R. E. FISCHER & M. WESCHER.

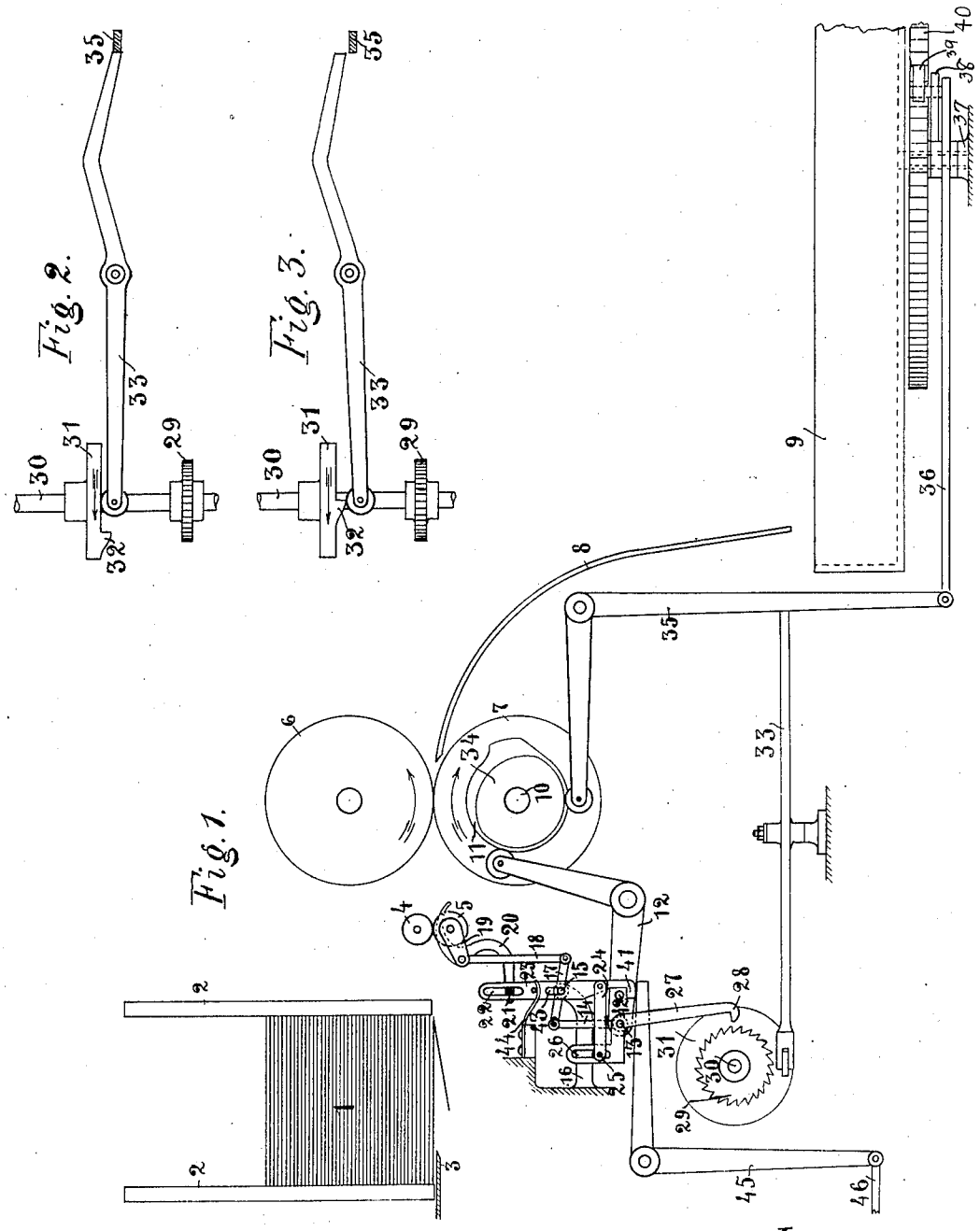
ENVELOP MACHINE.

APPLICATION FILED APR. 2, 1909.

1,179,513.

Patented Apr. 18, 1916.

2 SHEETS—SHEET 1.



Witnesses:
Paul Bartholomay
Heinrich Dahlhaus.

Inventors:
Robert Ernst Fischer
Max Wescher

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2 SHEETS—SHEET 2.

Fig. 5.

