

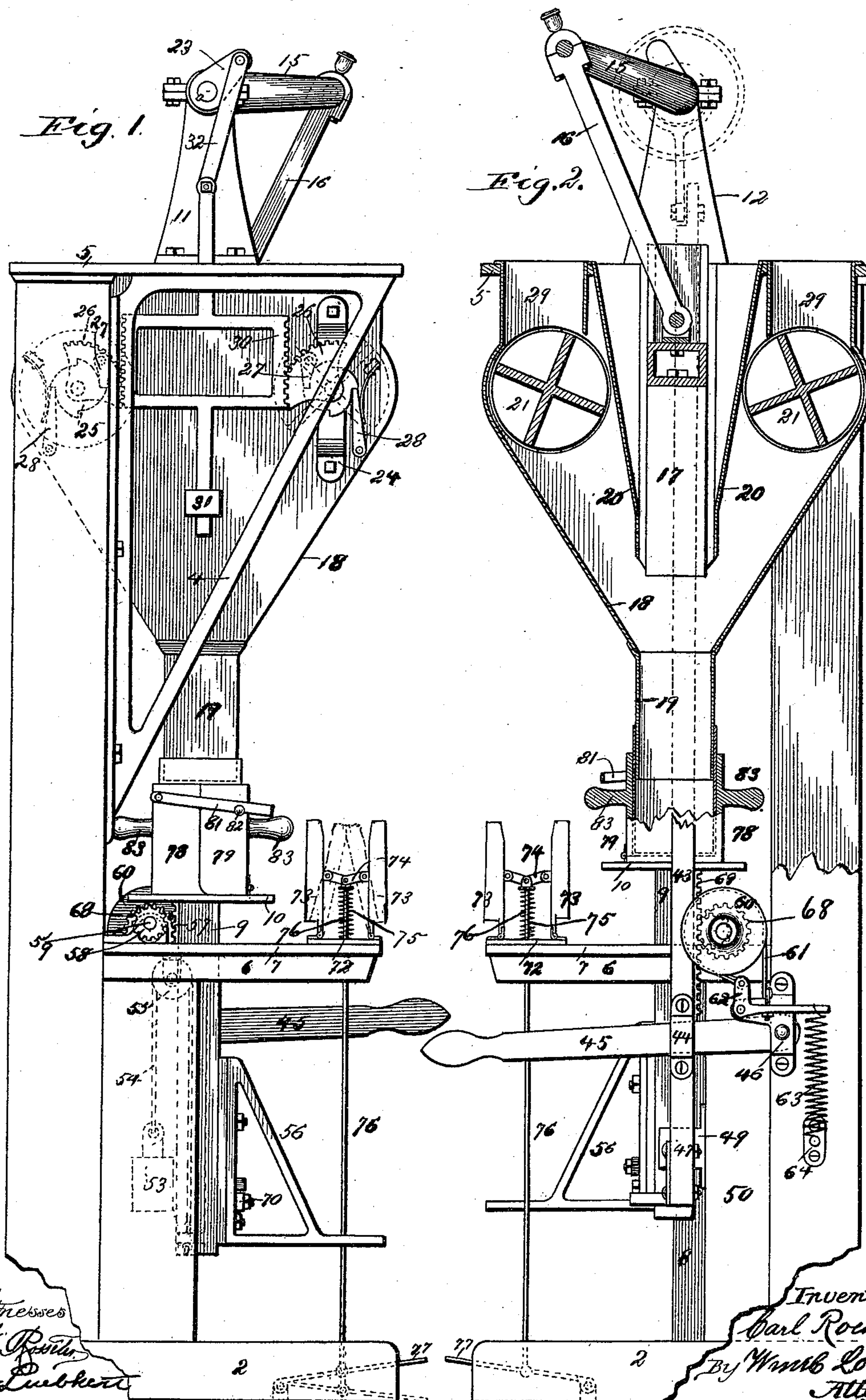
(No Model.)

3 Sheets—Sheet 1.

C. ROEHL.
FLOUR, MEAL, OR BRAN PACKER.

No. 429,645.

Patented June 10, 1890.



