

No. 719,374.

PATENTED JAN. 27, 1903.

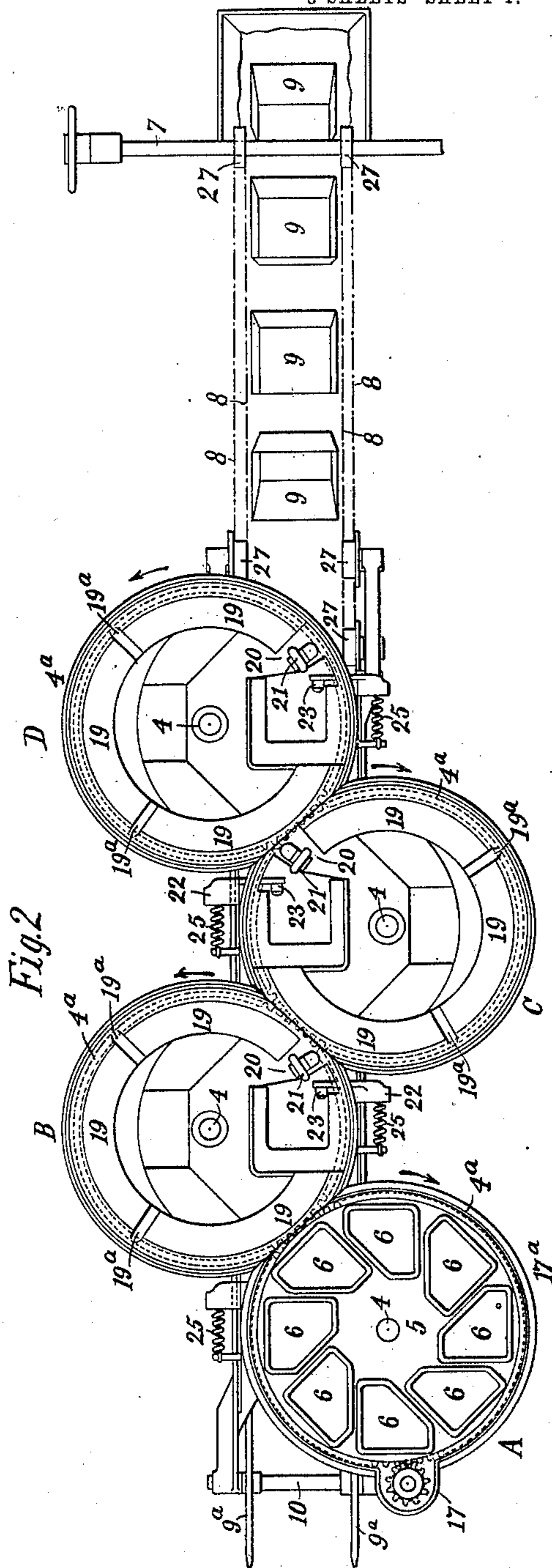
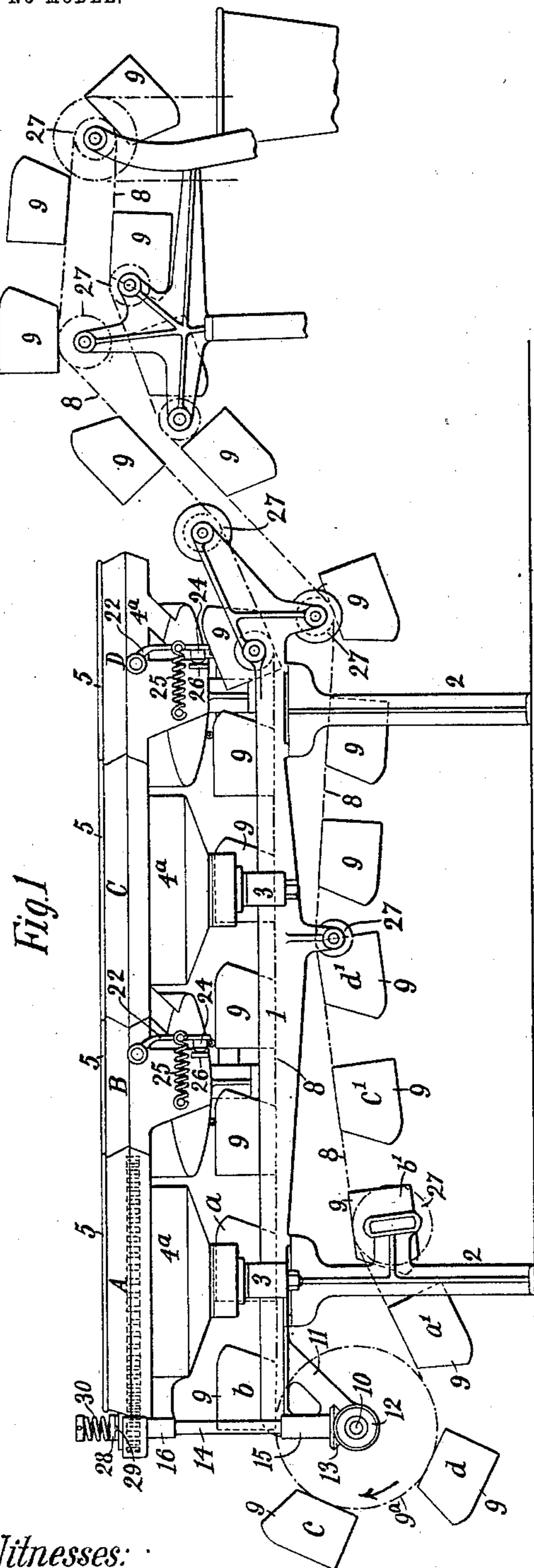
W. ROSE.

