

No. 822,572.

PATENTED JUNE 5, 1906.

E. J. BRASSEUR.
ENVELOP SEALING APPARATUS.

APPLICATION FILED MAR. 29, 1905.

3 SHEETS—SHEET 1.

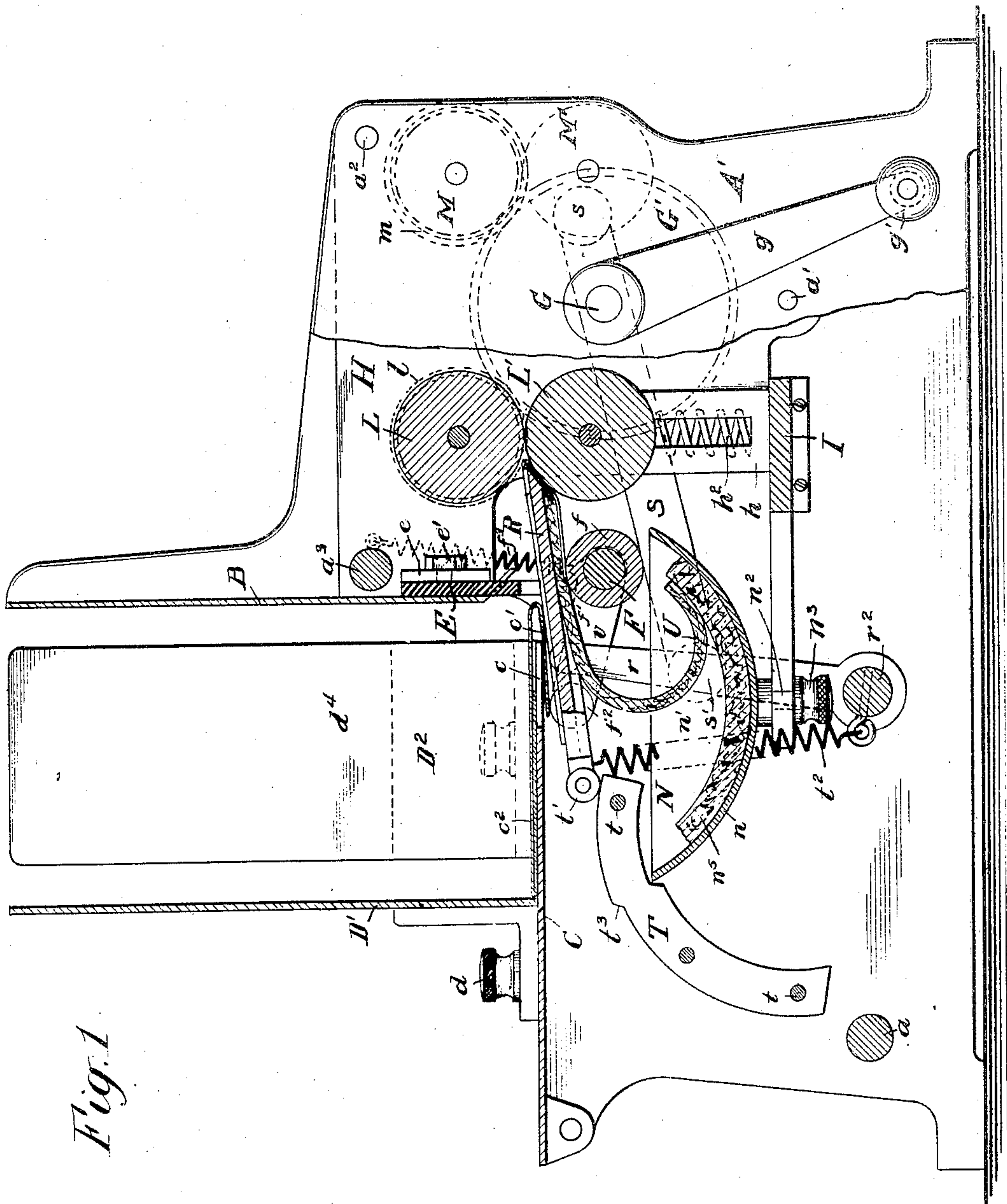


Fig. 1

WITNESSES:
L. Nork
S. M. Intosh

