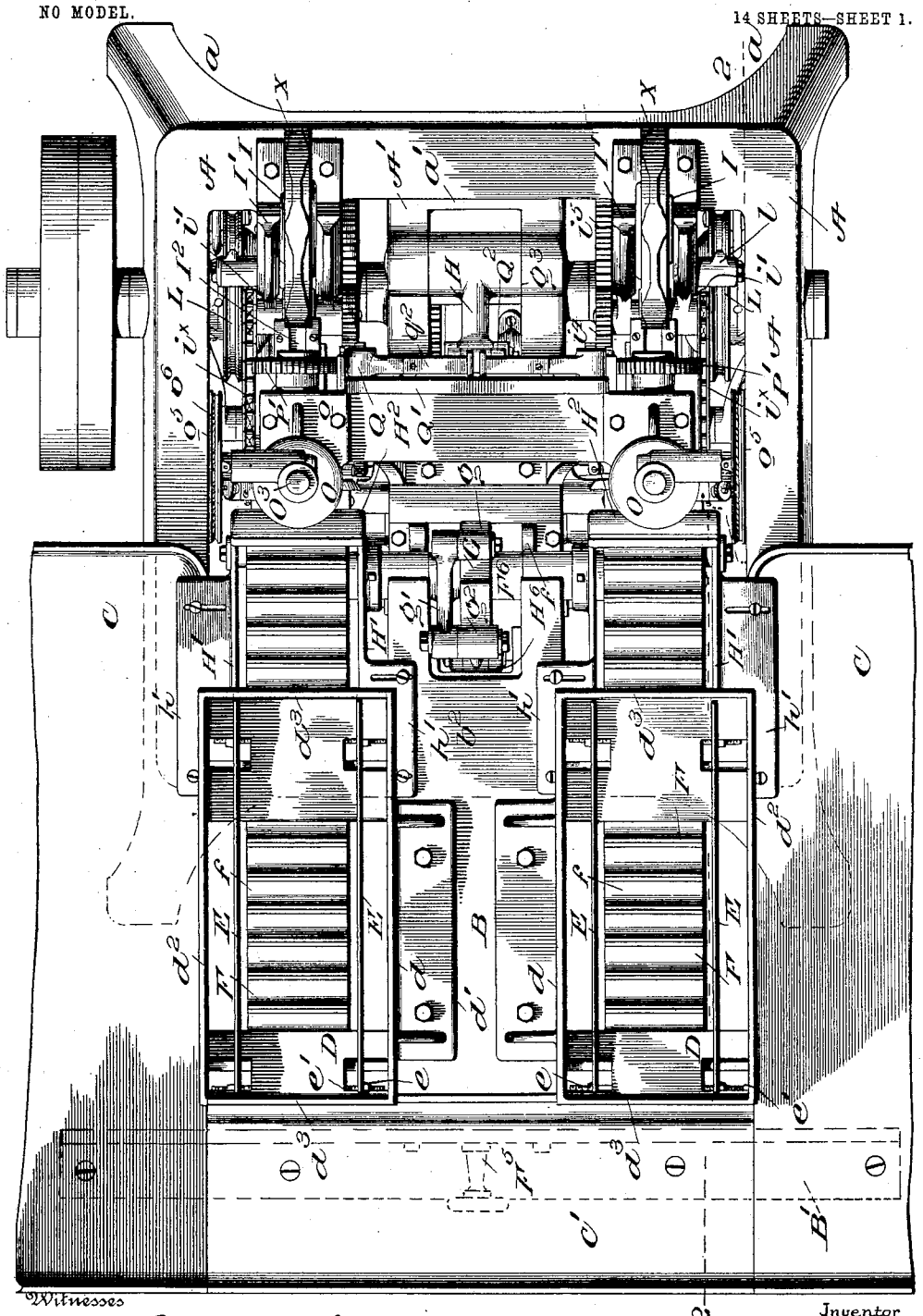
No. 762,681. PATENTED JUNE 14, 1904.

W. C. BRIGGS.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 1.



Witnesses

A. M. Parkins.

Inventor

William C. Briggs,

By Baldwin, Davidson & Wright his Attorneys

Fig. 1.

