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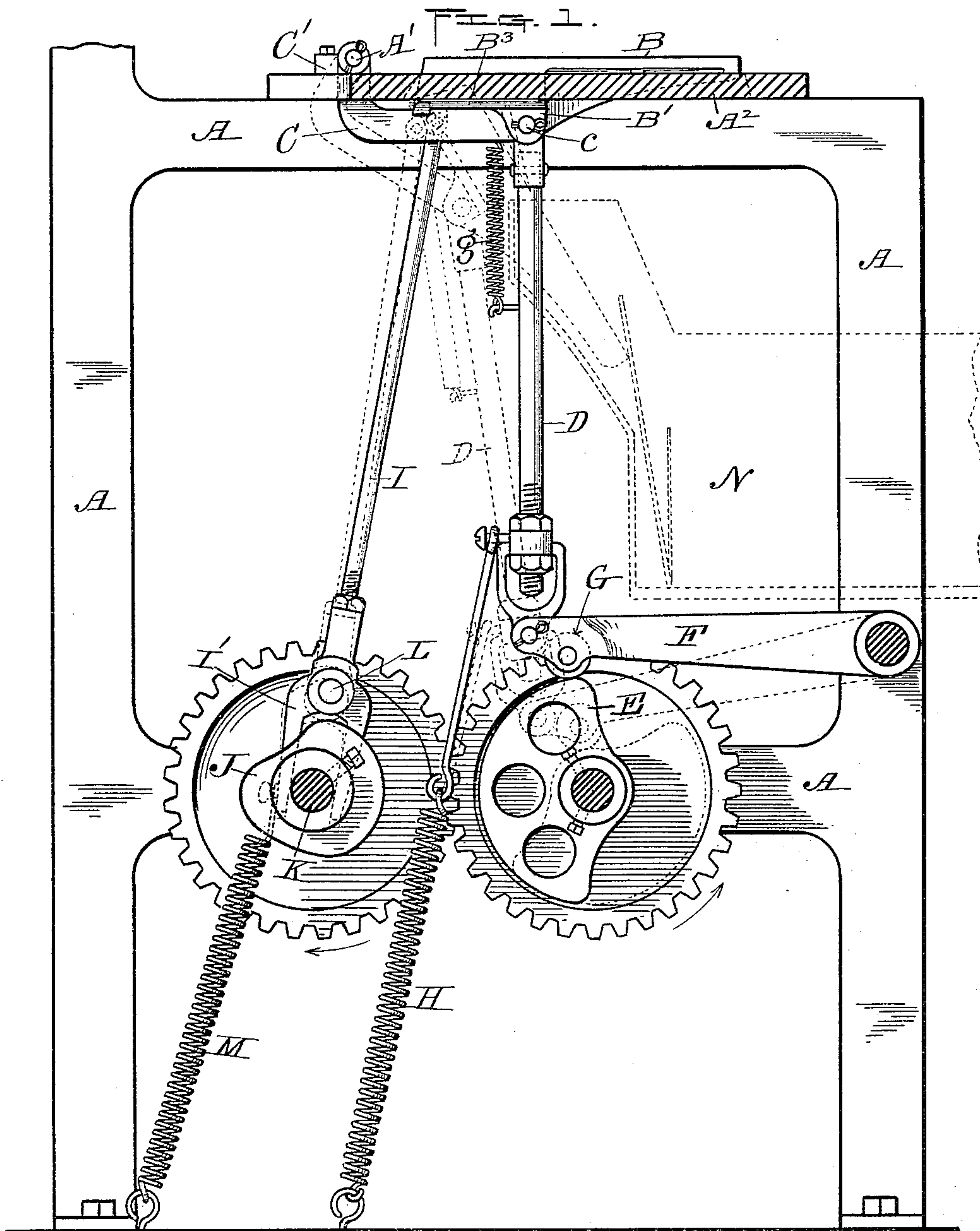
Patented Mar. 7, 1899.

