

No. 812,335.

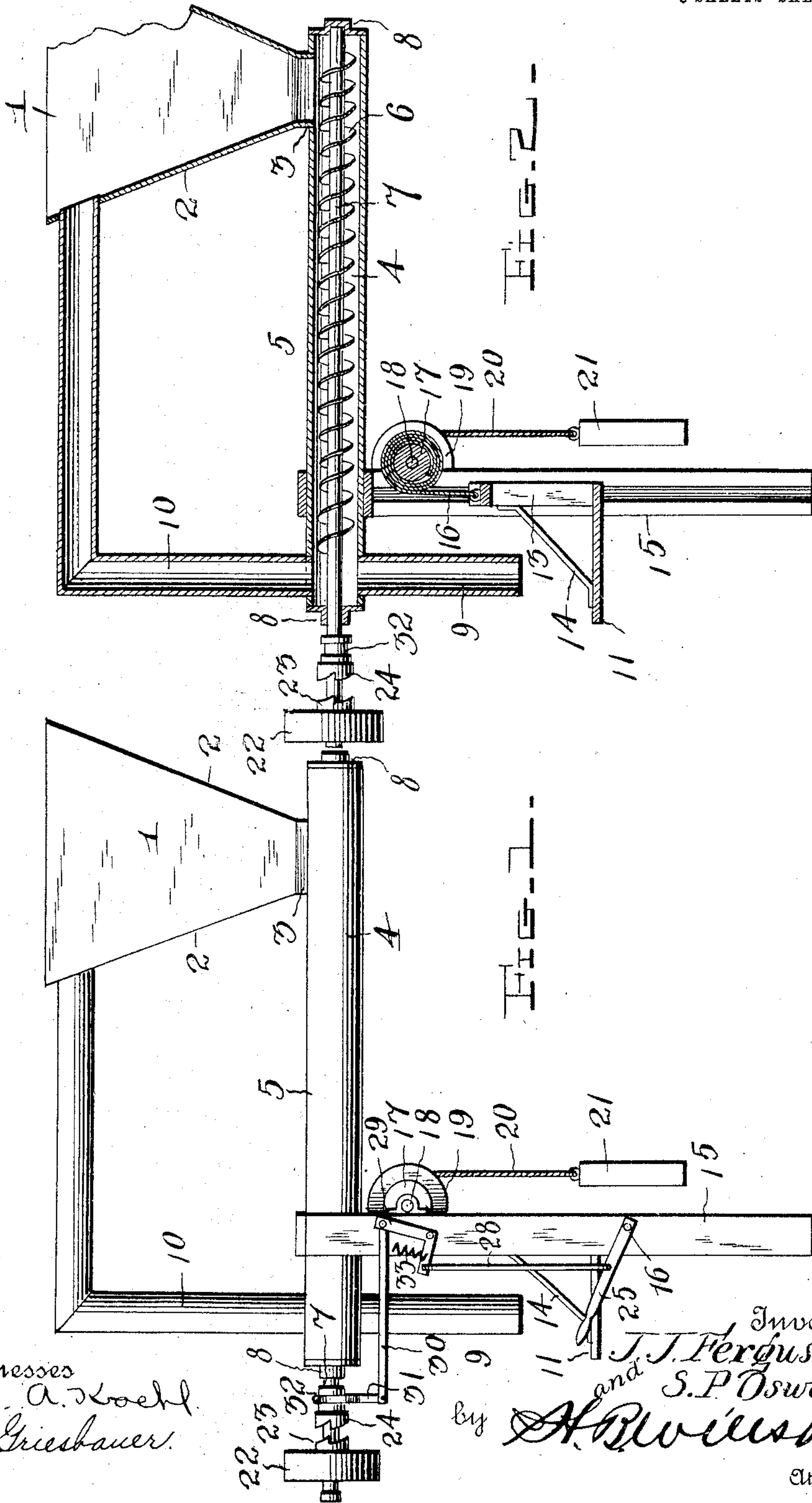
PATENTED FEB. 13, 1906.

J. J. FERGUSON & S. P. OSWALD.

SACK FILLING MACHINE.

APPLICATION FILED JULY 3, 1905.

