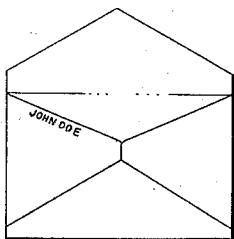
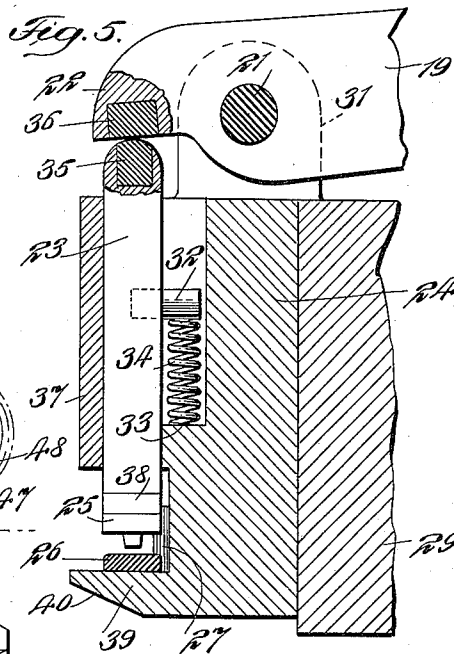
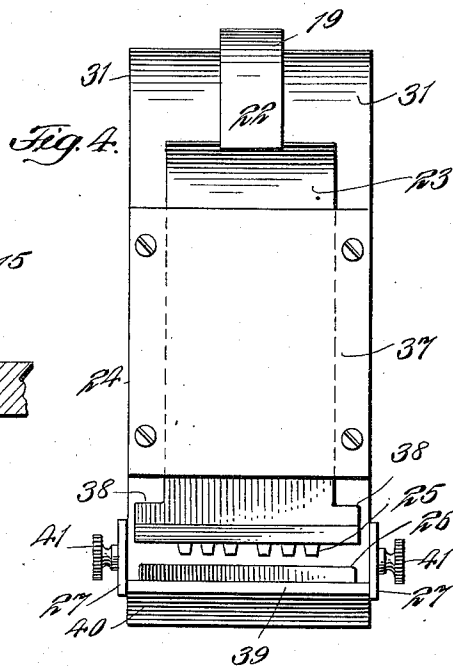


1,027,824.

2 SHEETS—SHEET 1.



Witnesses:
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U. C. DAVIS.
MACHINE FOR IMPRINTING ENVELOPS AND THE LIKE.
APPLICATION FILED SEPT. 26, 1910.

1,027,824.

Patented May 28, 1912.

2 SHEETS-SHEET 2.

Fig. 2.

