No. 794,748. PATENTED JULY 18, 1905.

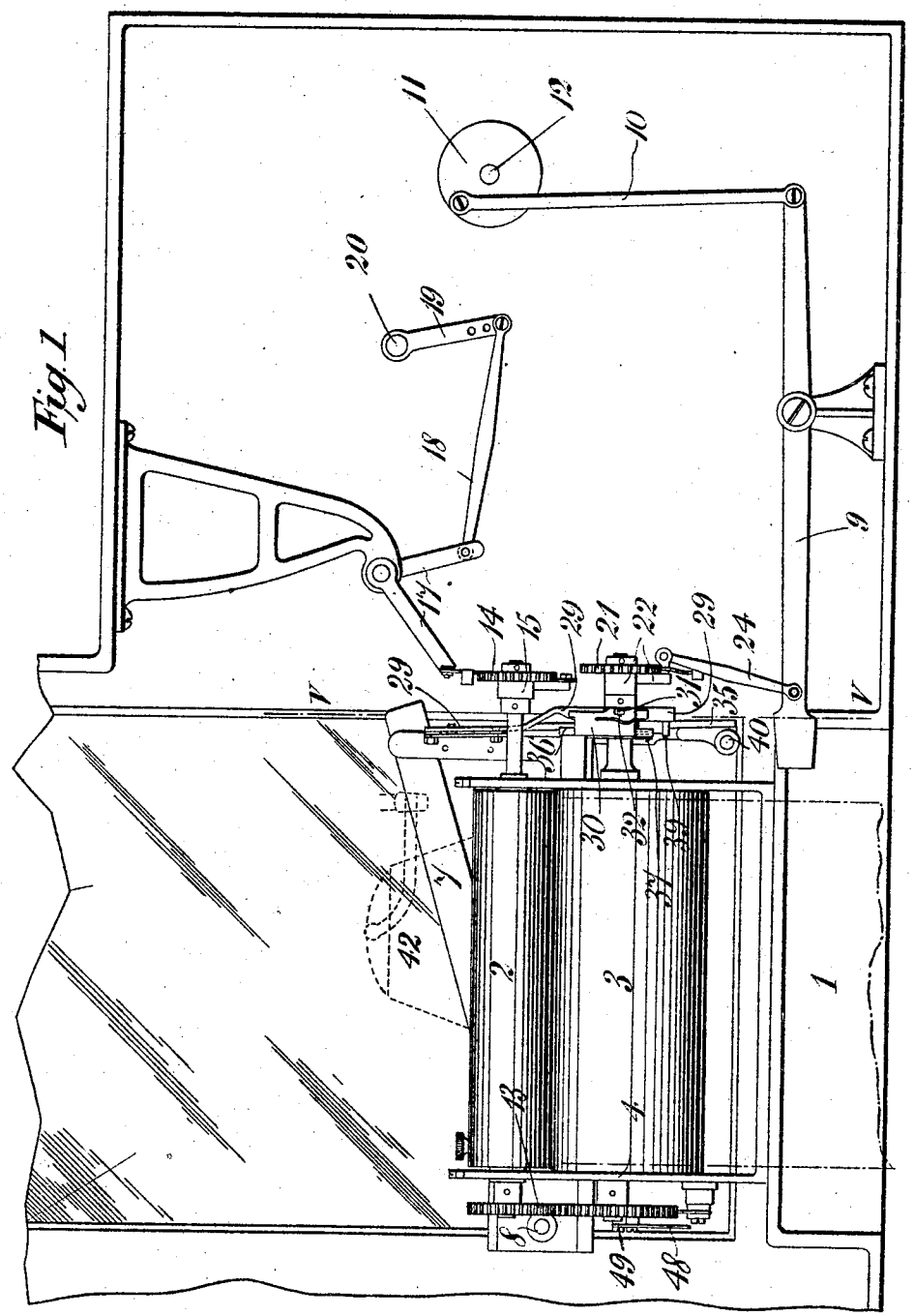
E. SHAW.

VENDING MACHINE.

APPLICATION FILED FEB. 7, 1903.

