No. 726,143. PATENTED APR. 21, 1903.

T. COURTLAND.

APPARATUS FOR PACKING SALT.

APPLICATION FILED MAY 7, 1902.

NO MODEL. 5 SHEETS—SHEET 1

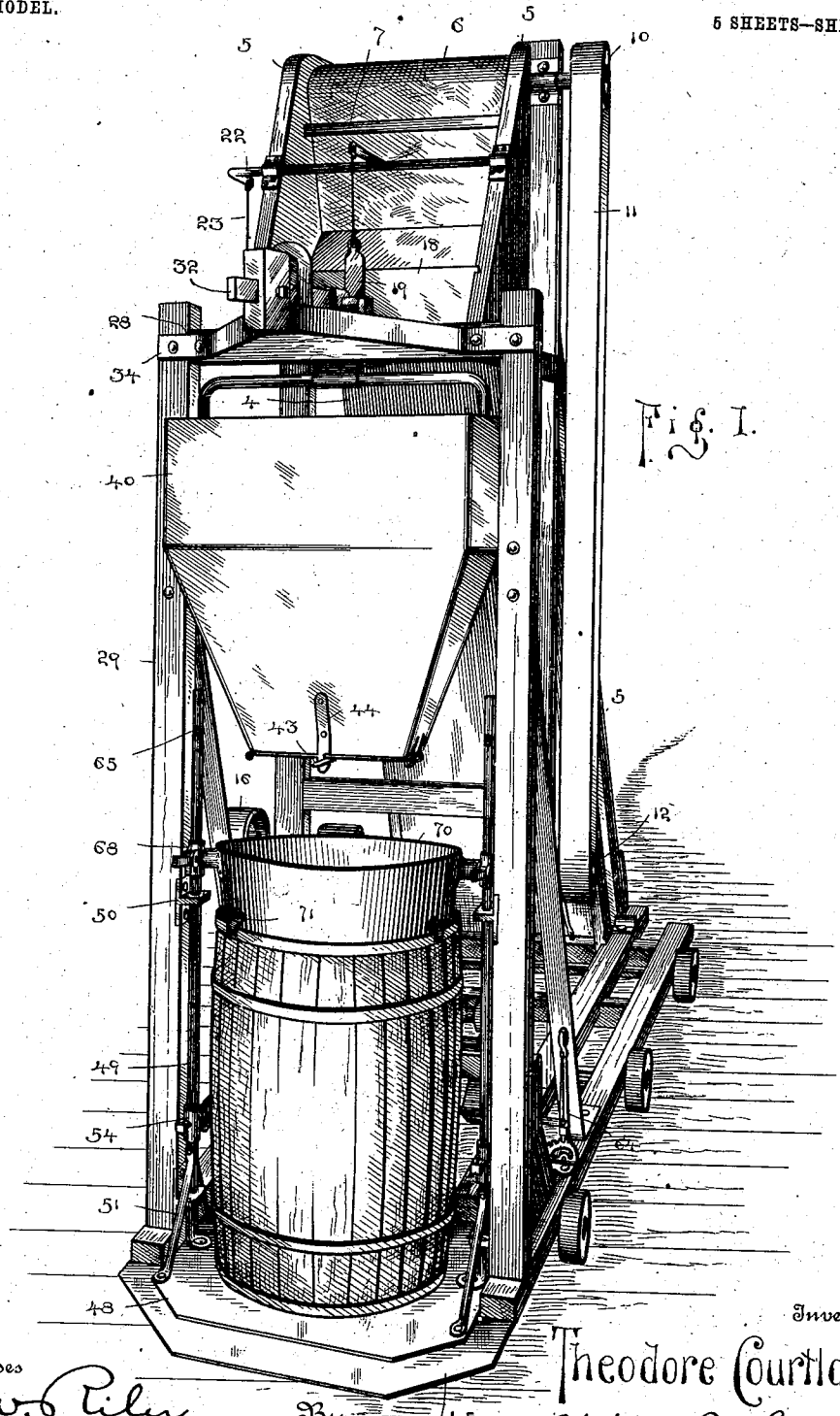


Fig. 1.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 726,143. PATENTED APR. 21, 1903.

