

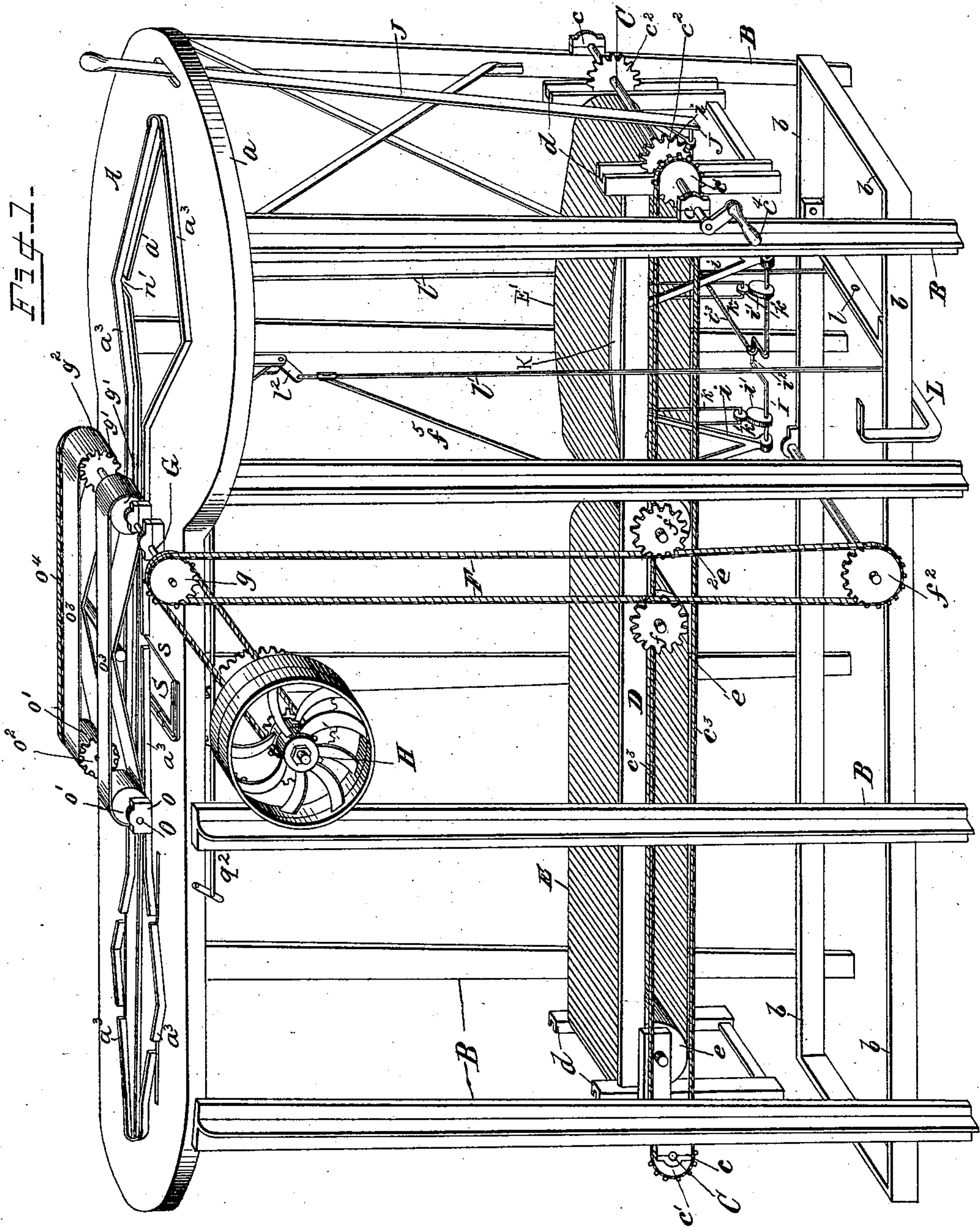
(No Model.)

4 Sheets—Sheet 1.

J. T. BIBB & A. T. TIMEWELL.
AUTOMATIC SACK FILLING AND SEWING MACHINE.

No. 548,029.

