

**No. 696,111.**

**Patented Mar. 25, 1902.**

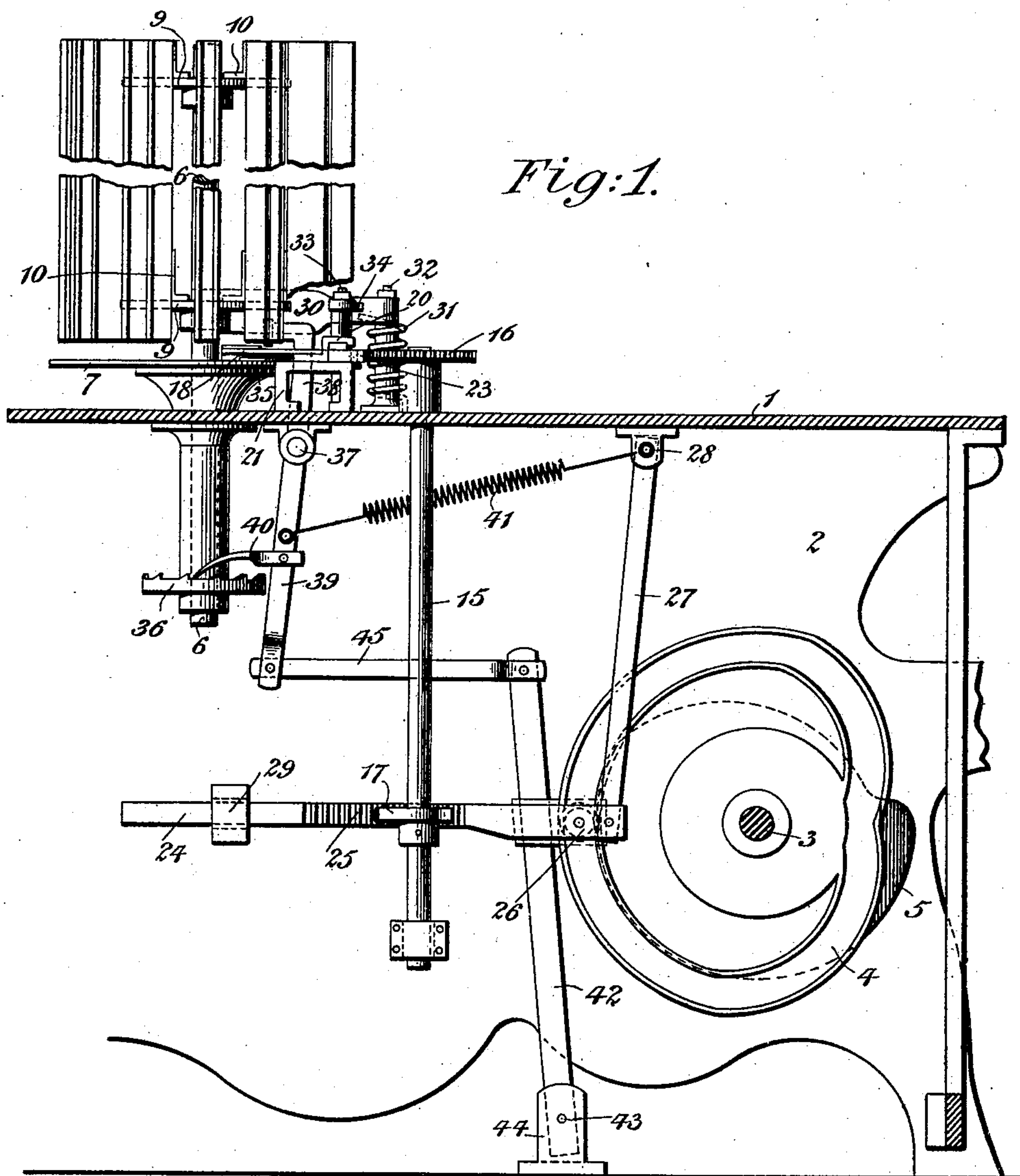
**A. STEARNS.**

**AUTOMATIC PACKAGE FEEDING ATTACHMENT.**

(Application filed Aug. 1, 1901.)