FEED OF PACKING MACHINES.

APPLICATION FILED MAR. 24, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:

Phaenel Ketter
Alexander Mitchell

Inventor

William Rose
by *Robt. H. Duncan Atty.*

No. 719,374.

PATENTED JAN. 27, 1903.

W. ROSE.
FEED OF PACKING MACHINES.

APPLICATION FILED MAR. 24, 1902.

NO MODEL.

3 SHEETS—SHEET 2.

Fig. 3

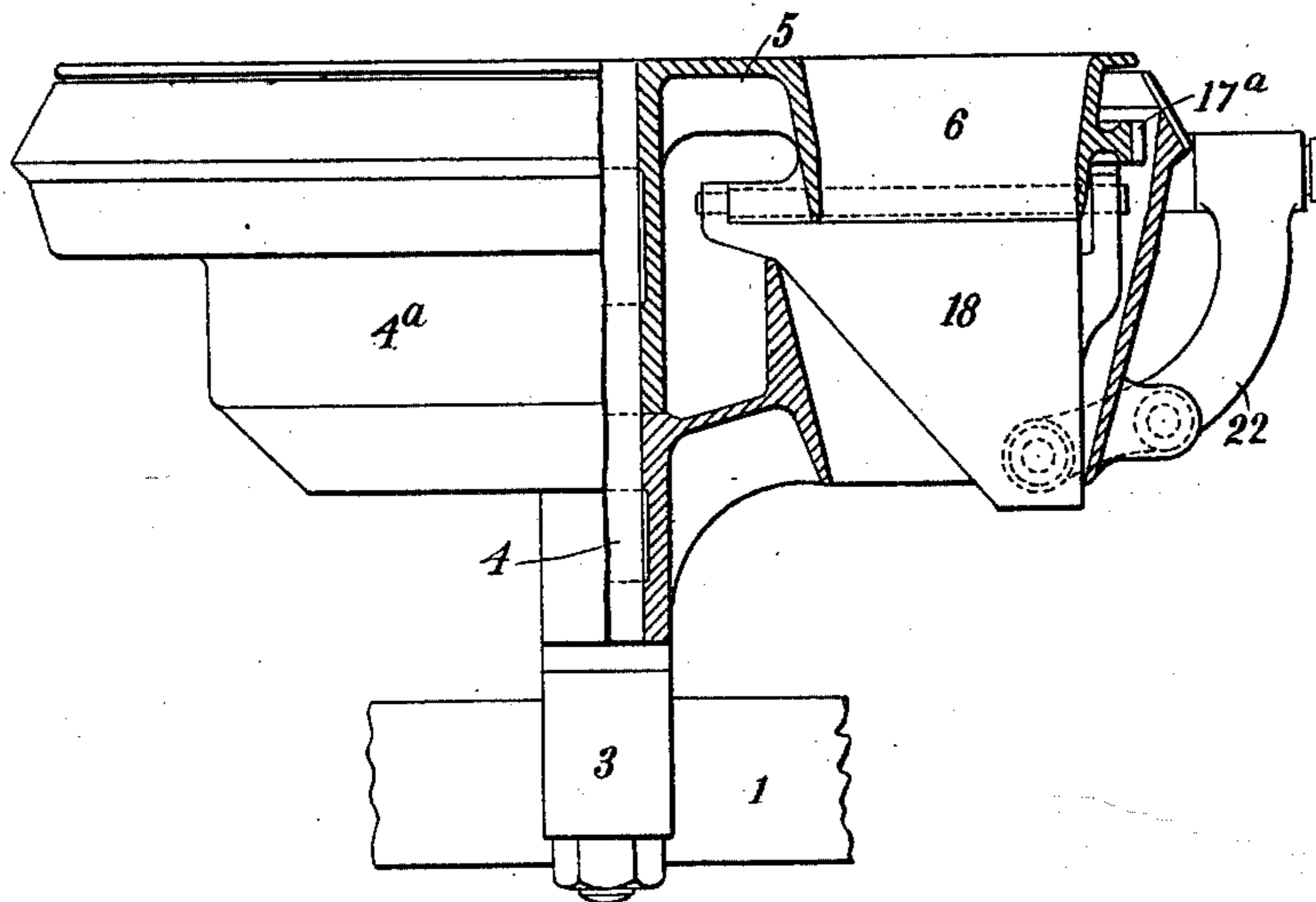
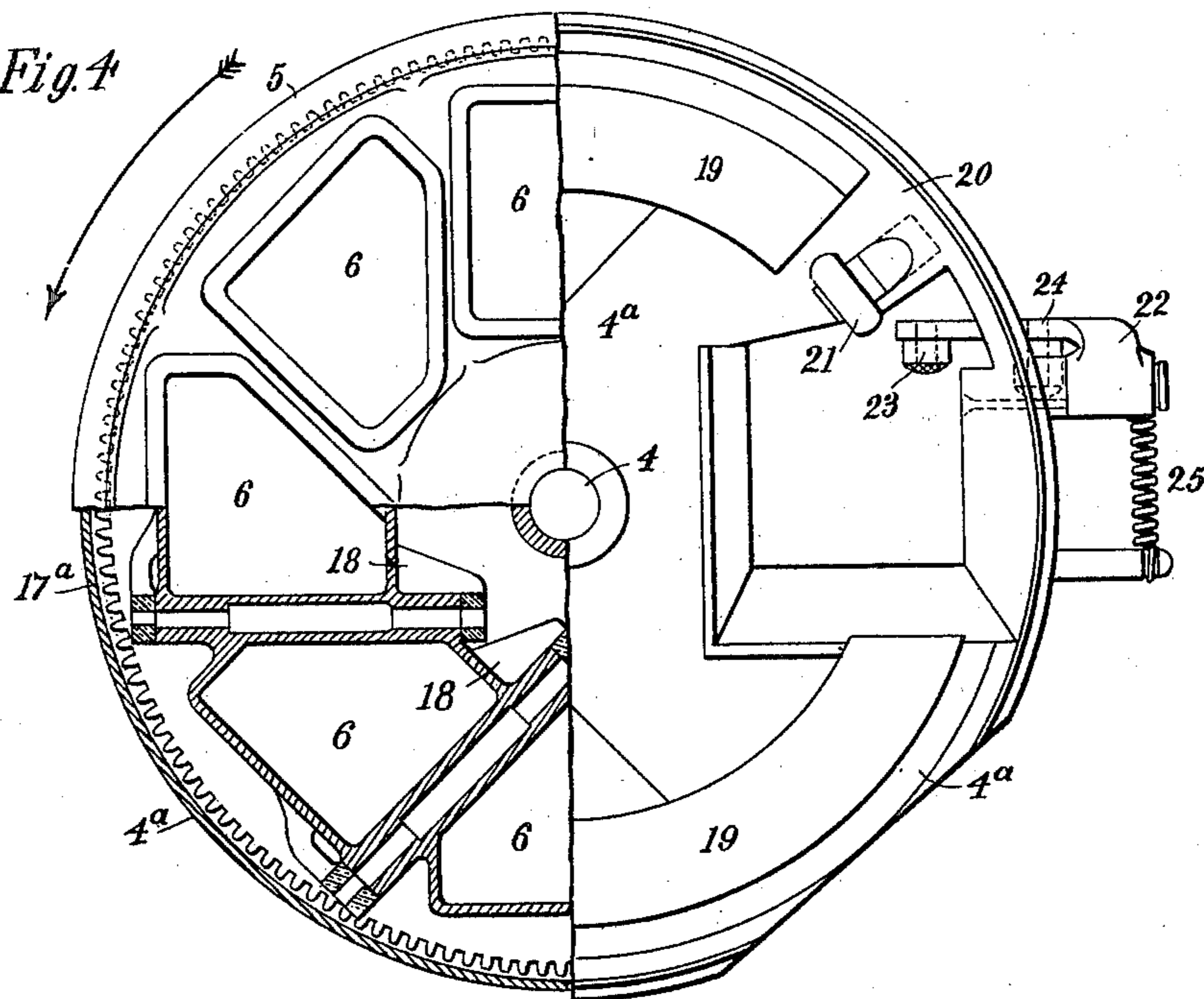