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NO MODEL. 14 SHEETS—SHEET 2.

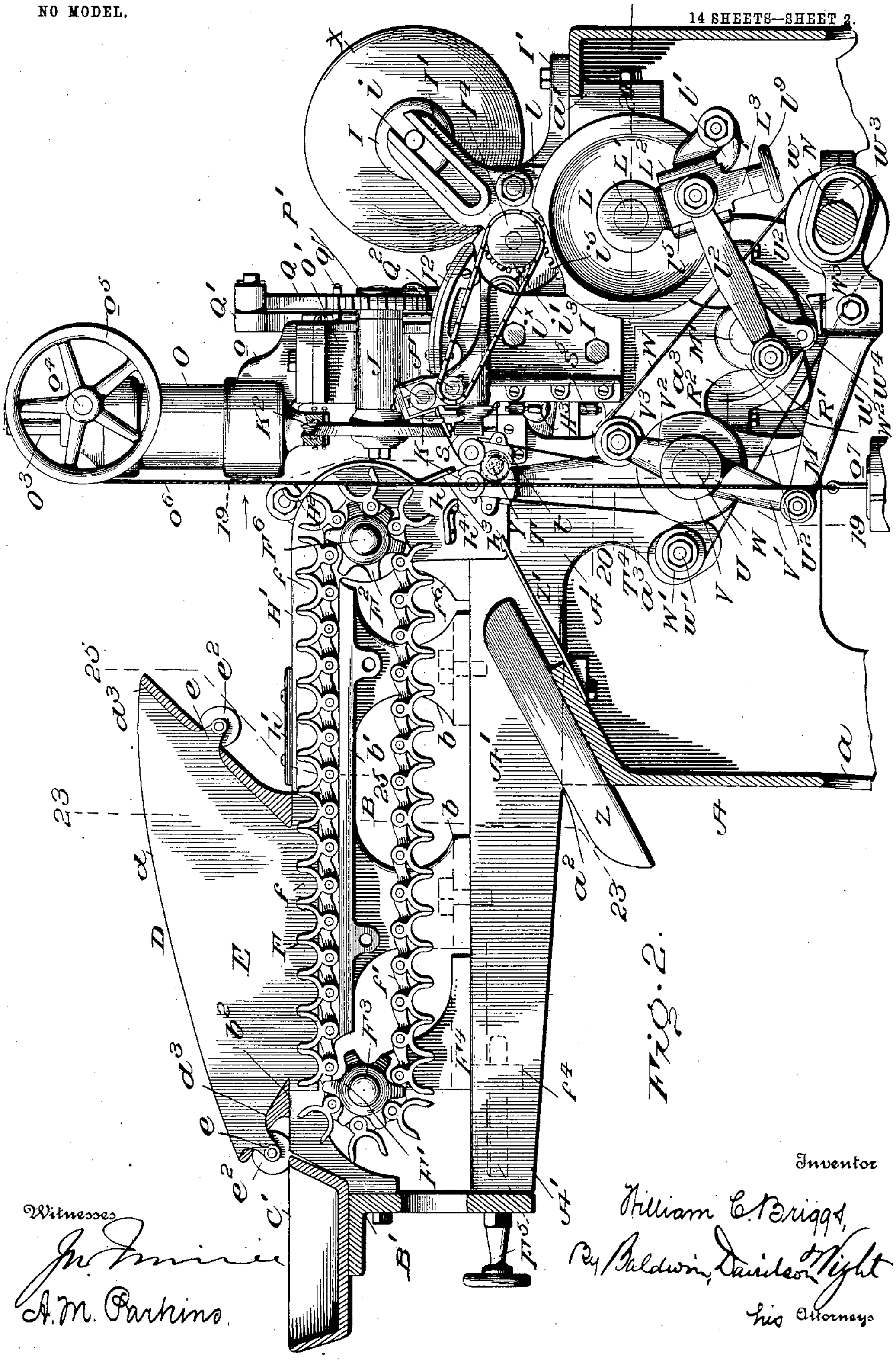

Fig. 2.

Witnesses

Jn. [illegible]

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

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NO MODEL. 14 SHEETS—SHEET 3.

