No. 732,905.

PATENTED JULY 7, 1903.

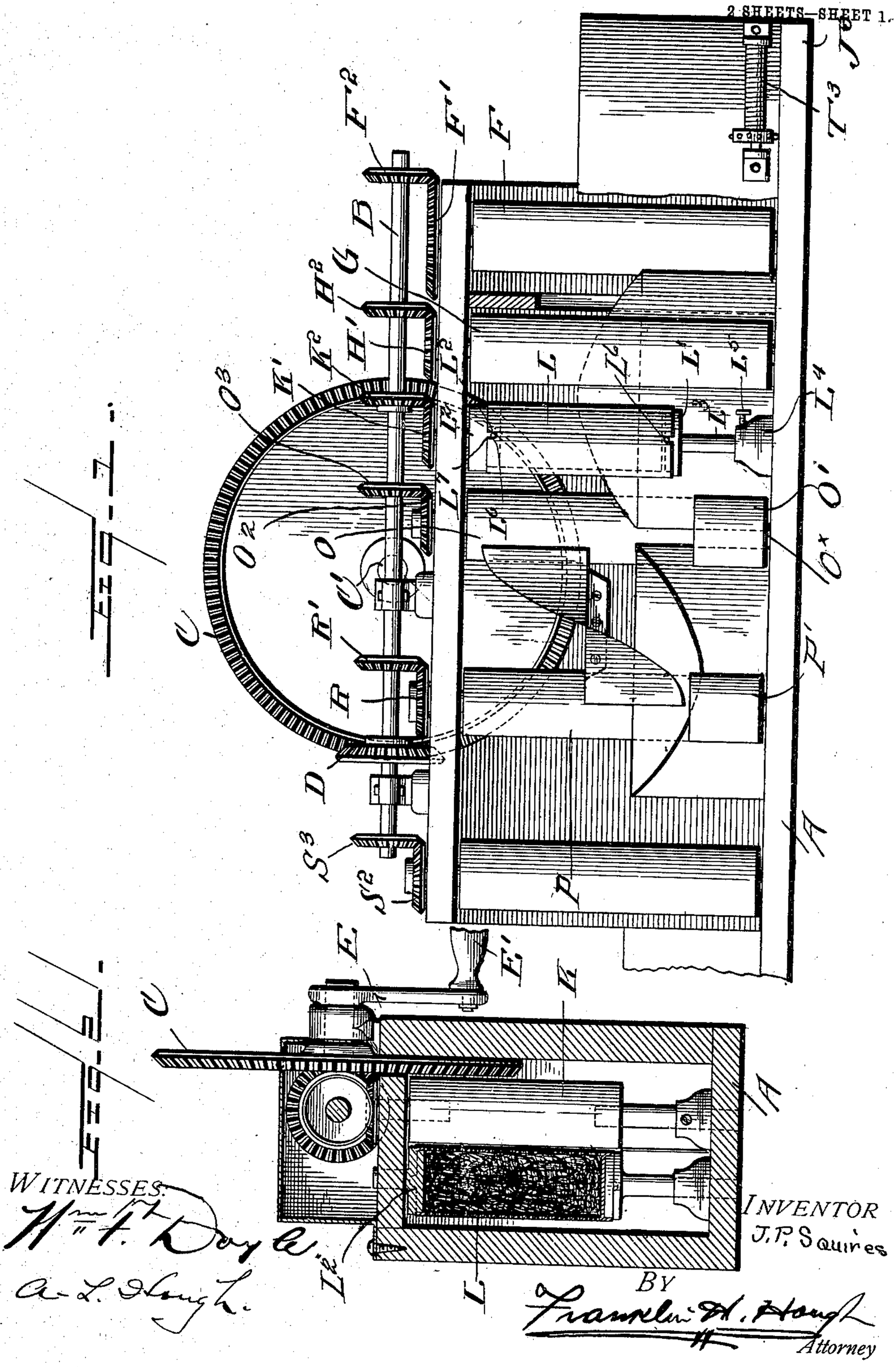
J. P. SQUIRES.

ENVELOP SEALING MACHINE.

APPLICATION FILED APR. 10, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.

Wm. F. Doyle.