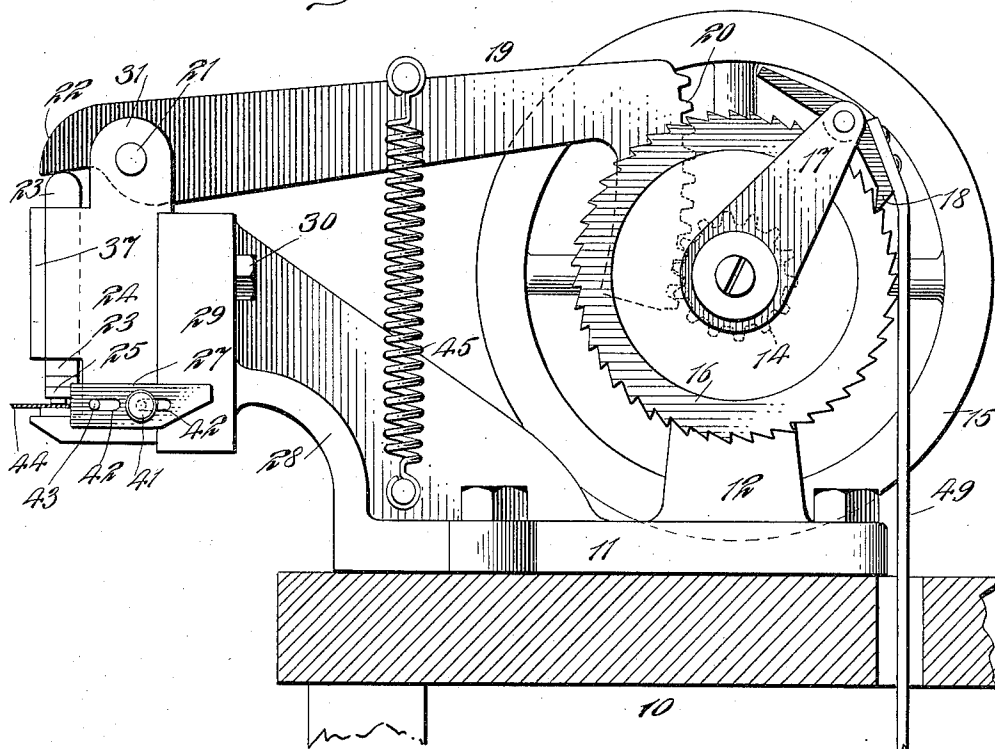
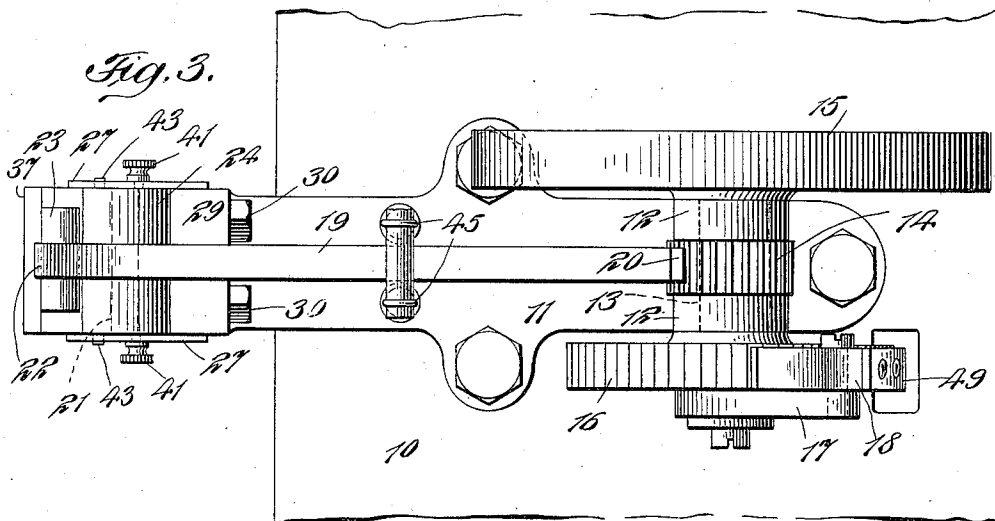


Fig. 3.



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UNITED STATES PATENT OFFICE.

ULYSSES C. DAVIS, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO EATON, CRANE & PIKE COMPANY, OF PITTSFIELD, MASSACHUSETTS, A CORPORATION OF MAINE.

MACHINE FOR IMPRINTING ENVELOPS AND THE LIKE.

1,027,824.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed September 26, 1910. Serial No. 583,928.

To all whom it may concern:

Be it known that I, ULYSSES C. DAVIS, a citizen of the United States, and a resident of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Machines for Imprinting Envelops and the Like, of which the following is a specification.

The invention relates to improvements in machines for imprinting envelops and the like, and it consists in the novel features, arrangements and combinations of parts hereinafter described and particularly pointed out in the claims.

It is usual for manufacturers of envelops to imprint along the upper edge of the backs thereof, in a location concealed by the closing flap, the name and address of the retailer or dealer selling the envelops, and heretofore the imprinting of the names and addresses has been performed on the envelop blanks prior to their formation into the complete envelops. This course of manufacture has resulted in the manufacturer being compelled to make up lots of envelops on the special orders of persons desiring their names thereon, it having been practically impossible with appliances heretofore provided to perform the imprinting upon envelops already manufactured.

The methods heretofore in use for supplying imprinted envelops has resulted in extra expense and loss due to the necessity of making up envelops on special orders, and the object of my invention is to obviate this condition by providing an efficient though simple and comparatively inexpensive machine for enabling the imprinting of the envelops after their complete manufacture, thus enabling a manufacturer to regularly make the envelops in large quantities and thereafter imprint these envelops with such names and addresses as may be required and whenever ordered.