Patented Oct. 15, 1895.



Attest:
J. M. Pond.
Chas. A. Place.

Inventors:
John T. Bibb,
Arthur T. Timewell,
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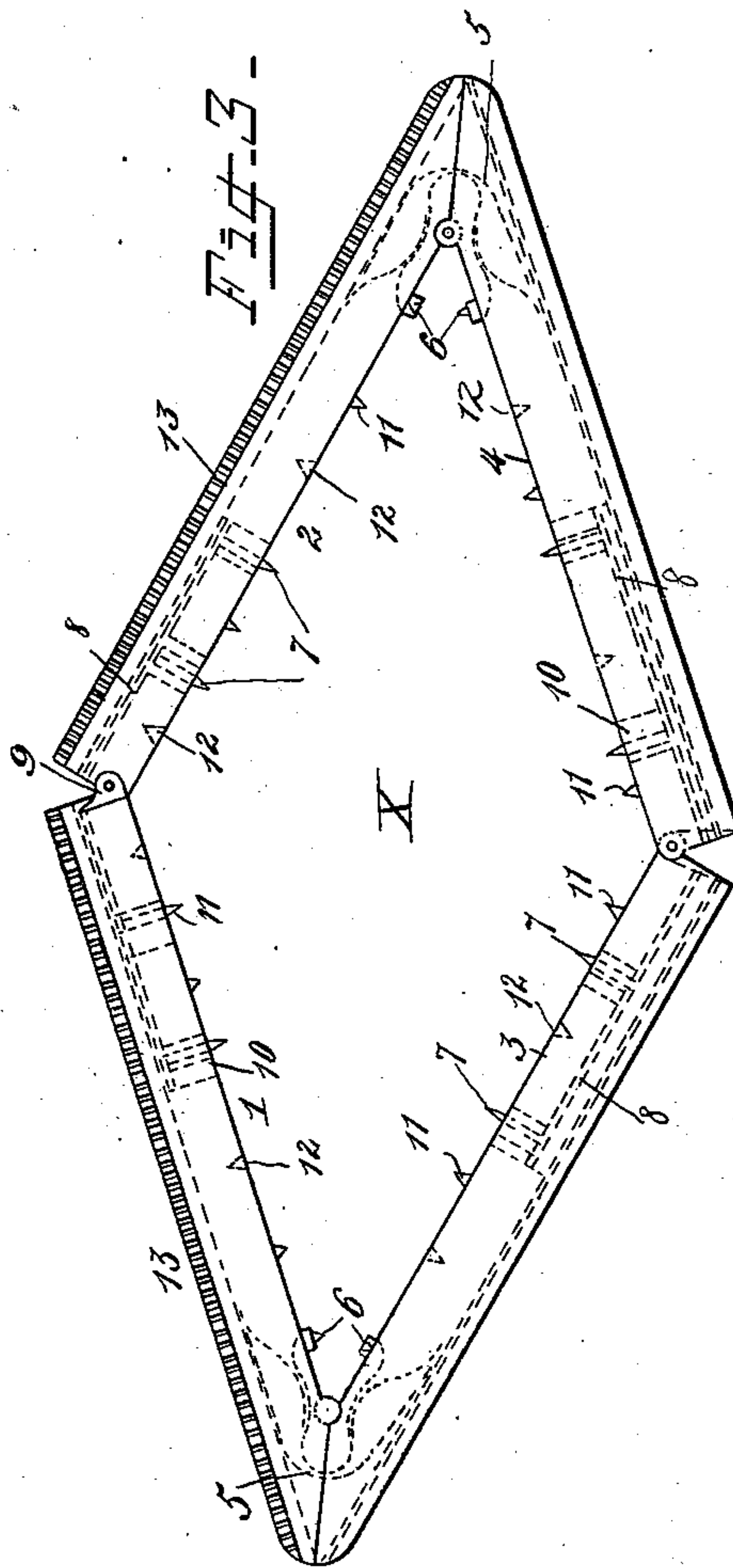
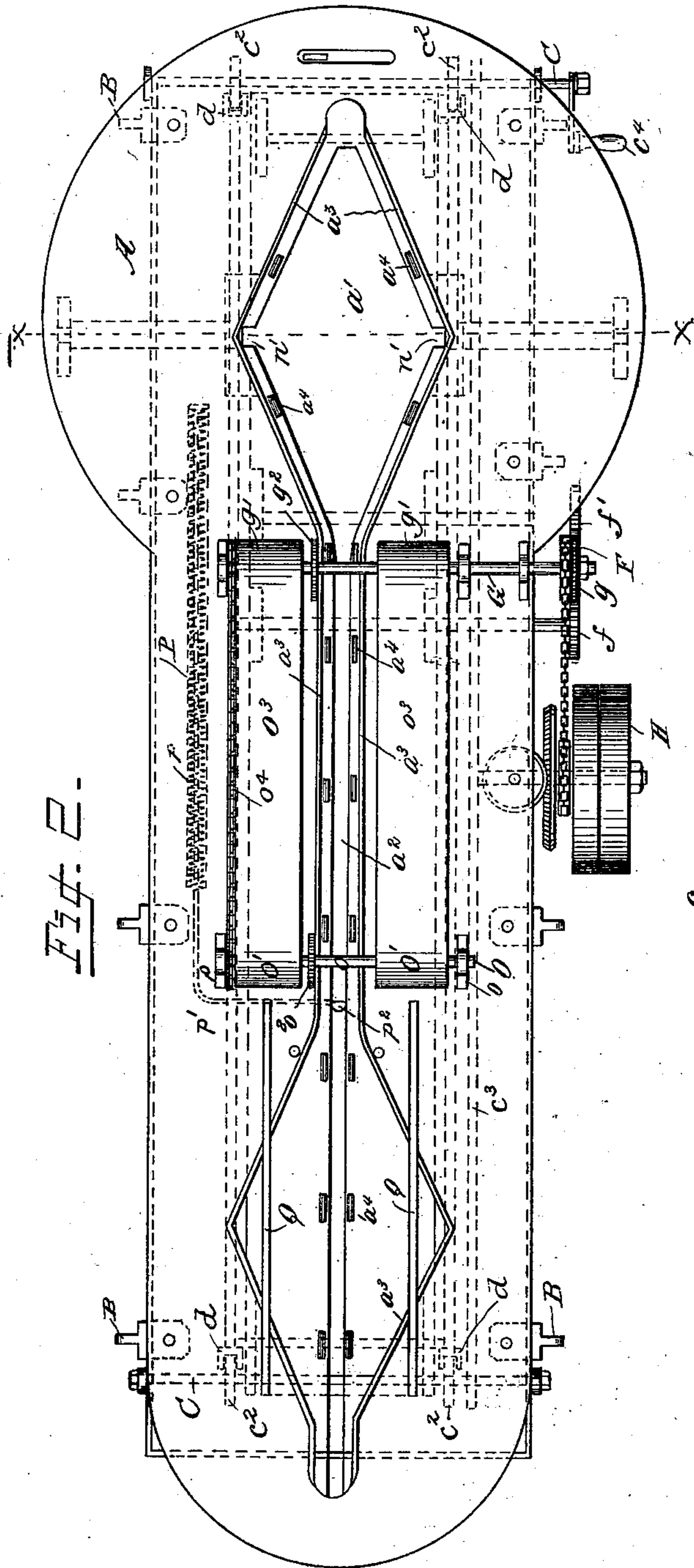
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4 Sheets—Sheet 2.