A. A. RHEUTAN.
ENVELOP MACHINE.

(Application filed Mar. 28, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses;

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Abram A. Rheutan.

By A. A. Barker Atty

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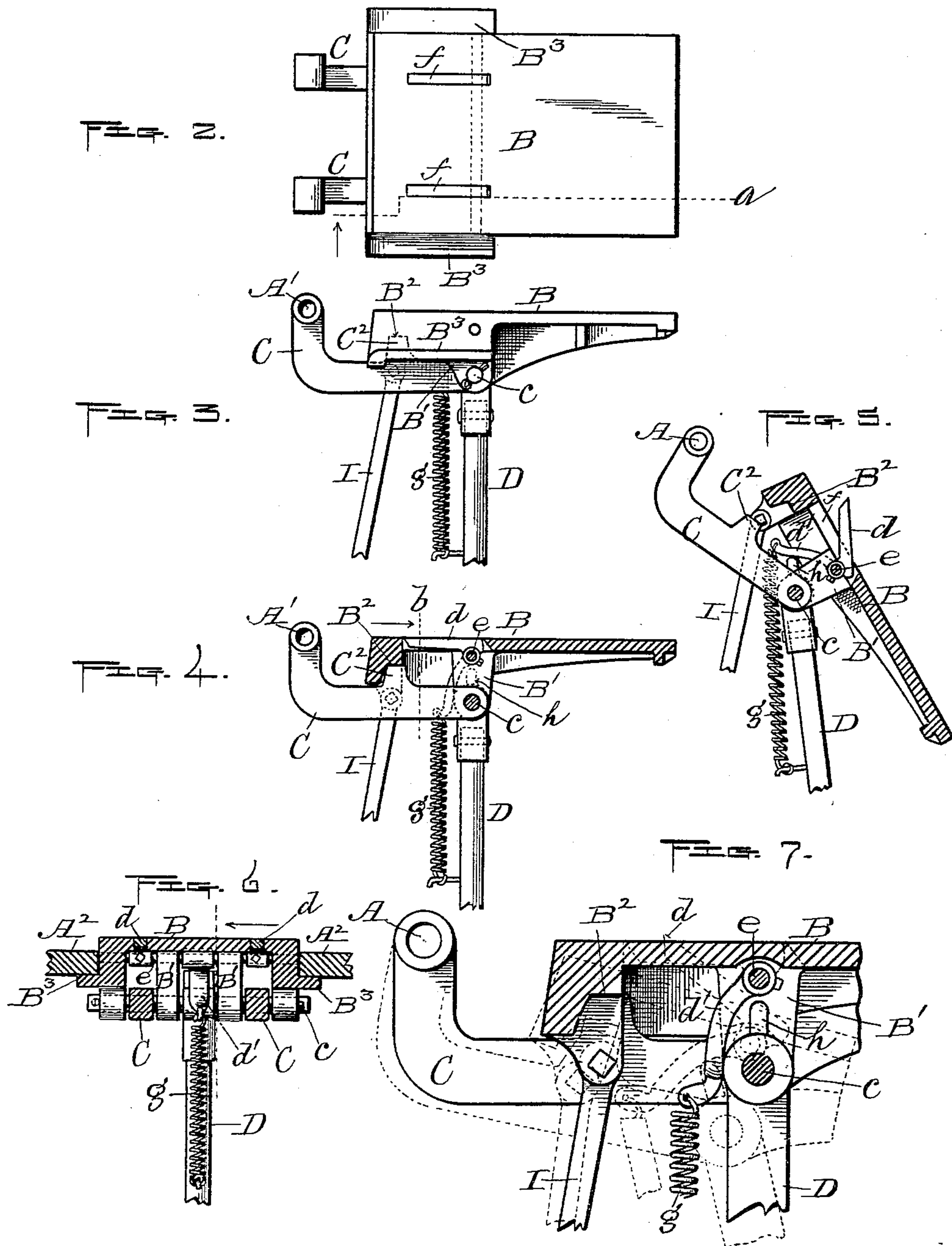
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UNITED STATES PATENT OFFICE.

