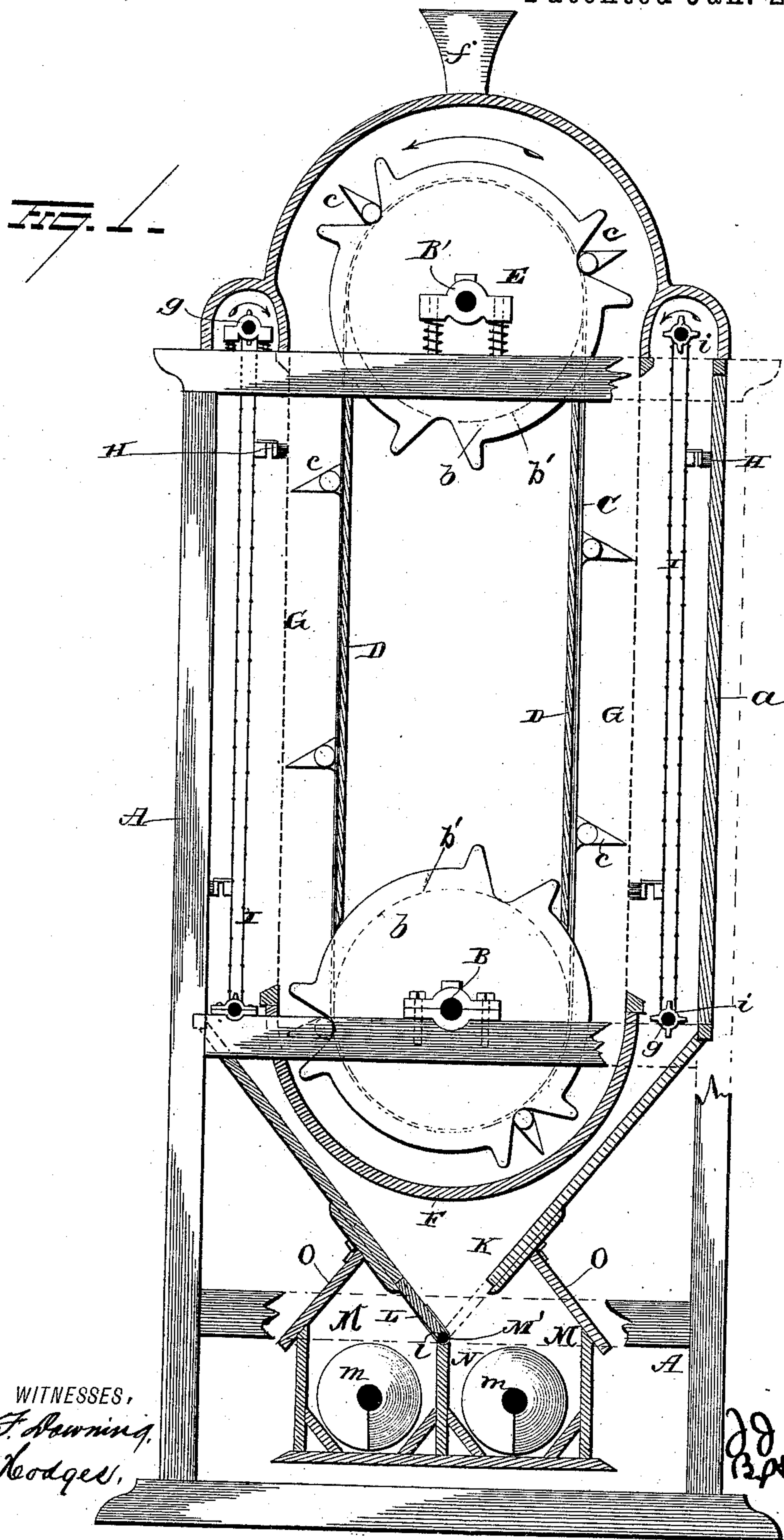
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J. J. FAULKNER.

FLOUR BOLT.