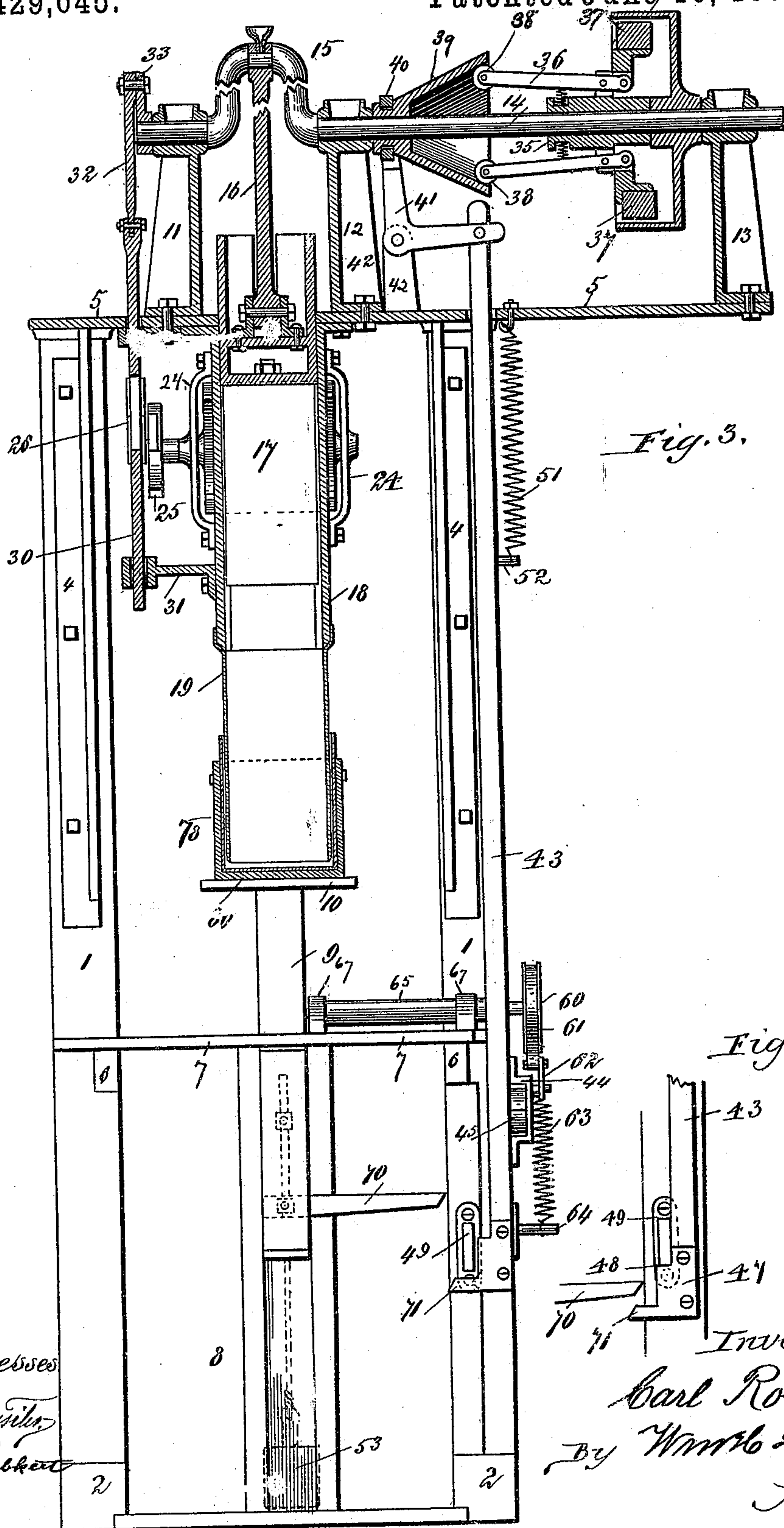
Witnesses
H. B. Smith
O. L. D. L. L.

Inventor
Carl Roehl
By Wm. Lotz
Atty.


3 Sheets—Sheet 2.

No. 429,645.

Patented June ³⁴ 10, 1890.



Witnesses
W. R. Smith
Otto Luebkert

70 76  Invention
Carl Roehl
By Wm. Lotz
Atty.

(No Model.)

3 Sheets—Sheet 3.

C. ROEHL.
FLOUR, MEAL, OR BRAN PACKER.

No. 429,645.

Patented June 10, 1890.

Fig. 5.