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AUTOMATIC SACK FILLING AND SEWING MACHINE.

No. 548,029.

Patented Oct. 15, 1895.



Attest:
J. M. O'Neil.
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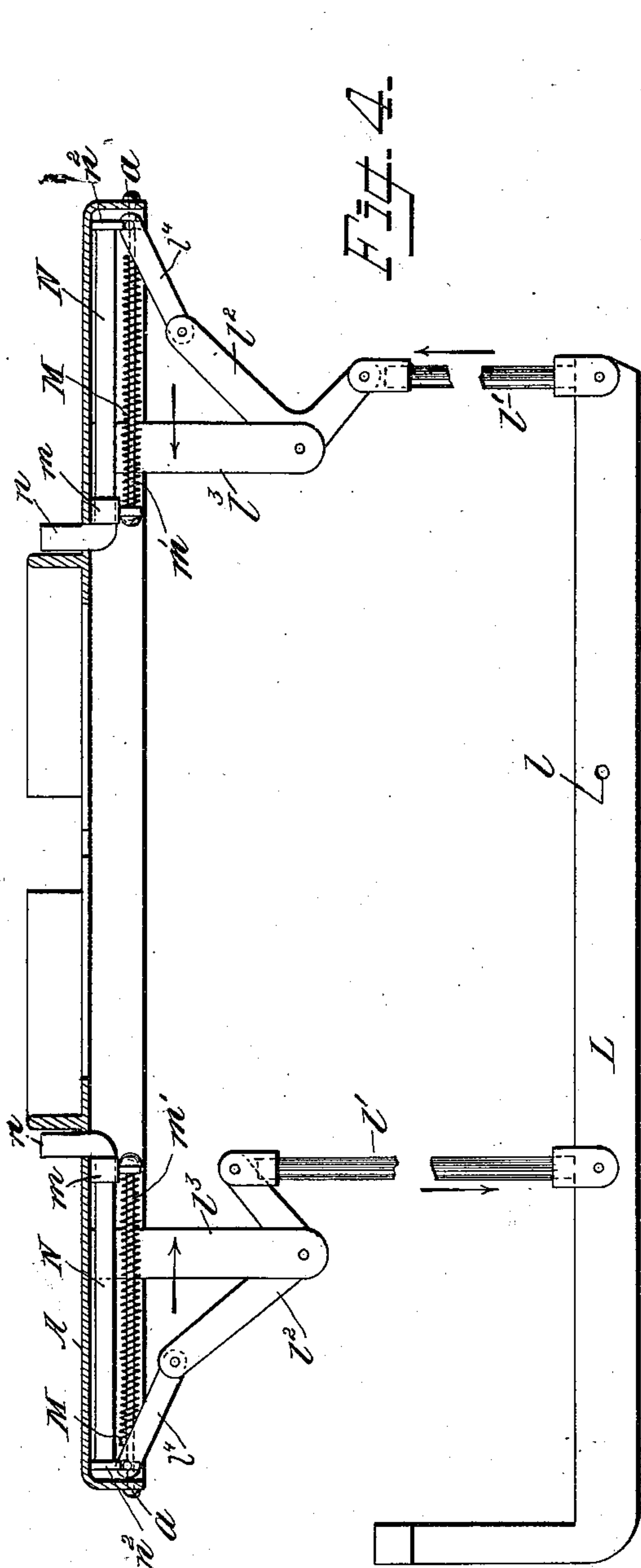
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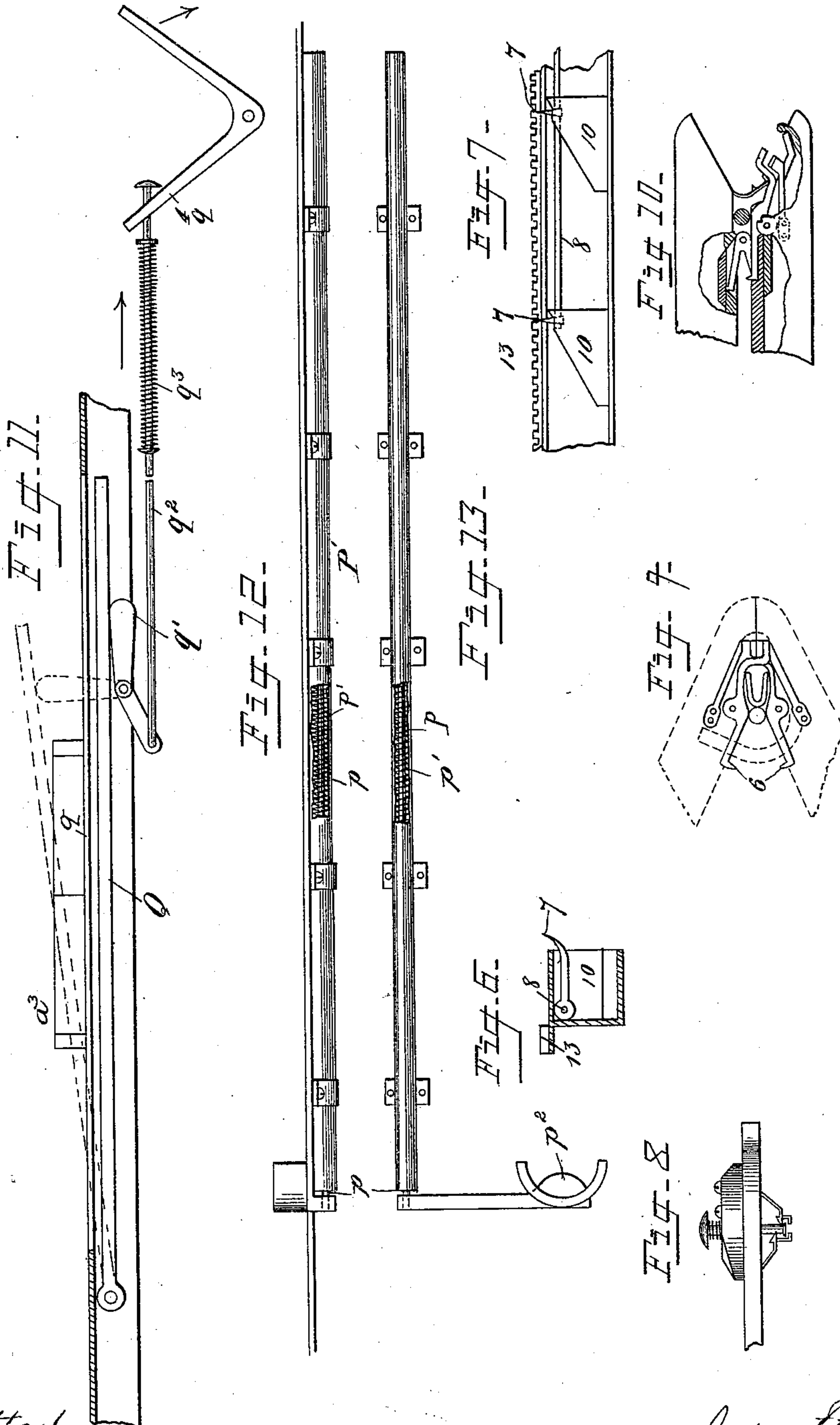
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4 Sheets—Sheet 4.