No. 396,922.

Patented Jan. 29, 1889.



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(No Model.)

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Fig. 2.

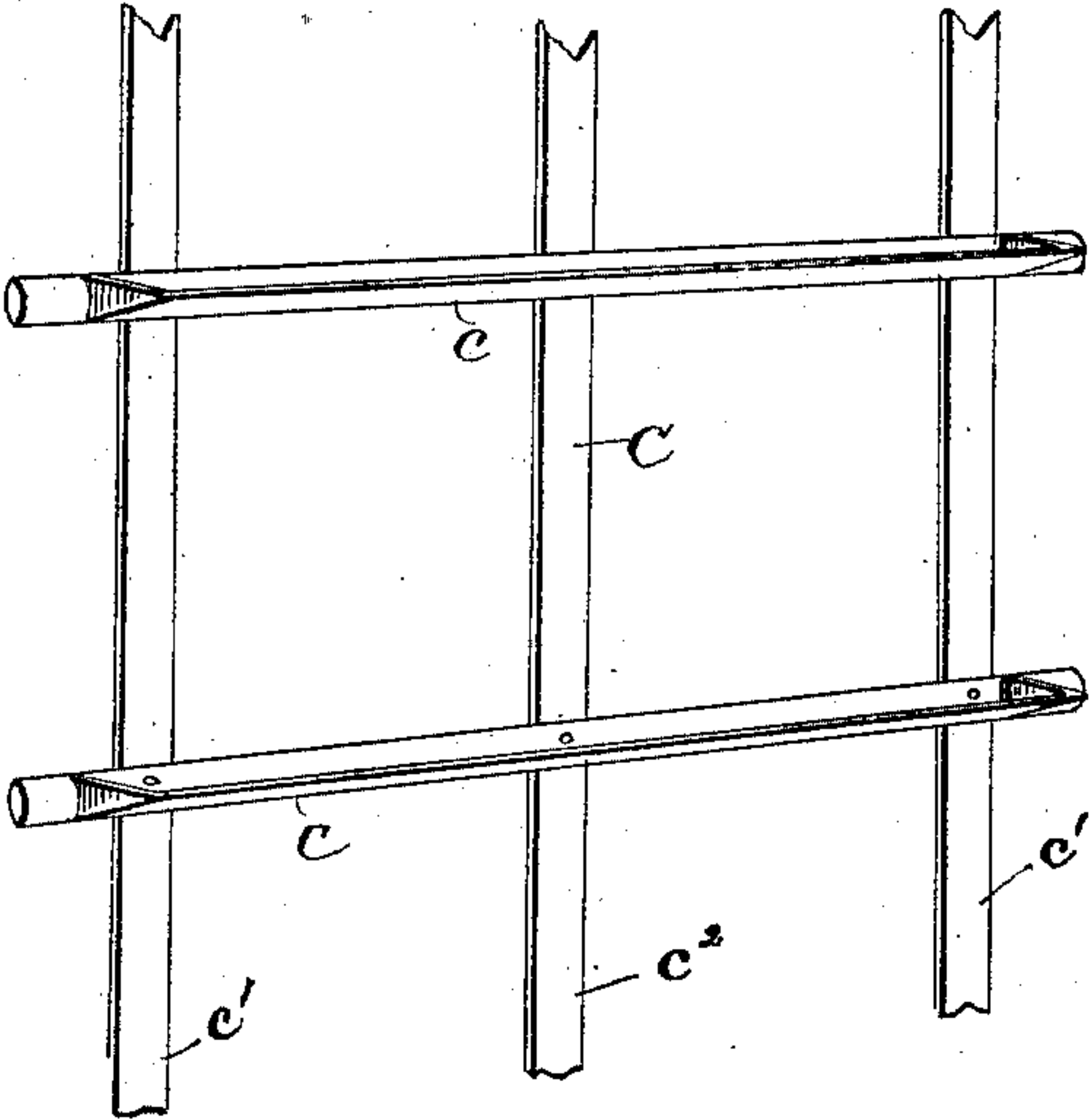


Fig. 5.