A. L. Hough.

INVENTOR

J. P. Squires

BY

Franklin H. Hough

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

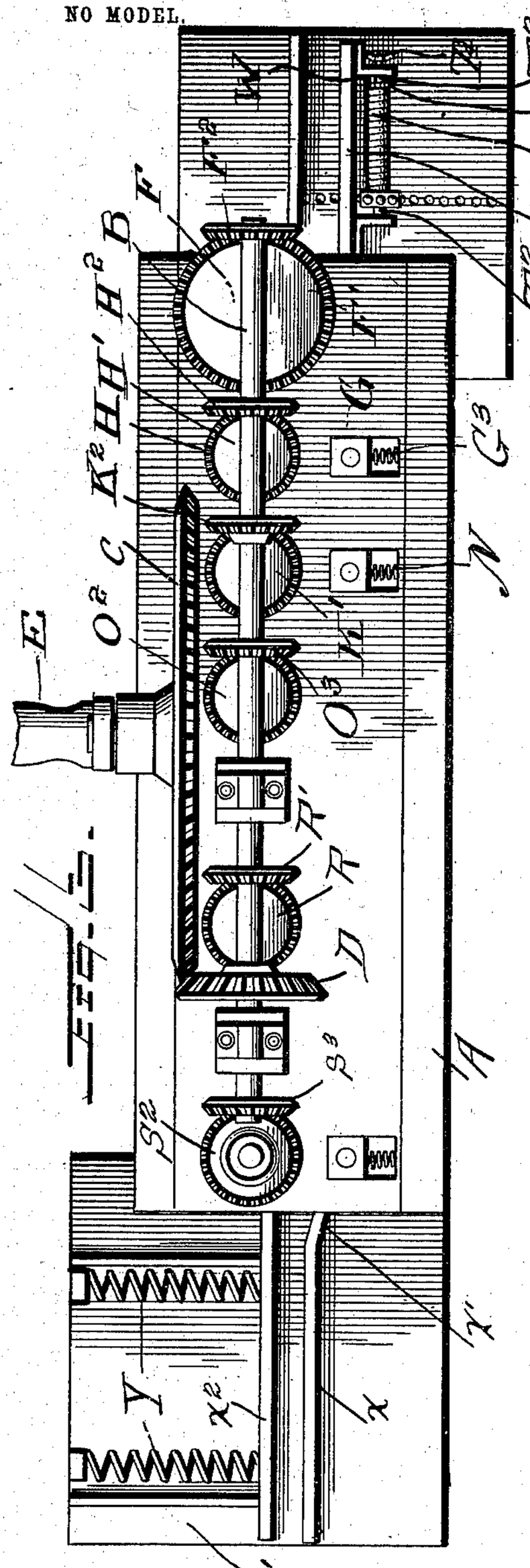
No. 732,905. PATENTED JULY 7, 1903.