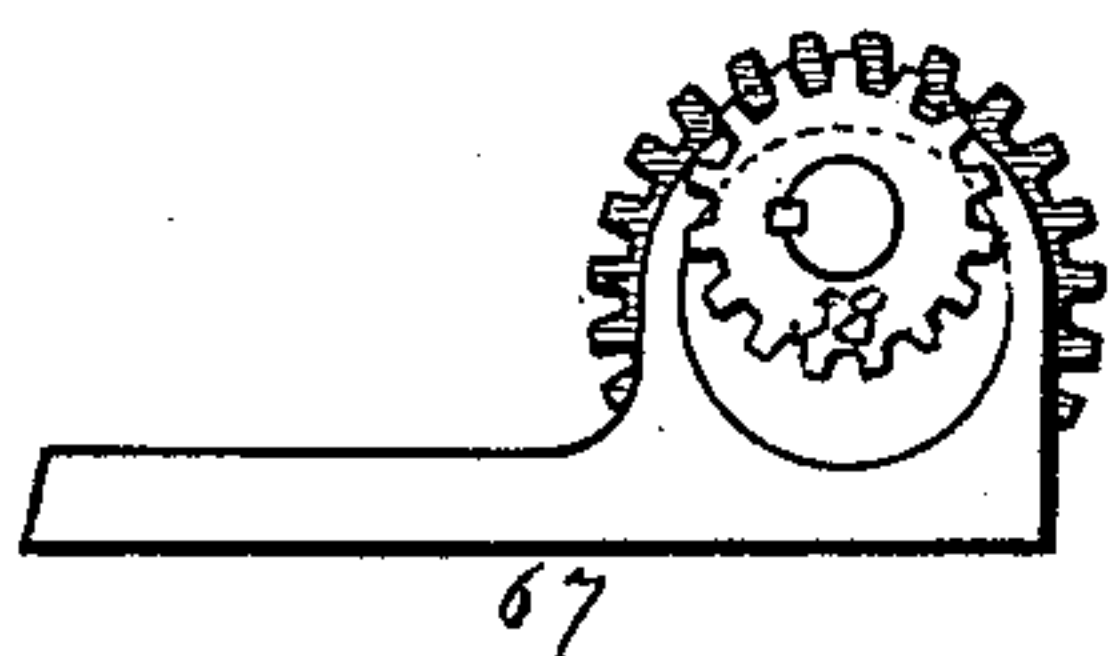


Fig. 6.

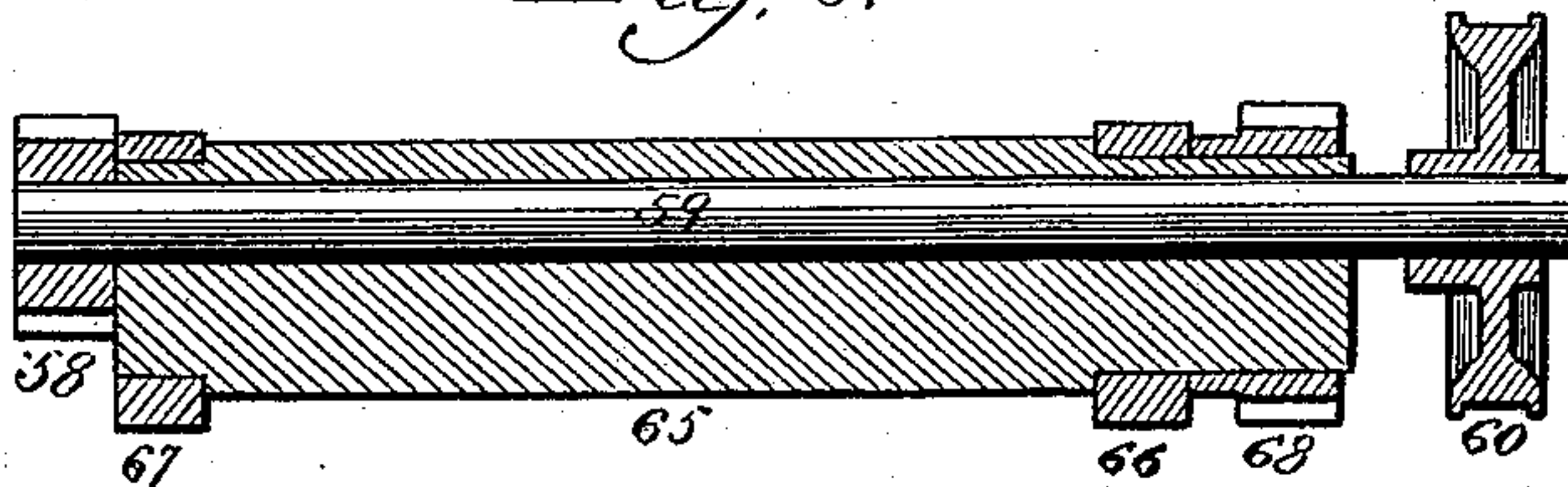


Fig. 7.