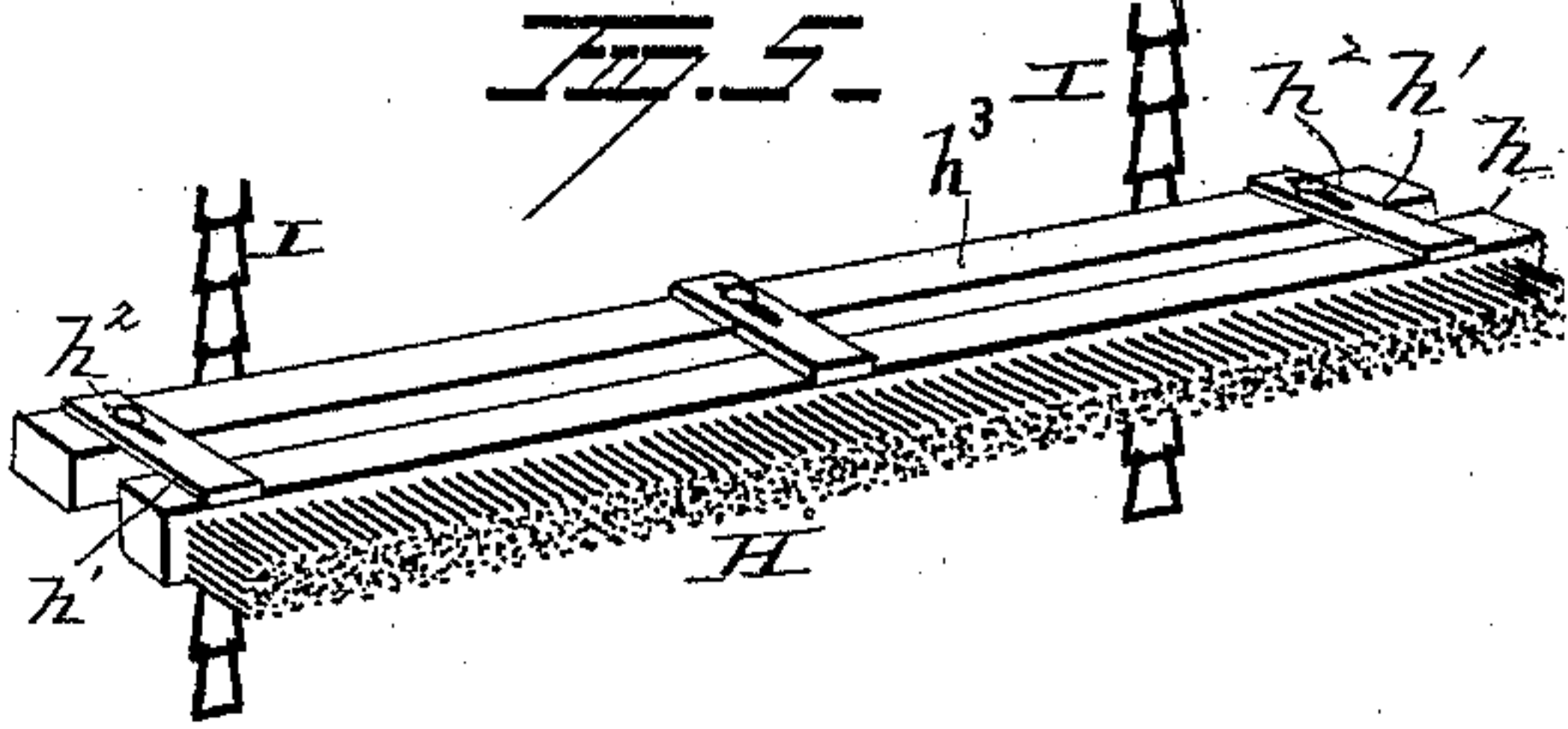


Fig. 6.