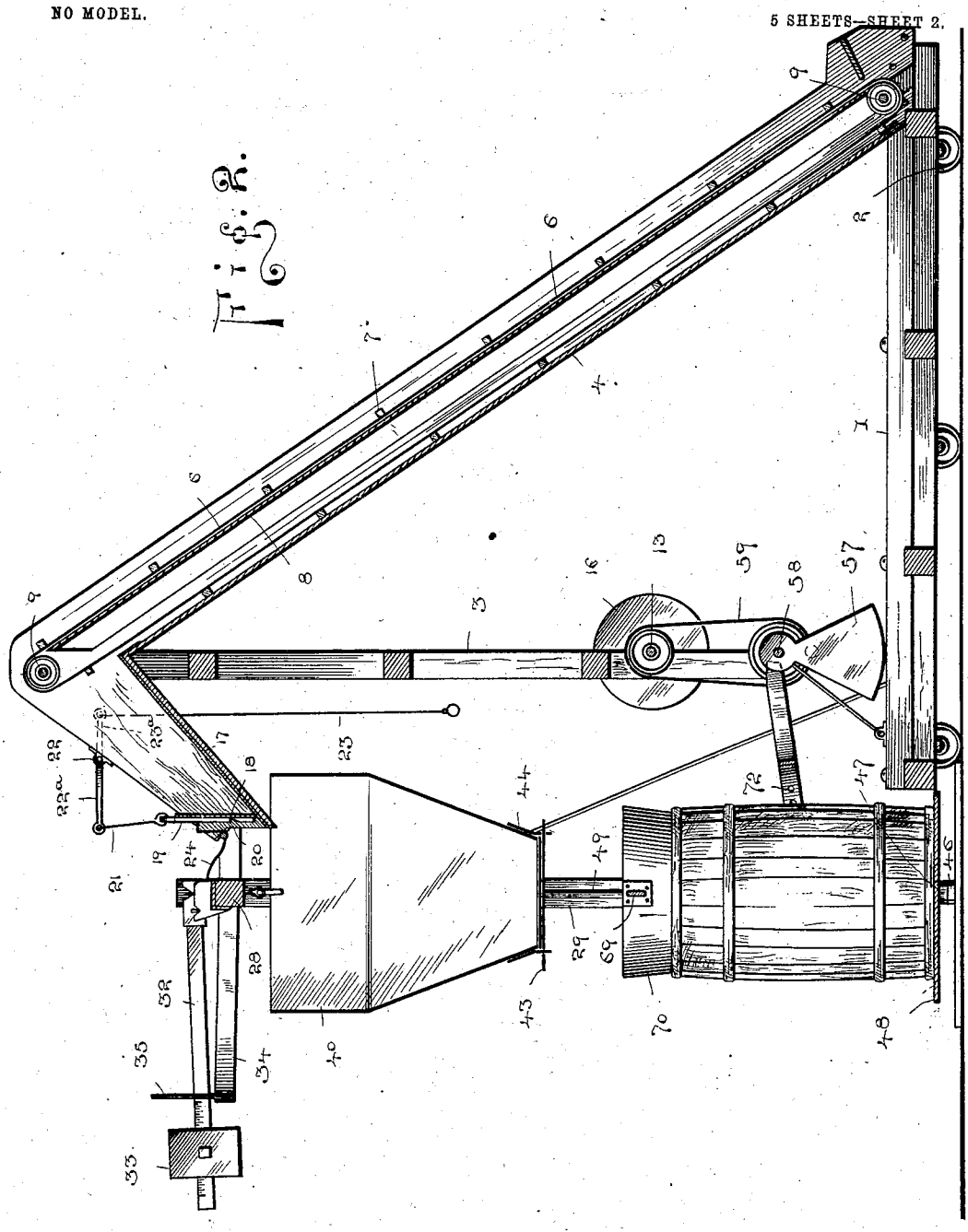
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NO MODEL. 5 SHEETS—SHEET 2.

Fig. 1.



Witnesses
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NO MODEL. 5 SHEETS—SHEET 3.