3 SHEETS—SHEET 1.

Fig. 1



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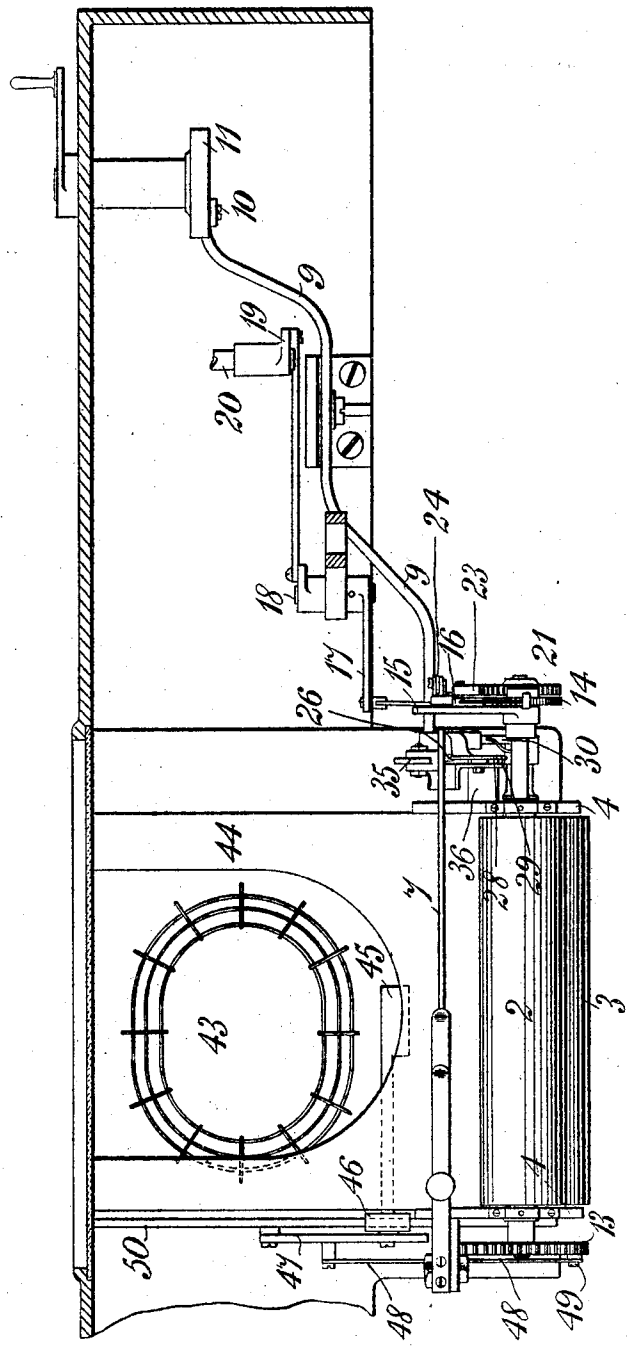
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

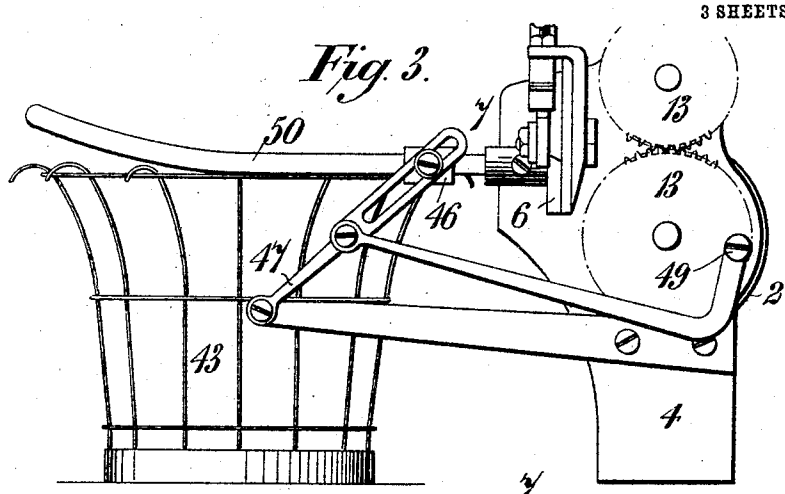


Fig. 4.

