

No. 668,576.

Patented Feb. 19, 1901.

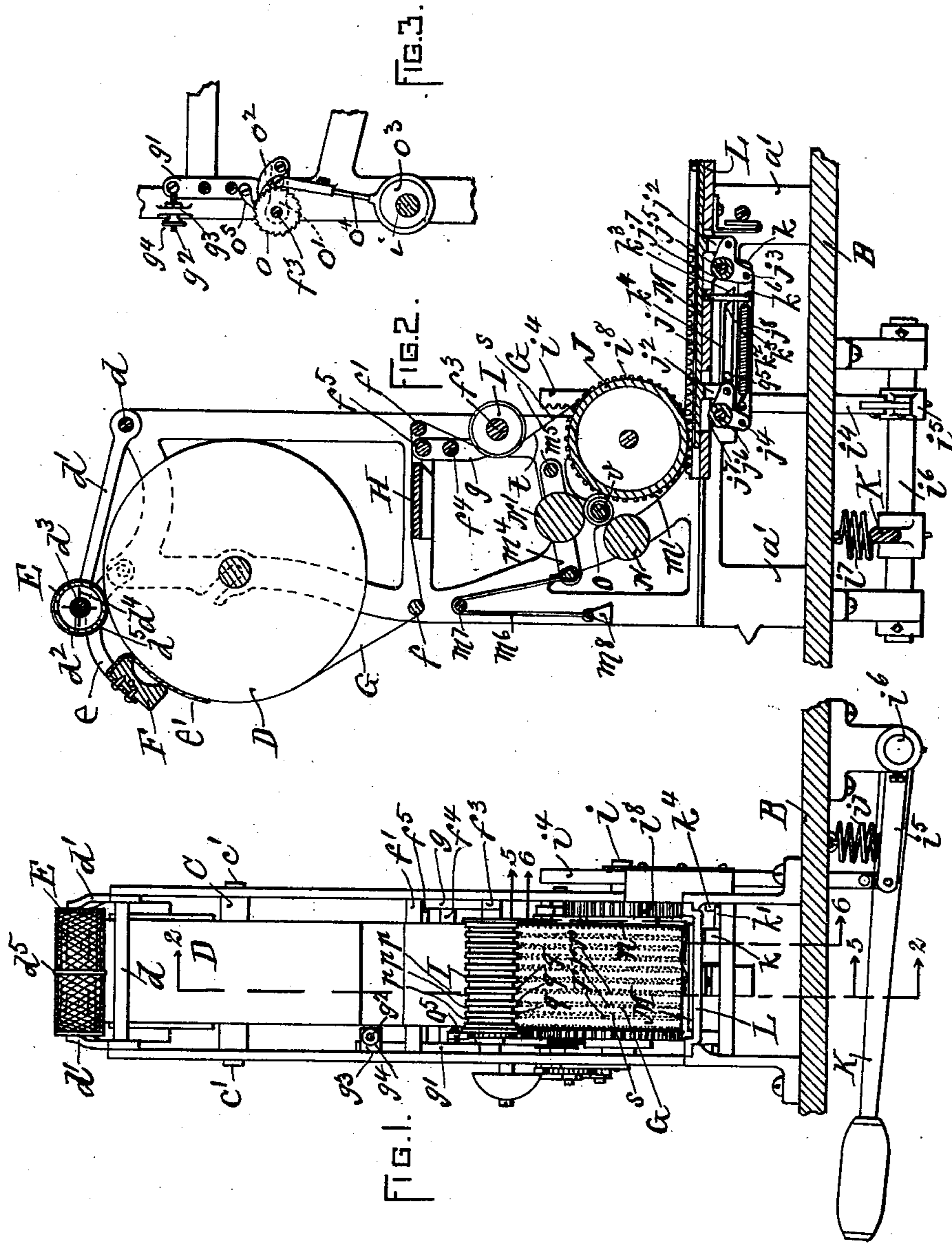
W. H. COE.