Fig. 4



Witnesses:

Raphael Ketter
Alexander Mitchell

Inventor

William Rose

by Robt. N. Duncan Atty

No. 719,374.

PATENTED JAN. 27, 1903.

W. ROSE.

FEED OF PACKING MACHINES:

APPLICATION FILED MAR. 24, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 5

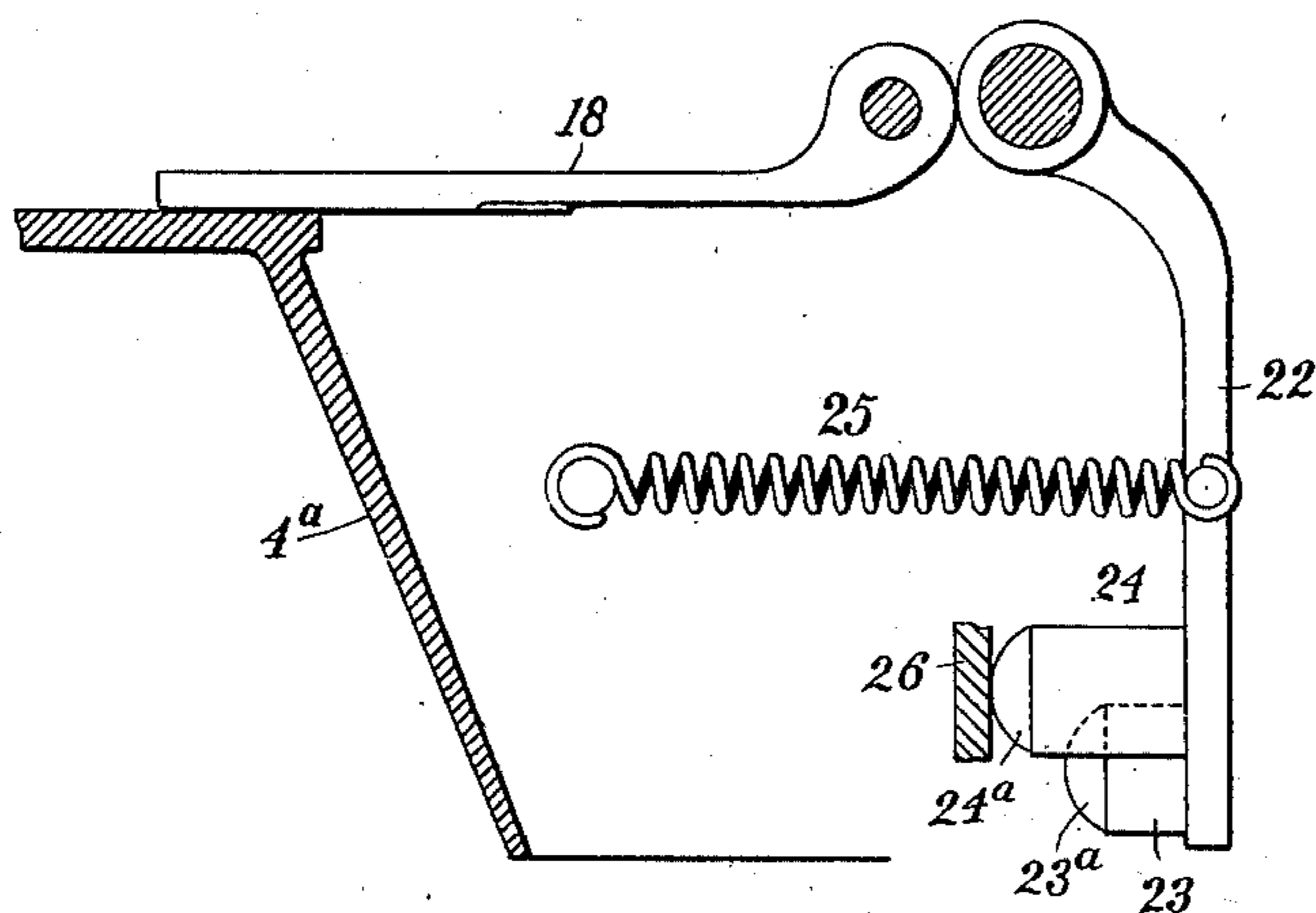
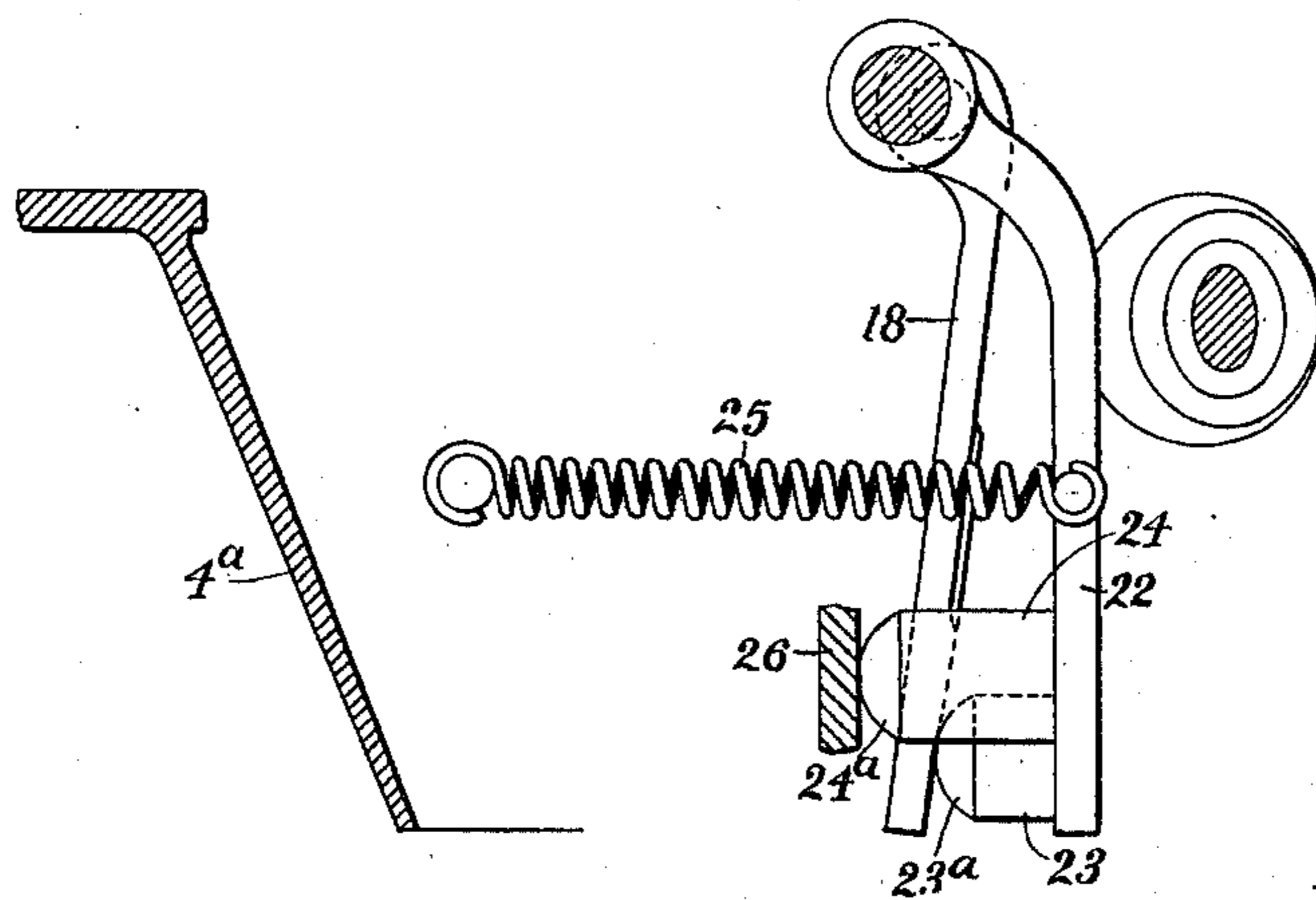