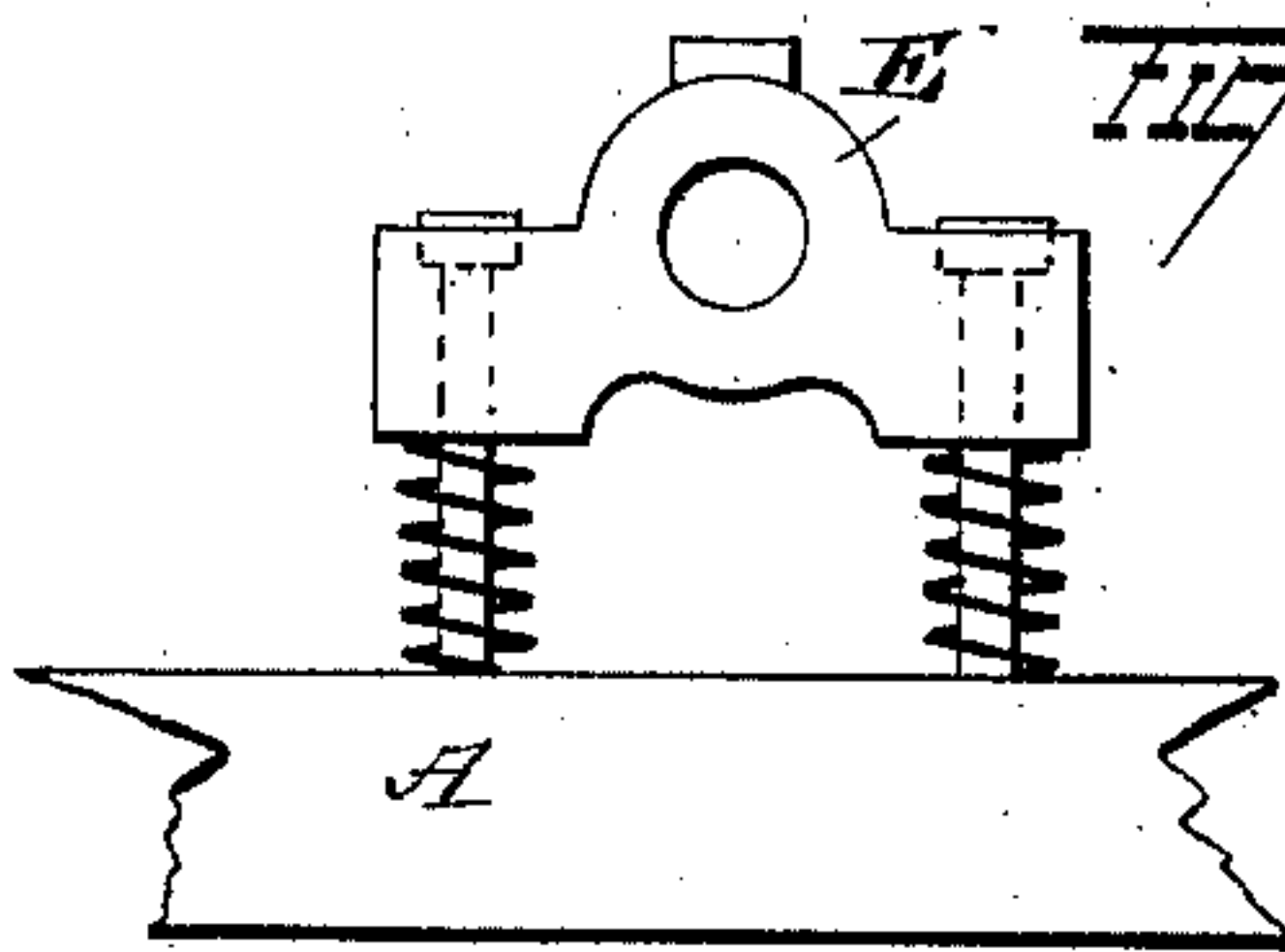


Fig. 3.