MACHINE FOR PACKAGING DECORATIVE FILMS.

(Application filed Aug. 16, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

Harry J. Garceau
John S. Lynch

INVENTOR:

Walter H. Coe
S. Scholfield
ATTY.

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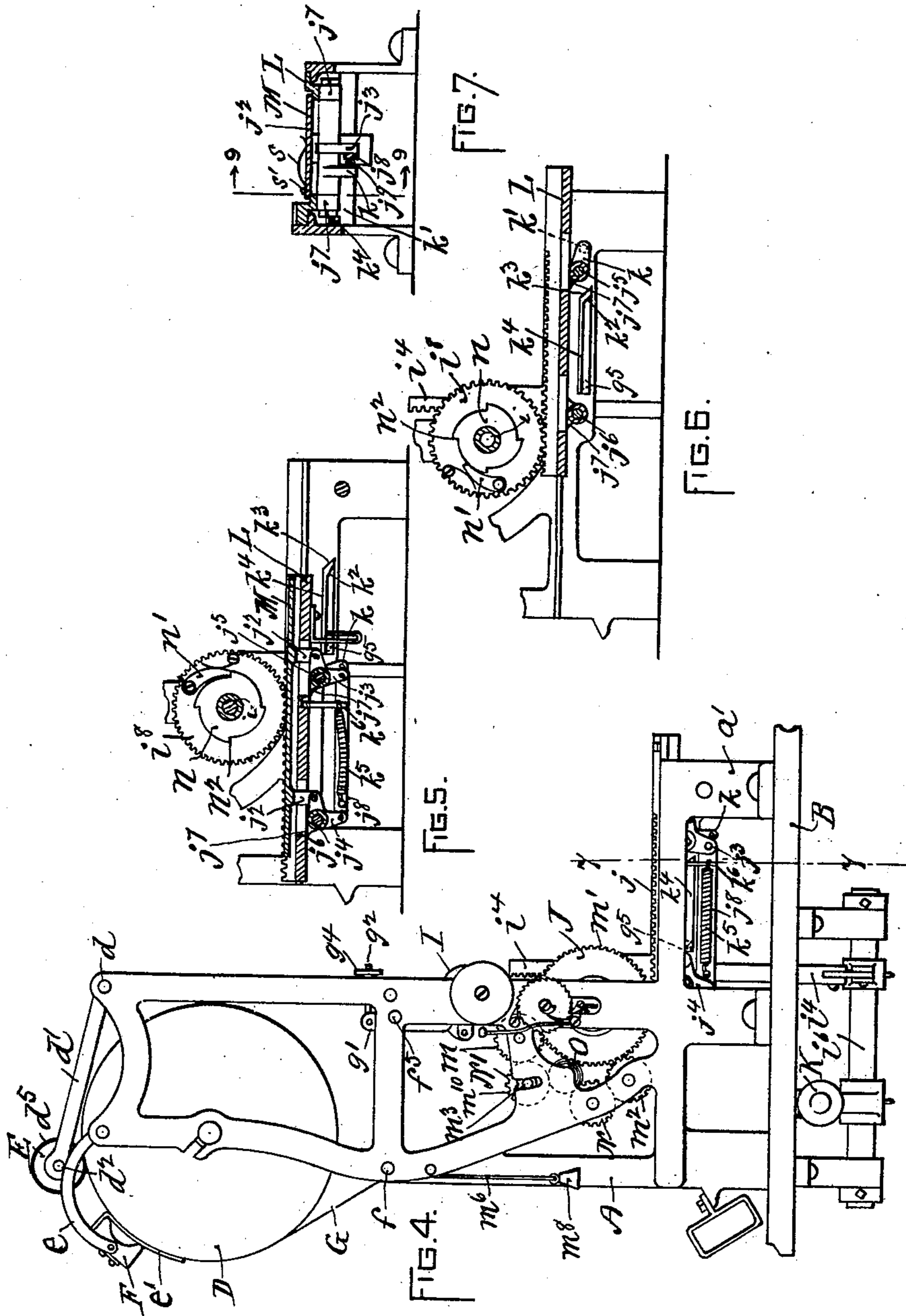
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WITNESSES:

Harry J. Luccian
John S. Lynch

INVENTOR:

Walter H. Coe.
BY S. Schofield
ATTY.