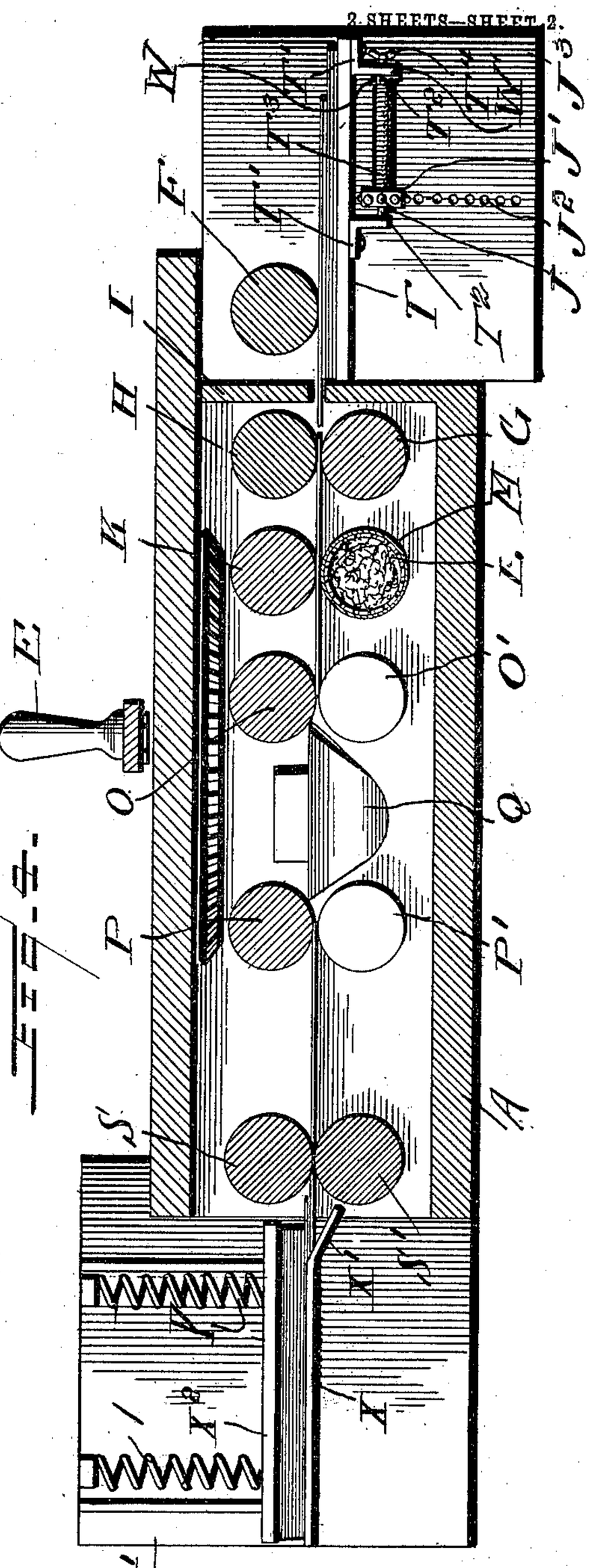
J. P. SQUIRES.

ENVELOP SEALING MACHINE.

APPLICATION FILED APR. 10, 1903.

NO MODEL. 2 SHEETS—SHEET 2.





WITNESSES:
Wm. F. Doyle,
A. L. Hough

INVENTOR
J. P. Squires,
BY
Franklin W. Hough
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 732,905. Patented July 7, 1903.

UNITED STATES PATENT OFFICE.

JOHN PHILIP SQUIRES, OF CANON CITY, COLORADO, ASSIGNOR OF ONE-HALF TO HARRY BLACKBURN ALDEN, OF CANON CITY, COLORADO.

ENVELOP-SEALING MACHINE.

SPECIFICATION forming part of Letters Patent No. 732,905, dated July 7, 1903.

Application filed April 10, 1903. Serial No. 152,045. (No model.)

To all whom it may concern:

Be it known that I, JOHN PHILIP SQUIRES, a citizen of the United States, residing at Canon City, in the county of Fremont and State of Colorado, have invented certain new and useful Improvements in Envelop-Sealing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in envelop-sealing machines; and it consists in the provision of apparatus whereby a stack of envelops is fed forward automatically between the feeding-rollers and advanced in contact with a moistening-roller, whereby the flap is moistened preparatory to its being folded down against the body of the envelop and driven through the apparatus to a location where the sealed envelops are stacked together.

The invention consists, further, in various details of construction and combinations and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claims.

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

Figure 1 is a side elevation of the machine. Fig. 2 is a cross-sectional view, parts being shown in elevation. Fig. 3 is a top plan view, and Fig. 4 is a horizontal section longitudinally through the machine.