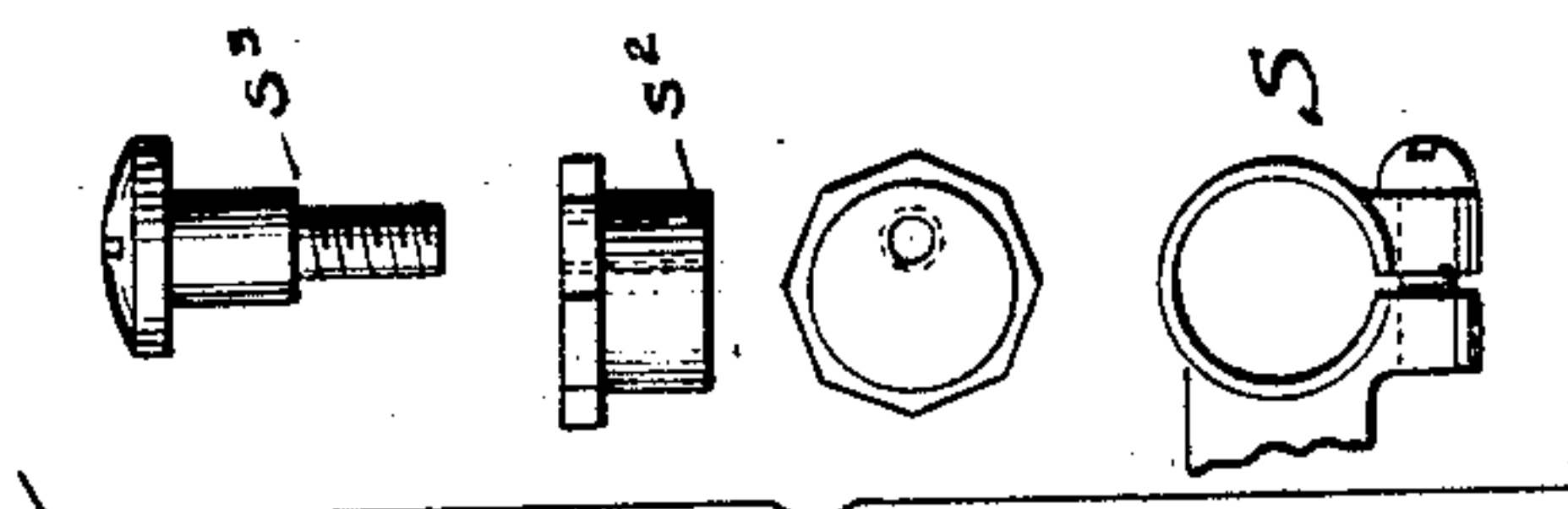


Fig. 6

INVENTOR
E. J. Brasseur
BY *J. P. Edwards*
ATTORNEY

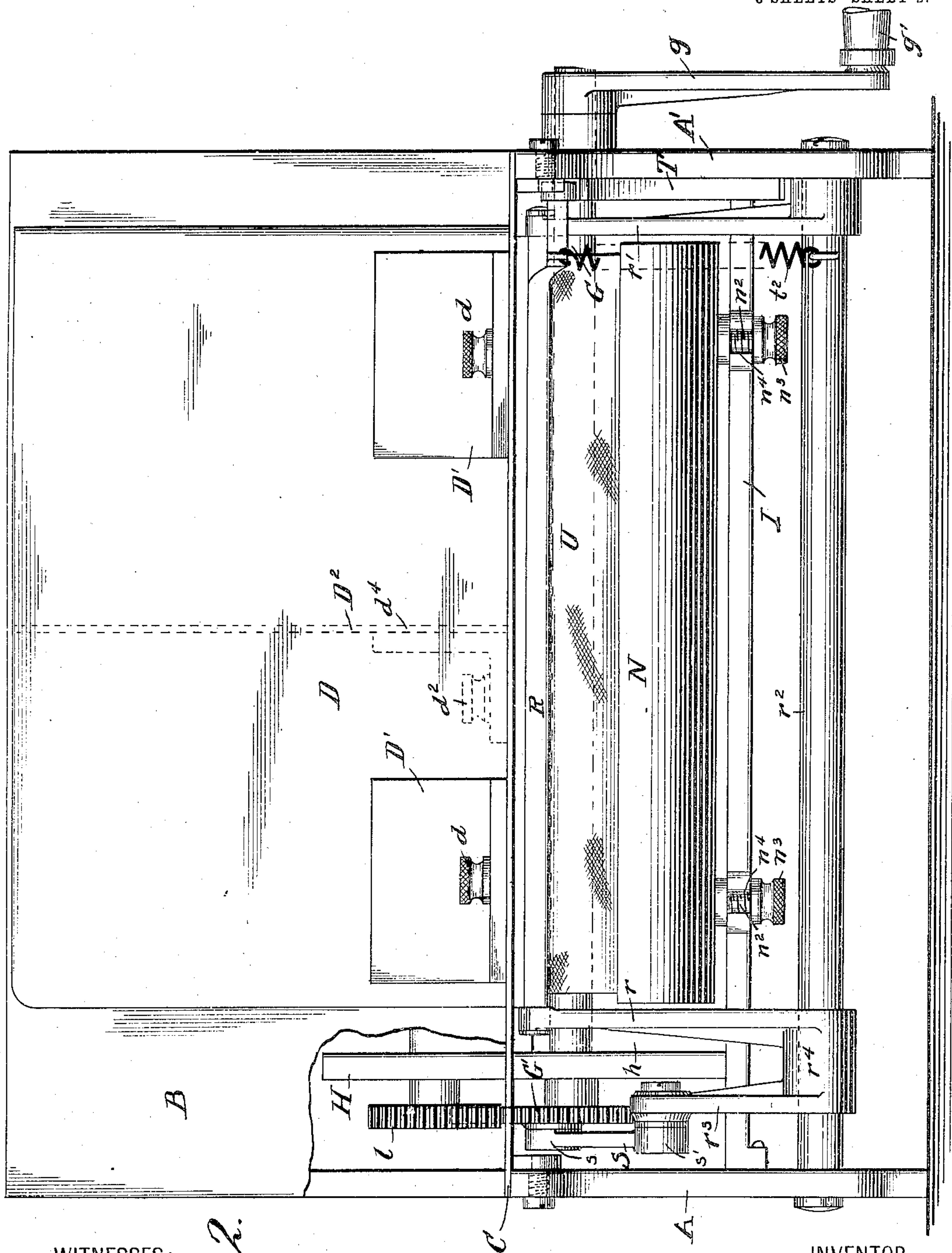
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3 SHEETS—SHEET 2.