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3 Sheets—Sheet 3.

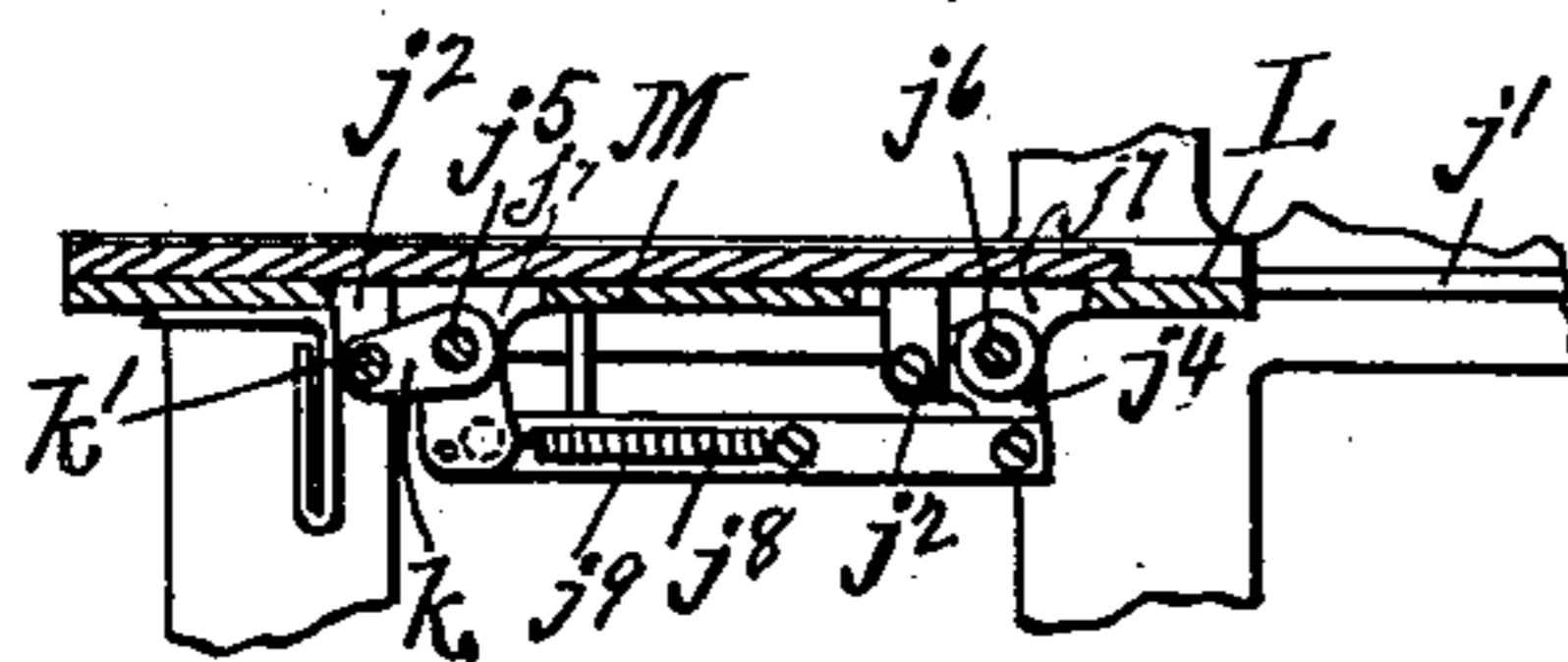