Fig. 6



Witnesses:

Raphaël Ketter
Alexander Mitchell

Inventor

William Rose

by Robt. H. Duncan Atty

UNITED STATES PATENT OFFICE.

WILLIAM ROSE, OF GAINSBOROUGH, ENGLAND, ASSIGNOR TO WRIGHT'S
AUTOMATIC TOBACCO PACKING MACHINE COMPANY, OF LYNCH-
BURG, VIRGINIA.

FEED OF PACKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 719,374, dated January 27, 1903.

Application filed March 24, 1902. Serial No. 99,603. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROSE, a sub-
ject of the King of Great Britain, and a resi-
dent of Gainsborough, in the county of Lin-
coln, England, have invented certain new and
useful Improvements in the Feed of Pack-
ing-Machines, of which the following is a
specification, reference being had to the ac-
companying drawings.

Heretofore in machines for forming pack-
ages of tobacco or other material it has been
the practice for one or more persons, called
"feeders," to weigh or measure out the de-
sired charges of material for the individual
packages and place them in moving recepta-
cles, by which they are conveyed to molds or
pockets of the packing-machine, where they
are inclosed in wrappers. Sometimes through
negligence or inadvertence a receptacle passes
beyond the reach of the feeders without re-
ceiving its charge, which entails a loss of
time and is liable to seriously interfere with
the proper operation of the machine, espe-
cially when the charges are fed into buckets
mounted upon a continuously-moving chain
or belt.

It is the object of my invention to provide
means by which tobacco or other material is
fed to a package-forming machine in such
way as to economize time and prevent any
waste of wrappers or obstruction to the opera-
tion of the machine by enabling each recep-
tacle as it passes the feeder or feeders to re-
ceive its charge of material.

The accompanying drawings illustrate a
form of feeding apparatus or devices embody-
ing my invention, in which—

Figure 1 is a side elevation of the feeding
devices. Fig. 2 is a plan, some of the parts
being removed to show parts beneath. Fig.
3 shows one of the feeding-drums detached
and drawn to a larger scale, one-half being in
side elevation and one-half in vertical sec-
tion. Fig. 4 is a view of the same, partly in
plan and partly in horizontal section. Fig.
5 is a sectional elevation of part of the feed-
ing-drum, showing the hinged bottom with
which it is provided in its closed position;

and Fig. 6 is a similar view showing the
hinged bottom in its open position.