J. T. BIBB & A. T. TIMEWELL.
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UNITED STATES PATENT OFFICE.

JOHN T. BIBB, OF TACOMA, AND ARTHUR T. TIMEWELL, OF SPOKANE, WASHINGTON, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO ALBERT DICKENSON, OF CHICAGO, ILLINOIS.

AUTOMATIC SACK FILLING AND SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 548,029, dated October 15, 1895.

Application filed October 15, 1894. Serial No. 525,969. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. BIBB, of Tacoma, in the county of Pierce, and ARTHUR T. TIMEWELL, of Spokane, in the county of Spokane, State of Washington, have invented certain new and useful Improvements in Automatic Sack Filling and Sewing Machines, of which the following is a specification, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon.

This invention relates to means for sacking grain, ore, and other materials and for sewing the sacks after they are filled. It is designed to be an improvement on the invention disclosed in Patent No. 476,778, granted to us June 14, 1892, and to which reference should be made.

In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a plan of the same. Fig. 3 is a plan, on an enlarged scale, of the sack-holder. Fig. 4 is a vertical section on the line $x x$, Fig. 2, showing the devices to close the sack-holder. Fig. 5 is a plan of the table-top, several parts of the machine being removed; and Figs. 6 to 13, inclusive, are details.

Similar letters and numerals of reference indicate similar parts in the respective figures. The table-top A is made of cast-iron or pressed steel, with its edge a turned down, as shown. It is provided at one end with a diamond-shaped hole a' , from which a slot a^2 extends to near the other end of the table. Flanges a^3 are attached to or cast on the table-top to support and guide the sack-holder during its progress through the machine, and a series of rollers a^4 are arranged in the table-top at the opposite sides of the diamond-shaped hole a' and the slot a^2 . The sack-holder travels on these rollers through the machine, and they also serve to elevate it slightly above the table-top to provide a space in which the sewing-needle can play, as will be described hereinafter. The table-top is supported by a series of legs B, (preferably made of T-iron,) bolted to the table, as shown, and suitably secured and braced at their lower ends by the frame b .

At each end of the machine a shaft C is journaled in suitable bearings $c c$, secured to the table-legs. These shafts each carry a sprocket-wheel c' and two pinions $c^2 c^2$. The pinions c^2 engage, respectively, racks $d d$, attached to or forming parts of the ends of the frame D. The sprocket-wheels $c' c'$ on the shafts C C are connected by the chain c^3 , and one of the shafts C is provided with a crank c^4 . By operating the crank c^4 both ends of the frame D may be elevated or lowered, as desired, the object being to adjust the height of the frame to sacks of different lengths. Journaled in the frame D are four rollers, three of which are shown—viz., e , e' , and e^2 . The shafts of the rollers e' and e^2 extend beyond the frame on one side thereof and are provided with sprocket-wheels $f f'$, driven by the chain F, which latter is driven by the sprocket-wheel g on the counter-shaft G, which receives its movement from the main driving-shaft H. A sprocket-wheel f^2 is carried by a shaft journaled in suitable bearings on the frame b and serves as an idler around which the chain F runs. The rollers e and e' carry the traveling bed or conveyer E and those e^2 and e^3 the conveyer and shaking-bed E'. When the machine is in operation, the traveling bed E moves continuously; but the shaking-bed E' has an intermittent travel. This is accomplished as follows: The sprocket-wheel f' turns loosely on its shaft and carries on its inner face one half of a clutch f^4 , (not shown,) the other half being keyed on the shaft and capable of being moved into engagement with the half on the sprocket-wheel by means of the rod f^5 , the latter being operated as hereinafter described.

Depending from each side of the frame D are brackets $i i$, in which shafts I I are mounted. Each of these shafts carries two eccentrics $i' i'$ and each is provided with a crank i^2 , the cranks of the two shafts being connected by the rod i^3 . The end of one of the shafts I is connected to the lever J, and by rocking the lever the shafts I and their eccentrics $i' i'$ will be partially rotated.

K is a frame having a convex top engaging the under side of the shaking-bed E'. This

frame K is within the frame D and adapted to have a vertical movement. It is provided with four legs $k k k k$, each having a caster k' . The casters rest on the eccentrics $i' i'$, and as the latter are operated by the movement of the lever J the frame K and shaking-bed E' will be given a vertical reciprocating movement, which will shake the grain or other material into the corners of the sack.

The sack-holder X consists of four channeled metal bars 1, 2, 3, and 4, hinged together at their ends, as shown in Fig. 3. A cross-section of the bar is seen in Fig. 6. The holder is normally forced open by the springs 5 5 at the end joints. Near the ends are spring-actuated claws 6 6, to which the upper corners of the sack are attached, these claws being operated in a manner similar to that described in our patent aforesaid. The sides of the sack are attached to hooks 7 7, hung on rods 8 8, adapted to have a slight longitudinal movement in the bars. The rods 8 8 are connected to levers 9 9 on the side joints of the holder, and the opening or closing of the latter effects the movement of the rods and the hooks 7 7, hung thereon. Secured within the channel of the bars 1, 2, 3, and 4 are a series of blocks 10 10, having inclined top surfaces. (See Fig. 7.) These blocks are so arranged that when the holder is opened the hooks 7 7 will be caused to ride up their inclined surfaces and assume a horizontal position; but when the holder is closed the hooks 7 7 will move down the inclined surfaces and their points will hang down, so that the sack will easily detach itself from them when discharged at the delivery end of the machine. The bars 1 2 3 4 on their inner faces are each provided with a series of teeth 11 11 and recesses 12 12. The teeth on one bar are adapted to the recesses of the opposite bar and serve to hold the sack when the holder is closed. The bars 1 and 2 on their upper surfaces are provided with a series of teeth, which form, when the holder is closed, a rack 13.