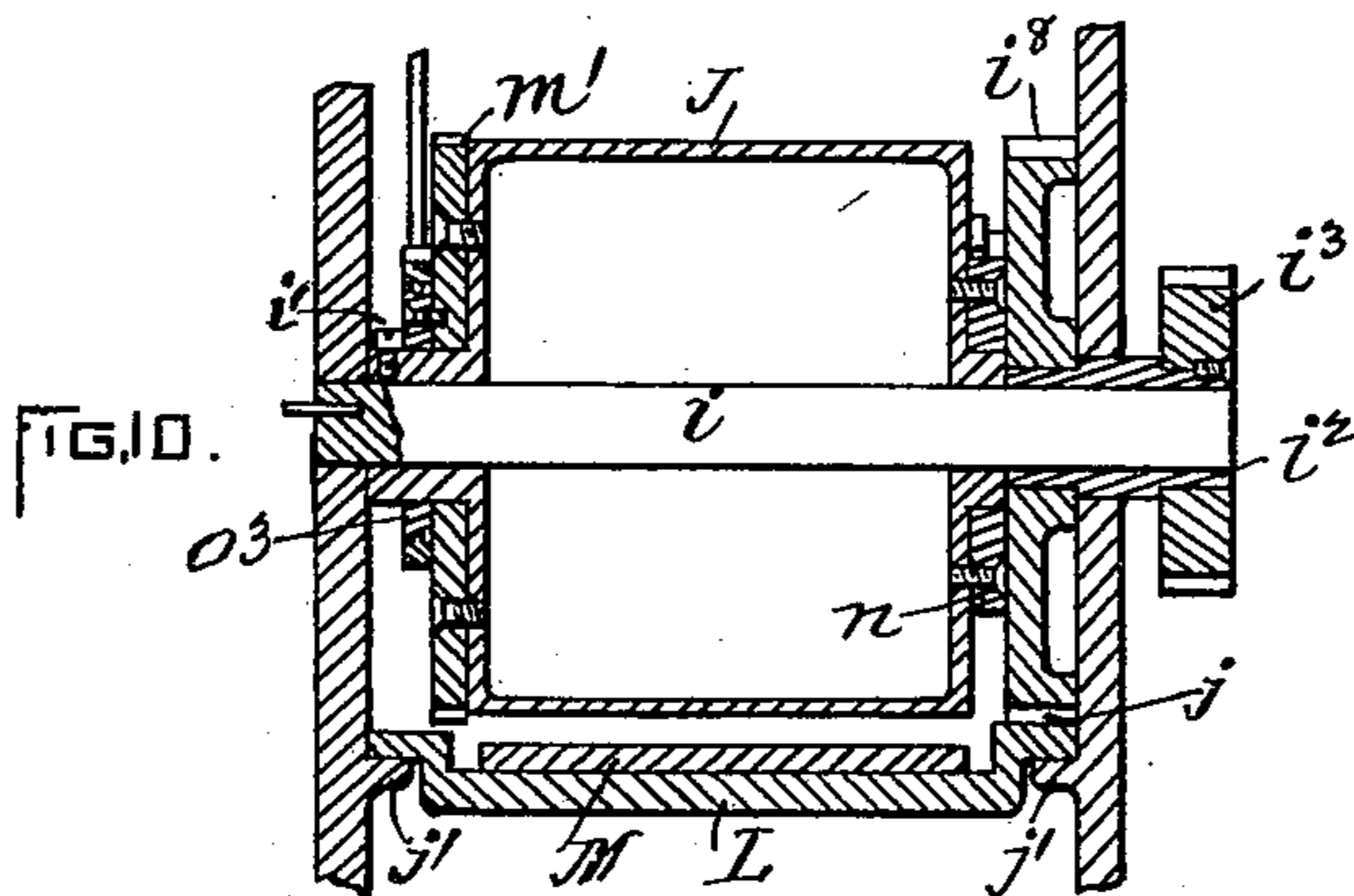
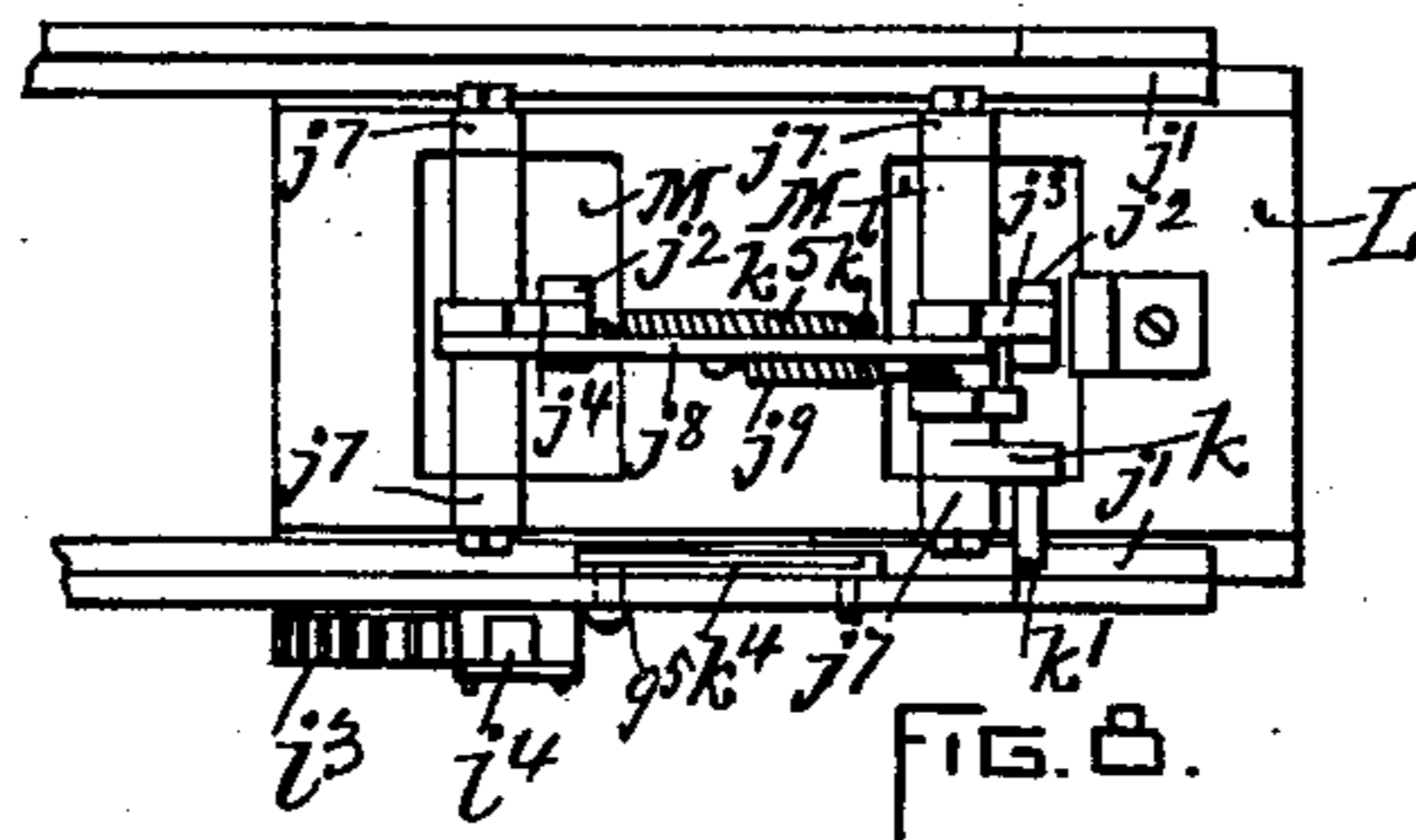