2 SHEETS—SHEET 1.



Witnesses
Jas. A. Koehl
C. H. Griesbauer.

by

Inventors
J. J. Ferguson,
and S. P. Oswald.
H. B. Wilson

Attorney

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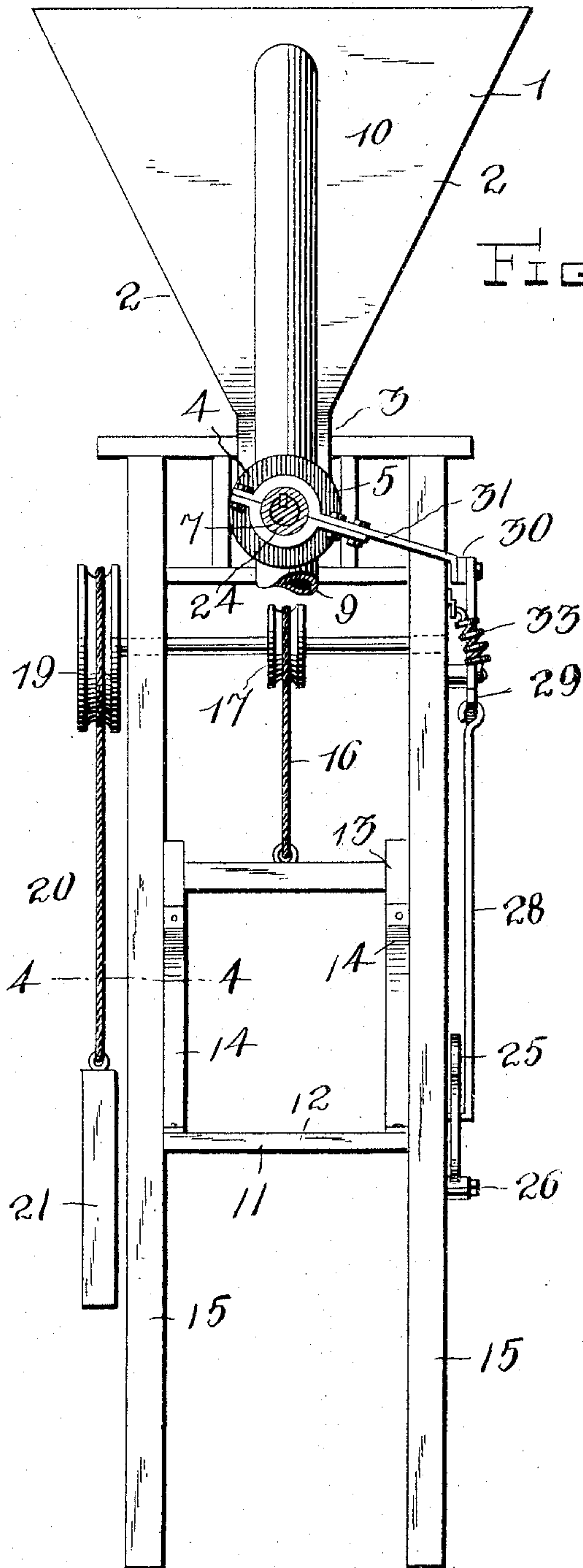
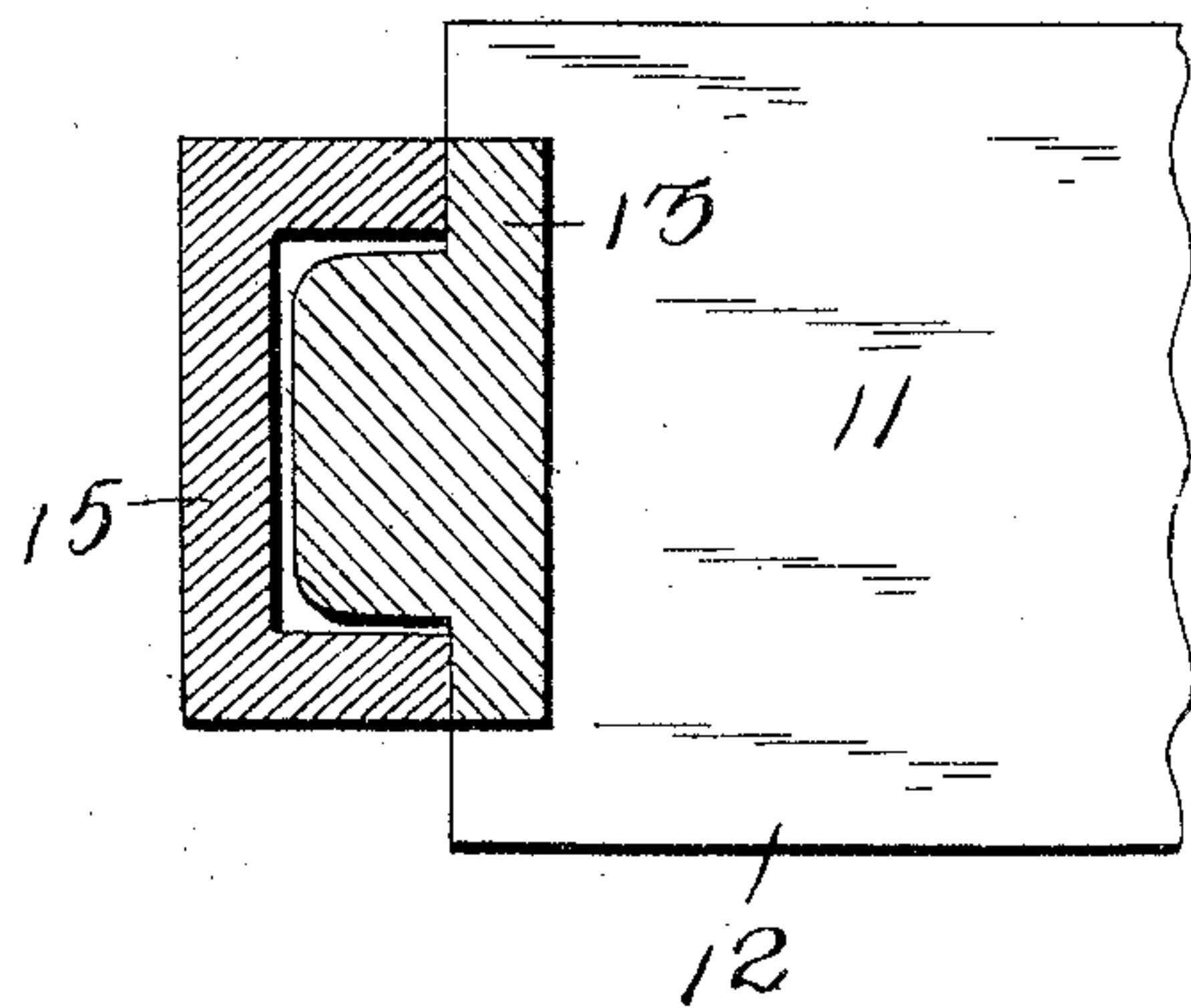