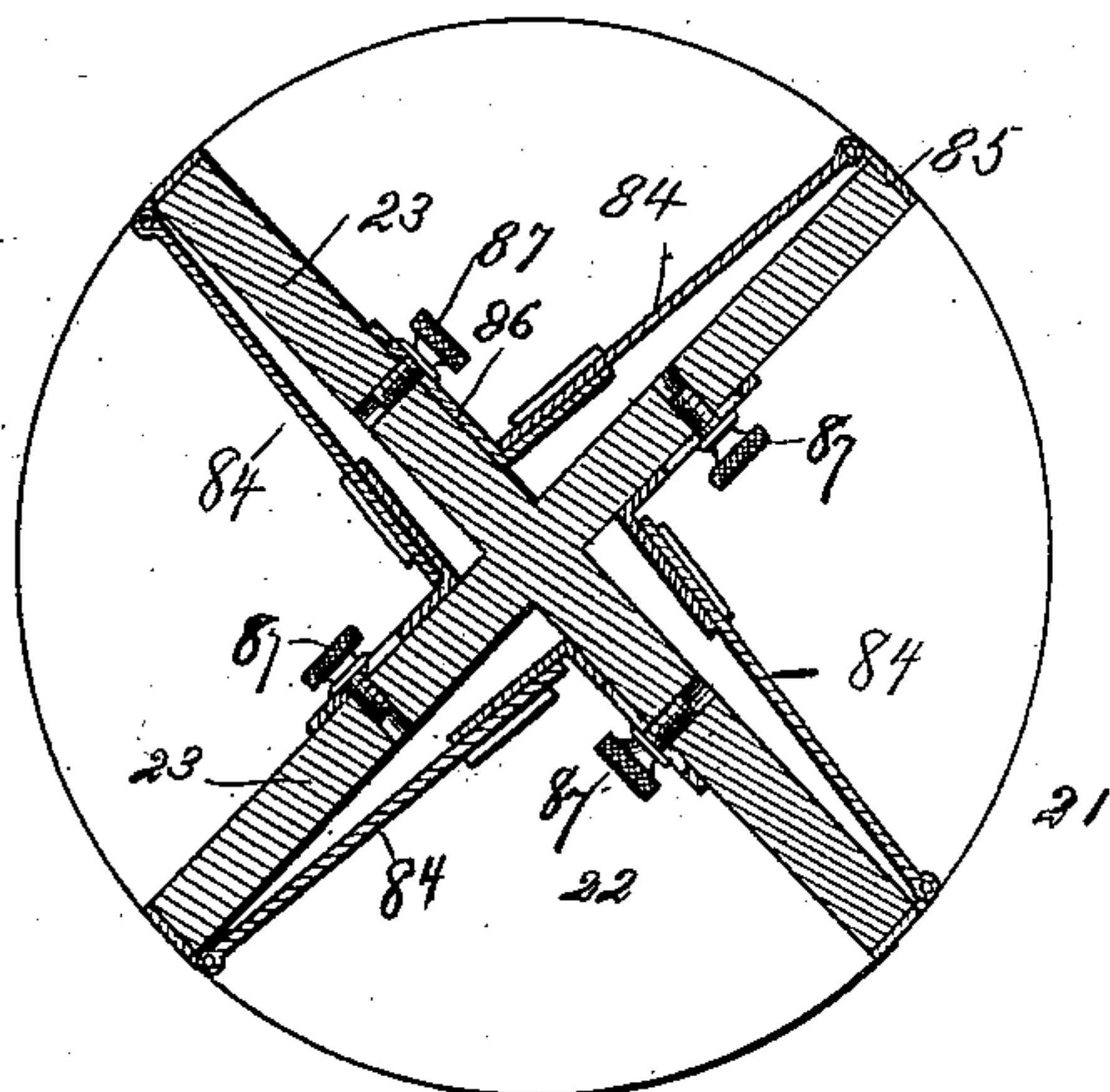
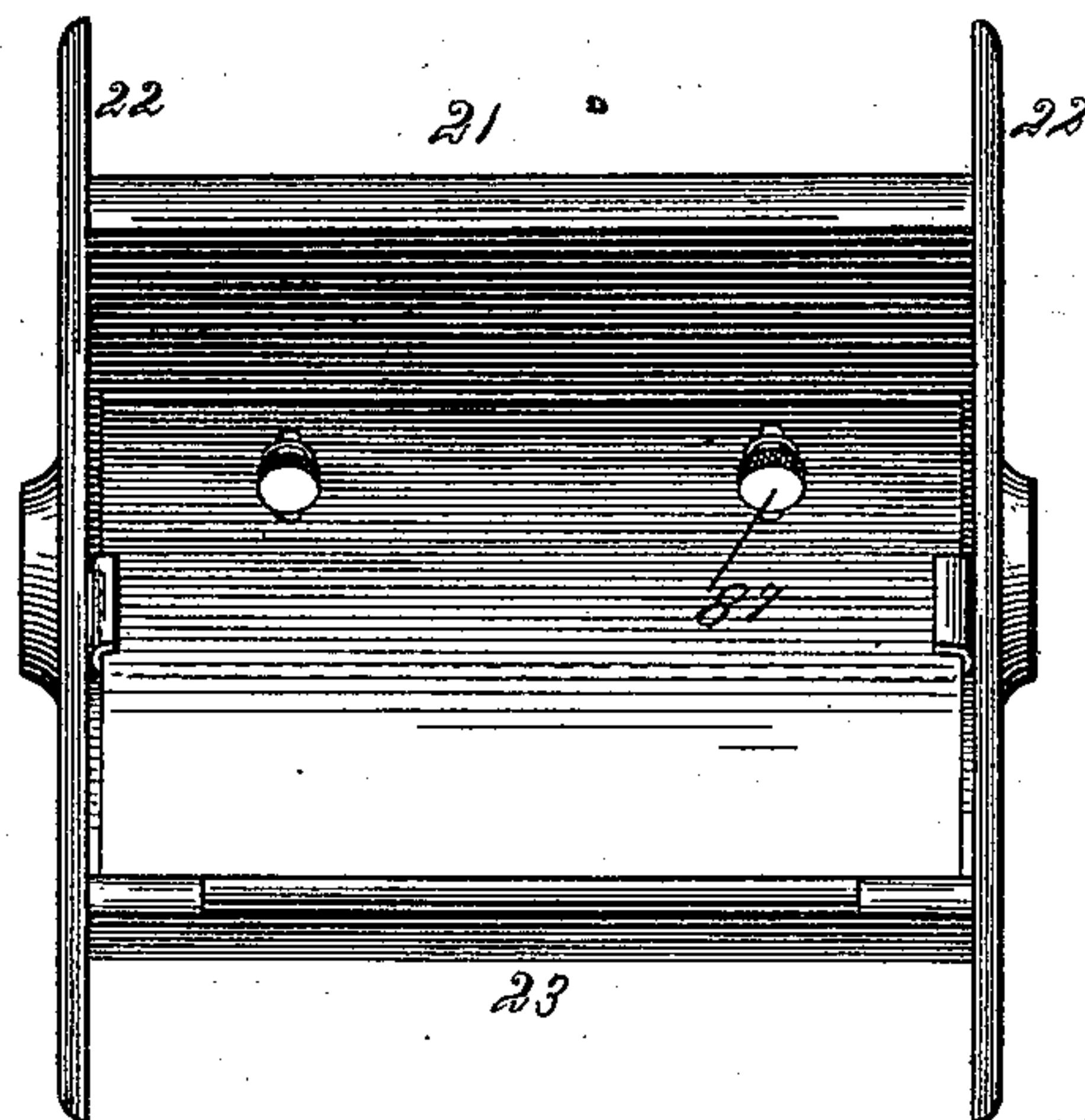