The machine of my invention will be driven, preferably, by an electric motor and comprises a plunger upon which the type or printing characters will be applied, a lever for moving said plunger downwardly to impress its characters upon the envelops, a spring for returning said plunger to its upper position after each down thrust from the power-driven mechanism, guides for assuring the imprinting at the proper location

on the envelops, and operative mechanism and novel features, all of which will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of an imprinting machine constructed in accordance with and embodying the invention, the machine being shown as mounted upon a table which is indicated in section; Fig. 2 is an enlarged side elevation of the same, the motor and drive mechanism being omitted and the table being shown as partly broken away; Fig. 3 is a top view of the same; Fig. 4 is a front end view of the same; Fig. 5 is a substantially central vertical section through the head portion of the imprinting machine; and Fig. 6 is a back view of a customary form of envelop indicating by the letters thereon the work performed by the machine of my invention, it being understood that the letters or words imprinted on the envelops are embossed and in relief, considered from the outer side of the envelop.

In the drawings, 10 designates an ordinary table or work bench, 11 the main supporting frame of my machine securely bolted in position on said table, 12 a pair of standards cast integrally with said frame, 13 a shaft mounted in the upper ends of said standards, 14 a gear wheel rigid on said shaft between said standards, 15 a fly-wheel on one end of said shaft, 16 a ratchet wheel on the other end of said shaft, 17 a lever arm swiveled on said shaft adjacent to said ratchet wheel and carrying a pawl 18 for engagement therewith, 19 a lever arm having at its inner end a segment 20 in engagement with said gear wheel and at its other end being mounted on a pivot 21 and formed with a short arm 22 projecting forwardly beyond said pivot, 23 a plunger mounted in the head 24 of the machine directly in vertical line with and below said arm 22 and adapted to receive on its lower end the type, dies or other characters 25 to imprint on the envelops, 26 a bed of felt or other suitable substance below said plunger to receive the edge of the envelops, and 27 adjustable guides or gages for controlling the position of the envelops fed to the machine, arresting said envelops in such position as to assure the imprinting thereon of the names or words in proper line and location.

The main frame 11 of the machine is

formed with a forwardly projecting neck 28, and upon the front vertical section 29 of said neck is secured by bolts 30 the head 24, hereinbefore referred to. The head 24 is
 5 formed with two upwardly projecting corresponding ears 31 between which on the pivot 21 the forward end of the lever arm 19 is mounted. The front portion of the head 24 is recessed, as shown in Fig. 5, to receive and
 10 guide the plunger 23, which has secured to it a horizontally projecting pin 32 between which and a seat 33 formed in the head 24, is located a spring 34 which normally acts to press the plunger 23 to its upward position and operates to return said plunger up-
 15 wardly after each depression of the same by the lever arm 19.

The upper end of the plunger 23 is rounded and engaged by the lower flat edge of the
 20 front-projecting arm 22 of the lever 19, and the adjacent portions of said plunger and arm are preferably provided with inserts 35, 36, respectively, of hardened metal for the purpose of avoiding wear on the engaging
 25 surfaces and rendering the machine more durable. The plunger 23 is held within the recess in the head 24 by means of a front plate 37 (Fig. 4), and the lower end of said
 30 plunger at its opposite side edges is extended laterally to form shoulders 38 whereby to afford adequate surfaces on the lower end of the plunger to receive the type or
 35 dies 25 and to under any and all conditions prevent any undue upward movement of the plunger under the impetus of the spring 34. Below the plunger 23 the head 24 is
 40 formed with a forwardly projecting bed section 39 supporting the bed of felt or other suitable material 26 and suitably chamfered off, as at 40, to enable said bed section to
 45 readily enter the mouth of an envelop applied with the edge of its back on the felt 26 preparatory to the depression of the die 25 thereupon for effecting the imprinting of
 50 the envelop. It is necessary upon applying the envelops upon the bed section 39 to so place the same that the imprint from the die 25 shall be correspondingly placed on
 55 all the envelops, and to this end I provide the head 24 with the side guides or gages 27, which, as shown in Figs. 2 and 4, are in the form of plates secured to the opposite
 60 sides of the head 24 in an adjustable manner by means of set screws 41, the plates being slotted, as at 42, and being engaged in one of the slots by pins 43 so that upon the
 65 loosening of the screws 41 the plates 27 may be adjusted forwardly or backwardly to any extent required in accordance with the size of the envelop and other conditions. In Fig. 2 I indicate a portion of the envelop, at 44, in position on the felt 26 and against the front edges of the plates 27. When the envelops are applied to the machine the closing
 70 flap is opened out, as shown in Fig. 6, and

the opened mouth of the envelop is inserted over the base section 39 and up against the gages 27, while the closing flap extends under said base section.