ABRAM A. RHEUTAN, OF WORCESTER, MASSACHUSETTS.

ENVELOP-MACHINE.

SPECIFICATION forming part of Letters Patent No. 620,613, dated March 7, 1899.

Application filed March 28, 1898. Serial No. 675,420. (No model.)

To all whom it may concern:

Be it known that I, ABRAM A. RHEUTAN, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Envelop-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical section through part of the machine at one side of the folding-bed, showing a side view of the parts to which my invention relates, as will be hereinafter more fully explained. Fig. 2 is a plan of the folding-bed to which my said invention relates. Fig. 3 is a side view thereof, also showing portions of its supports. Fig. 4 is a vertical section through the parts shown in Figs. 1 and 2, taken on line *a*, Fig. 2, looking in the direction of the arrow, the various parts in all of said figures being shown in their normal positions with the bed in a horizontal position. Fig. 5 is a similar view to Fig. 4, with the bed and parts operating therewith in the positions which they occupy in discharging the folded envelops from said bed, as will be hereinafter described. Fig. 6 is a transverse section through the parts shown in the previous views, taken on line *b*, Fig. 4, looking in the direction of the arrow; and Fig. 7 is an enlarged view of the sectional view shown in Fig. 4, with the front end of the folding-bed broken away, the various parts being shown in their normal positions by full lines and by dotted lines, with the bed partly swung down preparatory to discharging the folded envelops therefrom, as will also be hereinafter described.

My invention is designed more especially for machines for folding long large envelops, and relates to the mechanism for discharging said envelops from the folding-bed.

It consists in making the folding-bed proper separate from the usual pivoted supporting-arms and pivoting said bed at or near the center or point of equilibrium to the outer ends of said pivoted supporting-arms, where connection is also made with the vertically-operated rod for lifting and depressing the bed, said bed also being pivoted at its inner end to an independent vertically-operated

rod, whereby when the bed is lowered by the first-mentioned supporting-rod and its mechanism an independent tipping motion may be imparted thereto to facilitate the discharge of the envelops therefrom.

Said invention also consists in providing said double pivoted bed with discharging-fingers pivoted to the bed fitted to work in vertical longitudinal slots in said bed and operated to elevate them above the top surface thereof by the lowering or depression of said bed, the purpose of said fingers being to lift the folded envelops from the surface of the bed and at the same time give them a slight push or tap to positively insure their quick and proper discharge from said bed as the latter descends to discharge the same therefrom, all as will be hereinafter more fully set forth.

To enable others skilled in the art to which my invention appertains to better understand the nature and purpose thereof I will now proceed to describe it more in detail.

Referring to the drawings, A represents part of the main frame of an envelop-machine.

B is the bed upon which the envelops are folded. As the folding mechanism does not constitute a part of my invention it will be unnecessary to illustrate or describe the same.

C C are arms extending back from the bed proper, B, which are pivoted at A' to suitable bearings C' on frame A. Usually said arms are formed integral with the bed or rigidly secured thereto, but in this instance they are independent parts and their forward ends are pivoted at *c* to suitable bearings B' on the bottom of the bed, to which bearings the upper end of rod D is also pivoted, as previously stated. The arms are also provided upon their upper sides with bosses or projections C², which fit in suitable bearings or seats B², formed on the bed, so that when the parts are in their normal positions, with the bed in a horizontal position with its side flanges B³ B³ bearing against the under side of the stationary bed A² on frame A, said bed B and its arm will be held firm and rigid. (See Figs. 3, 4, and 7.) The folding-bed proper is supported at or near the center or point of equilibrium by the vertical connecting-rod D, which is so connected at its

lower end with a cam E as to impart the action of said cam thereto to elevate and lower said folding-bed. In this instance said rod is attached to the free end of a swinging lever 5 F, pivoted at its opposite end to frame A and upon which is mounted a friction-roll G, adapted to travel on the peripheral working surface of the cam, as is shown in Fig. 1. I do not limit myself, however, to this particular construction.