WITNESSES:

L. Nork

J. M. Lintock

Fig. 2.

INVENTOR

E. J. Brasseur

BY

J. P. Edwards

ATTORNEY

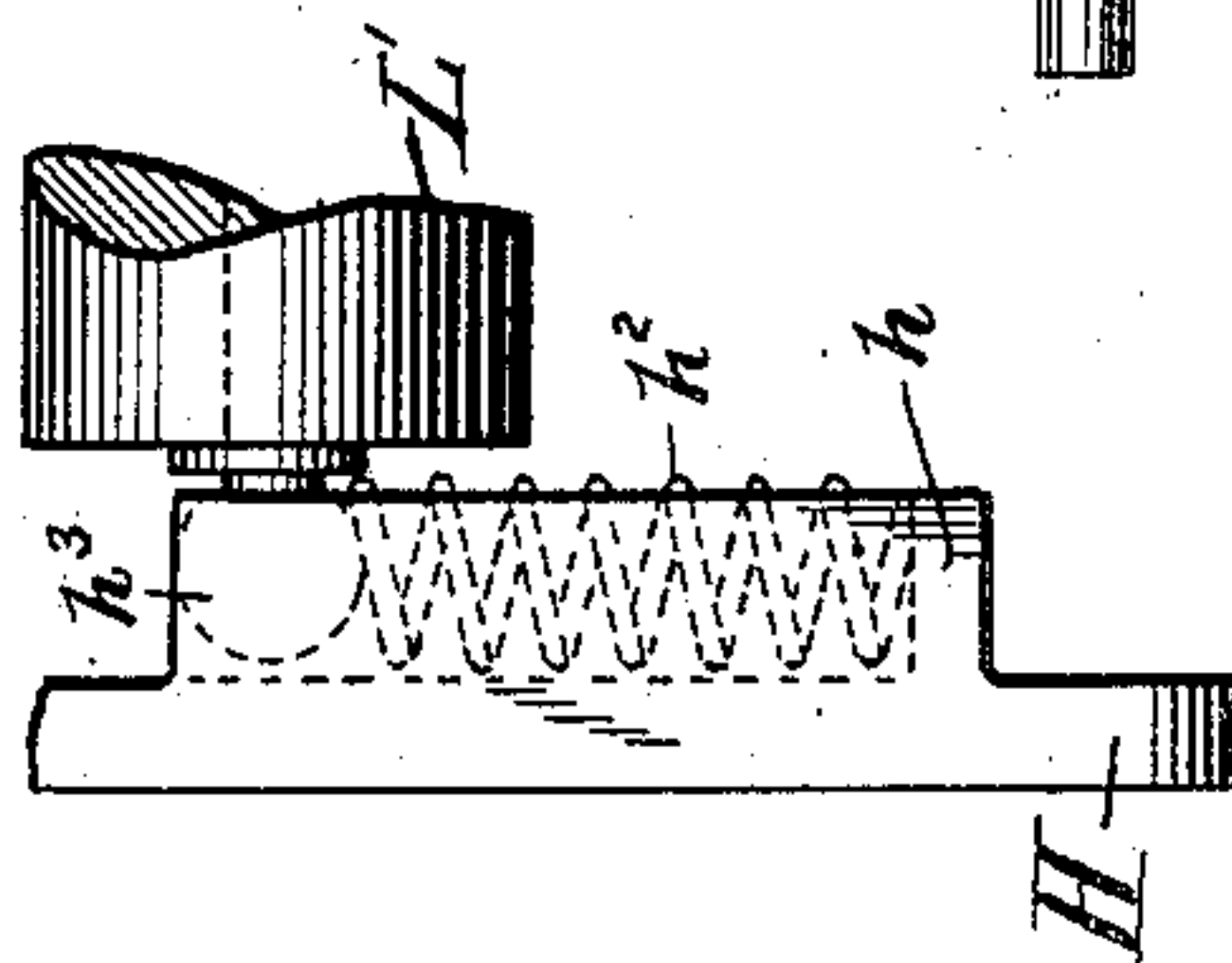
