

No. 766,968.

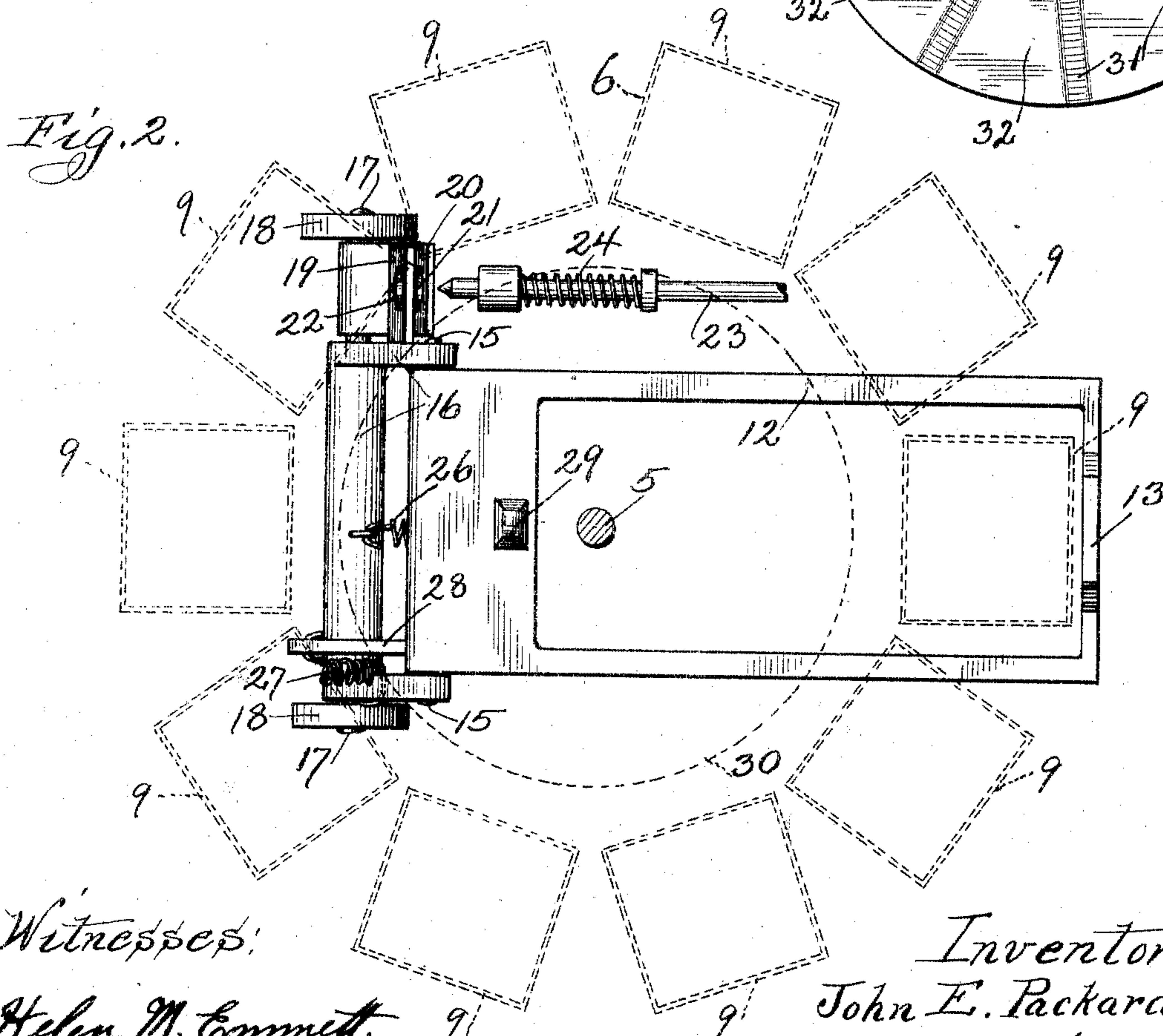
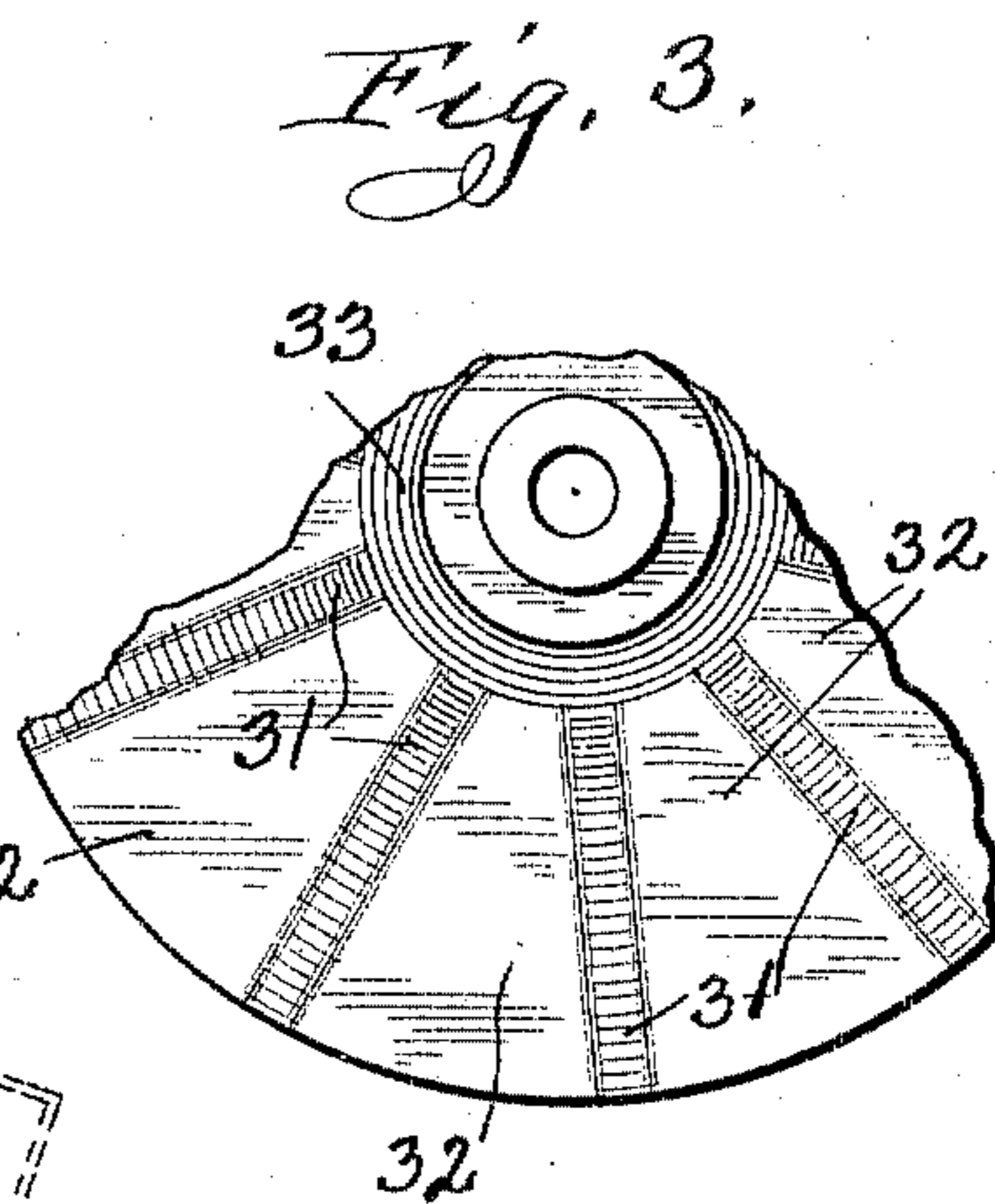