Referring to Figs. 1 and 2, supported on
legs 2 is a frame 1, having lugs 3, to which
are secured studs 4. On each stud 4 (four of
which are shown in the drawings) is mounted
a stationary chamber 4^a, which I will refer to
as a "platform," and above this platform is
mounted so as to rotate on the stud 4 a drum
5, which I will refer to as a "feed-drum."
The feed-drums 5 are each provided with a
number of receptacles 6, into each of which
a weighed or measured quantity of material
to constitute a package charge is placed.
These drums are shown in the drawings as
receiving rotary motion at a constant speed
from a shaft 7 of the package-making ma-
chine by means of endless chains 8, carry-
ing buckets 9, by which charges of mate-
rial to be packed are conveyed from the feed-
ing-drums 5 to the said package-machine,
but the said drum or drums may be rotated
by any other suitable means. The endless
chains 8 engage the teeth of sprocket-wheels
9^a, fast on a horizontal shaft 10, carried in
brackets 11 on the frame 1, on which shaft is
a bevel-wheel 12, in gear with a bevel-wheel
13 on a vertical shaft 14, mounted in bearings
15 and 16 on the frame 1 and platform 4^a.
On the vertical shaft 14 is a pinion 17, gear-
ing with teeth 17^a on the circumference of the
first feed-drum 5, so as to impart rotation to
the said drum. The several drums 5 are
geared together, so that the said drums are
all simultaneously rotated from the vertical
shaft 14.

Each receptacle 6 in the feed-drums is pro-
vided with a hinged plate 18, constituting a
movable bottom, which is held in its closed po-
sition by a plate or fixed surface 19 on the
platform 4^a, which plate or fixed surface has
in it a gap or opening 20 through which the
material is discharged from each receptacle
as it comes over the said gap or opening 20,
the said plate or bottom 18 when over this
gap not being supported by the plate 19 con-
sequently falls into the position shown in
Figs. 3 and 6. As the drum continues to ro-

tate the said hinged plate or bottom 18 is returned to its raised or closed position by bearing against the edge of the gap in the plate 19 or preferably against an antifriction-roller 21, as shown, or the closing and opening of the said hinged plate or bottom may be effected by a cam secured to the shaft or stud upon which the drum rotates or by any other convenient means. A stationary plate may be provided over each of the said drums above the receptacle from which the charge is being delivered to the conveyer to prevent a second charge from being dropped in the said receptacle while the hinged plate or bottom is open. On a stud projecting from the platform 4^a is mounted an arm 22, Figs. 3, 4, 5 and 6, on which are two yielding pads or buffers 23 24, the surfaces 23^a and 24^a being of india-rubber or similar material to reduce vibration and noise, against one of which buffers 23 the hinged plate or bottom 18 strikes when released from the plate 19, causing the said hinged plate or bottom to vibrate slightly so as to shake from it any material that may tend to adhere thereto. The arm 22 is connected by a spring 25 to the platform or other stationary part, so as to retain the other buffer 24 pressed against a stop 26 to prevent undue rebound of the hinged plate or bottom. By the use of these rotary drums the person supplying each drum with material is enabled to keep several of the receptacles filled, so that should any delay occur in weighing or measuring one charge the package-machine will still properly receive its charges.

In the case of a machine in which an endless traveling chain fitted with a number of buckets is employed and in which two or more persons are employed to feed the material, I employ as many rotary drums and their adjuncts as there are persons engaged in feeding the machine. I have shown four of the said feed-drums in the drawings, respectively designated as A B C D, geared together and driven by the endless chains carrying buckets 9, by which the charges are conveyed to the packing mechanism. The traversing motion of the chain of buckets is so timed with reference to the speed of rotation of the said feed-drums that the buckets will receive a charge from each of the feed-drums in succession, one bucket, as *a*, receiving a charge from the feed-drum A, the next bucket *b* receiving a charge from the feed-drum B, the next bucket *c* receiving a charge from the feed-drum C, and the next bucket *d* receiving a charge from the feed-drum D, so that after charging one bucket from one of the drums the same drum will supply the next fourth bucket that comes beneath the discharging-receptacle in the said drum. For instance, the next bucket charged by the feed-drum A will be that marked *a'*, that charged by feed-drum B is marked *b'*, that marked *c'* being the next fed by the drum C, and the bucket marked *d'* will be charged by the feed-

drum D. If only one feed-drum be employed, the speed of the chains will be timed with reference to the rotation of the said feed-drum so that each successive bucket will be charged by each succeeding chamber in the feed-drum.

Although I have shown the feed-drums as discharging the material into buckets carried on endless chains, it is evident that the contents of the chambers may be discharged onto any suitable conveyer which will carry the material to the packing mechanism.

The chains 8 when employed are supported on guide-pulleys 27, suitably arranged on the frame 1 and on the frame of the package-machine.