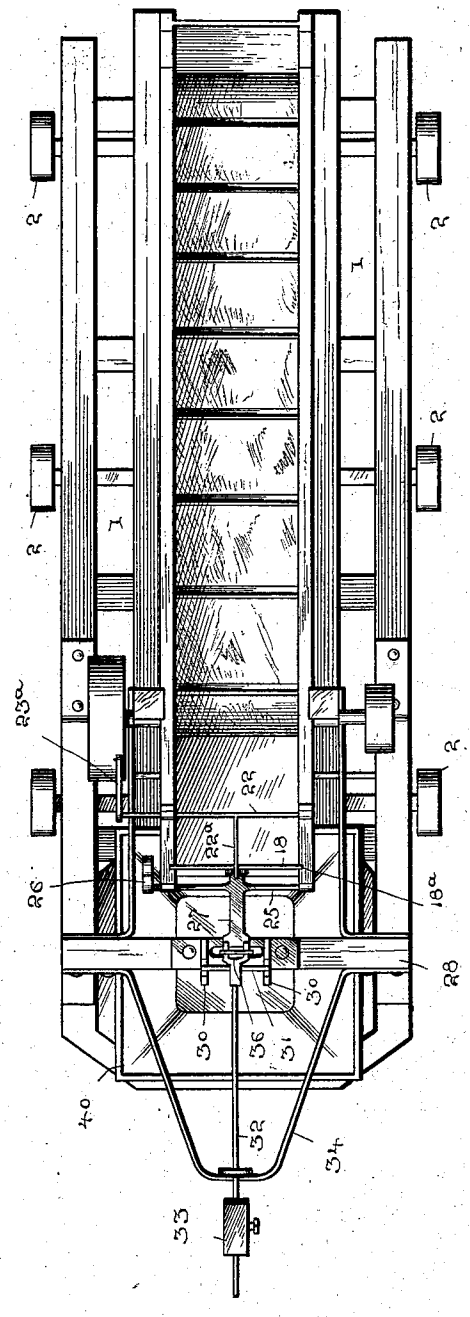


Fig. 3.

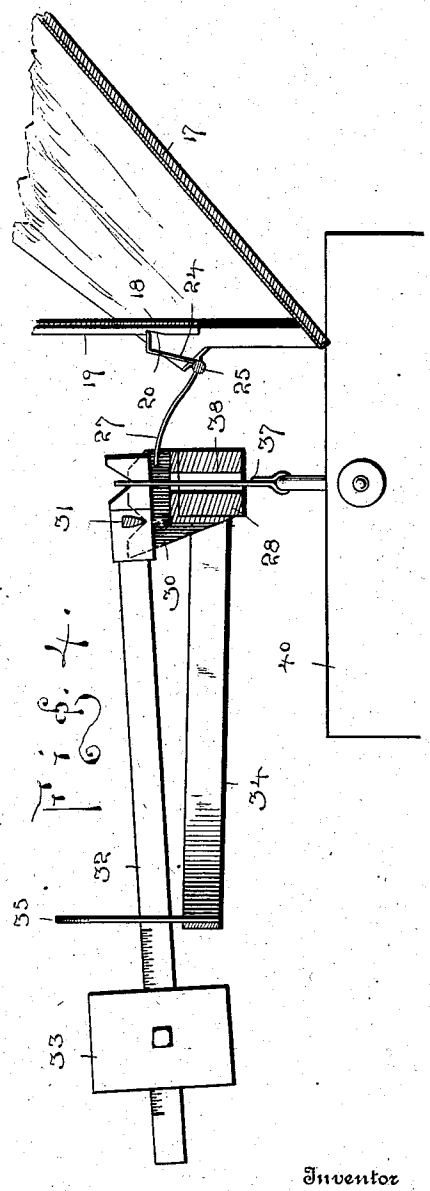


Fig. 4.

Witnesses
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NO MODEL. 5 SHEETS—SHEET 4.

Fig. 5.