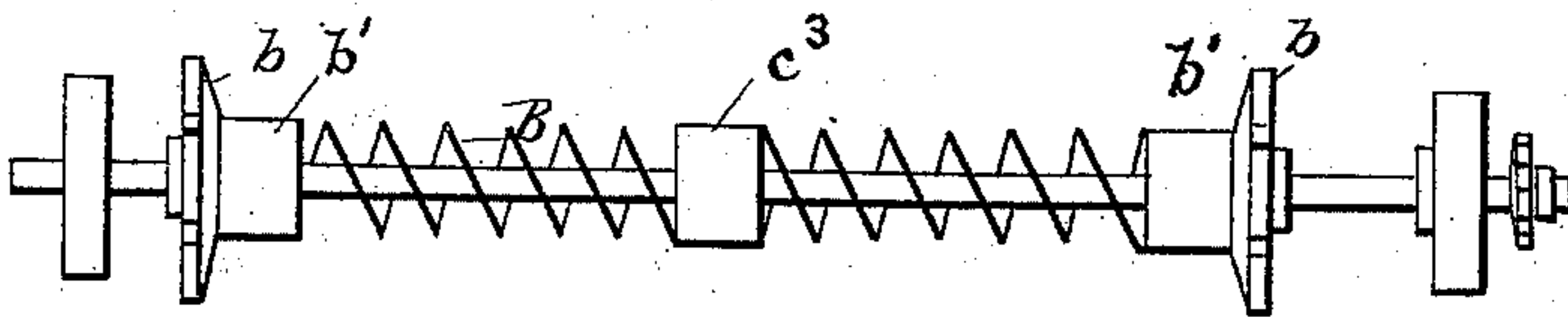
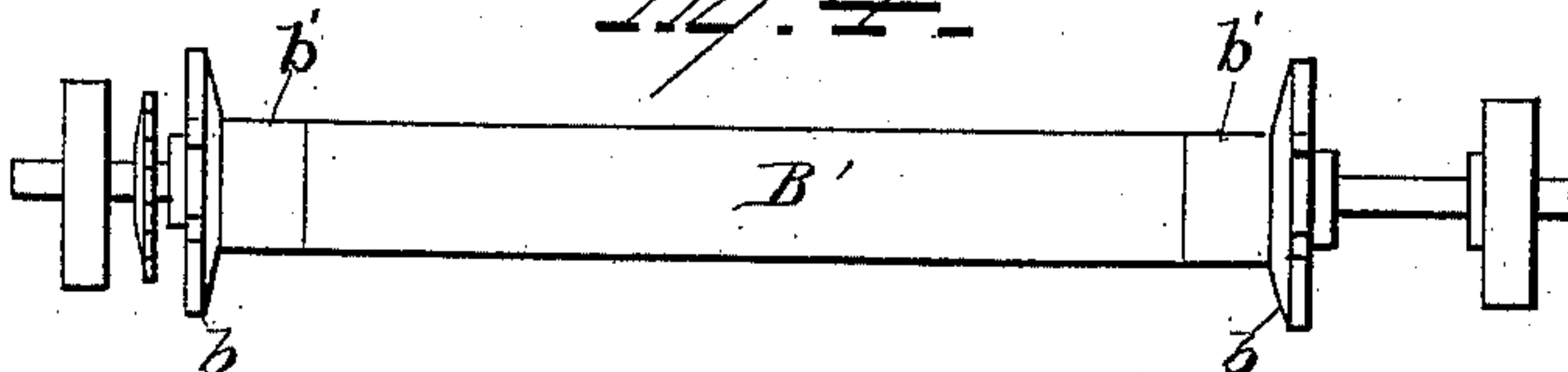


Fig. 4.