The plunger 23 is given its downward
 70 movements, as hereinbefore explained, by the lever arm 19 which has a pivotal or oscillatory motion on the pivot 21 and is actuated in one direction by the gear wheel 14 and segment 20, and in the other direction
 75 by the coiled springs 45 secured at their upper ends to the lever arm 19 and at their lower ends to the sides of the machine frame. The springs 45 act normally to depress the rear or long arm of the lever 19 and to there-
 80 by elevate the short arm 22 of said lever from the plunger 23, thus allowing the spring 34 to act in elevating the plunger after each depression of the same. The gear wheel 14 is in mesh with the segment
 85 20 and when said gear wheel is turned downwardly and toward the right, looking at Fig. 2, it will act through the segment 20 to elevate the rear end of the lever arm 19 and to turn the short arm 22 downwardly
 90 against and depress the plunger 23. The gear wheel 14 is positively moved to elevate the segment 20 and rear end of the lever arm 19, and is then released from its driving
 95 means so that the springs 45 may depress the rear end of the lever 19 and through the segment 20 reverse the motion of the gear wheel 14, thereby restoring said gear wheel to its initial position with the
 100 front end of the lever arm 19 elevated. The gear wheel is secured on the shaft 13 and receives its motion through said shaft which is rotated in one direction or to effect the depression of the plunger 23 by means of the
 105 lever arm 17, pawl 18, and ratchet wheel 16, and said ratchet wheel derives its movement from the power mechanism indicated in Fig. 1, in which 46 denotes an electric motor and 47 a gear wheel driven thereby and having
 110 eccentrically secured thereto, on a pin 48, the lower end of a strap or other suitable flexible connection 49 whose upper end is secured to the pawl 18, as more clearly shown in Fig. 2. With each rotation of the gear
 115 wheel 47 it will act through the strap 49 to pull the pawl 18 downwardly against the teeth of the ratchet wheel 16 and thereby effect a partial rotation of said ratchet wheel and the shaft 13 on which it is secured. The movement of the shaft 13 is communi-
 120 cated to the gear wheel 14. The downward pull of the strap 49 on the pawl 18 takes place only when the gear wheel 47 is carrying the eccentric pin 48 from the upper to the lower side of the shaft of said wheel 47 or during one-half of the rotation of said
 125 wheel 47, and thereafter or during the second half of the said rotation of the wheel 47 the eccentric pin 48 is traveling upwardly to the upper side of the central axis of said
 130

wheel and during this movement relaxes its pull on the strap 49 and thereby releases the pawl 18, lever arm 17, ratchet wheel 16, shaft 13 and gear wheel 14, so that the segment 20 may descend under the force of the springs 45 and act through the gear wheel 14 to reverse the movement of said gear wheel, shaft 13, lever arm 17 and pawl 18, thereby returning said pawl to its upper position ready to be again pulled downward by the strap 49 on the succeeding rotation of the wheel 47. During the first half of each rotation of the wheel 47 the strap 49 effects, through the pawl 18 and gear wheel 14, an upward movement of the lever arm 19 and the depression of the front end of said arm against the plunger 23, and during the second half of each rotation of the wheel 47 the strap 49 is relaxed and the springs 45 act to depress the rear end of the lever arm 19 and effect through the segment 20 and gear wheel 14 the return of the lever arm 17 and pawl 18 to their initial position. The depression of the rear end of the lever arm 19 also results in the release of the front end of said lever arm from the plunger 23 and the elevation of said plunger from the imprinted envelop by means of the spring 34, the ratchet wheel 16 and balance-wheel 15 serving to steady the movement of the shaft 13 and improve the general action of the machine.

The operation of the machine will largely be understood from the description hereinbefore presented. When the motor 46 is set in motion it will impart a constant rotation to the gear wheel 47, and during one-half of each rotation of said gear wheel the strap 49 will be pulled to cause the pawl 18 to effect, through the connected parts already described, the depression of the plunger 23, while during the other half of each rotation of said gear wheel 47 the strap 49 will be relaxed to enable the springs 45 to return the pawl to its initial position and permit the spring 34 to elevate the plunger 23. While the plunger is in its upper position the envelop will be inserted over the bed section 39 with the edge of the mouth of the envelop upon the felt or other pad 26, while the closing flap of the envelop is extended under the head 24, the edge of the opened mouth of the envelop being located as to position by means of the gages 27. During each upward movement of the plunger 23 an imprinted envelop will be removed and a fresh envelop inserted upon the bed of felt or other material 26, so that upon the succeeding depression of the plunger, such envelop may receive its impression. The pawl 18 does not in the regular operation of the machine slide on the rim of the ratchet-wheel 16 but acts positively to turn said wheel when the strap or flexible connection 49 is pulled downwardly, and then