Reference now being had to the details of the drawings by letter, A designates the frame of the machine, which has mounted in suitable bearings a driving-shaft B, driven by geared connections between the bevel-wheels C and D, which are in mesh with each other, said wheel D being keyed to rotate with the shaft B, while the wheel C is keyed to rotate with the stub-shaft C′. Said shaft C′ is journaled in suitable bearings and has a crank E secured to one end thereof and a handle E′ upon the crank, as shown in Fig. 2 of the drawings. Mounted in the top and bottom portions of said frame and in vertical relation are the feed-rollers F, G, and H, the former roller, F, being positioned by itself, as shown in the drawings, and against which envelops are pressed by means of a presser-board, which will be presently described. The upper end of the spindle of the roller F has keyed thereto a bevel gear-wheel F′, which is in mesh with a bevel gear-wheel F^2, keyed to rotate with the shaft B. Intermediate the roller F and the rollers G and H is a slotted partition I, through which slot the envelops are adapted to be fed singly to the rollers H and G, where they are frictionally fed forward to a roller, where the flaps are moistened. Said roller H has a gear-wheel H′ fitted to its spindle, and said gear-wheel is in mesh with a bevel gear-wheel H^2, also keyed to rotate with the shaft B, while the roller G is an idler and is driven by frictional pressure from the driving-roller H. Said roller G is spring-pressed, being acted upon by means of springs G^3, one of which is shown in Fig. 3 of the drawings, said springs bearing against the boxes in which the spindle of said roller has bearings. Also journaled in suitable bearings in the upper and lower portion of the frame is a driving-roller K, having a bevel gear-wheel K′ keyed to its spindle, which gear-wheel is in mesh with the gear K^2, rotating with the shaft B.

L designates a moistening-cylinder, which is made with perforations about its circumference and provided with two caps L′ and L^2, one of said caps L′ having a cylindrical shank portion L^3, which passes through a boss L^4 and is held thereto by means of a set-screw L^5. Lugs L^6 project from the caps at positions diametrically opposite and are adapted to engage slots L^7 in the edges of said cylinder. The cap L^2 has a shank portion which is journaled in the horizontally-disposed beam of the machine, and M is a fabric covering surrounding the roller L, made of a suitable absorbent material, which is kept moist by the water passing through the perforations in the cylinder L. Said moistening-cylinder L is spring-pressed, being acted upon by means of the springs N, which bear against the boxing in which the shank portions of the ends or caps of the cylinder are journaled.

Journaled in suitable bearings in the frame are the feed-shafts O and O′, the former hav-

ing a gear-wheel O^2 upon its spindle, which is in mesh with a gear-wheel O^3, keyed to rotate with the shaft B, and the roller O′ has but one bearing and that upon a spindle $O^\times$, mounted in the lower portion of the frame. This roller is driven by frictional contact with the roller O and is considerably shorter than the former in order not to interfere with the folding of the flap of the envelop.

Q designates a flap-folding member which is formed of a plate bent in the shape of the wing of an auger and so positioned that the flap of the envelop, as it is advanced against said plate will strike the compound-curved surface and fold the flap down against the body of the envelop after said flap has been moistened. Another set of feeding-rollers (indicated in the drawings by letters P and P′) is provided, the former of which has keyed to its spindle a gear-wheel R, in mesh with a similar gear-wheel R′, rotating with the shaft B, while the short roller P′, which is similar to roller O′, before described, is pivoted on the lower portion of the frame and is made short in order not to interfere with the folding of the flap. The last series of feeding-rollers is designated by letters S and S′, and the former is provided with a gear-wheel S^2, in mesh with a gear S^3, also rotating with the shaft B.

The presser-board is indicated in the drawings by letter T and comprises a plate which is mounted upon edge and has upon its outer face bracket-arms T′, in which a shaft T^2 has bearing, said shaft T^2 having a spur-wheel J keyed thereto, with spurs J′ about its circumference, which are adapted to engage the perforations J^2 in the plate J^3 for the purpose of feeding the presser plate or board forward. A spring T^3 is fixed at one end to one of said brackets T′ and its other end to the shaft T^2, and a suitable ratchet-wheel and pawl (indicated by letters W and W′, respectively) are provided which are adapted to hold the spring wound, and a winged nut T^4 is fitted upon the end of the shaft T^2, whereby the spring may be wound up.

Upon the opposite end of the frame is a vertically-disposed plate X, having one end X′ bent at an angle, as shown, and X^2 designates a presser-plate, which has springs Y bearing between the same and a fixed part of the frame and provided to form means for stacking the envelops after they are sealed.