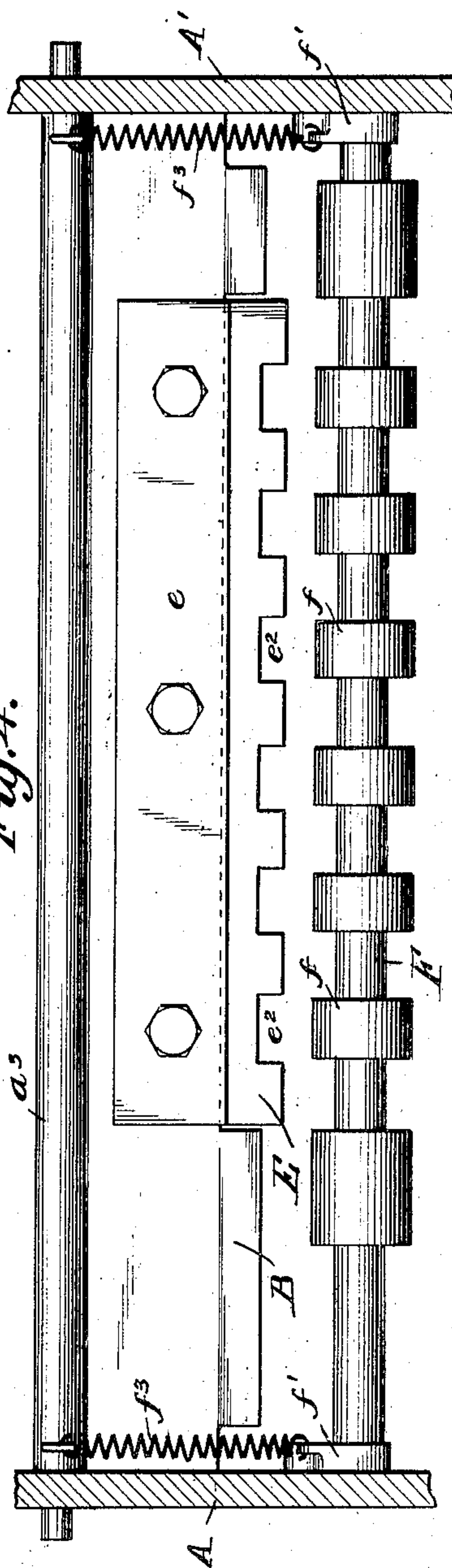
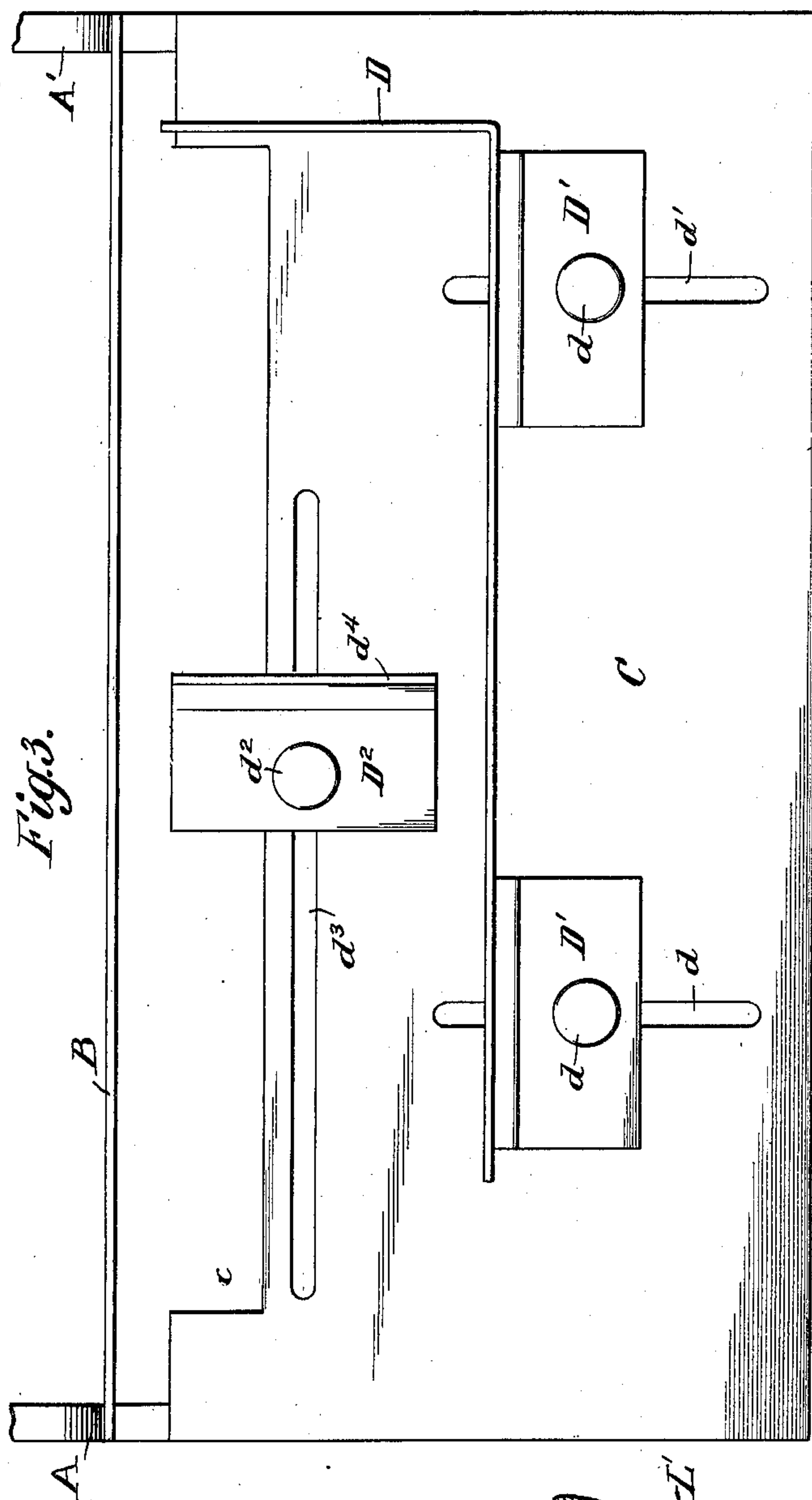
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3 SHEETS—SHEET 3.