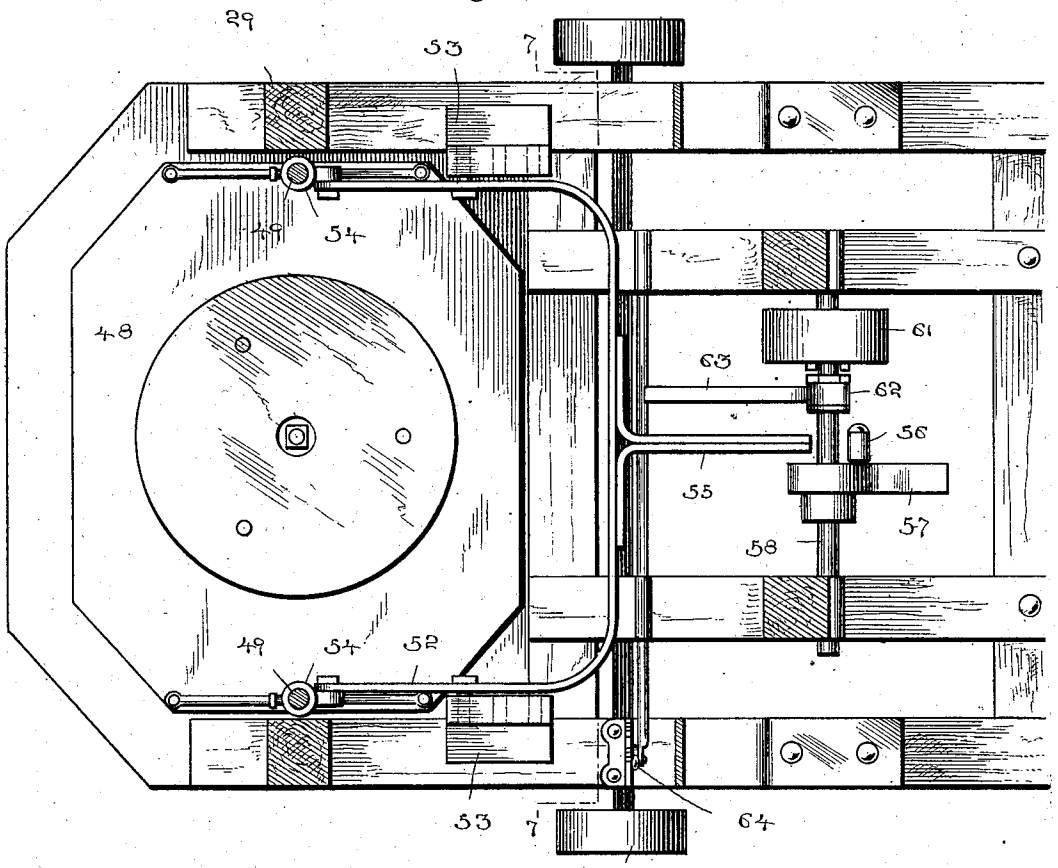
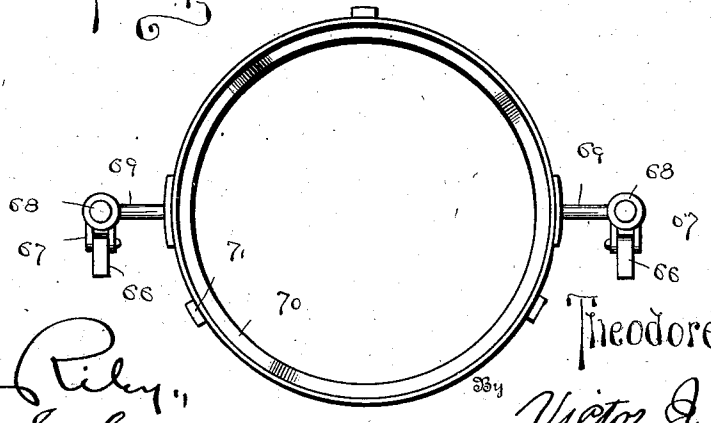


Fig. 6.



Witnesses

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No. 726,143. PATENTED APR. 21, 1903.

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APPARATUS FOR PACKING SALT.

APPLICATION FILED MAY 7, 1902.

NO MODEL. 5 SHEETS—SHEET 5.