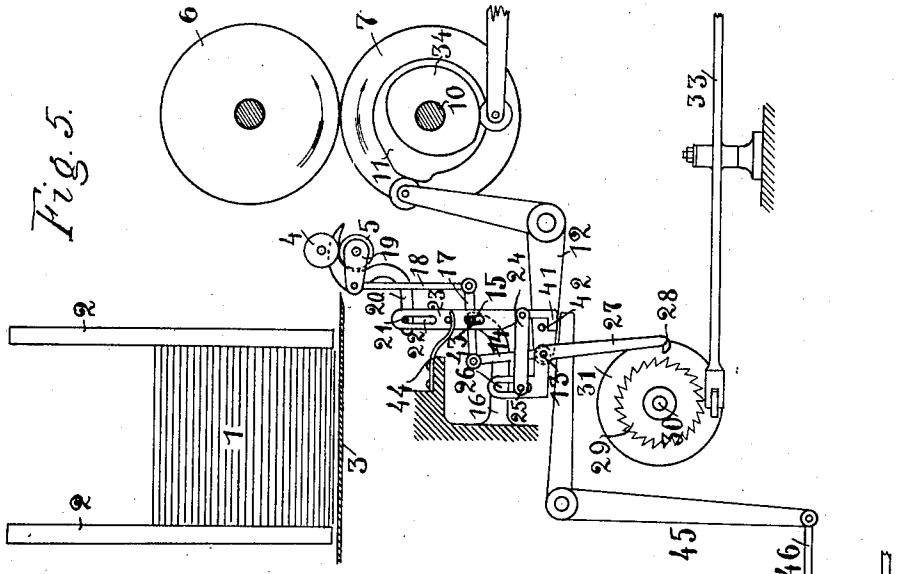
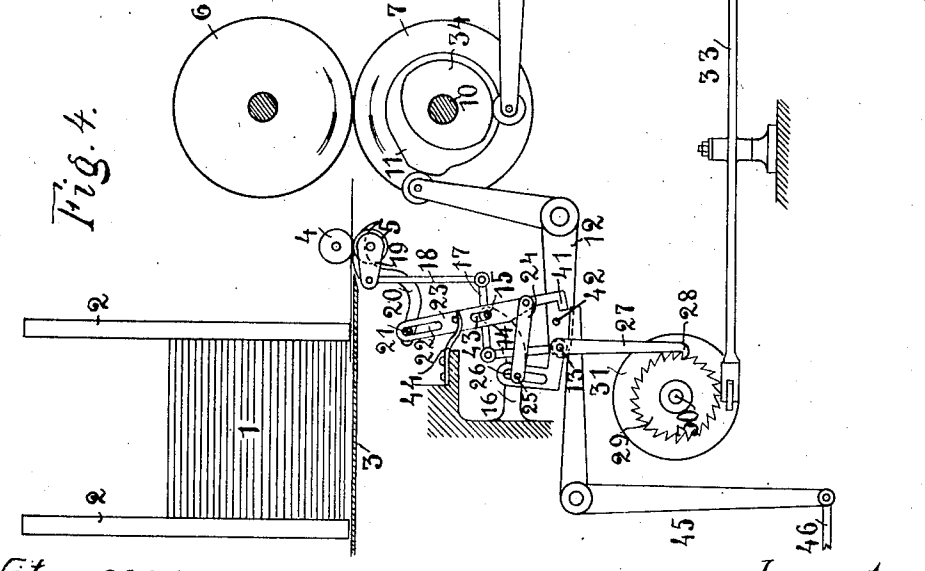


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT ERNST FISCHER AND MAX WESCHER, OF ELBERFELD, GERMANY, ASSIGNORS TO UNITED STATES ENVELOPE COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ENVELOP-MACHINE.

1,179,513. Specification of Letters Patent. Patented Apr. 18, 1916.

Application filed April 2, 1909. Serial No. 487,422.

To all whom it may concern:

Be it known that we, ROBERT ERNST FISCHER and MAX WESCHER, subjects of the German Emperor, residing at Elberfeld, in the Kingdom of Prussia, German Empire, have jointly invented new and useful Improvements in Envelop-Machines, of which the following is a specification.

This invention relates to improvements in envelop-machines, printing machines or similar paper treating machines, and has for its object to provide a mechanism which will automatically operate a disengaging device when no work is passing through the machine and which by its special connection with the table upon which the finished work is received permits of the work being stacked upon the said table in packages containing the desired number of envelops or the like.