L is a lever pivoted at l on the frame of the machine. At equal distances on each side of the pivot l the vertical rods $l' l'$ are connected at their lower ends to the lever L. At their upper ends these rods $l' l'$ are attached to the short arms of bell-crank levers $l^2 l^2$, pivoted in brackets $l^3 l^3$, depending from the under side of the table-top.

M M are rods secured at one end to the rim a of the table and at their other ends to lugs $m m$ on the under side of the table-top. The lugs $m m$ are provided with apertures through which the bars N N slide. Each of these bars is upturned at its front end, and the upturned portions $n n$ when in their normal positions project above the table-top and occupy the recesses $n' n'$ at the side angles of the opening a' in the table-top. The rear ends of the bars N N have downwardly-projecting lugs $n^2 n^2$, which slide on the rods M M and are connected by links $l^4 l^4$ to the long arms of the bell-crank levers $l^2 l^2$. Spiral springs m'

m' are fitted on the rods M M between the lugs n^2 and m and serve to maintain the bars N N in their normal positions. When the sack-holder is open and in place around the opening a' in the table-top, the ends $n n$ of the bars N N will engage the side joints of the sack-holder, and when the lever L is operated the bars N N will be caused to approach each other and thereby close the sack-holder. The movement of the lever L also effects the movement of the rod f^5 , the latter being connected at its upper end to the upper end of one of the vertical rods l' , thus partaking of its movement.

The counter-shaft G carries two pulleys g' and a spur-gear g^2 . Another shaft O is journaled in suitable bearings $o o$ on the table-top. This shaft also carries two pulleys o' and a spur-gear o^2 , corresponding to the similar elements on the counter-shaft G. The shaft O is positively driven by the sprocket-chain o^4 from the shaft G. Belts $o^3 o^3$ are driven by the pulleys g' and o' and are for the purpose of returning the sack-holder from the delivery end of the machine, after the sack is released from it, to the opening a' . The spur-gears g^2 o^2 are adapted to engage the rack 13 on the top of the sack-holder and aid in drawing the holder and sack through the machine.

P is a tube secured by suitable means to the under side of the table-top, and within this tube is a rod p , with a surrounding spiral spring p' . The rod p is free to have longitudinal movement in the tube P and when pushed outwardly will compress the spring p' . The forward end of the rod p is bent at an angle and provided with a head p^2 , which projects up through the slot a^2 in the table-top in the path of the sack-holder X. As the holder and sack travel through the machine, the rod p will be pushed forward against the force of the spring p' until the holder opens and becomes disengaged from the sack, when the force of the spring p' will retract the rod p and force the sack-holder up the inclined bars Q Q onto the belts $o^3 o^3$, which latter will return it to the operator. The flanges a^3 on the table-top are arranged in a diamond shape at the delivery end of the machine to permit the sack-holder to open by the force of the springs 5 5.

The bars Q Q are pivoted at one end to the table and normally lie in the slots $q q$ in the table, their free ends being supported by triggers $q' q'$, (see Figs. 5 and 11,) pivoted on the under side of the table. Each trigger is operated by a rod q^2 , adapted to slide in bearings secured to the table. These rods are held in their normal position by springs q^3 . Only one bar Q and its elevating mechanism is shown in Fig. 11; but it is to be understood that the other bar Q is actuated in a similar manner. The rods q^2 are operated by bell-crank levers q^4 , connected either to the lever L or the rods l' . The movement of the lever L therefore effects three operations—viz., closing the sack-holder, bringing the two

halves of the clutch (not shown) into engagement, and lifting the bars Q Q.

The sewing device is indicated as a whole by S, the needle being indicated by s. The needle reciprocates immediately above the table-top and enters the sack close below the sack-holder, the rollers α^4 elevating the latter a sufficient height above the table-top to permit this action. The flanges α^3 are cut away for the passage of the needle.