WITNESSES:

L. Nork
J. M^cIntosh

Fig. 5.

Fig. 4.

INVENTOR

E. J. Brasseur

BY

BY *J. R. Edmonds*
ATTORNEY

UNITED STATES PATENT OFFICE.

ERNEST J. BRASSEUR, OF CHICAGO, ILLINOIS, ASSIGNOR TO A. B. DICK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ENVELOP-SEALING APPARATUS.

No. 822,572.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed March 29, 1905. Serial No. 252,730.

To all whom it may concern:

Be it known that I, ERNEST J. BRASSEUR, a subject of the King of Belgium, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Envelop-Sealing Apparatus, of which the following is a specification.

The object of the present invention is to provide a simple, durable, and efficient sealing device of relatively low manufacturing cost wherein envelops may be successively fed, preferably from the under side of a pile to pressing mechanism, such as parallel rollers, whereby the flaps of such envelops, moistened, preferably, during the feeding operation, shall be firmly attached in position.

In carrying out the invention in an approved form provision is made for supporting the envelops in a pile, the flaps downward, and an underlying forwarding device, hereinafter termed a "picker," so coacts successively with the lowermost envelop as to remove the same from the under side of such pile and forward the same to combined pressing and passing rolls, there being associated with such forwarding device or picker means for moistening the adhesive material on the inner surfaces of the flaps of such envelops. A common source of power is utilized both to actuate the picker and the pressing and passing rolls, and guide mechanism is provided for such picker, whereby angular movement is given the effective forward edge thereof to assure reliable operation in removing the lowermost envelop of the pile. Provision is also made for guarding against the removal of more than a single envelop at a time, and all the parts mentioned, as well as others associated with such parts in the construction and operation of the machine, are of such character as to permit ready repair or removal and replacing.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section, partly in elevation, of sealing apparatus embodying my invention. Fig. 2 is an end view, partly broken away to show details. Fig. 3 is a plan view of the bed whereon the envelops are mounted. Fig. 4 is a detail sectional view, partly in elevation, illustrating a preferred form of envelop stop and roll for pressing the envelop-flap against the moistening device as well as assisting in the feeding operation.