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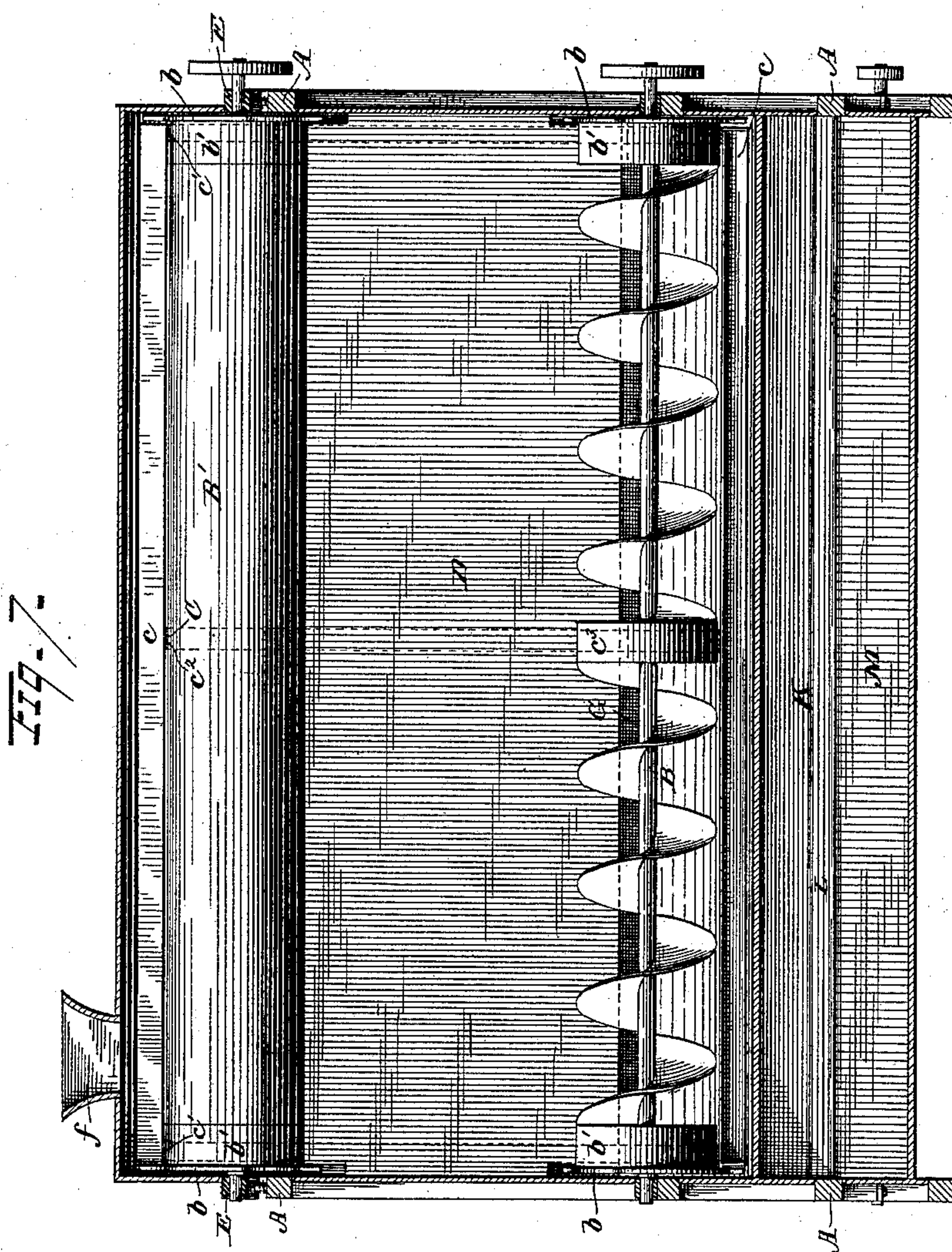
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# UNITED STATES PATENT OFFICE.

JAMES JONES FAULKNER, OF JACKSON, MICHIGAN.

## FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 396,922, dated January 29, 1889.

Application filed September 1, 1886. Serial No. 212,375. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES JONES FAULKNER, of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Flour-Bolts; 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.

My invention relates to an improvement in flour-bolts.