FIG. 9.

WITNESSES:

Harry J. Garrison.
John S. Lynch.

INVENTOR:

Walter H. Coe.
S. Scholfield

BY

ATTY.

UNITED STATES PATENT OFFICE.

WALTER H. COE, OF PROVIDENCE, RHODE ISLAND.

MACHINE FOR PACKAGING DECORATIVE FILMS.

SPECIFICATION forming part of Letters Patent No. 668,576, dated February 19, 1901.

Application filed August 16, 1899. Serial No. 727,462. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. COE, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Packaging Decorative Films, of which the following is a specification.

My invention relates to an improvement in machines adapted to apply lapped sheets of metallic leaf to a supporting paper strip and winding the same into a package-roll; and it consists in improved means for depositing wax or other adhesive material upon the surface of the paper strip and in means for automatically rotating the adhesive material, whereby the uneven wear of the same will be prevented.

In the employment of a bar of wax having a uniform cylindrical surface, as heretofore, for applying the required adhesive material to the side of the supporting paper strip it is found that many of the paper strips are liable in their passage through the machine to bear unevenly upon the surface of the wax, so that while there may be a full deposit of wax at one side of the axis of the strip there will be but little or no wax upon the opposite side, thus spoiling a large portion of the roll when cut into shorter lengths, and I am able to overcome this defect in the operation of the machine by providing the surface of the bar of wax with a series of peripheral grooves, so that the high parts only of the said roll will come in contact with the paper strip, and by this means the paper strip by sinking slightly at the grooves will tend to bear evenly upon the raised wax surfaces, so as to receive a proper deposit of adhesive material at both sides of the axis of the strip, and by depositing the adhesive material in a series of lines upon the paper strip the attachment of the metallic leaf thereto will be greatly facilitated, for the reason that the air can readily escape at the unwaxed portions from between the paper strip and the sheet of metallic leaf, so that the metallic leaf may be readily applied to the strip in a smooth unwrinkled condition, and the loss of time caused by defective attachment of the leaf to the strip as heretofore will be avoided.

My invention, as illustrated in the accompanying drawings, is incorporated with the

machine for packaging decorative films, for which I obtained Letters Patent of the United States No. 580,817, dated April 13, 1897.

In the accompanying drawings, Figure 1 represents a front elevation of a machine provided with my improvement. Fig. 2 represents a central vertical section of the same. Fig. 3 is a detail view showing the mechanism for imparting rotation to the bar of wax. Fig. 4 represents a side elevation. Fig. 5 represents a detail section taken in the line 5 5 of Fig. 1. Fig. 6 represents a detail section taken in the line 6 6 of Fig. 1. Fig. 7 represents a transverse section taken in the line 7 7 of Fig. 4. Fig. 8 represents an under view of the sliding bed which carries the lifting-table. Fig. 9 represents a vertical section taken in the line 9 9 of Fig. 7. Fig. 10 represents an axial section of the pressing-roller and its driving means.

In the drawings, A represents the frame of the machine, provided at its upper end with suitable bearings for the journals of the mandrel C, upon which is placed the supply-roll D, from which the package-strip of paper is to be drawn in the operation of the machine. The opposite sides of the frame A are connected by means of a rod d , to which are pivoted the arms d' d' , which at their outer ends are rigidly connected by means of the rod d^2 , and loosely upon the rod d^2 is placed the cylindrical receptacle E for the crocus or other powder employed for providing the package-strip with a surface non-adhesive to the film, the said cylindrical receptacle being provided with the central tube d^3 , arranged loosely upon the rod d^2 and provided with the longitudinal wings d^4 d^4 . The periphery of the said receptacle is formed of wire-cloth or other foraminous material, through which the desired quantity of powder may be made to pass upon the revolution of the said receptacle upon the rod d^2 .