(No Model.)

**2 Sheets—Sheet 1.**



Witnesses:  
John A. Rennie.  
George Barry.

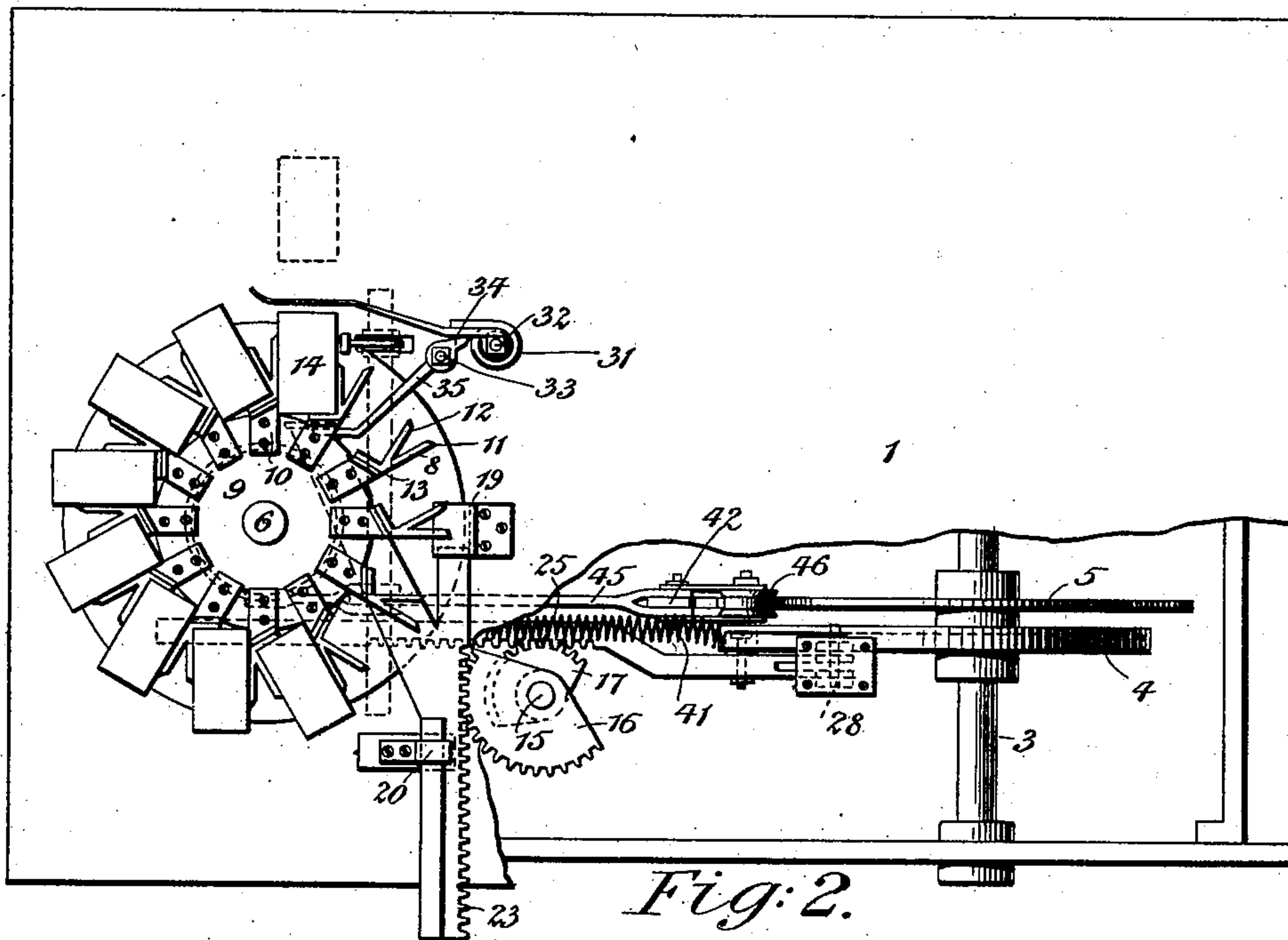
Inventor:  
Albert Stearns  
by attorney  
Morton L. Ward