FIG. 3.

FIG. 4.



Witnesses
for A. Koehl.
C. H. Giesbauer.

Inventors
J. J. Ferguson and S. P. Oswald.
by *A. Blumson*
Attorney

UNITED STATES PATENT OFFICE.

JAMES J. FERGUSON AND SIMON P. OSWALD, OF NASHVILLE, TENNESSEE.

SACK-FILLING MACHINE.

No. 812,335.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed July 3, 1905. Serial No. 268,136.

To all whom it may concern:

Be it known that we, JAMES JOHNSON FERGUSON and SIMON PETER OSWALD, citizens of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Sack-Filling Machines; and we do 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.

Our invention relates to improvements in sack-filling machines; and it consists of the novel construction, combination, and arrangement of devices hereinafter described and claimed.

One object of the invention is to provide a simple and efficient machine of this character by means of which hydrated lime or the like may be expeditiously and conveniently placed in sacks without waste and without dust.

Another object of the invention is to provide a machine of this character with simple and efficient means for supporting the sacks, weighing the lime or other material placed therein, and starting and stopping the feeding mechanism.

The above and other objects, which will appear as the nature of our invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a bag or sack filling machine constructed in accordance with our invention. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is an end elevation of the machine, and Fig. 4 is a detail transverse sectional view taken on the line 4 4 in Fig. 3.