Fig. 8.



Witnesses

W. R. Smith
Otto Liebkert

Inventor

Carl Roehl
by Wm. H. Lotz
Atty.

UNITED STATES PATENT OFFICE.

CARL ROEHL, OF CHICAGO, ILLINOIS.

FLOUR, MEAL, OR BRAN PACKER.

SPECIFICATION forming part of Letters Patent No. 429,645, dated June 10, 1890.

Application filed January 13, 1890. Serial No. 336,776. (No model.)

To all whom it may concern:

Be it known that I, CARL ROEHL, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flour, Meal, or Bran Packers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to machines for packing oatmeal, graham, or buckwheat flour or other products of grain into small packages of special weight and size for family use; and it has for its object to provide such a machine
15 in which oatmeal, pearl barley, or similar products will be packed into paper bags or pasteboard boxes, and in which the exact quantity for each package is measured off automatically; and with these objects in view
20 my invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents an elevation of one side of the machine; Fig. 2, a sectional elevation of the opposite side of the machine; and Fig. 3, a front elevation, partly in section. Fig. 4 is an elevation of the automatic device for stopping the operation of the machine. Figs. 5 and 6
30 show an end elevation and longitudinal section of the automatic package-supporting feed device, and Figs. 7 and 8 a transverse section and elevation of one of the automatic meal measures and feeders.