The object is to provide a bolt in which the flour shall be exposed to a great area of bolting-cloth with a comparatively small amount of travel, and to provide a compact and effective bolt in which the several movable parts shall tend to produce the best results in an economical manner.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the bolt in end elevation, the casing being removed from one end to show the interior construction. Fig. 2 is a detached view of one form of elevator-belt. Figs. 3 and 4 represent, respectively, the lower and upper elevator-shafts. Fig. 5 is a detached view of one of the brushes for clearing the bolting-cloth. Fig. 6 is a detached view of one of the yielding bearings, and Fig. 7 is a vertical longitudinal section on the line of the shafts.

A represents the frame-work of the bolt, to which the casing *a* is secured, forming a box having a general oblong shape. A lower elevator-shaft, B, is journaled in cross-beams at the lower portions of the ends of the box and centrally therein, and an upper elevator-shaft, B', is journaled in the top cross-beams, and preferably in the same vertical plane with the shaft B.

The elevator-belt C consists of a leather or chain belt, preferably of skeleton form, as shown, and provided with buckets or lifts *c*, secured at intervals thereto and extending the entire length of the bolt. These buckets are preferably constructed of sheet metal and form pockets for the reception of flour.

The shafts B and B' are each provided with

combined sprocket-wheels and pulleys *b*, located at their ends, and the ends of the buckets or lifts *c* project laterally beyond the edges of the belt sufficiently far to engage the notches between the teeth on the sprocket-wheels and thereby prevent the belt from slipping. The upper roller, B', is preferably constructed of wood, and has a frictional bearing-surface throughout its entire length between the pulley portion *b'* of the combined sprocket-wheels and pulleys *b*, in order that no open space is left between the inner surfaces of the ascending and descending portions of the elevator-belt C for the escape of the flour unbolted. The lower shaft, B, is provided with a screw-flange, which serves to even the flour and prevent any bulking of the stock, so that it may be readily scooped up by the elevator-buckets. At intervals on this shaft B, to correspond with the intermediate endless strips, *c'*, are frictional pulleys *c'*, one or more in number, as desired, adapted to assist in revolving the elevator-belt.

To further prevent the fall of the unbolted flour between the parts of the belt, and to keep it more constantly in contact with the bolting-cloth, tight partitions D are inserted between the upper and lower shafts, B B', in close proximity to the inner faces of the elevator-belt. These partitions D are also valuable in preventing the belt from wavering and producing an injurious jar.

To keep the elevator-belt in a constantly-extended position, the upper journal-boxes, E, rest upon spring-cushions—preferably formed by coiled-wire springs—which tend to elevate the boxes, and hence the upper shaft or roller, B'.

The top of the casing over the upper shaft or roller is preferably arched, as shown, and a trough, F, semicircular in cross-section, is located beneath the lower shaft and forms a receptacle for the unbolted flour as it falls from the feed-funnel *f* at the top of the casing.

The bolting-cloth G forms side walls from the plane of the lower to the plane of the upper elevator-shaft, and is placed as near the free edges of the buckets or lifts as it can be and yet give the necessary clearance for their passage.

Between the walls of bolting-cloth G and



the side casing, *a*, is a narrow chamber on each side of the bolt, in which the clearing-brushes are adapted to travel. The clearing-brushes *H* extend the entire length of the bolting-cloth, and are secured to a pair of endless sprocket chains or belts, *I*, which are mounted on sprocket-wheels *i*, secured on shafts *g* at the bottom and top of the side chambers, and driven by suitable gear from a wheel on the lower elevator-shaft, *B*. Each upper shaft *g* is preferably mounted in cushioned bearings, as shown, to keep the chains taut. The brushes *H* ascend along the outside casings and descend in engagement with the bolting-cloth. Each top casing over the side chambers in which the clearing-brushes work is preferably arched, as shown, and may be formed integral with the central arched section. Each brush is attached to a bar, *h*, which in turn is adjustably secured to an intermediate bar, *h*<sup>3</sup>, carried on chains *I* by metallic straps *h*<sup>1</sup>, provided with elongated slots *h*<sup>2</sup>, through which set-screws extend into the bar *h*<sup>3</sup>, thereby rendering the brush adjustable toward and away from the bolting-cloth. The bolted flour falls from the bolting-cloth into the hopper *K*, the inclined sides of which guide it toward the series of gates or valves *L*, located along its mouth.