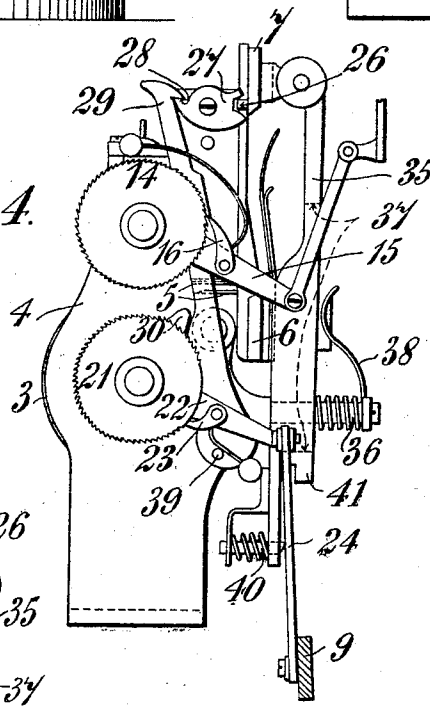
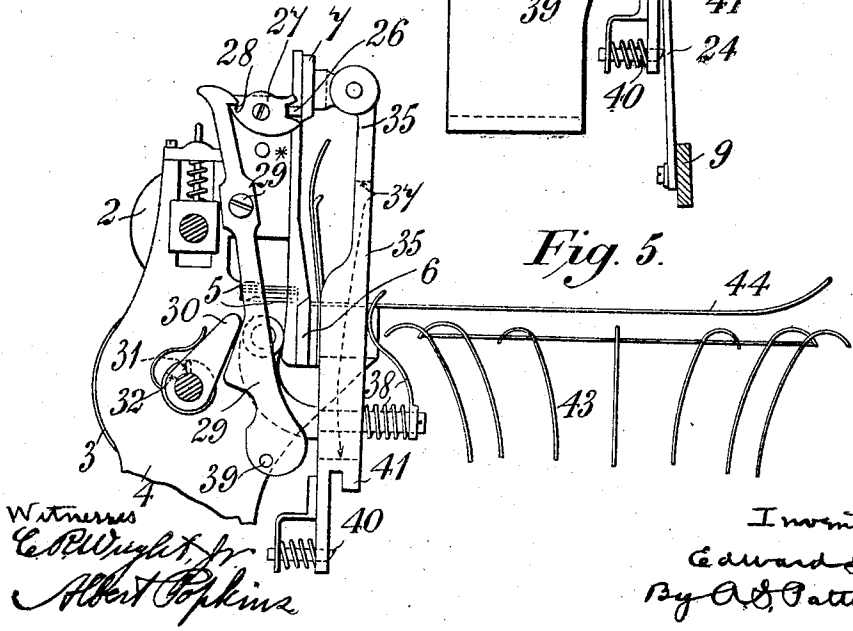


Fig. 5.



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No. 794,748. Patented July 18, 1905.

UNITED STATES PATENT OFFICE.

EDWARD SHAW, OF LONDON, ENGLAND.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 794,748, dated July 18, 1905.

Application filed February 7, 1903. Serial No. 142,408.

To all whom it may concern:

Be it known that I, EDWARD SHAW, a subject of the King of Great Britain and Ireland, residing at London, England, have invented Improvements in Vending-Machines, of which the following is a specification.

This invention relates to automatic vending-machines of the kind in which goods are delivered from bulk and at the same time a piece of paper is supplied in which to wrap the goods bought. In a machine according to this invention the paper passes between two feed-rollers, one of which is partially rotated at each machine operation by suitable means. The second roller is then driven from the machine-operating shaft and a movable cutting-blade is released and is drawn down at the completion of the rotation of the feed-rollers and cuts off a strip of paper.

Figures 1 and 2 of the accompanying drawings show in rear elevation and in plan paper feeding and cutting-off mechanism according to this invention with portions of the machine-operating mechanism. Figs. 3 and 4 are opposite end elevations. Fig. 5 is a section corresponding to the line V V of Fig. 1.

1 is a long strip of paper the free end of which first passes between rollers 2 3, mounted in standards 4, then between guide-plates 5, also carried by the standards 4, before passing between a fixed scissor-like blade 6 and a blade 7, pivoted to one of the standards 4. The blade 7 is moved down and up after a given length of paper has been fed forward by mechanism that is actuated from one arm of a lever 9, whose other arm is connected to the machine-operating shaft 12 by means of a link 10 and crank-disk 11.

The rollers 2 3 are geared together at 13 and are driven as follows: Upon the spindle of the roller 2 is mounted a ratchet-wheel 14, with which engages a weighted pawl 16, carried by an arm 15, loosely mounted on the roller-spindle and operated, through a bell-crank lever 17, link 18, and arm 19, from a shaft 20, that is partly rotated by means of an inserted coin each time the machine is operated. Upon the spindle of the roller 3 is a mutilated ratchet-wheel 21, with which engages a pawl 23, carried by an arm 22, loosely mounted on the roller-spindle and operated from the lever 9 through a link 24.