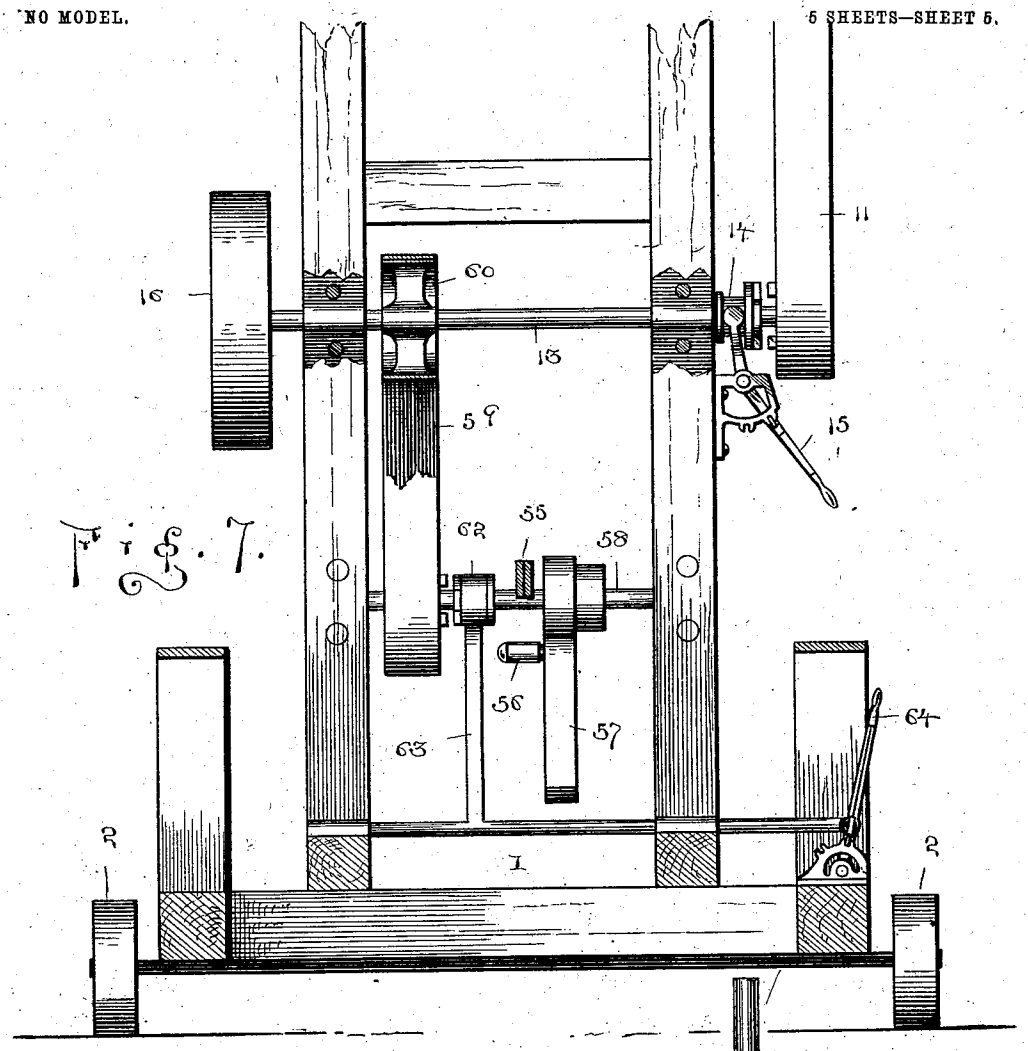


Fig. 7.

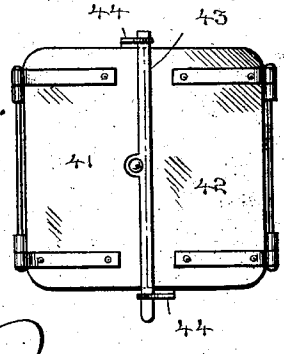


Fig. 9.

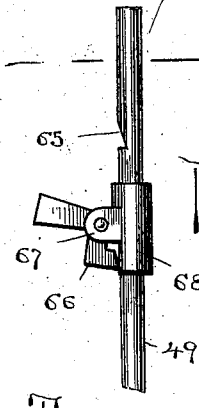


Fig. 8.

Witnesses
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UNITED STATES PATENT OFFICE.

THEODORE COURTLAND, OF LUDINGTON, MICHIGAN.

APPARATUS FOR PACKING SALT.