35 Corresponding referential characters on the several figures of the drawings designate like parts.

The frame of the machine consists of two posts 1, framed into base-pieces 2, connected
40 by a transverse board 3. Against each such post 1 is bolted an iron bracket 4, to be flush with the upper extremity of these posts, and upon these brackets 4 is bolted a plate 5, that at one side extends beyond post 1. At the
45 proper elevation are framed in or against posts 1 two bars 6, which support a table 7. Centrally between the posts 1 and between table 7 and base-board 3 is framed a guide-post 8 for a square bar 9, that has fixed upon its
50 upper extremity a plate 10, for supporting the

paper bag or box while being packed with meal or flour.

In standard-bearings 11, 12, and 13, secured upon plate 5, is journaled a shaft 14, having between bearings 11 and 12 a crank 15, connected by pitman 16 with the upper end of
55 a rectangular plunger 17, vertically guided in a hopper-box 18, that is rigidly secured under plate 5. To the lower opening of hopper 18 is secured a rectangular tube 19, which
60 priorly is of the size to enter the paper bag or box into which meal or flour is to be packed, while its interior dimensions are somewhat larger than plunger 17.

Partitions 20 divide the hopper-box 18 from
65 a point a short distance above the lower outlet thereof transversely into three parts, the middle one being occupied by the plunger-guides, and in the two side chambers being
70 arranged the measure-wheels 21, each, as shown by Figs. 7 and 8, consisting of two disks 22, connected by a cross-shaped partition 23, thus providing four quarter-cylindrical pockets, each to contain a certain measure
75 of meal or flour. Each measure-wheel 21 extends with its ends through openings in the side walls of hopper-box 18, with its disk-flanges exterior of such hopper-walls moving
80 close in the same, while its trunnions extend through central bosses of vertical bow-bars 24, secured against the sides of the hopper-box 18. Upon the overhanging end of one of
85 the trunnions of each measure-wheel 21 is rigidly mounted a ratchet-wheel 25, the number of teeth thereon corresponding with the number of pockets in such measure-wheel, and upon these gudgeons are also loosely
90 mounted segmental gear-wheels 26, each carrying a pawl 27, that is in position to engage the ratchet-wheel. Another pawl 28, pivoted against hopper-box 18, is held in contact with
95 the ratchet-wheel 25 by a spring. By this device, as will be readily seen, an oscillating movement of segmental wheels 26 will transmit an intermittent rotary movement to
measure-wheels 21, above each of which is a feed-hopper 29.

Both segmental wheels 26 mesh with side racks of a rectangular frame 30, having vertical guide-shanks to its middle, the lower

one moving in the eye of a side bracket 31, secured to the hopper-box 18, while the upper one is passed through a slot in top plate 5, and is pivotally connected by a pitman 32 with a crank 33, mounted upon the overhanging end of shaft 14, which by rotating will vertically reciprocate frame 30, and thereby will impart an oscillating movement of a little more than a quarter-revolution to the segmental wheels 26, which again will intermittently rotate the measure-wheels 21, thus feeding with each movement the amount of meal or flour contained in one of the pockets of each wheel 21 to drop into the mouth of hopper 18 and thence into the downward extension 19 thereof.

Upon shaft 14 is loosely pivoted a pulley 34 and is rigidly mounted a sleeve 35, provided with lugs, between which are pivoted levers 36, the shorter ends of which extend into the pulley 34 and carry segmental friction-blocks 37. The opposite ends of levers 36 are slotted and carry small rollers 38, entering a cone 39, fitted upon shaft 14 to slide thereon. This cone 39 has an annular groove formed in its hub to engage a ring 40, pivotally coupled between the bifurcated ends of a bell-crank 41, pivoted to a standard 42, that is rigid with plate 5. A swinging movement applied to bell-crank 41 in one direction will push the cone 39 toward pulley 34, thereby contracting the ends of levers 36 and expanding the blocks 37 against the inward face of the rim, whereby the shaft 14 will then be rotated with the pulleys by frictional contact until the bell-crank 41 is swung in the opposite direction, again shifting the cone 39 to release the levers 36, which then will be swung apart by springs 43, placed in sockets of sleeve 35 and pressing against levers 36.

With the horizontal arm of bell-crank 41 is pivotally coupled the upper end of vertical bar 43, having secured against its lower portion a loop-plate 44, through which is placed a hand-lever 45, pivoted at its rear end in bracket 46. By swinging this lever 45 downward the blocks 37 are brought into frictional contact with pulley 34, setting the machine in motion, and for the purpose of holding the bar 43 on its down position a plate 47 is secured against the lower end of such bar 43, which plate has a shoulder 48, that will swing under a projecting lug of a plate 49, screwed against a side plank 50, which is framed against one of the posts 1 below table 7. For uncoupling shaft 14 from pulley 34, a spring 51, suspended to plate 5 of the frame and coupled with its lower end to a stud 52 of bar 43, will lift such bar when released, thereby shifting the cone 39 toward standard-bearing 12.