A. STEARNS.  
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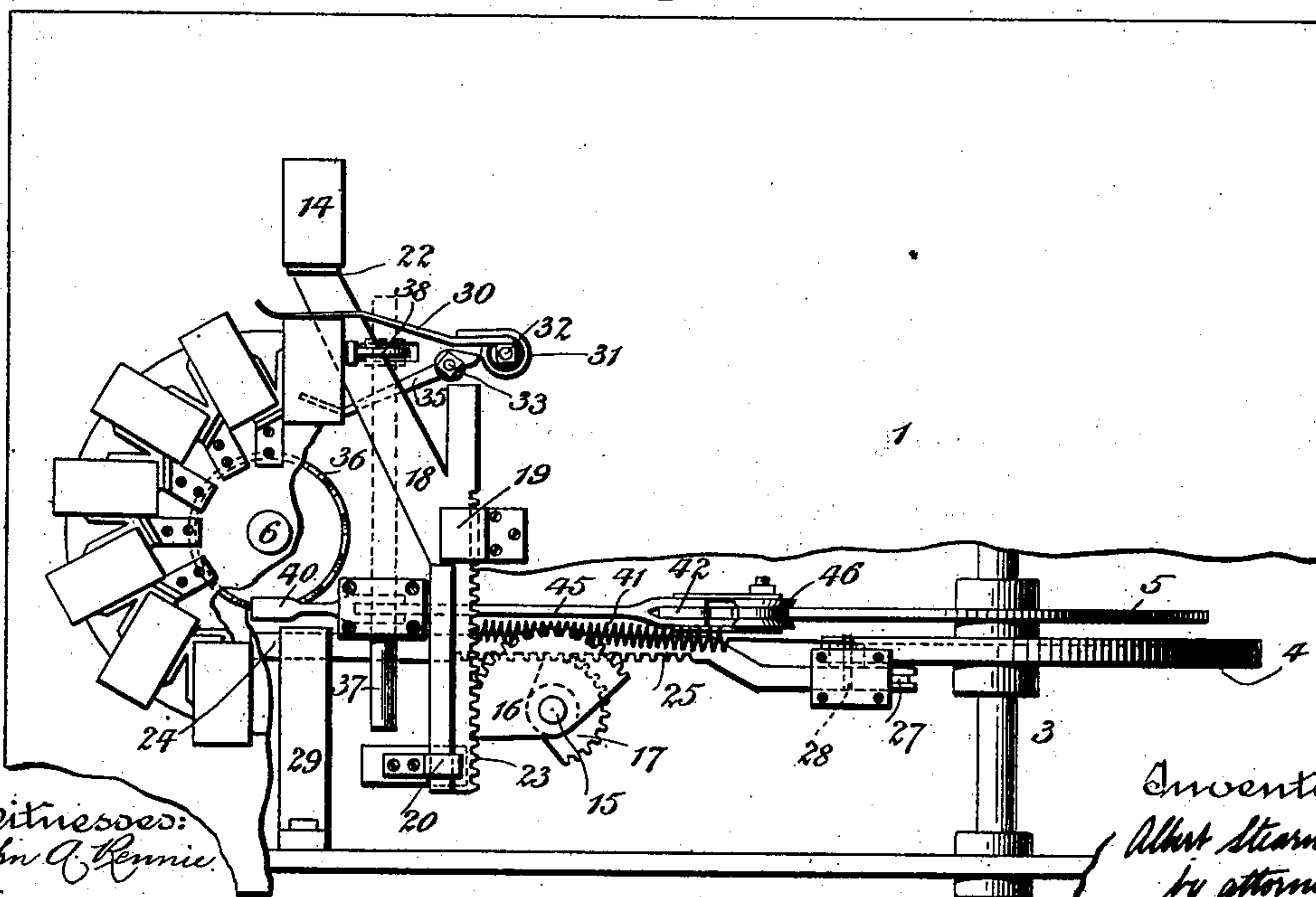
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(No Model.)

