

R. B. CRAIG & A. COFFMAN.
SEVERING MECHANISM.
APPLICATION FILED AUG. 24, 1909.

981,534.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.

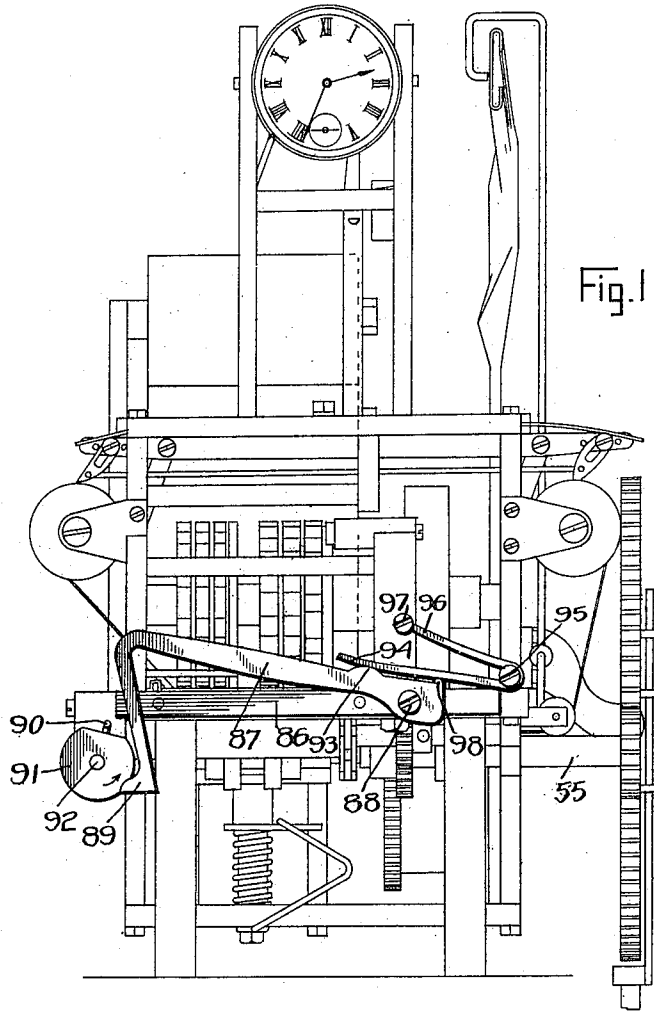


Fig. 1.

Witnesses

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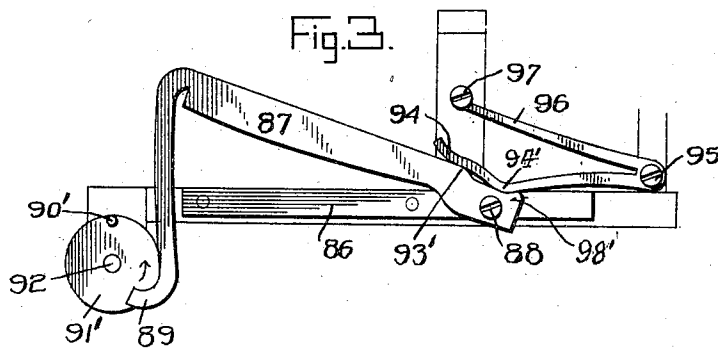
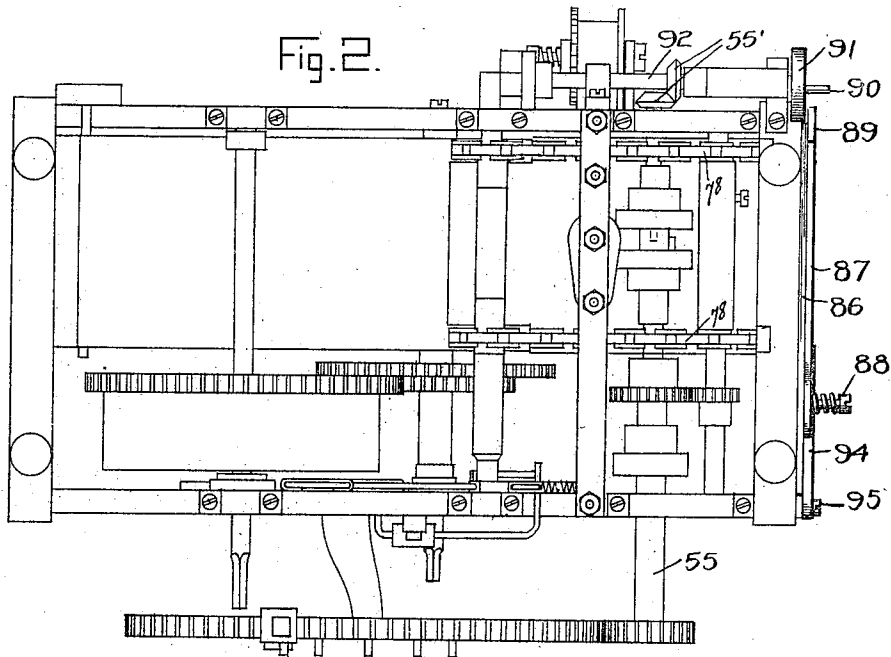
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UNITED STATES PATENT OFFICE.