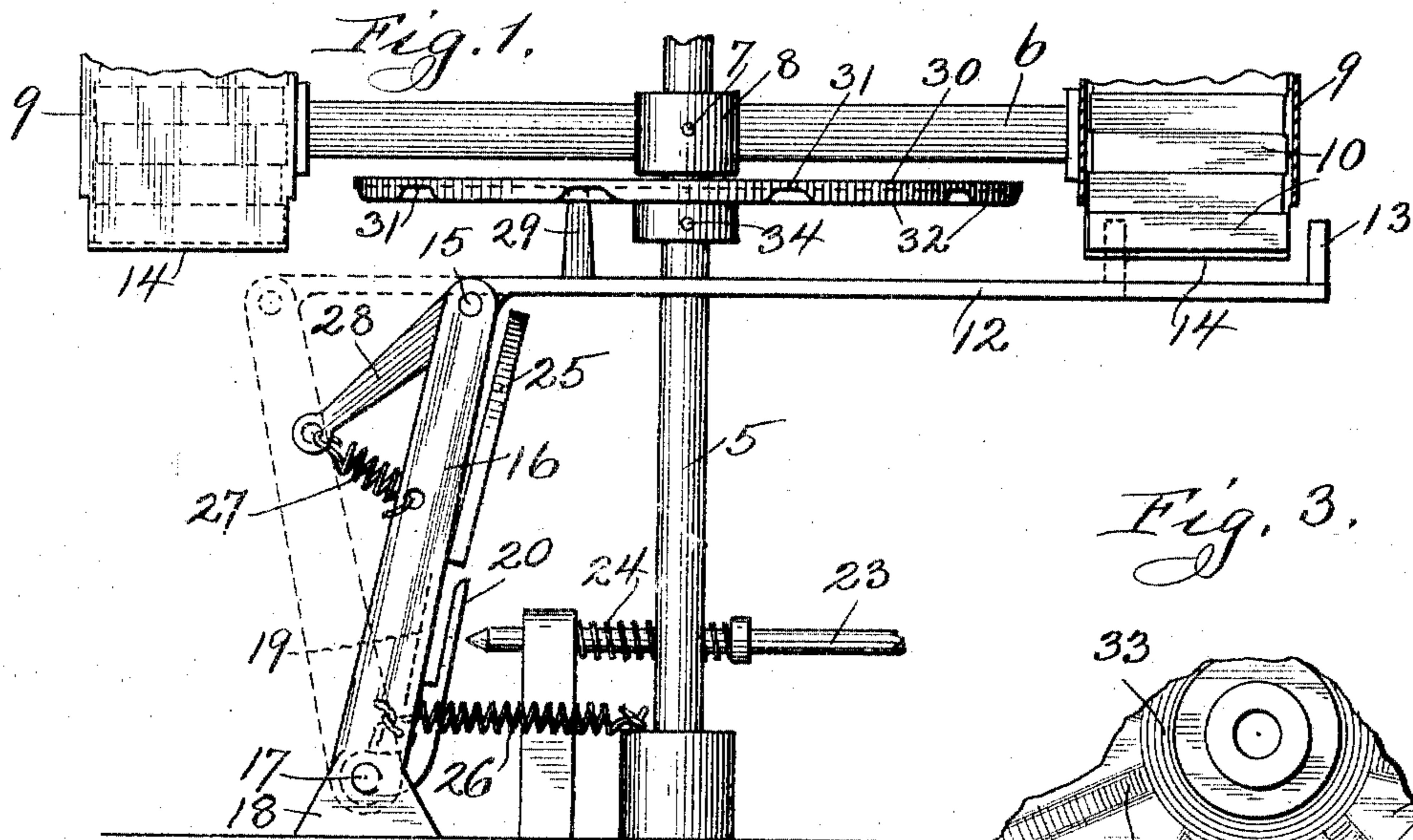
PATENTED AUG. 9, 1904.