when the motion of said ratchet wheel is reversed during the descending movement of the segment 20 against the gear-wheel 14 and when the tension on the strap 49 is relaxed by the gear-wheel 47, said ratchet-wheel acting against the pawl compels its upward movement to its initial position, both ratchet and pawl moving together. Ordinarily, therefore, the pawl 18 remains in engagement with one tooth of the ratchet-wheel 16 during the entire operation of the machine and has a fixed uniform throw. It is not absolutely required therefore that the entire periphery of the wheel 16 should be provided with ratchet teeth but it is advantageous that said wheel should have more than one tooth, since with the provision of a number of teeth the wheel may be adjusted on its shaft to present a new tooth to the pawl whenever any one tooth that has been in engagement therewith shows wear, and in addition a series of ratchet-teeth enable an adjustment of the action of the lever-arm 19 and plunger 23 in accordance with the thickness of the paper in the envelops and any conditions that may exist, as with respect to the die 25 and pad 26, without varying the throw of the pawl 18, which adjustment of the action of the lever-arm 19 may be accomplished by turning the pawl 18 on its pivot free of the ratchet wheel 16 and then positioning the segment 20 upwardly or downwardly, as the case may be, against the gear-wheel 14 and then permitting the pawl to again engage the ratchet-wheel, such movement of the segment 20 against the gear-wheel 14 resulting in a partial rotation of said gear-wheel and said ratchet-wheel without having any other effect upon the same and also, and which is the important consideration, varying the initial position or line of the lever 19, so that the gear-wheel 14 may when actuated from the motor 46 move the lever 19 through an arc which will insure the correct movement of the short arm 22 thereof against the plunger 23. The lever 19 will always have the same extent of throw but by varying the initial position of said lever with relation to the gear-wheel 14, such throw may be adjusted as to the arc of its movement and the action of the lever on the plunger 23 varied accordingly. The adjustment of the lever 19 with relation to the gear wheel 14 will always be very slight in extent, owing to said lever having a rear long arm and a front short arm, but such adjustment is important in always securing, under all conditions, sharply defined imprints on the envelops.

What I claim as my invention and desire to secure by Letters Patent, is:

1. An imprinting machine of the character described comprising a plunger for effecting the pressure, a pivoted lever having

one arm in coöperative relation to said plunger for depressing the same and on its other end a segment, means automatically acting against said lever to normally hold it turned from said plunger, a shaft having thereon a gear-wheel engaging said segment and also a ratchet, a swiveled arm having on its outer end a pawl in engagement with said ratchet, and means for alternately moving said pawl to rotate said ratchet and gear wheel to operate said lever and then releasing said pawl to permit the said lever to return to its initial position; substantially as set forth.

2. An imprinting machine of the character described comprising a plunger for effecting the pressure, a pivoted lever having one arm in coöperative relation to said plunger for depressing the same and on its other end a segment, means automatically acting against said lever to normally hold it turned from said plunger, a shaft having thereon a gear-wheel engaging said segment and also a ratchet, a swiveled arm having on its outer end a pawl in engagement with said ratchet, a power driven wheel and a connection at one end secured to said pawl and at its other end eccentrically fastened to said wheel, whereby said wheel is adapt-

ed for alternately moving said pawl to rotate said ratchet and gear wheel to operate said lever and then releasing said pawl to permit the said lever to return to its initial position; substantially as set forth.

3. An imprinting machine of the character described comprising a plunger for effecting the pressure, a pivoted lever having one arm in coöperative relation to said plunger for depressing the same and on its other end a segment, means automatically acting against said lever to normally hold it turned from said plunger, a shaft having thereon a gear-wheel engaging said segment, a balance wheel, a ratchet wheel and a swiveled arm carrying a pawl in engagement with said ratchet, and means for alternately moving said pawl to rotate said ratchet and gear wheel to operate said lever and then releasing said pawl to permit the said lever to return to its initial position; substantially as set forth.

Signed at Pittsfield, in the county of Berkshire and State of Massachusetts, this 31st day of August A. D. 1910.

ULYSSES C. DAVIS.

Witnesses:

FRANK HEMPSTEAD,
PHILIP H. MUGLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."