The narrow band d^5 , which is placed over the periphery of the powder-receptacle E, serves by frictional contact with the periphery of the supply-roll D to cause the proper revolution of the powder-receptacle E and the sprinkling of the powder in suitable quantity upon the surface of the package-strip G, the wings d^4 serving to maintain the proper loose condition of powder in the powder-re-

ceptacle during the rotation of the same. At the opposite corners of the upper portion of the frame A are pivoted the arms *e e*, which are also pivoted to the opposite ends of the block F, preferably hollowed upon its bearing-surface and provided with the attached woolen flap *e'*, which serves to properly distribute the powder previously sprinkled upon the surface of the package-strip from the powder-receptacle E. The properly prepared and powdered package-strip G passes under the tie-rod *f* of the frame, thence over the pad H, by means of which any surplusage of the powdering material may be removed to fall into a suitable receptacle, thence over the tie-rod *f'* and downward to contact with the inner side of the bar of wax I, the said bar of wax being arranged at the side of the paper strip opposite to the powdered surface and held upon a shaft *f³*, journaled at its opposite ends in the arms *g g'*, which arms are connected to each other by means of the rod *f⁴* and are pivoted to the tie-rod *f⁵* of the frame. The bar of wax I is made adjustable to expose a greater or less surface of wax to the paper strip by means of the screw *g²*, pivoted to the arm *g* and passing loosely through a perforation in the inwardly-extending ear *g³* of the frame and provided with the milled nut *g⁴*, by means of which the desired adjustment is effected. To the shaft *f³* of the wax bar I is secured the ratchet-wheel *o*, and upon the said shaft is loosely pivoted the arm *o'*, provided at its outer end with the catch *o²*, which engages with the teeth of the ratchet-wheel, vibratory movement being imparted to the arm *o'* by means of the eccentric *o³* upon the shaft *i* of the pressing-roller J and the adjustable connecting-rod *o⁴*, and a pawl *o⁵* is provided to prevent the backward rotation of the bar I when the catch *o²* is out of engagement with the teeth of the ratchet-wheel, and by this rotation of the bar of wax I uneven wear will be prevented. The surface of the bar of wax is provided with the circumferential grooves *p p p*, whereby a series of annular surfaces *q q q* will be formed, from which adhesive parallel lines of wax *r r* will be deposited upon the surface *s* of the paper strip G as the paper strip is being drawn over the said surfaces, and from the bar of wax I the paper strip G, provided with a powdered surface *t* at one side, and a surface *s*, provided with a series of longitudinal lines of adhesive material *r r r* at the opposite side, passes to the periphery of the pressing-roller J, the powdered surface *t* being on the inner side in contact with the roller and the waxed surface *s* upon the outer side.

The pressing-roller J is secured upon a shaft *i* by means of the set-screw *i'*, held in a hub at the forward end of the roller, the opposite end of the shaft *i* passing through the loose sleeve *i²*, upon the outer end of which is secured the gear *i³*, which engages with the teeth of the rack *i⁴*, by means of which the gear *i³* may be actuated in oppo-

site directions, the said rack *i⁴* being jointed to the arm *i⁵*, which is secured to the loosely-journaled bar *i⁶*, provided with the outwardly-extending hand-lever K, by means of which the machine is operated, the said hand-lever being held in its upward position by means of the spiral spring *i⁷*, secured at its upper end to the under side of the bench B. To the inner end of the sleeve *i²*, at the inner side of the frame A, is secured the gear *i⁸*, which engages with the rack-teeth *j* of the sliding bed L, the said sliding bed being supported between the parallel sides of the frame A upon the parallel ways *j' j'*. The downward-and-upward movement of the hand-lever K by the operator of the machine will cause a rocking movement of the sleeve *i²* and the gear *i⁸* and a corresponding reciprocating movement of the sliding bed L.