J. E. PACKARD.

EJECTOR FOR VENDING MACHINES.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

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EJECTOR FOR VENDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 766,968, dated August 9, 1904.

Application filed September 21, 1903. Serial No. 173,977. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PACKARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Ejector for Rotatable Vending-Machines, of which the following is a specification.

My invention relates to improvements in vending-machines in which the package-carrier is rotatable, and therefore it is desirable to provide an ejector which will automatically be moved clear of all moving parts, so that no portion of the machine will be damaged when the package-carrier is rotated, even though the ejector be held in an operated position. In this class of machines it is designed to have the ejecting ledge or foot normally resting in a position outside of an imaginary circle inside of which the package-carrier rotates. In practice, however, it is found necessary to provide means whereby the portion of the ejector which contacts with the packages to eject them is moved down and out of the path of the rotating package-receptacles when the ejector is operated or partly operated. This lowering of the ejector has heretofore been accomplished by simply allowing the lower ends of the package-receptacles cam the ejector down as they passed over the same, the ejector being formed into the proper cam-surface at the points of contact, which sometimes failed to operate properly. I, however, positively move the ejector down out of the path of the lower ends of the package-receptacles every time one such lower end is moved over the ejector. It will be understood that it is unnecessary to move the ejector down unless it is wholly or partly operated, and with my improved device I accomplish this by the construction shown in the accompanying sheet of drawings, in which—

Figure 1 is a fragmental vertical section through a machine, showing only so much of said machine as is found necessary to clearly show the application of my improvement, which is shown attached. Fig. 2 is a plan section of the same with parts shown in dotted lines, and Fig. 3 is an inverted plan view of

a portion of a cam-disk forming a part of my invention.