2 Sheets—Sheet 2.



*Fig. 3.*



Witnesses:  
John A. Rennie  
George Bangs

Inventor:  
Albert Stearns  
by attorney  
Monte Ward



# UNITED STATES PATENT OFFICE.

ALBERT STEARNS, OF SYRACUSE, NEW YORK.

## AUTOMATIC PACKAGE-FEEDING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 696,111, dated March 25, 1902.

Application filed August 1, 1901. Serial No. 70,509. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT STEARNS, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Automatic Package-Feeding Attachments, of which the following is a specification.

My invention relates to an improvement in automatic package-feeding attachments, and has more particularly for its object to provide a very simple, positive, and effective mechanism for feeding packages one by one from a source of supply to a predetermined point.

This attachment may be effectively used in connection with packing, package-filling, wrapping, and other machines where it is desirable to feed the packages one by one to a predetermined point.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the attachment in side elevation. Fig. 2 is a top plan view of the same, a portion of the stationary table being broken away to more clearly illustrate the mechanism beneath the table, the parts being in a position which they assume when about to feed a package from the source of supply; and Fig. 3 is a similar view showing the parts in the position which they assume when a package has been fed from the source of supply to a predetermined point upon the stationary table.

The example of the invention illustrated in the accompanying drawings is especially designed as an attachment to my wrapping-machine patented in the United States on July 10, 1894, No. 522,723, and on November 3, 1896, No. 570,615.

The stationary table of the machine is denoted by 1, and it is supported by the usual framework 2. A rotary cam-shaft 3 is mounted in suitable bearings in the frame of the machine below the table 1 thereof. This cam-shaft 3 is provided with a face-cam 4 and a peripheral cam 5, fixed thereto, the face-cam 4 being used for controlling the feeding of the packages from the source of supply and the peripheral cam 5 being used for bringing the successive compartments in the source of supply into position to have their contained

packages successively removed therefrom by the package-feeding mechanism, all as will be hereinafter more fully set forth.

The source of supply for the packages to be fed is constructed and arranged as follows: A vertical shaft 6 is mounted in suitable bearings in the table 1 of the machine and projects below the said table. This shaft has fixed thereto a rotary table 7. An annular series of vertical partitions 8 are secured to the vertical shaft 6, with their lower ends spaced a short distance from the rotary table 7. In the present instance I have shown these partitions as being secured to a plurality of disks 9 by means of brackets 10 for spacing the partitions at equal distances from each other and from the shaft 6. Each of these partitions 8 comprises a radial arm 11, a branch arm 12 parallel to the radial arm of the next succeeding partition, and a short arm 13 at right angles to the said branch arm 12. Compartments are thus formed between the successive partitions corresponding to the shape of the packages to be fed.

The packages 14 are herein represented as of rectangular form and may be piled in stacks in the successive compartments, the bottom package of the stack resting upon the rotary table 7.

The packages 14 are fed successively from each of the compartments between the partitions by the following mechanism: A vertical sector-bearing rock-shaft 15 is mounted in suitable bearings in the table 1 and the framework 2 of the machine, which shaft has fixed thereto an upper sector-gear 16, located above the table 1, and a lower sector-gear 17, located below the said table.

The horizontally-arranged package-feeding bar is denoted by 18, and it is mounted to reciprocate in guides 19 and 20, carried by the table 1. This horizontally-reciprocating bar 18 is spaced from the top of the stationary table 1 by means of a suitable spacing-block 21, so that the forward end 22 of the said bar, which is intended to engage the rear end of the lowermost package of a stack, reciprocates between the lower ends of the partitions 8 and the top of the rotary table 7. This package-feeding bar 18 is provided with a suitable rack-bar 23 along one edge thereof, which intermeshes with the sector 16 on the



vertical shaft 15. A cam-bar 24 is provided with a rack-bar 25, intermeshing with the sector 17, fixed to the shaft 15, which cam-bar is provided with a stud or roller 26, which travels in the groove in the face-cam 4, fixed to the cam-shaft 3. This cam-bar 24 is supported at one end by a rocking lever 27, hinged at 28 to the under side of the table 1, and at its other end it is fitted to slide loosely in a guide 29, carried by the framework 2 of the machine.