SPECIFICATION forming part of Letters Patent No. 726,143, dated April 21, 1903.

Application filed May 7, 1902. Serial No. 106,317. (No model.)

To all whom it may concern:

Be it known that I, THEODORE COURTLAND, a citizen of the United States, residing at Ludington, in the county of Mason and State of Michigan, have invented new and useful Improvements in Apparatus for Packing Salt, of which the following is a specification.

My invention relates to new and useful improvements in apparatus for packing salt or similar material in barrels, kegs, or other desired receptacles; and its object is to provide an apparatus which may be readily transported from place to place and which is constructed with a conveyer thereon for discharging material into a weighing-receptacle provided therefor.

A further object is to employ means for automatically cutting off the supply of material to the weighing-receptacle when the proper amount has been accumulated therein.

Another object is to construct a hinged bottom for the said receptacle which is provided with securing means adapted to effectively seal said bottom when closed and which may be readily unfastened when it is desired to empty the receptacle.

A further object is to provide adjustable means for jumping the keg or other device into which the material is discharged from the weighing-receptacle, thereby settling or packing the same therein.

With the above and other objects in view the invention consists in a frame which is mounted on suitable wheels or rollers and is provided with an endless inclined conveyer adapted to conduct material up to and discharge it into a spout. A vertical sliding cut-off or gate is arranged adjacent to the mouth of the spout and is held normally raised by a pivoted catch. An arm extends from this catch and under the short end of a graduated scale-beam pivoted to the frame and provided with an adjustable weight. A receptacle is suspended from the short end of the beam and under the spout and is adapted when a desired quantity of material is deposited therein to pull down the short end of the scale-beam and release the catch, thereby dropping the gate of the spout and shutting off the supply.

Two doors hinged at opposite sides of the suspended receptacle of the scales constitute the bottom thereof. These are held normally closed by a strip centrally pivoted to one edge of one door and adapted to engage locking means depending from said receptacle. This strip when in locking position lies directly under the adjacent edges of the bottom doors or sections for their entire length and serves to prevent material from sifting therebetween.

A yoke is arranged longitudinally in the frame and under the weighing-receptacle and is mounted upon adjustable pivots. Each member of the yoke is secured to a rod extending from a preferably metal base and having guides therefor. This plate is adapted to support a barrel or other receptacle into which the material is to be packed, and it normally rests upon a metal contact or block.

An arm extends from the yoke and is adapted to be compressed by means operated from a rotary shaft. Each time the arm is depressed the yoke and platform are raised. When the arm is released, the parts fall quickly back into their normal positions, the platform coming violently into contact with the block thereunder and jolting the barrel or other receptacle on said platform, thereby settling or packing the material therein. Adjustable means are employed for securing the receptacle upon the platform and for holding the excess of material on the receptacle prior to or during the packing process. Means are also employed for shifting the conveying and the jolting mechanism into or out of operative connection with the driving mechanism either alternately or in unison.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed.

In the drawings, Figure 1 is a perspective view of the complete apparatus. Fig. 2 is a longitudinal section therethrough. Fig. 3 is a plan view. Fig. 4 is a detail view of the cut-off-operating mechanism. Fig. 5 is a plan view of the platform and its supporting and operating mechanism. Fig. 6 is a plan view of the securing-flange of a barrel upon the platform and for holding excess material. Fig. 7 is a section on line 7 7, Fig. 5. Fig. 8 is a detail view of the means for securing the barrel-flange upon the rod of the platform. Fig. 9 is a bottom plan view of the bottom of the weighing-receptacle.

Referring to the figures by numerals of reference, 1 is a frame mounted on suitable wheels or rollers 2 and having uprights 3 near the forward end thereof, which support the upper end of an incline 4, between the sides 5 of which is arranged an endless apron or conveyer 6, having strips 7 secured thereon at desired intervals. This conveyer extends over a stationary platform 8 and is mounted at opposite ends of the incline upon shafts 9, the upper one of which is provided with a pulley 10. Motion is imparted to this pulley and its shaft and the conveyer by means of a belt 11, which is driven by a pulley 12, mounted on a drive-shaft 13, journaled upon frame 1. A clutch 14 and operating-lever 15 therefor are provided for throwing this pulley into or out of engagement with the shaft 13. Power is applied to the drive-shaft 13 in any desired manner, as by means of a belt mounted on the drive-pulley 16.