A constant downward draft is imparted to the rod D by a spring H, attached at one end to said rod and at the other end to some stationary part, thereby keeping the friction-roll G in contact with cam E and insuring 15 the proper operation of the folding-bed and parts connected therewith by said cam.

To the inner end of the folding-bed is pivoted the upper end of another connecting-rod I, which engages at its lower end with another cam J for imparting longitudinal movements thereto and thereby swinging the folding-bed independent of the swinging movements imparted to it by the cam E, previously described. In this instance the lower end of rod I is provided with a fork I', which straddles shaft K, and upon which is mounted a friction-roll L, adapted to travel on the peripheral working surface of cam J. A 30 spring M is likewise used in this instance for exerting a downward draft on rod I and parts connected therewith for the same purpose as spring H, previously described. The folding-bed and its supports being thus constructed 35 it is obvious that when the rod D is moved up or down longitudinally by its cam E said folding-bed is correspondingly elevated or lowered, the same swinging on its pivot A' with the bed proper and its arms C C locked in the 40 position shown in Figs. 3 and 4. They are thus held locked by the spring M and its connections pulling down upon the inner end of the bed proper, as previously described, until the cam J forces up rod I and raises the inner end of the bed from its seat on arms C. 45 This does not occur until the bed and its arms have been lowered part way down in the operation of discharging the envelopes therefrom.

In practice the cams E J are made of the proper shape and so arranged in relation to 50 each other as to lower the bed and its arms together in their locked positions part way down in said discharging operation before the cam J commences to act to swing the inner end of said bed up independent of said lowering operation. 55

Assuming that the cams and other parts are in the positions shown in Fig. 1 of the drawings, with the folding-bed in its elevated or 60 normal position preparatory to being lowered to discharge a folded envelop therefrom, as the cam E continues to rotate in the direction shown by the arrow and the friction-roll G is allowed to travel inward or descend toward the axis of the cam said bed is gradually 65 lowered from a horizontal to an inclined position. Meanwhile the other cam, J, is also

turning, and by the time the bed is lowered to the proper place said cam J commences to 70 force up its rod I, and in consequence the inner end of the bed, into the position shown in Fig. 5, thereby causing the envelop to be quickly discharged at quite an acute angle from the surface of the bed into the usual receiver or counting-box N. This provision of 75 a double pivoted folding-bed is not necessary for ordinary short envelopes, but is quite essential to the proper discharge of long envelopes for the reason that a large envelop, covering, as it does, a larger surface, creates a 80 correspondingly-increased friction on said surface, which retards its proper discharge unless the bed is tipped to quite an acute angle, as in this case. Such a result is not easily 85 obtained without a large waste of valuable space in the construction of an envelop-machine, since if the bed was not arranged to tip or swing independent of its usual swinging movement the cam E would have to be made much larger and more space occupied 90 to obtain the required vertical swinging movements of the bed. Then, again, if the bed was not tipped at quite an acute angle in the discharging operation the envelopes would be discharged improperly into the receiver or counting-box and said receiver or counting-box 95 would have to be arranged at a greater distance from the bed than is shown in the drawings, thus wasting considerable space in this direction. 100

By my improved construction the cam E is required to be no larger than ordinarily, and the bed is tipped to the desired acute angle, with the utmost economy of space.