The means which I employ for preventing the upper packages in the compartment from dropping down when the lower one is removed until the package-feed bar is returned to its normal position to the rear of the stack of packages and also to prevent the upper packages from being pushed out of position as the lower package is fed forward is constructed and arranged as follows: A spring-actuated arm 30 is mounted upon the stationary table 1 of the machine in position to have its free end normally pressing against the front end of the package or packages above the lower one of the stack from which the packages are being fed. The means for holding the arm normally in engagement with the forward end or ends of the packages is shown in the present instance as a coil-spring 31, surrounding the vertical post 32, on which the arm 30 is hinged. A two-armed rocking lever is hinged on a vertical post 33, adjacent to the post 32, one arm 34 of the said two-armed lever being in position to engage and disengage the spring-actuated rocking arm 30, while its other arm 35 is extended into position to be engaged by the back of the offset forward end 22 of the feed-bar 18 as the feed-bar returns to its normal position to the rear of the stack of packages. As the feed-bar returns to said normal position to the rear of the stack of packages it will rock the arm 35 of the two-armed lever inwardly, thus rocking the outer arm 34 outwardly and causing it to swing the spring-actuated arm 30 away from the stack of packages, thus permitting the stack to fall by gravity onto the rotary table 7 in position to have the package-feed bar remove the bottom package thereof.

The means which I have shown for moving the next succeeding compartment into position to have its packages removed after the preceding compartment has been emptied is constructed and arranged as follows: A ratchet-wheel 36 is fixed to the vertical shaft 6 of the attachment at a point below the table 1. A pawl-controlling lever is hinged at 37 to the table 1, the upper arm 38 thereof projecting upwardly into proximity to the side of the lowermost package of the stack from which the packages are being fed and its lower arm 39 being provided with a pawl 40 in engagement with the ratchet 36. This controlling-lever is held normally under a tension tending to swing the upper arm 38 into the compartment from which the packages are being fed and the lower arm 39 away from the

ratchet 36, in the present instance by means of a retracting-spring 41, one end of which is secured to the arm 39 and the other end to some portion of the machine—as, for instance, the bracket to which the depending arm 27 is hinged. A rocking cam-lever 42 is hinged at 43 in a suitable support 44, the free end of the said lever being connected to the free end of the arm 39 by a connecting bar or link 45. A stud or roller 46 is carried by the cam-lever 42 into position to be engaged by the peripheral cam 5, fixed to the rotary shaft 3 of the machine.

The operation of my attachment is as follows: As the shaft 3 is rotated the face-cam 4 will through the cam-bar 24 rock the shaft 15 first in a direction to slide the feed-bar 18 forwardly. This feed-bar as it moves forwardly will release the spring-actuated arm 30, which had been held away from the front of the stack from which the packages are to be removed, thus permitting the arm to engage the remaining packages to prevent them from being displaced and also to prevent them from falling down onto the rotary table 7 until after the feed-bar 18 has been returned to its normal position. This feed-bar 18 will push the lowermost of the packages 14 out to a predetermined point on the table, where the package may be engaged by any suitable mechanism (not shown herein) for purposes of wrapping the same or for any other desired purpose. As the feed-bar 18 is slid inwardly it will engage the inner end of the two-armed lever which controls the rocking lever 30 and cause the two-armed lever to rock the lever 30 away from its engagement with the packages in the stack, thus releasing the same and permitting them to fall by gravity onto the top of the rotary table 7. The rotary source of package-supply is held stationary until all of the packages have been exhausted from one compartment, because of the engagement of the upper arm 38 of the pawl-controlling lever with the sides of the packages within the compartment from which the packages are being removed, thus preventing the pawl 40 from being brought back far enough by the tension-spring 41 to engage the next succeeding tooth in the ratchet-wheel 36. After the last package has been removed from the compartment the pawl-controlling arm will be permitted to swing a sufficient distance to permit the pawl to engage the next succeeding tooth, so that when the peripheral cam 5 engages the roller 46 the said pawl will be advanced a sufficient distance to bring the next succeeding compartment in the source of supply into position to be engaged by the package-feed bar.