Fig. 5 is a detail view illustrating a preferred means for mounting the pressing and passing rolls, and Fig. 6 illustrates an adjustable connection between one of the picker-operating crank-arms and its actuating-lever.

Referring to the drawings, in which similar letters denote corresponding parts, the frame consists, generally speaking, of the two side members A A' of any suitable design and here shown as connected by tie-rods a , a' , a^2 , and a^3 . Extending laterally between the side members of the frame and preferably connected therewith in any suitable manner are the vertical abutment-plate B, against which the forward edges of the envelop-pile may be placed, and the horizontal bed-plate C, upon which said pile may be laid. The forward portion of said bed-plate C is cut away at c , as clearly shown in Fig. 3, in order to permit the flap c' of an envelop c^2 to spring downwardly below said bed-plate by its own elasticity for the purpose hereinafter explained.

D designates a guide, preferably L-shaped in plan view, for the envelop-pile, and coacting with this are sliding gages D', here shown as two in number, each provided with a set-screw d , coacting with a slot d' in the bed-plate C. If desired, the guide D may be secured to one or both of said gages D'. As shown in Fig. 3, said gages are movable toward and from the abutment-plate B.

D² designates a third gage, also provided with a set-screw d^2 , coacting with a transverse slot d^3 , formed in the bed-plate C. Said gage D² is provided with the upwardly-extending guide-plate d^4 . By means of the construction described the machine is adapted to receive and operate upon envelops of varying width and length.

E designates a vertically-adjustable envelop-stop, here shown as secured, by means of plate e and bolts or screws e' , upon the abutment-plate B. Said stop may be of any desired material, but preferably of rubber, and extends downwardly to about the horizontal plane of the bed-plate C. Preferably said stop will be recessed at intervals along its lower edge, as shown at e^2 , the recesses corresponding in width with the width of sectional rolls f , carried by a shaft F, the ends whereof are mounted in arms f' , pivoted at f^2 to the inner surfaces of the side members A A' of the frame, and with which arms coact coil-springs f^3 , connected at their upper

ends to the tie-rod a^3 , whereby said shaft F and the sectional rolls f , carried thereby, are normally held up into close coaction with the envelop-stop E, said sectional rolls lying within the recesses e^2 , formed in said stop.

G designates the main power-shaft of the apparatus, one end whereof is mounted in the side plate A' of the frame, extending through such side plate and provided outside the same with operating means—such, for instance, as crank-arm g and handle g' . The other end of said power-shaft G is mounted in an auxiliary frame-plate H, secured in position by any suitable means—as, for instance, upon the tie-rods a' a^2 a^3 . Additionally said plate may rest upon and be secured to a shelf-plate I, having angular downturned ends, whereby said plate may be screwed or otherwise secured to the inner faces of the side members A A' of the frame. Said shaft G extends through the auxiliary frame-plate H and is provided outside said auxiliary plate and between the same and the side member A of the frame with driving-pinion G'.

L L' and M M' designate pressing and passing rolls each mounted upon a shaft journaled at one end in the side member A' of the frame and at its other end in the auxiliary frame-plate H. The shafts of said rolls L and M extend through said auxiliary frame-plate H and are provided outside the same with pinions l and m , meshing with the driving-pinion G' on the main shaft G. In the arrangement of the rolls just described the rolls L' M' receive only such movement as may be imparted to them by the movement of the rolls L and M; but, if desired, said rolls L' M' may be positively driven by a suitable connection with the main driving-pinion G'. A preferred means for yieldingly mounting the shafts of the rolls L' M' is illustrated in Fig. 5, the same comprising inwardly-projecting boxes h h' , formed integral with or secured to the auxiliary frame-plate H and the side member A' of the frame, respectively. Within these boxes may be mounted coil-springs h^2 , exerting upward pressure upon bearing-blocks h^3 , in which the ends of the shafts of said rolls L' M' are journaled.

Detachably secured to the shelf-plate I is the reservoir N, containing water for the flap-moistener, presently to be described. In the present instance this reservoir is shown as comprising the curved bottom n and sides n' and is supported by means of screw-studs n^2 , provided with nuts n^3 . Said screw-studs and nuts coact with slots n^4 , formed in said shelf-plate I. As will be seen, the reservoir may readily be detached from its support by loosening the nuts n^3 in order to cleanse or repair the same or to fill it with water. Also in the present embodiment of the invention I have shown said reservoir as provided with a pad n^5 , of felt or other absorbent material.