To further facilitate the discharge of the 105 envelopes from the folding-bed, I have provided the same with discharging-fingers d , attached to a pivot-spindle e and adapted to work in vertical longitudinal slots f , formed in said folding-bed. To said pivot-spindle e 110 is also secured an arm d' , projecting down and back under the folding-bed and having attached at its outer end a spring g , connected at its opposite end with rod D. Said arm d' is adapted to bear on its underside against 115 a cam projection h , formed on the bearing i at the upper end of rod D. In this instance two of said fingers are shown, (see Fig. 2;) but I do not limit myself to this number. When in their normal positions, they occupy 120 the position shown in Fig. 4, with their top edges flush with the top of the folding-bed and the arm d' just back of the cam projection h ; but when the folding-bed is lowered and tipped, as previously described, said operation causes the cam projection h to bear 125 against the arm d' and forces it up and in consequence swinging the fingers d up above the level of the top of the folding-bed, as is shown in Fig. 5. Said operation causes the 130 folded envelop on the bed to be raised above its surface to a still more acute angle and, being performed quickly in the operation of the machine, imparts a slight push or tap to

said envelop in addition to raising it, and in consequence a quick and positive discharge thereof is insured from said bed. Although I prefer to use said auxiliary device to insure the discharge of the envelops, as the same result may be obtained, but in a less satisfactory degree, without it, I reserve the right to use the same or not with my improved mechanism for tipping the bed independently of its usual lowering operation.

As will be observed, the mechanism which I have adopted is very simple in construction, while at the same time effective for the purpose for which it is intended. By the application thereof to practice I am enabled to discharge large long envelops with equal certainty and facility to those of common size without requiring more room than is ordinarily required for the discharging mechanism of an envelop-machine.

Having now described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In an envelop-machine, the combination of the folding-bed, the central supporting-rod, pivoted at its upper end to said folding-bed and having means connected therewith for operating it longitudinally; the supporting-arms, pivoted also to the folding-bed and to the bed of the machine-frame; a rod pivoted to the inner end of said folding-bed and having means connected therewith for operating it longitudinally, and said machine-frame, substantially as and for the purpose set forth.

2. In an envelop-machine, the combination of the centrally-pivoted folding-bed, the main supporting-rod to which it is pivoted and arms pivoted to said folding-bed and to the bed of the machine-frame, with a rod pivoted to the inner end of said folding-bed and having means connected therewith for operating it longitudinally, and said machine-frame, substantially as and for the purpose set forth.

3. In an envelop-machine, the combination of folding-bed B; the supporting-rod D, pivoted at its upper end to said folding-bed; lever F pivoted to the lower end of said rod D, also to frame A, and having the friction-roll G mounted thereon; cam E, adapted to en-

gage with said friction-roll; means for exerting a downdraft on rod D; arms C C pivoted to the folding-bed and to the bed A² of frame A; rod I pivoted to the inner end of said folding-bed and having the friction-roll L mounted thereon; cam J, adapted to engage with said friction-roll L; means for exerting a downdraft on rod I, and frame A, substantially as and for the purpose set forth.

4. In an envelop-machine, the combination of folding-bed B, provided with the shoulders B² and side flanges B³; vertically-operating, supporting-rod D; rod I, pivoted to the inner end of the folding-bed; arms C, C, pivoted to said folding-bed and to the bed of frame A, and having the projections C² on their upper edges, and said frame A, substantially as and for the purpose set forth.

5. In an envelop-machine, the folding-bed B, pivoted at about the center of its length to the upper end of rod D; said rod D, having the cam projection H at its upper end and means for operating it longitudinally; the vertically-operating rod I, pivoted to the inner end of said folding-bed; the arms C, C, also pivoted to said folding-bed and to the bed of frame A; pivoted, discharging-fingers *d*, adapted to work in slots formed in the folding-bed; arm *d'*, connected with said fingers and adapted to engage with cam projection *h*; spring *g* attached at one end to said arm *d'* and at its other end to rod D, and frame A, substantially as and for the purpose set forth.

6. In an envelop-machine, the combination of folding-bed B, pivoted at about the center of its length to the upper end of the vertically-operating rod D and at its inner end to the vertically-operating rod I; the arms C, C, pivoted to said folding-bed and to the bed of frame A; the discharging-fingers *d* and their arm *d'* pivoted at *e*; spring *g*, secured at one end to said arm *d'* and at its other end to rod D, and frame A, substantially as and for the purpose set forth.

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Witnesses:

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