A spout 17 extends downward from the upper end of the incline 4 at a point below the end of conveyer 6 and is provided adjacent to its mouth with a vertically-movable cut-off or gate 18, mounted in suitable guides, as slots 18^a. A cleat 19, having a notch 20 therein, is secured to the outer surface of the cut-off and is connected, by means of a chain or link 21, with the arm 22^a of a rotary pin 22, journaled adjacent to and above the cut-off. This pin may be operated by a rope 23, connected to an arm 23^a or in other suitable manner. The weight of the long end of lever 32 and of the cut-off serves to hold said cut-off normally closed.

A catch 24 is mounted upon and secured to a pivot-pin 25, extending transversely of the spout and provided with a weight 26, which serves to hold the catch normally in contact with the cleat 19. When the cleat and its cut-off are raised, the catch will automatically engage the notch 20 and lock them in raised position.

An arm 27 extends from the catch 24 and projects over a cross-beam 28, mounted on uprights or standards 29. A bracket 30 is arranged on this cross-beam at opposite sides of the arm 27, and these are notched in their upper edges to receive wedge-shaped lugs 31, extending laterally from opposite sides of a scale-beam 32 and near one end thereof. This beam is graduated and provided with an adjustable weight 33. A bracket 34 extends horizontally from beam 28 and is adapted to support the weighted end of the scale-beam. It is also provided with a slotted guide 35 for said scale-beam, which prevents lateral movement thereof.

The short end of the lever, which is between the brackets 30, is forked, as shown at 36, and each member of the fork is notched to receive a slotted link 37, extending downward through a slot 38, formed in beam 28 and loosely engaging a bail 39, extending upward from and supporting a measuring-receptacle 40. The walls of this receptacle are preferably inclined inwardly, and the bottom is closed by means of two doors 41 and 42, respectively, to one of which is pivoted a strip 43, adapted to engage at opposite ends hooks 44, extending downward from the sides of the receptacle. This strip 43 is so arranged that when it is in engagement with the hooks it extends longitudinally beneath the adjacent edges of the closed doors and prevents the material within said receptacle from sifting through.

A plate 45 is arranged under the frame 1 adjacent to the uprights 29 and is provided at the center with a nut or other suitable contact 46, which is adapted to normally support a similar block 47, extending downward from a platform 48. This platform is provided at opposite sides with hangers 49, slidably mounted within brackets 50, extending inwardly from the uprights 29, heretofore referred to. Suitable braces 51 are connected to the hangers and the platform, which will hold the same rigidly in position. A yoke 52 is pivoted upon the standards 53, arranged upon frame 1, and the ends thereof are connected to sleeves 54, adjustably secured upon the hangers 49. An arm 55 extends rearwardly from the yoke 52 and is normally in the path of a pin 56, extending laterally from a segmental weight 57. This weight is fixed upon and revolves with a shaft 58, mounted on frame 1 and driven in any suitable manner, as by means of a belt 59, extending from a pulley 60 on the drive-shaft 13 to a pulley 61 on said shaft 58. A sliding clutch 62 may be provided for throwing the shaft 58 into or out of engagement with pulley 61, and this clutch may be operated by an L-shaped rod 63, extending to a lever 64, mounted at the side of the frame.

The hangers 49 are provided with a suitable number of notches 65, any one of which is adapted to be engaged by a weighted catch 66, pivoted between lugs 67, extending from a sleeve 68, slidably mounted on the hanger. Each of these sleeves is connected, by means of a laterally-extending arm 69, with a substantially cylindrical flange 70, adapted to be fitted into the upper end of a barrel or other receptacle to be filled and held in position thereon by means of brackets 71, arranged upon the outer surface at desired intervals and engaging the edge of the receptacle. As the sleeves 68 can be moved longitudinally upon the hangers, it is obvious that this flange can be used upon barrels of various heights. If desired, flanges of different shapes may be employed in order to correspond with receptacles differing from a barrel in form.