R designates the envelop-picker, pivoted

intermediate of its ends upon crank-arms r r' , keyed or otherwise secured upon a rock-shaft r^2 , to which is also secured a crank-arm r^3 . If desired, the crank-arms r and r^3 , together with a connecting sleeve or collar r^4 for the lower end thereof, may be formed integral, as shown in Fig. 2.

S designates a connecting arm or pitman, one end whereof is movably and eccentrically mounted at s upon the outer surface of the main driving-pinion G', the other end thereof being pivotally connected at s' with the crank-arm r^3 . In Fig. 6 I have illustrated a preferred means for connecting the pitman S with the crank-arm r^3 , such means comprising a bushing s^2 , coacting with a correspondingly-shaped orifice in the end of said pitman S and provided with a screw-stud s^3 at one side of its center, whereby connection is made between said bushing s^2 (and consequently the pitman S) and the crank-arm r^3 . This provision makes a nice adjustment possible to vary the throw of the picker R, as will readily be understood.

In order to govern the movement of the picker R in its operation of separating an envelop from the under side of the overlying pile and to feed the same forwardly to the rolls L L', I provide a guide-rib or equivalent device and means for maintaining said picker in contact therewith. As an illustration I have shown in the drawings a guide-rib or cam T secured in position by any suitable means—as, for instance, by rivets t —to the inner surface of the side member A' of the frame. With said guide-rib or cam coacts a sheave t' , carried by the picker R, as clearly shown in Figs. 1 and 2, and said sheave t' is maintained in contact with said rib or cam by means, for instance, of the coil-spring t^2 , the lower end whereof is connected with the rock-shaft r^2 or made fast in any suitable manner to the inner surface of the side member A' of the frame. The guiding-surface of the guide-rib or cam T is provided with a shoulder t^3 , the surface beyond (rearward of) said shoulder being, like that forward thereof, formed on the arc of a circle, but of a circle of greater diameter. Due to this construction the forward end of the picker R is in operation moved upward, so as to pass between the flap c' and the body c^2 of the envelop, and then, when the sheave t' and shoulder t^3 are brought into coaction, downward to pass such envelop past the stop E and then forward until the folded edge of said envelop is grasped between the rolls L and L', through which the envelops are fed to the rolls M and M', whence they may drop into a tray or other receptacle of any suitable design.

In order to moisten the adhesive substance on the inner faces of the envelop-flaps, I provide a flap-moistener U, of felt or other suitable absorbent material, and preferably the forward end of this is secured to the under

side of the picker R near its forward end, as shown in Fig. 1. Also to prevent disarrangement I prefer to secure the rearward end of the moistener U to the pad n^5 , contained within the reservoir N. The flap-moistener U will be kept more or less saturated by capillary attraction, drawing the water from said reservoir and from the absorbent pad n^5 therein. As will be seen, Fig. 1, as the picker R moves forward between an envelop-flap and the body of the envelop the beveled forward end of said picker forces downward the sectional rolls f , which thereupon exert upward pressure against the envelop-flap, pressing the same firmly against the moistener U and thereby moistening the adhesive substance on the inner surface of said flap previous to the delivery of the envelop to the rolls L L'.

The operation of the apparatus has been described to a considerable extent in connection with the description of the several parts thereof. The envelop-pile is laid upon the bed C, the gages D^1 and D^2 being properly adjusted to bear against the same in manner above described in order to securely hold the same against displacement. The forward vertical edge of the pile will rest against or in proximity to the abutment-plate B. Power being then applied to the main shaft G, the picker R may be vibrated as rapidly as desired backward and forward, the forward end thereof on each forward movement passing between an envelop-flap and the connected body of the envelop and feeding the same forward and at the same time through the agency of the moistener U moistening the adhesive substance thereon. When such picker reaches the extreme of its forward movement, (a point which may be nicely determined by the provision, Fig. 6, above described,) the envelop is grasped by the rolls L L' and both fed forward and pressure applied to seal the flap firmly to the body, after which the envelop is again grasped and fed forward by the rolls M M'.

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

1. The combination with means for supporting an envelop, of a picker coacting with such envelop between the flap and body thereof and means for reciprocating said picker over a curved path, substantially as set forth.

2. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, and means for guiding the advancing edge of said picker to move the same in a broken line, substantially as set forth.

3. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap

and body thereof, and means for transmitting movement to the forward edge of said picker in a broken line, substantially as set forth.

4. The combination with means for supporting an envelop, of a stop and a vibrating picker and means for actuating said picker to cause it to engage such envelop between the flap and body thereof and advance said envelop past said stop in a broken line, substantially as set forth.