The pawl 23 when the machine is inoperative rests upon the portion of the ratchet-wheel 21 that is without teeth, Fig. 4. When the machine is operated, the shaft 20 is partly rotated. This partial rotation causes the pawl 16 to act on the teeth of the ratchet-wheel 14 and drive the roller 2, which through the gearing 13 drives the roller 3. The rotation of the roller 3 brings the teeth on its ratchet-wheel 21 and the pawl 23 into engagement. The rollers 2 3 are now driven by the pawl 23 from the shaft 12 until the pawl 23 again comes in contact with the plain portion of the ratchet-wheel. The shaft 12 is rotated until the quantities of goods paid for has been delivered. The pawl 16 serves only to move the rollers through such an angle as will bring the pawl 23 into engagement with the toothed portion of its ratchet-wheel.

The blade 7 is normally kept in its raised position by a detent that comprises a short lever, one arm of which is formed with a jaw 27, that engages a pin 26 on the blade, and the other arm of which is formed with a tooth 28, that is engaged by the hooked end of a lever 29, pivoted at 29* to the one of the standards 4.

30 is a spring-pressed arm, which is connected to the spindle of the roller 3 by a pin 31, which projects from a collar on the spindle into a slot 32 in the arm. The arm comes in contact once in each revolution of the spindle with the lower portion of the lever 29 and causes the release of the detent. Depending from the blade 7 is a bar 35, suitably guided by a part 36, that is fixed to the standard 4 and passes through a long slot 37 in the said bar. Normally the upper blade 7 is held raised, and the lower end of the bar 35 is caused by a spring 38 to assume a position in which its lower end will be clear of the lever 9. Projecting from the lower arm of the lever 29 is a pin 39, which when the lever is actuated comes in contact with the bar 35 and pushes it into such a position that the lever 9 upon its next upward movement slides past a spring-pawl 40, carried thereby, and upon its next downward movement the lever 9 comes in contact with the spring-pawl 40,

and thereby pulls down the blade 7, which shears off the length of paper. When the bar 35 is pulled down, its upper part, which is of reduced width, comes opposite the pin 39 and permits the lower end of the lever 29 to be moved still farther outward and the arm 30 under the action of its spring to move clear of the lever 29. The spring 38 then forces the bar 35 back to its normal position, so that upon the next upward movement of the lever 9 it will come in contact with a projecting portion 41 of the depending bar 35 and lift the blade 7 into its raised position, wherein it will be held by the detent 27.

The circumference of the roller 3 is such as to cause the desired amount of paper to be fed at each revolution.

In proximity to the rollers and below the pan 42 of a weighing device into which goods are deposited is a goods-delivery passage consisting of a frame 43. The paper is fed forward so as to rest upon guides 44 over the mouth of the delivery-passage 43. Upon the completion of a machine operation the pan 42 tips and the goods drop upon the cut paper and cause it to fall, with the goods thereon, through the delivery-passage 43, the shape of which is such as to cause the paper to more or less inclose the goods.

It may sometimes be desirable to support the paper as it is fed forward on the guides 44, for which purpose an arm 45, Fig. 2, that projects from a carriage 46, which is adapted, by means of a pivoted lever 47 and an operating-arm 48, pivoted to a crank-pin 49, secured to one of the gear-wheels 13, to be moved along a fixed bar 50 as the paper is fed forward.

What I claim is—

1. In a vending-machine, the combination of a machine-driving shaft, an operating-shaft, paper-feed rollers, a mutilated ratchet-wheel connected to one of said rollers, a pawl arranged to be moved by said machine-shaft and normally working on the plain portion of said ratchet-wheel periphery, means connected to said operating-shaft adapted to partially rotate said ratchet-wheel, and means actuated by said machine-shaft, for cutting off a portion of paper when the operated paper-feed roller has made one revolution, substantially as described.

2. In a vending-machine, the combination of a machine-driving shaft, an operating-shaft, paper-feed rollers, a mutilated ratchet-wheel connected to one of said rollers, a pawl arranged to be moved by said machine-shaft and normally working on the plain portion of said ratchet-wheel periphery, means connected to said operating-shaft adapted to partially rotate said ratchet-wheel, a fixed blade, a blade pivoted at one end, a detent adapted to engage and normally hold said pivoted blade in a raised position, a bar hinged to and depending from said pivoted blade, a spring-pawl at the lower end of said bar, a lever actuated by said machine-shaft, means connected to said operated paper-feed roller adapted to release said pivoted blade from said detent and to move said bar into position in which its spring-pawl will be engaged by said lever, substantially as described.