In order that the said invention may be clearly understood and readily carried into effect we will proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the mechanism as applied to an envelop printing machine, and in the position it assumes in the period between the passage of two successive envelops. Figs. 2 and 3 are detail views of the mechanism in two operative positions. Fig. 4 shows the position of the mechanism during the passage of an envelop. Fig. 5 shows the position of the mechanism when the machine is thrown out of gear owing to failure to receive an envelop.

The envelops 1 are arranged with the sealing flaps downward in a box formed by the rods 2, its bottom being constituted by a reciprocating slide 3. During its passage this slide enters between the lowest envelop and the sealing flap thereof and pushes the same between the rotating rollers 4 and 5. These rollers conduct the envelop to the actual printing cylinders 6 and 7. The printed envelop is ejected on to the incline 8 and reaches the circular collecting table 9.

A cam 11 is mounted on the shaft 10 of the cylinder 7 and over its edge a roller mounted on one arm of a bell crank lever 12 runs. The other arm of this lever is connected through a rod 14 carried by the bolt 13, with one end of a rocking lever 17 mounted at 15 on the fixed bracket or support 16, the other end of the lever 17 being connected by a rod 18 with an arm 19. An S-shaped lever 20 is rotatably mounted on the arm 19, its upper end passing through channels or grooves provided in the rollers 4 and 5 in such a manner that, as shown in the drawing, this arm is able to rest completely in the channel in the roller 5 and is also able to enter the channel in the roller 4 as shown in Fig. 5.

A rocking motion is imparted to the bell crank lever 12 at each revolution of the cam 11. Through the system of levers above described, the rocking movement of the bell crank lever 12 will impart a rocking motion to the arm 19 which is pivoted concentrically with the axis of the roll 5, moving said arm 19 between the position shown in Fig. 1 and the position shown in Figs. 4 and 5. This movement of the arm 19 imparts an up and down motion to the S-shaped lever 20. Now if the machine be operated and no paper comes between the rollers 4 and 5 the upper arm of the lever 20 will enter the channel in the roller 4 once in each revolution of the printing cylinders 6 and 7. If an envelop is inserted between the rolls 4 and 5, as shown in Fig. 4 the lever 20 is lifted during the period the envelop is passing between the rollers 4 and 5 but the upper arm of the lever 20 strikes against the envelop so that it is unable to enter the channel in the roller 4 the lever 20 thus being caused to rock from the position shown in Fig. 1 to the position shown in Fig. 4, the lever 20 rocking on its pivotal connection with the arm 19.

The lower end of the lever or feeler 20 is provided with a pin 21 which moves in a slot 22 formed in a lever 23, the latter being mounted at 15. A rod 24 is jointed to the lower end of this lever and its free end carries a pin 25 which moves in a slot 26 formed in a lever 27 pivoted at 13 to the lever 12, the lower arm of the lever 27 being formed as a pawl 28. Now if the upper end of the lever 20 strikes against the paper and the lower end of said lever is rocked to the left hand, the lower end of the lever 23 will rock toward the right hand and the lower end of the lever 27 toward the left hand, whereby the pawl 28 is caused to engage with the ratchet wheel 29. Owing to

the simultaneous lifting of the lever 27 by the lever 12 the ratchet wheel 29 will be caused to rotate by one tooth in a contra-clockwise direction.

A plate 31 provided with a lateral nose 32 (Figs. 2 and 3) is fixed on the shaft 30 of the ratchet wheel 29, and the lever 33 will be caused to swing horizontally by means of the nose 32 once during each revolution of the plate. Consequently assuming the ratchet wheel 29 to be formed with say twenty-five teeth, it follows that, as this wheel is caused to advance tooth by tooth at each revolution of the machine, the lever 33 will be caused to oscillate once after each twenty-five revolutions of the machine.

Mounted on the shaft 10 is an eccentric plate or cam 34 adapted to operate the bell crank lever 35 and move it forward to the position shown in Fig. 1. A lever 33 mounted to swing horizontally is adapted to be operated by means of a projection 32 on the plate 31, the lever 33 being oscillated, therefore, every twenty five revolutions of the machine. When the bell-crank lever 35 is in its forward position, the lever 33 moves in behind it, as shown in Fig. 2 and holds the lever 35 in this position. When, however, the lever 33 is swung by reason of the engagement of the projection 32 on plate 31, with the end of said lever, see Fig. 3, the lever 35 is permitted to return when it will again be moved forward by the eccentric plate 34. The oscillation of this lever 35 is transmitted to an arm 38 mounted on the pin 37. This arm carries a pawl 39 engaging with a ratchet wheel 40 likewise mounted on the pin 37, so that when the lever 35 oscillates, this ratchet wheel 40 is caused to rotate in a contra-clockwise direction.