The square bar 9, supporting plate 10, being guided in grooved post 8, is counterbalanced by a weight 53, suspended to a cord 54, passed over a pulley 55 and secured to the lower end of such bar 9, this weight 53 being

sufficiently heavy to lift bar 9 and plate 10 when released. Against the front face of bar 9 is secured a bracket 56, providing a pedal thereto for the operator to lower plate 10 by foot-pressure, and against the rear face of bar 9 is secured a rack-bar 57, meshing with a pinion 58, mounted upon one end of shaft 59, upon the opposite end of which is mounted a brake-wheel 60, embraced by a strap 61, with its ends coupled to the two arms of a bell-crank 62, pivoted to bracket 46. The extreme end of the horizontal arm of this bell-crank 62 is coupled with a spiral spring 63, connected with its lower end to a stud-plate 64, secured against the post 1 of the frame. The tension of this spring 63 will draw strap 61 tight around wheel 60, thus providing a brake the frictional resistance of which may be regulated to be more or less. This brake will allow the plate 10 to be pushed downward as a package is being filled and packed by plunger 17.

For the purpose of releasing the bar 9, with plate 10, of its frictional hold, the shaft 59 is journaled in an eccentrically-bored sleeve 65, journaled in bearings 66 and 67, secured upon table 7, and this sleeve 65 has mounted upon one end a pinion 68, meshing with a rack 69, secured against the edge of bar 43, so that a vertical movement of such bar 43 will rotate sleeve 65, so that a down movement of bar 43 will move pinion 68 into gear with rack-bar 57, and that an up movement of such bar 43 will move pinion 68 out of gear with rack-bar 57, by which device the throwing in gear of the friction-clutch for driving shaft 14 will at the same time couple the brake for resisting or holding bar 9 with plate 10, and vice versa.

For automatically stopping the machine after a package has been completed, an arm 70 is adjustably secured against the bolting-plate of bracket 56, which arm 70 has a beveled end, which, as it moves downward with the bar 9, will come into contact with the beveled end of a side projection 71 of plate 47 of bar 43, pushing said plate sidewise, so that its shoulder 48 is released from lug 49, when said bar 43 will be free to be lifted by spring 51 for automatically disconnecting the friction-coupling to pulley 34, and at the same time releasing the bar 9 from its brake.

Upon one corner of table 7 is secured a plate 72, having hinged thereto two vertical plates 73, connected at about their middle by a toggle-joint 74, held to its straightened position by a spiral spring 75, butting with its ends against plate 72 and the central joint of toggle 74, and to this central joint of toggle 74 is coupled a vertical rod 76, extending through spring 75 and through a hole in plate 72 and table 7, and connected with its lower end to a pedal 77, which, when depressed, will swing the plates 73 toward and against each other, and when said pedal 77 is released the spring 75 will lift it again, and by means of toggle 74 it will push the plates 73 apart.

These plates 73 are of proper width, and are hinged a proper distance apart for the exact dimensions of the paper bags to be filled with meal or flour, so that if a paper bag be drawn over these plates 73 while contracted the releasing of the pedal 77 will cause spring 75 and toggles 74 to separate the plates 73, and thereby expand the paper bag to the shape and size it will have after being filled with meal or flour.

A series of boxes are provided for sustaining the paper bag while being packed with meal or flour, which boxes are made each in two sections 78 and 79 of equal size, the section 78 being rigid with the bottom 80, to which the section 79 is secured by hinges, so that it may open outward. These sections 78 and 79 are locked together at their upper ends by a lever 81, pivoted with one end to the rigid section 78, and notched near its opposite end to engage a stud 82 of section 79, which lever end at the same time provides the handle. This box when thus closed is interiorly of the exact shape and dimensions of the expanded paper bag, and after a bag has been drawn over plates 73 a box 78 79 is placed over it upside down, when by releasing pedal 77 said bag will be expanded in the box in a manner to appear as a lining thereof, and then said box is turned to its proper position again to be placed upon plate 10 for filling and packing the bag with meal or flour. Each such box is provided with two handles 83, one to each section 78 and 79.