The pressing-roller J is operated intermittently by means of the ratchet-wheel *n*, which is secured to the rearward end of the said pressing-roller, and the spring-actuated ratchet-catch *n'*, the notches *n²* of the ratchet-wheel being so arranged that upon the downward movement of the hand-lever K by the operator of the machine the pressing-roller J will be turned so that the periphery of the said roller will be moved forward for a space equal to the length of one of the sheets of decorative film less the distance required for the lapping contact of the edges of the said sheets upon the paper strip G, and upon the rotation of the pressing-roller J the waxed-paper strip G will be moved forward into fresh contact with the surfaces *q q q* of the bar of wax I.

The sliding bed L carries the table M, upon which the book of prepared decorative films is to be placed in proper position for the attachment of the films singly and properly lapping each other upon the waxed side of the paper strip, the said table M being provided with the downwardly-extending lugs *j² j²*, to which are pivoted the bell-crank levers *j³ j⁴*, which levers are loosely held upon the stationary bearing-rods *j⁵ j⁶*, held in the downwardly-extending lugs *j⁷ j⁷* of the sliding bed L. The said bell-crank levers *j³ j⁴* are connected with each other, so as to move in unison, by means of the connecting-link *j⁸*, to the rearward side of which is secured the spiral spring *j⁹*, (shown in Figs. 8 and 9,) the opposite end of the said spiral spring being secured to the loose bell-crank lever *k*, which is held, together with the loose bell-crank lever *j³*, upon the stationary bearing-rod *j⁵*. At the rearward side of the forwardly-projecting horizontal arm of the bell-crank lever *k* is secured the stud *k'*, which engages with the upper surface of the latch-cam *k⁴*, the said latch-cam being pivoted to the inner side of the frame at the point *g⁵* and held by a suitable stop in the normal position, as shown in Figs. 5 and 6, and adapted to be raised at its outer end upon the engagement of the stud *k'* with the incline *k²* at the backward movement of the sliding bed L.

When the operator of the machine depresses the hand-lever K, the sliding bed L and the table M will be carried forward under the pressing-roller J until the stud k' engages with the incline k^3 at the outer end of the latch-cam k^4 , thus causing the said stud to rise to the top of the said latch-cam, thereby causing the angular movement of the bell-crank lever k , which through the spiral spring j^9 , connected with the link j^8 , serves to lift the book of films held upon the table M to contact with the paper strip G at the under side of the pressing-roller J.

At the back of the pressing-roller J and at a certain distance therefrom is placed the stationary roller N, provided at its forward end with a gear m , which is connected with the gear m' upon the forward end of the pressing-roller J by means of the intermediate gear m^2 . The movable roller N' is journaled in the opposite arms $m^3 m^4$, which are rigidly secured to the rod m^5 , the said rod being loosely journaled in the sides of the frame A, so that the roller N' may have an up-and-down movement in the arc of a circle whose center is the axis of the rod m^5 . To the outer end of the arm m^4 is attached the cord m^6 , which passes over the pulley m^7 , and to the pendent end of the cord m^6 is attached the weight m^8 , by means of which a portion of the

weight of the movable roller N' may be balanced, so as to secure the required degree of pressure upon the package-roll O, which is held for winding revolution between the said roller N', the stationary roller N, and the pressing-roller J.

I claim as my invention—

1. In a machine for winding films of metallic leaf into a package-roll, the combination of means for winding the package-strip and metallic leaf upon a core, with a bar of wax or similar adhesive material over which the package-strip is drawn, and means for automatically rotating the bar of adhesive material to prevent uneven wear upon its surface, substantially as described.

2. In a machine for winding films of metallic leaf into a package-roll, the combination of means for drawing the package-strip forward, with a series of separate surfaces of adhesive material, over which the package-strip is drawn to cause the deposit of the adhesive material upon the surface of the strip in parallel longitudinal lines, substantially as described.

WALTER H. COE.

Witnesses:

SOCRATES SCHOLFIELD,
M. F. BLIGH.