Similar reference characters refer to similar parts throughout the several views.

The vertical shaft 5 forms the axis about which the package-carrier 6 rotates. The shaft 5 may or may not rotate with the carrier 6; but I have in this case shown it as rotating with the carrier 6, which is rigidly secured to the same by a pin 7 passing through a collar 8 of the carrier and through the shaft 5. The carrier 6 is provided with a plurality of tubular receptacles 9 for the packages 10, arranged in a circle about the shaft 5.

The cam-disk 30 is arranged to rotate with the package-carrier 6 and may be rigidly secured to the carrier 6, or it may be secured, as shown, to a shaft 5, which in turn is secured to the carrier 6.

The lower end of each receptacle 9 is constructed in the usual way, having portions of the lower end cut away so as to enable only one package to be removed at a time. In the machines to which my device is adapted these package-receptacles are arranged in a circle around a center about which they are arranged to be rotated by the operator.

I do not attempt to show any particular kind of rotatable machine, and hence omit the casing and all operating mechanism except that with which my invention coöperates.

The packages 10, as shown in the drawings, are ejected from their receptacles by being pushed toward the center shaft 5 and thence precipitated to within the reach of the operator through a chute. (Not shown.) A substantially horizontally moving frame 12 is provided with an ejector 13 to impinge against the lower package 10 and push it off of the sustaining-flanges 14. The frame 12 at the opposite end from the ejector 13 is pivoted, as at 15, to a portion of the operating mechanism by means of which it is moved in a substantially horizontal plane. This portion of the operating mechanism may slide in a horizontal plane or it may swing in an arc about a center. I lay claim broadly to the idea of depressing the ejector 13 at the proper time when the pack-

age-carrier is rotated by means of a cam, disk, or wheel which is operated by the package-carrier acting upon the ejector-frame.

To illustrate one mode of operating my invention, I have shown a U-shaped frame 16, pivoted at 17 to the lugs 18, secured to a stationary part of the machine-frame. The ejector-frame 12 is pivoted at 15 between the upper ends of the U-shaped frame 16. The frame 16 has a perforated lateral-extending lug 19 a short distance above the pivot 17, which coöperates with a swinging arm 20, the two parts forming a pocket for the reception of a coin. The arm 20 is provided with a perforation 21, concentric with the perforation 22 in the lug 19. A push-rod 23, which may be operated in any of the well-known ways from the exterior of the case of the machine by the operator, is arranged to pass through the perforations 21 and 22 when operated and normally held out of said perforations by a spring 24.

A coin-chute 25 is provided to guide the proper coin from the exterior of the case (not shown) to a position between the lug 19 and the arm 20, where it will be retained by any means provided in the path of the push-rod 23.

The operation of the device is as follows: The operator first deposits a proper coin into the chute 25, which comes to rest between the lug 19 and the arm 20. Next the package-carrier is rotated to bring the desired package-receptacle 9 in a position in front of the ejector 13. Lastly the push-rod 23 is operated and its end will impinge against the coin, and thus exert the push against the lug 19 and swing the frame 16 about its pivot 17 to the position shown in dotted lines in Fig. 1. The frame 12 being pivoted to the frame 16 will be moved with it and the ejector 13 will force the lower package 10 out of the receptacle.

When the push-rod 23 is allowed to be returned to its normal position by the spring 24, the spring 26 will return the frames 16 and 12 to their normal position and the coin will be ejected from between the lug 19 and arm 20 by mechanism not shown.

To normally and yieldingly hold the frame 12 and thus the ejector 13 in their normal position, I provide a spring 27, secured between an arm 28, extending from the frame 12 and the frame 16.