Referring to the drawings by numeral, 1 denotes a bin or hopper, which may be mounted in any desired manner and which has tapered sides 2, terminating in a contracted bottom 3, from which the hydrated lime or other material in the hopper is discharged into a conveyer 4. The latter, as shown, comprises a horizontally-disposed cylindrical shell 5, within which is mounted a spiral conveyer 6. Said conveyer 6 is secured upon a shaft 7, which extends concentrically through the tubular shell 5 and is mounted in suitable bearings 8, as shown. As clearly shown in Fig. 2 of the drawings, one end of the conveyer-shell 5 communicates with the dis-

charge end 3 of the hopper 2, and the opposite end of said shell communicates with a downwardly-projecting discharge spout or chute 9, upon which the open bags or sacks are placed while being filled. In order to prevent the dust which arises from the falling of the hydrated lime through the chute 9, we provide an air-flue 10, which has its lower end communicating with the upper end of the chute or spout 9 and its opposite end opening into the upper portion of the hopper 1, so that any dust that may arise will pass back into the hopper, as will be readily understood.

In order to support the sacks while being filled and to weigh the lime or other material placed therein, we provide beneath the chute or spout 9 a movable platform 11. The latter comprises a base 12, secured to the bottom end of a vertical frame 13 and supported from the upper end of the same by inclined braces 14. The frame 13 is mounted to slide vertically between uprights 15 and has connected to its upper portion one end of a cable or other flexible connection 16, which has its opposite end wound upon and attached to a pulley or drum 17. The latter is secured upon a shaft 18, mounted in suitable bearings in the uprights 15 and having fixed upon one of its ends a large pulley or wheel 19, to which one end of a cable or the like 20 is secured. Said cable 20, which is wound upon the pulley 19 in a direction reverse to that in which the cable 16 is wound, has upon its opposite end a weight 21, the purpose of which is to support the platform 11 in its elevated position. The weight 21 may be detachably connected to the cable 20, so that it may be replaced by smaller or larger weights, according to the weight of the material desired to be placed in the bags or sacks. It will be seen that while said weight holds the platform 11 normally in an elevated position said platform will descend as soon as the weight of the material placed in the sack becomes heavier than the weight 21. Instead of replacing the weight 21 it will be understood that supplemental weights may be applied thereto or removed therefrom, according to the quantity of material to be placed in the sack.

In order to start the conveyer 6 and to quickly stop the same when the platform 11 begins to descend, we provide upon one end of the shaft 7 a loose pulley 22, which carries

one member 23 of a clutch. The other member 24 of said clutch is keyed to rotate with the shaft 7, but is free to slide longitudinally thereon, so as to engage and disengage the member 23. The member 24 is operated by a hand-lever 25, which is pivoted upon the frame 15, as shown at 26, and has connected to it one end of a link 28. The opposite end of the latter is pivotally connected to one arm of a bell-crank 29, which is pivoted upon the frame 15 and has its opposite arm pivotally connected to a link 30. Said link 30 is connected to a yoke or collar 31, which is mounted in a groove 32, formed in the clutch member 24, so that the latter may turn within said yoke or collar. In order to hold the clutch members 23 24 normally out of engagement with each other, we provide a coil-spring 33, which has one of its ends secured to the frame 15 and its other end to one arm of the bell-crank 29. It will be seen that when the lever 25 is depressed the bell-crank 29 will be moved against the tension of the spring 33 and will move the clutch member 24 into engagement with the member 23, so as to lock the pulley 22 to turn with the conveyer-shaft 7.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The herein-described sack-filling machine comprising the hopper, the conveyer-tube into which the hopper discharges, the conveyer-worm in said tube, having the shaft provided with the loose driving-pulley, said driving-pulley being provided with a clutch member, the clutch member on the shaft, slidable thereon and connected thereto for revolution therewith, the upright guide-frame, the platform guided by the said frame, the shaft mounted on said frame, above said platform and having pulleys of unequal diameter, a cable wound on one of said pulleys and connected to the platform, a cable wound in the reverse direction on the other of said pulleys, a counterweight attached to the last-mentioned cable, the bell-crank lever mounted on the guide-frame, connections between the bell-crank lever and the shiftable clutch member, the spring acting on the bell-crank lever to normally disengage the shiftable clutch member from that of the driving-pulley, and means connected to the bell-crank lever to move the latter against the tension of said spring.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

J. J. FERGUSON.
S. P. OSWALD.

Witnesses:

G. A. MADDUX,
A. G. EWING, Jr.