The operation of the machine is as follows: The machine being uncoupled from pulley 34, running loose upon shaft 14, the operator will put his foot upon pedal 56, thereby lowering the plate 10. He will next place the box 78 79 with the paper bag therein over tube 19, and then he will release pedal 56 and will swing the lever 45 downward until shoulder 48 of plate 47 of the bar 43 will catch below lug 49, whereby the shaft 14 will become coupled with the pulley 34. Now, the upper pockets of the measure-wheels 21, being filled with meal or flour, by being intermittently rotated will empty into the hopper 18, and the meal or flour thus discharged therein from both wheels will enter tube 19, to rest upon the bottom of the paper bag, and then the plunger 17, being reciprocated into this tube 19, will compress the meal or flour in the paper bag, which while being filled will be pushed downward with the plate 10 and bar 9, that support it, and the brake 60 and 61 will provide the required resistance for a more or less compression of the material to be thus packed. This operation automatically continues until the package has reached the desired dimensions in height, when the arm 70 will come into contact with projection 71 of plate 47, pushing the bar 43 sidewise, so that its shoulder 48 is released from the lug 49, when the spring 51 will at once lift such bar 43, uncoupling the shaft 14 from the pulley 34, which latter will then run loose again

upon said shaft. Now the operator will put his foot upon treadle 56 again for clearing box 78 79, to be removed and replaced by another box containing a paper bag that is to go through the same operation again. After the upper edges of bag have been folded for closing said bag the lever 81 is lifted, when section 79 of the box can be swung open for removing the package.

For the purpose of regulating the capacity of the pockets in the measure-wheels 21, I provide each pocket with a plate 84, connected by a hinge-plate 85 to the exterior end of a wing 23, and coupled with its inner end to a slotted plate 86, adjustably secured against the face of the other wing by two or more thumb-screws 87. The plates 84 occupying the entire width between disks 22, a more or less angular adjustment of these plates 84 will regulate the exact quantity of meal or flour each such cavity or pocket is to hold.

What I claim is—

1. In a packer, the combination of a hopper having a lower tubular extension, and a plunger vertically reciprocated therein, with a movable bar having a rack on one side and a bag-supporting plate mounted thereon, and a brake for yieldingly resisting downward pressure, said brake having a pinion for engaging the rack, in the manner and for the purpose set forth.

2. In a machine for the purpose described, the combination, with a reciprocating plunger 17 and tube 19, of bar 9, with plate 10 and rack-bar 57, shaft 59, with pinion 58 and brake-wheel 60, strap 61, bell-crank 62, and spring 63, all arranged substantially as set forth.

3. In a machine for the purpose described, the combination, with reciprocating plunger 17 and tube 19, of bar 9, with plate 10 and rack-bar 57, pinion 58 and brake-wheel 60, shaft 59, on which the wheel 60 is mounted, bored sleeve 65, in which shaft 59 is eccentrically pivoted, pinion 68, meshing with rack 69, bar 43, lever 45 for reciprocating bar 43, and strap 61, bell-crank 62, and spring 63, all substantially as set forth.

4. In a machine for the purpose described, the combination, with a hopper having lower tubular extension 19, and a plunger 17, mounted and reciprocated in said hopper, of a bar 9, having a plate 10, rack-bar 57, and arm 70, a transverse shaft 59, having a brake-wheel 60 and a pinion 58 mounted upon it, an eccentrically-bored sleeve 65, in which the shaft 59 is mounted, a pinion 68, mounted on said bored sleeve and meshing with rack 69, a bar 43, lever 45 for reciprocating said bar, and a spring 51, connected to said bar and to a fixed part, a shoulder 48 and a projection 71 on the foot of the bar 43, lug 49 and arm 70, for engaging the shoulder and projection, strap 61, bell-crank 62, and spring 63, all substantially as described.

5. The combination of a hopper and a vertically-reciprocating plunger operating in

connection therewith, of a measuring-wheel having partitions or wings dividing it into segmental pockets, a plate 84, hinged at the outer edge of each partition or wing and extending down the side of the partition or wing and having a slotted angle-plate 86, connected to the inner edge thereof and extending out upon the opposing face of the next wing or partition, and a set-screw operating through the slot, as set forth.

6. In a machine for the purpose described, the combination, with crank-shaft 14, pitman 16, and plunger 17, of hopper-box 18, wheels 21, pivoted in such hopper-box and each provided with cavities, ratchet-wheels 25, rigidly mounted upon the gudgeons of wheels 21, segmental wheels 26, loosely mounted upon these gudgeons and each carrying a pawl

27, engaging ratchet-wheels 25, and frame 30, having racks to its sides meshing the teeth of the segmental wheels, and a crank 33 and pitman 32 for reciprocating said frame, as set forth.

7. In combination with a machine substantially as described, the paper-bag spreader, consisting of two hinge-plates 73, toggle-joint 74, connecting these plates, spring 75 for raising the toggle, rod 76, and pedal 77, all substantially as set forth.

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

CARL ROEHL.

Witnesses:

WILLIAM H. LOTZ,
OTTO LUEBKERT.