In operation the salt or other material to be packed is conveyed, by means of the apron 6 and the strips 7 thereon, to the top of the incline 4, where it is discharged upon the spout 17. The cut-off 18 of this spout is held in raised position by means of the weighted catch 24, and the material is thus permitted to fall downwardly into the weighing-receptacle 40, heretofore referred to. When a

sufficient amount of material has been accumulated within this receptacle to raise the weighted scale-lever 32, the receptacle will move downward, carrying the forked end 36 of the scale-beam therewith. This end will contact with the arm 24 of the catch and depress it, thereby withdrawing the same from engagement with the notched cleat 19 and permitting the cut-off to drop into closed position. The receptacle 40 is then emptied by disengaging the pivoted strip 43 from the hooks 44, and it will drop into the barrel or other receptacle provided therefor. The flange 70 serves to hold the surplus material which cannot be contained within the barrel until after the same has been properly packed. When the material has once been discharged into the barrel, the clutch 14 is shifted so as throw the belt 11 out of operation, and the apron is thus prevented from operating. At the same time the clutch 62 is shifted so as to bring the shaft 53 into gear with the drive-shaft 13. As this shaft 58 revolves, the pin 56 is brought down upon the arm 55 and will depress the same. This will cause the ends of the yoke 52 to swing upward, carrying the hangers 49, platform 48, and the receptacle thereon upward. As the shaft 58 continues to revolve, arm 55 is released and the parts above mentioned are immediately dropped into normal position, and the sudden jarring resulting from the violent contact between the parts 46 and 47 will render the material contained within the barrel more compact. After this operation has been continued for some time the entire amount of material discharged into the flange is compressed into the barrel and the same can be removed and closed. The apron 6 is then again connected to the drive-shaft of the apparatus and the operation above described is repeated. By providing the weighted segments 57 the power required to depress the arm 55 is minimized. As the sleeves 54 are adjustably secured to the hangers 49 the length of vertical movement of the platform and hangers may be readily regulated. This can also be done by providing a series of apertures 72 in each side of the yoke 52, and the pivots of the yoke can be placed in any one of the apertures of each series. This will draw the yoke backward or forward, as desired, thereby diminishing or increasing the vertical movement of the hangers. By employing raised contacts 46 the platform 48 can if arranged above an uneven surface nevertheless strike squarely upon said contact, as is obvious.

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

1. The combination with a vertically-movable platform, of a rotary shaft having a weight revolving therewith, pivoted means connected to the platform, and a tripping-pin upon said shaft coacting with and operating said means, substantially as specified.

2. The combination with a vertically-movable platform, of a pivoted yoke connected therewith, an arm extending from the yoke, a drive-shaft having a weight revolving therewith, and a tripping-pin connected to the shaft adapted to depress the arm so as to operate the yoke, substantially as specified.

3. The combination with a vertically-movable platform, of hangers therefor, a pivoted yoke connected to the hangers, an arm to the yoke, a revoluble shaft, and a tripping-pin connected thereto and adapted to depress and release the arm.

4. The combination of a vertically-movable platform, of hangers therefor, a pivoted yoke adjustably secured to the hangers, an arm to the yoke, a revoluble shaft, and a tripping-pin connected to the shaft and adapted to depress and release said arm.

5. The combination with a platform, of hangers therefor, guides for said hangers, a pivoted yoke adjustably secured to the hangers, an arm extending from the yoke, a revoluble shaft, and a weighted tripping-pin connected to the shaft and adapted to depress and release said arm, thereby imparting a jumping motion to the platform.

6. The combination with a frame having standards thereon and guides upon the standards, of a platform having hangers mounted in the guides, a pivoted yoke adjustably secured to the hangers, an arm thereon, and means for alternately depressing and releasing said arm.

7. The combination with a frame having standards thereon and guides upon the standards, of a platform having hangers mounted in the guides, a flange intermediate the hangers, and sleeves connected thereto and adjustably mounted upon the said hangers.

8. The combination with a frame having standards thereon and guides upon the standards, of a platform, hangers therefor slidably mounted in the guides, sleeves adjustably secured upon the hangers, a flange secured to and intermediate said sleeves, and engaging hooks upon the flange.

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

THEODORE COURTLAND.

Witnesses:
D. L. HARDY,
M. COURTLAND.