Beneath the hopper *K* are the boxes *M*, in which the screw conveyers *m* are located. The partition-wall *N* between the two conveyers is situated immediately below the center of the hopper, and its top is preferably in a line where the inclined sides of the hopper would meet if produced. The series of gates *L* have half-round grooves *l* in their edges, and are hinged to a rod, *M*<sup>1</sup>, extending along the top of the wall *N*, by means of sheet-metal straps, which snugly embrace the opposite sides of the gate and loosely embrace the rod.

The free ends of the gates are adapted to swing and closely meet the edges of the hopper at the sides of its mouth, and are stopped flush with the inside surface of the hopper by means of cleats or their equivalent secured along the outside edges of the mouth. Thus by swinging the gates *L* to the right or left the bolted flour may be guided into the one or the other of the conveyer-boxes, as may be desired. Access to the gates is obtained through doors *O* at the tops of the conveyer-boxes, which doors also enable those interested to sample the flour.

The flour as it is fed into the bolt is caught by the buckets or lifts either while falling or from the curved receptacle at the base, where the screw-flange on the shaft *B* levels the surface of the flour in readiness to be evenly dispensed in the passing buckets immediately preceding its being moved along the surface of the bolting-cloth both on the ascending and descending sides of the elevator. The great area of exposed bolting-cloth and the constant passage of the flour along its surface serve to rapidly cause its passage through the bolting-cloth, while the latter is

kept from clogging and with its meshes open by the passage of the brushes.

The bolting-cloth may be set to diverge upwardly instead of upright, and when so set the upper shaft or roller, *B*<sup>1</sup>, is constructed of greater diameter than the pulleys on the lower shaft, thereby spreading the parts of the elevator-belt farther apart at the upper end to correspond with the inclined surfaces of the bolting-cloth. Several sets of bolting-cloth walls with their elevators and brushes may be set in the same frame.

I am aware that it is old to construct a flour-bolt with boxes at the bottom having hinged covers and screw conveyers therein, and also having gates or valves located along the mouth of this box, and hence I make no claim to this construction; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a flour-bolt, the combination, with a pair of opposite bolting-cloth walls and an endless belt or chain carrying a set of buckets or lifts, the end of which projects beyond the edges of the belt or chain, of upper and lower shafts on which the endless belt or chain is mounted, said shafts being provided with sprocket-wheels, the notches of which are adapted to receive the projecting ends of the buckets or lifts, substantially as set forth.

2. In a flour-bolt, the combination, with the pair of opposite bolting-cloth walls and the endless-belt flour-elevator, of the endless belts or chains and the adjustable clearing-brushes carried by these belts or chains and adapted to sweep the entire outer surface of the bolting-cloth in their descent, substantially as set forth.

3. In a flour-bolt, the combination, with the bolting-cloth walls and the flour-elevator, of the endless chains or belts adapted to travel up and down on the outside of the bolting-cloth walls, cross-bars attached to the endless belts or chains, and brushes adjustably secured to one of the cross-bars, substantially as set forth.

4. In a flour-bolt, the combination, with the endless chains and bars secured thereto, of metallic strips secured to the bars, brushes, and set-screws for adjustably securing the brushes to the metallic strips, substantially as set forth.

5. In a flour-bolt, the combination of the bolting-cloth walls and the flour-elevator mounted on upper and lower shafts, the lower shaft being provided with a screw-flange adapted to prevent the uneven accumulation of unbolted flour, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES JONES FAULKNER.

Witnesses:

ELI A. CLEMENT,  
GEORGE POWELL.