The operation of my invention is as follows: A pile of envelops is placed upon edge intermediate the presser-plate T and the feed-roller F, with said presser-plate bearing against the same under the influence of the spring T^3. As the apparatus is in operation the feed-roller F will engage the adjacent envelop of a pile with sufficient frictional force to feed the same through the slotted partition I, and as the forward edge of the envelop is caught between the rollers H and G it will be fed forward and advanced to the rollers K and L, and as the mucilaged portion of the flap comes in contact with the absorbent covering of the cylinder L it will be moistened, and the envelop being caught by the feeding-rollers O and O′ will drive the envelop so that the flap will engage the folding member Q, and owing to the peculiar curved shape of said folding member the flap will be folded down against the body portion of the envelop, the rollers O′ and P′ being out of the way of the envelop in order not to interfere with the folding flap thereof. As the flap is folded it is caught between the friction-rollers P and P′ and pressed tightly by said rollers and is fed still farther until it is caught between the presser-rollers S and S′, where it receives its final pressure preparatory to its being fed into the stacking apparatus. As the envelop leaves the rollers S and S′ it is fed onto the rack Y′ and behind the presser-plate X^2, and as each envelop passes from the presser-rollers S and S′ it is fed behind the preceding one, and the series of envelops accumulate in a pile and upon edge, the presser-plate X^2 yielding slightly in order to make room for the envelops as they are fed from the machine.

From the foregoing it will be observed that by the provision of a machine embodying the features of the invention described the envelops are automatically handled from start to finish, and by reason of the peculiar arrangement of the moistening-cylinder the same may be easily removed when desired by unloosening the thumb-screw L^5 and allowing the cylinder to lower, after which the caps may be removed and water within the same replaced.

While I have shown a particular construction of apparatus embodying the features of the envelop-sealing apparatus, it will be understood that I may make alterations in the detailed construction of the same without departing from the spirit of the invention.

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

1. An envelop-sealing machine comprising series of vertically-disposed feeding-rollers and means for driving the same, a moistening-cylinder, a flap-folding plate, a presser-plate, a spring-actuated spur-wheel for placing the envelops on edge upon the friction-roller, whereby they are frictionally driven into the machine, as set forth.

2. An envelop-sealing machine comprising series of vertically-mounted friction feed-rollers, means for driving the same, a hollow cylindrical moistening-roller having a perforated circumference, an absorbent covering, a folding-plate intermediate the feeding-rollers, a presser-plate, a spring-actuated spur-wheel carried thereby and adapted to feed the presser-plate against a frictional feed-roller, as set forth.

3. An envelop-sealing machine comprising series of vertically-mounted friction feed-rollers, geared connections between the same, a frame on which the same are mounted, a

presser-plate, a spring-actuated spur-wheel, the spurs of which are designed to engage apertures on a table of the machine on which the envelops rest, and push the envelops against the feed-roller, a slotted partition through which the envelops are fed to a series of feeding-rollers, a moistening-cylinder with perforated circumference having an absorbent covering, a friction-roller bearing against the covering of said moistening-cylinder, and a flap-folding plate intermediate the series of feeding-rollers, as set forth.

4. An envelop-sealing machine comprising a frame having vertically-mounted friction feed-rollers, geared connections for driving the same, a presser-plate mounted upon the table of the machine, bracket-arms projecting from said plate, a shaft mounted in said bracket-arms, a spur-wheel rotating with said shaft, the spurs of said wheel designed to engage apertures in said table, a spring fastened at one end to one of said bracket-arms and its other end secured to said shaft, a ratchet and pawl for holding the spring under tension, a thumb-screw pivoted to the end of the shaft, and a flap-folding plate, as shown and described.

5. An envelop-sealing machine comprising a frame having a series of vertically-mounted friction feed-rollers, geared connections between the same and said driving-shaft, a spring-actuated presser-plate, a hollow moistening-cylinder with perforated circumference, an absorbent covering about the same, caps fitted in the ends of said moistening-cylinder, a boss held by means of a thumb-screw to the shank portion of one of said caps, lugs on the caps engaging slots in said moistening-cylinder, and a flap-folding member intermediate the feeding-rollers, as set forth.

6. An envelop-sealing machine comprising the feed-rollers and flap-folding member, as described, a stacking attachment comprising a plate upon edge with an angled end and a spring-actuated presser-plate, between which plates the envelops are successively fed from the machine, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOHN PHILIP SQUIRES.

Witnesses:
H. B. ALDEN,
LESLIE STEVENSON.