ROBERT B. CRAIG AND ALBERT COFFMAN, OF DAYTON, OHIO, ASSIGNORS TO THE AUTOMATIC VENDING MACHINES COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF THE TERRITORY OF NEW MEXICO.

SEVERING MECHANISM.

981,534.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Original application filed November 30, 1908, Serial No. 465,182. Divided and this application filed August 24, 1909. Serial No. 514,454.

To all whom it may concern:

Be it known that we, ROBERT B. CRAIG and ALBERT COFFMAN, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Severing Mechanism, of which the following is a specification.

The present invention relates to paper severing mechanism of that type employed on vending machines operable through the depositing of a coin therein, such for instance as the insurance policy vending machines of that character shown in our pending applications for patents, bearing the Serial Nos. 465,182 and 489,457, under dates of Nov. 30, 1908 and April 12, 1909, respectively, and of which former application the present case forms a division.

The purpose of the invention is to provide a cutting mechanism of the character in question which will sever the projecting end or ticket portion of a strip of paper or the like as it emerges from the delivery end of the machine, and whose period of operation is substantially instantaneous.

A further object of the invention is in providing a novel impelling means for the cutting blade to which end the same is utilized as a means for retracting the same and bringing it again into operative position.

With the above mentioned objects in view the invention is described in full detail in the following specification and the points of novelty thereof set forth in the appended claims.

In the accompanying drawing wherein is shown the invention in its preferred structure,—Figure 1 is a front elevation of a vending machine showing the severing apparatus in operative position, Fig. 2 is a top plan view of the machine showing the mechanism for operating the severing device, and, Fig. 3 is a modified form of the severing device in elevation.

The paper web emerges at the front of the machine where it passes over the fixed blade 86 of a severing device comprising, in addition to said fixed blade, a knife 87, fulcrumed at 88 and having a foot 89 depending from its free end into the path of a pin 90 carried by a disk 91 rotating with shaft 92. Knife 87 is constructed with a bearing