5. The combination with means for supporting an envelop, of a stop, a vibrating picker coacting with such envelop between the flap and body thereof to advance said envelop past said stop, and means for transmitting movement in a broken line to the forward edge of said picker, substantially as set forth.

6. The combination with means for supporting an envelop, of a picker coacting with such envelop between the flap and body thereof, means for reciprocating said picker over a curved path, and a flap-moistener coacting with said picker and said flap, substantially as set forth.

7. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, a flap-moistener coacting with said picker and said flap, and means for transmitting motion to the forward edge of said picker in a broken line, substantially as set forth.

8. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, a movable moistening device for said flap carried into coöperative relation to said flap by said picker, a stationary supply-reservoir with which said device coacts, and means for pressing said flap against said moistening device, substantially as set forth.

9. The combination with means for supporting an envelop, of a stop having recesses, sectional pressure-rolls operating in proximity to said stop, and a vibrating picker coacting with said envelop between the flap and body thereof to pass said envelop between said stop and pressure-rolls, substantially as set forth.

10. The combination with means for supporting an envelop, of a stop having recesses, sectional pressure-rolls operating in proximity to said stop, and a vibrating picker coacting with said envelop between the flap and body thereof to pass said envelop between said stop and pressure-rolls, the forward edge of said picker having movement in a broken line, substantially as set forth.

11. The combination with means for supporting an envelop, of a stop, an underlying, yieldingly-supported pressure device, a picker and means for actuating the same to cause it

to engage said envelop, between the flap and body thereof, and pass the same between said stop and said device in a broken line, substantially as set forth.

5 12. The combination with means for supporting an envelop, of a stop provided with recesses, an underlying yieldingly-supported pressure device including sectional rolls co-
10 acting with the recesses in said stop, a picker, and means for vibrating the same to pass be-
tween the flap and body of an envelop and to move said envelop between said stop and pressure device, substantially as set forth.

13. The combination with means for sup-
15 porting an envelop, of a picker coacting with said envelop between the flap and body there-
of, and means for moving the forward edge of said picker in a broken line, substantially as
set forth.

20 14. The combination with means for sup-
porting an envelop, of a pivotally-mounted
picker coacting with said envelop between
the flap and body thereof, and a guide cam or
25 rib governing the direction of movement of
the forward edge of said picker, substantially
as set forth.

15. The combination with means for sup-
porting an envelop, of a pivotally-mounted
30 picker coacting with said envelop between
the flap and body thereof, a guide cam or rib
governing the direction of movement of the
forward edge of said picker, and means for as-
suring coaction between said picker and said
guide cam or rib, substantially as set forth.

35 16. The combination with means for sup-
porting an envelop, of a vibrating picker co-
acting with said envelop between the flap and
body thereof, an underlying stationary reser-
voir, and a moistener secured to said picker
40 and coacting with said reservoir, substan-
tially as set forth.

17. The combination with means for sup-
porting an envelop, of a vibrating picker co-
acting with said envelop between the flap
45 and body thereof, an underlying stationary

reservoir, a moistener secured to said picker
and coacting with said reservoir, and a pres-
sure device for assuring contact between said
envelop-flap and said moistener, substantially
as set forth.

50 18. The combination with means for sup-
porting an envelop, of a vibrating picker co-
acting with said envelop between the flap
and body thereof, a guide cam or rib for gov-
erning the movement of said picker, and a
55 spring for maintaining said picker in contact
with said guide cam or rib, substantially as
set forth.

19. The combination with means for sup-
porting an envelop, of a picker coacting with
60 said envelop between the flap and body there-
of to move said envelop forward, means for
reciprocating said picker and causing its for-
ward edge to move in a broken line and
means for simultaneously applying moisture
65 to the inner surface of said flap, substantially
as set forth.

20. The combination with means for sup-
porting an envelop, of a vibrating picker co-
acting with said envelop between the flap and
70 body thereof to move said envelop forward,
and means, including a stationary reservoir
and continuously-connected absorbent mois-
tener moving with said picker, for simulta-
neously applying moisture to the inner sur-
75 face of said flap, substantially as set forth.

21. The combination with means for sup-
porting an envelop, of a vibrating picker piv-
otally mounted intermediate of its forward
and rearward ends, means for transmitting
80 vibratory movement thereto, a guide cam or
rib, and a sheave carried by said picker and
coacting with said guide cam or rib, substan-
tially as set forth.

This specification signed and witnessed 85
this 24th day of March, 1905.

ERNEST J. BRASSEUR.

Witnesses:

M. H. BURKART,
R. R. HARRINGTON.