So far as the operation has just been described my invention does not come into service at all; but it is when the ejector 13 is purposely or accidentally held partly moved in toward the shaft 5 and the package-carrier 6 is rotated that my invention comes into service and prevents any of the mechanism becoming broken or otherwise damaged. To accomplish this, I provide means whereby the frame 12 is lowered to bring the ejector 13 out of the path of the lower ends of the receptacles 9 each time one of said receptacles is brought

into a position by rotating the carrier 6 so that it would contact with the ejector 13 if said ejector were allowed to remain unmoved.

Before describing the construction shown in the drawings I desire to have it understood that it is not necessary to make identically the construction shown to come within the scope of my invention; but any mechanism whereby a cam, cam-wheel, or cam-disk operated by the turning of the package-carrier will move the ejector-frame at the proper time may be used and will be covered by the appended claims.

I have shown in the drawings an upward-extending lug 29 on the frame 12, which is held in contact with the lower face of a cam-disk 30 by the spring 27. The lower face of this cam is corrugated radially to correspond in number and position to the package-receptacles 9—i. e., a radial depression 31 is formed on the lower surface of the disk 30 to correspond with each package-receptacle 9, so that whenever a receptacle 9 is in proper position to be operated on by the ejector 13 the lug 29 will be resting in one of the radial depressions 31 on the under face of the cam-disk 30 and the ejector 13 will be in a raised position so it will contact with a package 10 when operated.

It is obvious that if the ejector 13 is in an operated position, as shown by the dotted lines in Fig. 1, and the carrier 6 is rotated the ejector must be moved out of the path of the receptacles to prevent the parts being damaged. To compensate for this movement of the ejector, ridges or raised portions 32 are provided on the under side of the cam-disk 30 between the radial depressions 31, previously mentioned, to correspond with the spaces between the receptacles 9, and the lug 29 coming in contact with these radial ridges 32 will be cammed down by each ridge 32 as the carrier 6, and therefore the cam-disk 30, is rotated. Thus the ejector 13 will be raised by the action of the spring 27 whenever a receptacle 9 is directly above it and will be cammed down by one of the radial ribs 32 on the cam-disk 30 when a receptacle 9 is not directly above the same. On a circle about the shaft 5 at such distance where the lug 29 contacts with the disk 30 when the ejector 13 is in its unoperated position, as shown in full lines in Fig. 1, the cam-disk 30 is provided with a circular depression 33, (see Fig. 3,) which is flush or on the same level with the radial depression 31, previously referred to. This circular depression 33 is provided so that the ejector 13 and the ejector-frame 12 will not be unnecessarily lowered and raised as the carrier is rotated while the ejector 13 is in its normal position.

If the carrier 9 is placed so that no receptacle is in proper position to be operated on by the ejector 13 and the ejector is then operated, the lug 29 will simply be forced back

by the operator and down by one of the ridges 32 on the disk 30, thus lowering the ejector 13 so that it will not contact with any of the parts.

5 The cam-disk 30 is secured to the shaft 5 or the carrier 6, as by a pin 34.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

10 1. In a vending-machine, the combination of an ejector capable of horizontal and vertical movement, a cam-surface arranged to move with the carrier containing a plurality of goods to be ejected, means for operating the ejector
15 horizontally to eject the goods, and cooperating means between the ejector and the cam-surface whereby the ejector is moved vertically.

20 2. In a vending-machine, the combination of a rotatable goods-carrier, a horizontally and vertically moving ejector, a cam rotated by said carrier, and an extension on said ejector held yieldingly in contact with said cam, whereby the ejector is moved into and out of
25 the path of the goods to be ejected.

3. In a vending-machine, the combination of a pivoted frame provided with an ejector, a rotatable goods-carrier, and means operated by said carrier whereby the ejector is moved out of the path of the carrier when desired. 30

4. In a vending-machine, the combination of a goods-carrier rotatably mounted on a vertical shaft, a circular cam-disk secured to said carrier concentric with said shaft, a pivoted actuating-frame, a frame pivoted to said ac- 35 tuating-frame provided with an ejector, a spring to yieldingly hold the ejector in the path of said goods-carrier, and a lug on the ejector-frame contacting with said circular cam whereby the ejector is moved in and out 40 of the path of the goods-carrier.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of September, 1903.

JOHN E. PACKARD.

Witnesses:

CHAS. BECHSTEIN,
R. J. JACKER.