The ratchet wheel 40 is rigidly connected with the circular table 9, the result being that this table moves angularly once for each twenty-five revolutions of the machine. The envelops leaving the machine pass over the incline 8 on to this table, twenty five envelops reaching the table between each movement of the same and packets of twenty five envelops are thus formed side by side ready to be done up into bundles. Now if owing to any irregularity the slide 3 does not eject an envelop from the box, or if the box contains no more envelops, the upper arm of the lever 20 enters the channel in the roller 4 as shown in Fig. 5 and the lever 20 will therefore not oscillate in the manner shown in Fig. 4, but will merely be raised vertically. Consequently the levers 23 and 27 will not oscillate and the pawl 28 will not come into engagement with the ratchet wheel 29. Accordingly when no paper comes between the rollers 4 and 5 the ratchet wheel 29 will not advance, that is to say, the counting mechanism will become inoperative.

On its lower end the lever 23 carries a nose 41 which in the position shown in Fig. 1 is situated beneath a pin 42 on the lever 12. If the machine is operating regularly, that is to say, if at each revolution an envelop passes between the rollers 4 and 5 the lever 23 rocks in the manner described above and shown in Fig. 4 and the lever 12 likewise oscillates so that when the pin 42 descends, the nose 41 moves toward the right hand and does not come into contact with the pin. If an envelop does not pass between the rollers 4 and 5, the lever 23 does not oscillate, but the lever 12 oscillates and causes the pin 42 to press upon the nose 41. Owing to the provision of a slot 43 the lever 23 can be depressed in opposition to the action of the spring 44, the pin 42 producing this movement. The lower edge of the nose 41 then strikes one arm of the bell crank lever 45 which consequently oscillates. The other arm of this lever 45 is connected with a disengaging device in some convenient manner by means of a rod 46. The result is hereby attained that if no envelop comes between the rollers 4 and 5 not only does the counting mechanism become inoperative but the machine itself is at the same time thrown out of gear. When the machine is again thrown into gear the counting mechanism becomes operative as soon as the first envelop passes between the rollers 4 and 5, so that the correct enumeration is not affected by an interruption of the running of the machine.

We claim:

1. In an envelop machine, a counting mechanism, a pair of contacting feed rolls for feeding an envelop blank, each of said rolls having a peripheral channel lying in the same plane, a pivoted feeler having one end extending between the axes of said rolls and normally lying in the channel of one of said feed rolls and having its opposite end operatively connected with said counting mechanism, means for raising the axis of said feeler to carry its end into the groove of the other feed roll, and means for inserting an envelop blank between said feed rolls to check the movement of one end of said feeler and cause its opposite end to operate said counting mechanism.

2. In an envelop machine, upper and lower coacting feed rolls provided with peripheral channels in the same plane, a pivoted feeler having one end extending between the axes of said rolls and lying normally in the channel of the lower feed roll, means for raising the axis of said feeler to move its end into the channel of the upper roll, a pin carried by the opposite end of said feeler, a pivoted lever engaged by said pin, a pivoted pawl operatively connected with said pivoted lever, a ratchet wheel forming part of a counting mechanism, means for actuating said pawl in a direction to rotate said ratchet

wheel, and means for interposing an envelop blank between said feeler and the channel of said upper feed roll, whereby a rocking motion is imparted to said pivoted feeler by the elevation of its axis and through its connecting mechanism with said pawl move the latter into engagement with said ratchet wheel.

3. In an envelop machine, the combination with a counting mechanism comprising a ratchet wheel, a pivoted pawl engaging said ratchet wheel, means for moving said pawl to actuate said ratchet wheel, operative mechanism for withdrawing said pawl from engagement with said ratchet wheel, comprising a pivoted feeler, means for raising and lowering the axis of said feeler, means for holding one end of said feeler from upward movement as its axis is raised, thereby imparting a rocking movement to said pivoted feeler, and connecting levers between said feeler and said pawl.

4. In an envelop machine, a counting mechanism, a feeler pivoted between its ends, means for raising the axis of said feeler, means for moving an envelop blank across one end of said feeler to check its movement during the movement of the axis of the feeler, and means actuated by the opposite end of said feeler for operating said counting mechanism.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ROBERT ERNST FISCHER. [L. S.]
MAX WESCHER. [L. S.]

Witnesses:
OTTO KÖNIG,
FRITZ MÜLLER.