A continuous rotation is imparted to the feed-drums by the pinion 17; but to provide against damage to the machine in case of an obstruction to the rotation of the drums I mount the pinion 17 loosely on the vertical shaft 14, but connect it so as to rotate with the said shaft by a collar 28 on the shaft, which collar is free to slide longitudinally thereon, but is caused to rotate therewith, the said collar having a projection 29, which is caused by a spring 30 to engage in a notch or recess in the boss of the pinion 17, so as to cause the said pinion to rotate with the shaft and rotate the drums. Should, however, an obstruction cause the drums to be retarded, the pressure on the pinion 17 will cause the projection 29 on the collar 28 to disengage the notch in the boss of the pinion, which then will remain stationary, while the vertical shaft will continue to rotate in the pinion until the cause of the obstruction is removed, whereupon under the action of the spring 30 the projection 29 will be again caused to engage the pinion at the proper time to suit the position of the buckets.

The platforms 4^a are hopper-shaped in the interior, and the stationary plate or surface 19 has recesses 19^a therein to conduct any dust or small matter that may escape from the drums into and from the interior of the platforms 4^a.

It is not intended to limit the invention to the special construction shown in the drawings and particularly described in connection therewith, nor to a feeding apparatus provided with a specific number of feed-drums, nor to a conveyer of any fixed construction, inasmuch as the main gist or principle of the invention consists in the arrangement of a rotary drum having several receptacles or chambers to contain charges of material to be packed, with a conveyer by which the charges received upon it are transferred to the package-forming machine.

Having hereinbefore described the nature of my invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an apparatus for feeding tobacco, or other material, to a package-forming machine, the combination of a drum arranged to rotate

in a horizontal plane and having a number of chambers or receptacles opening upward into which charges of material to be packed are placed, means for discharging the material therefrom and a conveyer to receive the charges and deliver them to devices where they are inclosed in wrappers, substantially as set forth.

2. The combination, in an apparatus for feeding material to a package-forming machine, of a rotary drum, or drums, having a number of receptacles into which package charges are placed, an opening and closing plate or bottom for each receptacle, a conveyer for transferring the charges to the package-forming machine, means for opening the bottom when a receptacle is over the conveyer to discharge its contents thereon, and means for closing and keeping said bottom closed when not over the conveyer, substantially as set forth.

3. The combination, in an apparatus for feeding material to a package-forming machine, of a rotary drum or drums having a number of receptacles into which package charges are placed, a hinged bottom for each receptacle, a stationary plate to hold the bottom in its closed position provided with a gap or opening to permit the bottom to swing open to discharge the contents of the receptacle, substantially as set forth.

4. The combination, in an apparatus for feeding material to a package-forming machine, of a rotating drum having receptacles into which package charges are placed provided with movable bottoms, means for opening and closing the bottoms, an endless chain of buckets extending from beneath the drum to the package-forming machine, means for rotating the drum and moving the chain of buckets at such relative speeds that the buckets will be brought to register with the recep-

tacles of the drum at the moment their bottoms are opened and thereby discharge their contents into the buckets, substantially as set forth.

5. The combination, in an apparatus for feeding material to a package-forming machine, with a rotary drum or drums, having receptacles into which package charges are placed, of an endless chain of buckets arranged to receive said charges and convey them to the machine, means to move the said chain from the said machine and through the chain to rotate the drum or drums, substantially as set forth.

6. The combination, in an apparatus for feeding material to a package-forming machine, with a stationary platform 4^a and fixed plate 19 provided with a gap or opening 20, of a rotating drum 5 having a number of receptacles provided with hinged bottoms 18, whereby at a certain point in the rotation of the drum the hinged bottoms can swing open to discharge their contents and are then closed and held in the closed position, substantially as set forth.

7. The combination, in an apparatus for feeding material to a package-forming machine, with a rotating drum having a series of receptacles into which package charges are placed and provided with swinging bottoms, means for holding the bottoms in their closed position and means for permitting them to swing downward into an open position at a certain point in the rotation of the drum, of buffers arranged to give a vibration to the bottoms and to prevent their undue rebound when they reach their open position, substantially as set forth.

WILLIAM ROSE.

Witnesses:

F. G. TWEED,
J. HENRY TUBB.