3. In a vending-machine, the combination of a machine-driving shaft, an operating-shaft, paper-feed rollers, a mutilated ratchet-wheel connected to one of said rollers, a pawl arranged to be moved by said machine-shaft and normally working on the plain portion of said ratchet-wheel periphery, means connected to said operating-shaft adapted to partially rotate said ratchet-wheel, means actuated by said machine-shaft, for cutting off a portion of paper when the operated paper-feed roller has made one revolution, a goods-delivery passage having a flared entrance, and fixed paper-supporting guides located over the flared entrance of said goods-delivery passage, substantially as described.

4. In a vending-machine, the combination of a machine-driving shaft, an operating-shaft, paper-feed rollers, a mutilated ratchet-wheel connected to one of said rollers, a pawl arranged to be moved by said machine-shaft and normally working on the plain portion of said ratchet-wheel periphery, means connected to said operating-shaft adapted to partially rotate said ratchet-wheel, means, actuated by said machine-shaft, for cutting off a portion of paper when the operated paper-feed roller has made one revolution, a goods-delivery passage having a flared entrance, fixed paper-supporting guides located over the flared entrance of said goods-delivery passage, a fixed bar arranged in line with said paper-guides, a carriage arranged to slide on said fixed bar, a paper-supporting arm secured to said carriage and means connected to the operated paper-feed roller whereby the carriage is caused to slide along said bar as the roller rotates, substantially as described.

5. In a vending-machine, the combination of a machine-driving shaft, an operating-shaft, a pair of paper-feed rollers, guide-plates located adjacent to said rollers and between which paper fed between the rollers passes, a fixed blade, a pivoted blade, mechanism actuated by the machine-shaft whereby said pivoted blade is moved down and up after a given length of paper has been fed by the rollers, gearing connecting the two feed-rollers of said pair, a ratchet-wheel fixed to one of said rollers, a pawl engaging said ratchet-wheel, a pivoted arm on which said pawl is pivoted, actuating means connecting said arm to said operating-shaft, a mutilated ratchet-wheel fixed to the other roller of the pair, a pawl engaging said mutilated ratchet-wheel, a pivoted arm on which the last-mentioned pawl is mounted

and actuating means connecting the last-mentioned arm to the machine-shaft, substantially as described.

6. The combination in a vending-machine of a machine-driving shaft, an operating-shaft, paper-feed rollers, a fixed knife, a pivoted knife, means, connected to said operating-shaft for partially rotating said paper-feed rollers, means, connected to said machine-shaft, for rotating said rollers, when partially rotated by the said means connected to said operating-shaft, means for holding said pivoted knife in a raised position and means whereby said knife is released, pulled down, and again raised after a given length of paper has been fed, substantially as described.

7. The combination in a vending-machine of a machine-driving shaft, an operating-shaft, paper-feed rollers, a fixed knife, a pivoted knife, means, connected to said operating-shaft for partially rotating said paper-feed rollers, means, connected to said machine-shaft, for rotating said rollers, when partially rotated by the said means connected to said operating-shaft, means for holding said pivoted knife in a raised position, means whereby said knife is released, pulled down, and again raised after a given length of paper has been fed, a goods-delivery passage having a flared entrance, and fixed paper-supporting guides located over the flared entrance of said goods-delivery passage, substantially as described.

8. The combination in a vending-machine of a machine-driving shaft, an operating-shaft, paper-feed rollers, a fixed knife, a pivoted knife, means, connected to said operating-shaft for partially rotating said paper-feed rollers, means, connected to said machine-shaft, for rotating said rollers when partially rotated by the said means connected to said operating-shaft, means for holding said pivoted knife in a raised position, means whereby said knife is released, pulled down, and again raised after a given length of paper has been fed, a goods-delivery passage having a flared entrance, fixed paper-supporting guides located over the flared entrance of said goods-delivery passage, a fixed bar arranged in line with said paper-guides, a carriage arranged to slide on said fixed bar, a paper-supporting arm secured to said carriage and means connected to the operated paper-feed roller whereby the carriage is caused to slide along said bar as the roller rotates, substantially as described.

Signed at 75, 76, and 77 Cornhill, London, E. C., this 28th day of January, 1903.

EDWARD SHAW.

Witnesses:
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WM. O. BROWN.