93 or shoulder that receives the end of a spring 94, supported at 95 and tensioned by its end 96 secured at 97. When disk 91 rotates in the direction of the arrow shown therein to bring the pin 90 beneath the foot 89 and elevate said foot until the pin 90 passes from beneath it, spring 94 is further tensioned so that when the knife is released, it is driven downward past the normal position in which it is shown in Fig. 1 and coöperates with fixed blade 86 to shear off the paper web projecting beyond said fixed blade. Knife 87 has an additional bearing 98 at its heel, which is also engaged by the spring 94 when the knife is in normal position, whereby the knife is held elevated and the shearing device is opened to permit the paper to feed through under the action of the chains 78. The inertia of this knife, however, drives it past the normal position when it executes its stroke, causing a re-action in spring 94 immediately after which the pressure of the spring upon the heel of the knife restores the knife to normal position. Shaft 92 upon which the disk 91 is mounted, is driven through beveled pinion 55' from a like pinion on the shaft 55. Inasmuch as the beveled pinions 55' are of equal dimension, there is one stroke of the severing knife for each revolution of the shaft 55, which, as stated in the specification of the aforesaid applications, effects the printing and delivery of sufficient paper to make up a complete article sold.

By reason of having the prominent shoulder 93 as that part of the movable blade 87 which impinges against the free end 94 of the impelling spring, said blade 87 is tensioned by the spring under a stress proportionate with the degree or height to which it is moved, since the shoulder 93 is moved inwardly or toward the fixed point 95 of said spring on the upward movement of the movable blade, as will be readily understood. The advantage of this condition is that said blade is impelled downwardly substantially instantaneous on the release of the foot 89 from the pin 90, and this downward movement is uniformly graduated to zero when the bearing point 98 contacts with the spring from which moment said blade 87 is tensioned in a reverse direction.

Referring to the alternative form of sev-

ering device shown in Fig. 3, it will be seen that the structure thereof is in all essentials precisely the same and is actuated in the same manner as that shown in Figs. 1 and 2.

5 There are, however, slight variations in a few of the details residing in the contacting relation between the blade 87 and the impelling spring, and in the means for elevating the blade.

10 In the present instance, the foot 89 of the movable blade lies substantially in contact with the outer side face of the disk 91', and is adapted to be engaged and lifted by the pin 90' on the rotation of the shaft 92 in that manner described of the corresponding part shown in Fig. 1.

The spring 93 is, as in the other instance, fixed at the two points 95 and 97 and has its free end 94 slightly bent at the point 94' which seats and rides within that recessed portion at the fulcrumed end of the blade between the points 93' and 98'. The free end of said spring normally impinges against the shoulder 93' of the blade, and by this bearing and that just referred to, viz. 94', said spring has two points bearing on the blade. With the elevation of the knife 87, the spring end 94 rides along the blade edge, and in this respect differs from that operation described of the corresponding parts in the other structure.

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

35 1. In a severing device, the combination of a fixed blade, a blade movable past the fixed blade in shearing relation thereto, a spring having a two point bearing on the movable blade and adapted to depress said
40 movable blade to develop the cutting action,

and to effect an instantaneous return thereof after such cutting action, and means for lifting the blade to tension said spring.

2. In a severing device, for the purpose set forth, the combination of a fixed blade, 45 a pivoted blade movable past the fixed blade in shearing relation thereto, a spring for depressing the blade to develop the cutting action, and means for lifting the blade to tension the spring, said spring engaging the 50 pivoted blade on opposite sides of its pivot and holding it normally elevated above the fixed blade.

3. In a severing device, the combination of a fixed blade, a pivoted blade movable 55 past the fixed blade in shearing relation thereto, a fixed spring adapted to depress said movable blade to develop the cutting action, said movable blade having a shoulder adapted to impinge against said blade 60 and move toward the fixed point thereof during the upward movement of the blade whereby to effect its greatest tension, and means for lifting the blade to tension said spring. 65

4. In a severing device, the combination of a fixed blade, a pivoted blade movable 60 past the fixed blade, in shearing relation thereto, a spring adapted to depress said blade to develop the cutting action, said 70 movable blade having a depending arm, and a disk having a pin adapted to engage said arm and lift the blade to tension said spring.

The foregoing specification signed at Dayton Ohio this 27th day of July, 1909.

ROBERT B. CRAIG.
ALBERT COFFMAN.

In presence of—
H. M. WALSH,
H. BRAUM.