It will thus be seen that the operation of the several parts of the attachment is entirely automatic, thereby permitting the operator who fills the compartments to attend to a number of the attachments, one of the attachments not requiring his entire time.

It is evident that slight changes might be resorted to in the form, construction, and ar-



5 rangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. A package-feeding attachment comprising a compartment for receiving a stack of packages, a longitudinally-reciprocating feed-  
10 bar normally located to the rear of the bottom package of the stack, means for advancing the feed-bar for feeding the bottom package laterally from the stack to a predetermined point and means independent of the  
15 feed-bar for temporarily supporting the remainder of the stack while the bottom package is being removed, the said package-supporting means being automatically released by the feed-bar when the feed-bar returns to  
20 its normal position to the rear of the stack, substantially as set forth.

2. A package-feeding attachment comprising a compartment for receiving a stack of packages, a longitudinally-reciprocating feed-  
25 bar normally located to the rear of the bottom package of the stack, means for advancing the feed-bar for feeding the bottom package laterally from the stack to a predetermined point, and a spring-actuated arm for  
30 temporarily supporting the remainder of the stack while the bottom package is being removed, the said spring-actuated arm being released by the feed-bar when the feed-bar returns to its normal position to the rear of  
35 the stack, substantially as set forth.

3. A package-feeding attachment comprising a compartment for receiving a stack of packages, a longitudinally-reciprocating package-feed bar normally located to the rear  
40 of the bottom package of the stack, a spring-actuated arm and a rocking lever engaging the said arm and feed-bar for holding the arm out of engagement with the stack when the feed-bar is in its normal position and permitting  
45 the arm to engage the stack to temporarily support it when the package-feed bar is out of its normal position, substantially as set forth.

4. A package-feeding attachment comprising  
50 a series of compartments for receiving stacks of packages, means for feeding the bottom package of a stack laterally from its compartment, a pawl for advancing the compartments step by step in position to have their

packages removed and a pawl-controlling lever 55 engaging the stack of packages for holding the pawl out of operative position until the packages are exhausted, substantially as set forth.

5. A package-feeding attachment comprising 60 a series of compartments for receiving stacks of packages, a rotary support therefor, means for feeding the bottom package of a stack laterally from its compartment, a pawl-controlling lever, a pawl-and-ratchet connection 65 between the lever and the package-support, the said lever being engaged by the stack for preventing the operation of the pawl until the lever is released by the removal of the last package from the stack, and means for operating 70 the lever and thereby the pawl when the lever is released from engagement with the stack for advancing the next succeeding compartment into position to have its packages removed, substantially as set forth. 75

6. In combination a stationary table, a rotary table mounted thereon for supporting stacks of packages, a reciprocating feed-bar for successively feeding the packages laterally 80 from the packages to a predetermined point, a pawl-controlling lever, a ratchet carried by the rotary table, a pawl carried by the said lever, the said lever being held in inoperative position by the stack of packages, means for returning the lever into operative 85 position when the packages are exhausted and means for operating the lever and thereby the pawl when the lever is in its operative position for advancing the next succeeding compartment, substantially as set forth. 90

7. In combination, a stationary table, a rotary table for supporting stacks of packages and annular series of partitions located above and spaced from the rotary table, forming compartments for receiving stacks of packages 95 and a feed-bar arranged to reciprocate longitudinally upon the rotary table for successively feeding the packages laterally from each compartment, substantially as set forth.

In testimony that I claim the foregoing as 100 my invention I have signed my name, in presence of two witnesses, this 12th day of July, 1901.

ALBERT STEARNS.

Witnesses:

C. R. ALVORD,  
GEO. E. KITTLE.