As we do not limit ourselves to any special form of sewing device, it need not be further described herein, and reference is made to our said former patent as illustrating one form of mechanism to perform the sewing.

The general operation is as follows: The sack-holder X is placed in its open position over the opening α' and the sack attached to the hooks 6 and 7. The grain or other material is then fed into the sack, and during the filling the operator rocks the lever J, which imparts to the shaking-bed E' a vertical reciprocating movement and shakes the material down into the corners of the sack and aids in packing it closely in the sack. When the sack is filled, the operator depresses the lever L, which movement closes the sack-holder, brings the two halves of the clutch f^4 into engagement, and thereby causes the shaking-bed E' to travel, and elevates the free ends of the bars Q Q. The spur-gear g^2 will now engage the rack 13 on the sack-holder, and the sack will travel through the machine, being sewed during its passage. The spur-gear o^2 will also engage the rack 13 and continue the forward movement of the sack-holder, which will push the head p^2 and rod p forward with it. When the sack-holder reaches the triangular-shaped part of the flanges α^3 , the springs 5 will force it open and the sack will become detached from it. At the same time the spur-gear o^2 will be disengaged from the rack 13, and the rod p will be retracted by the spring p' and carry the sack-holder with it, causing the latter to ride up the rods Q Q onto the belts $o^3 o^3$, which latter will return it to the operator ready for the attachment of another sack.

Having described our invention, we claim—

1. In a machine for filling and sewing sacks, the combination with a table having an opening and a sack holder adapted when open to fit around said opening, of spring retracted bars engaging the sides of the sack holder, a lever, rods, bell-cranks and links connecting the lever and said bars whereby the sack holder is closed, substantially as specified.

2. In a machine for filling and sewing sacks, the combination with a table provided with a longitudinal slot having side flanges, and a sack holder adapted to travel over said slot between the flanges, of a sliding bar having a head projecting through the slot in the path of the sack holder, means to propel the sack holder in a forward direction to carry the bar with it, a spring to retract the said slid-

ing bar, and inclined bars and belts to return the sack holder, substantially as described.

3. In a machine for filling and sewing sacks, the combination with a table and moving belts above the table, of a sack holder, means to propel the sack holder from the filling to the discharge end of the machine, bars pivoted at one end to the table, triggers to support the free ends of the said bars, suitable devices to operate the triggers to elevate the free ends of the bars, and a device to force the sack holder up the inclined bars onto the said belts, substantially as specified.

4. In a machine for filling and sewing sacks, the combination of a conveyer and shaking bed to support the sack while being filled, devices to shake the bed during the filling process, and devices to impart an intermittent traveling movement to said bed, substantially as and for the purposes specified.

5. In a machine for filling and sewing sacks, the combination of a constantly moving conveyer, an intermittently moving shaker and conveyer to support the sack while being filled, a frame engaging the underside of the shaker and conveyer and adapted to have vertical movement, means for imparting vertical movement to said frame and means to impart intermittent movement to the shaker and conveyer to deliver the sack to the constantly moving conveyer, substantially as described.

6. In a machine for filling and sewing sacks, the combination of a table having an opening near one end and a slot extending from said opening to near the other end of the table, a flange around said opening and on the sides of said slot, rollers in the table within the boundaries of the flanges, a sack holder supported by and traveling on the rollers and guided by the flanges and devices to propel the sack holder through the machine, substantially as described.

7. In a sack holder, four channeled bars hinged together at their ends, sliding rods supported within the channels of the bars, hooks hung on the bars and moving laterally with the rods, blocks, having upper inclined faces on which the hooks slide, and levers connected to the bars and rods to operate the latter by the opening or closing of the sack holder, substantially as specified.

In testimony whereof we have hereunto set our hands and seals.

JOHN T. BIBB.

ARTHUR T. TIMEWELL.

[L. S.]

[L. S.]

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B. A. MOORE.

Witnesses as to the signature of Arthur T. Timewell:

S. P. DOMER,

B. N. CARRIER.