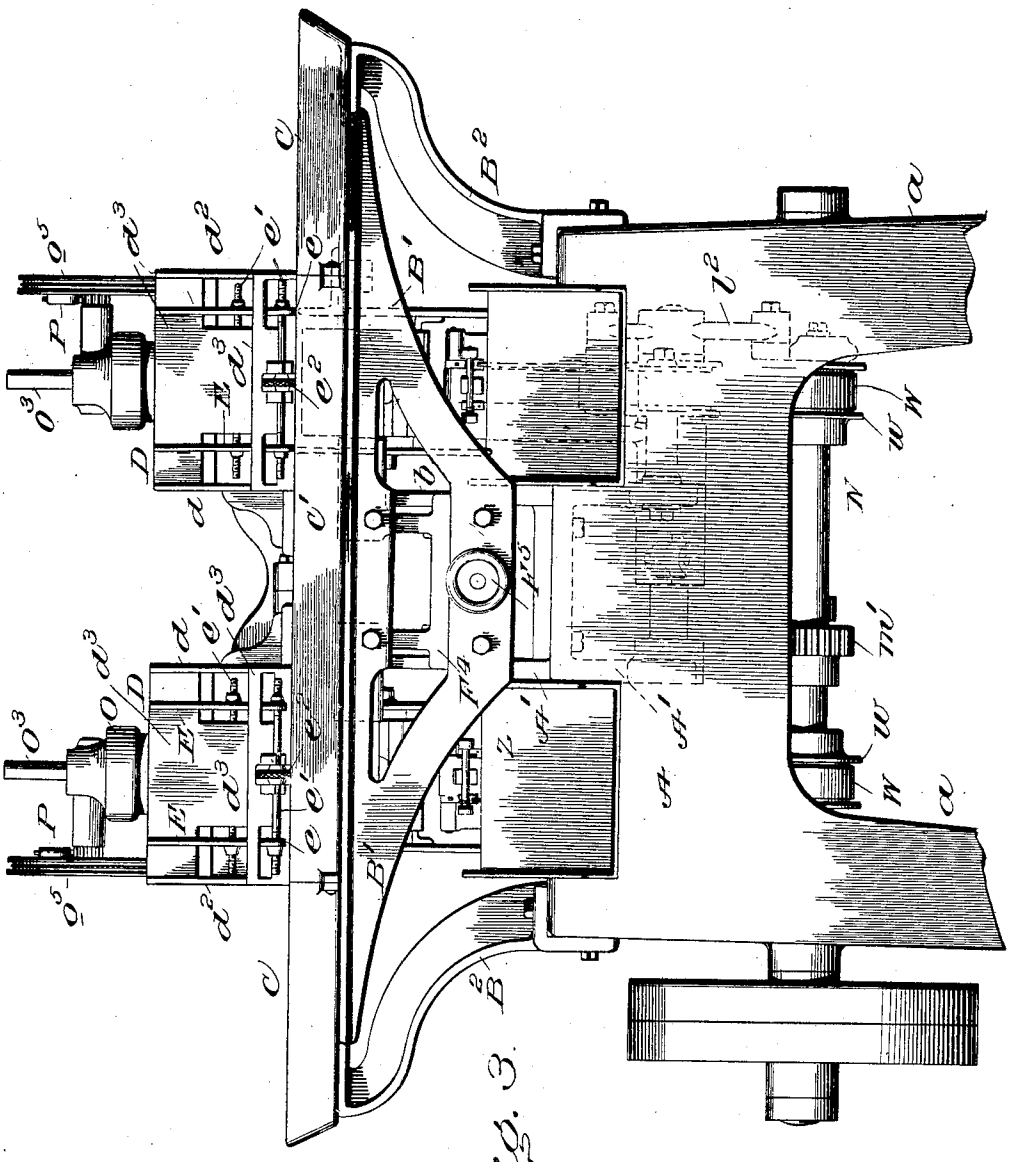

FIG. 3.

Witnesses:
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By Baldwin, Davidson & Wright
his Attorneys

No. 762,681. PATENTED JUNE 14, 1904.

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NO MODEL. 14 SHEETS—SHEET 4.

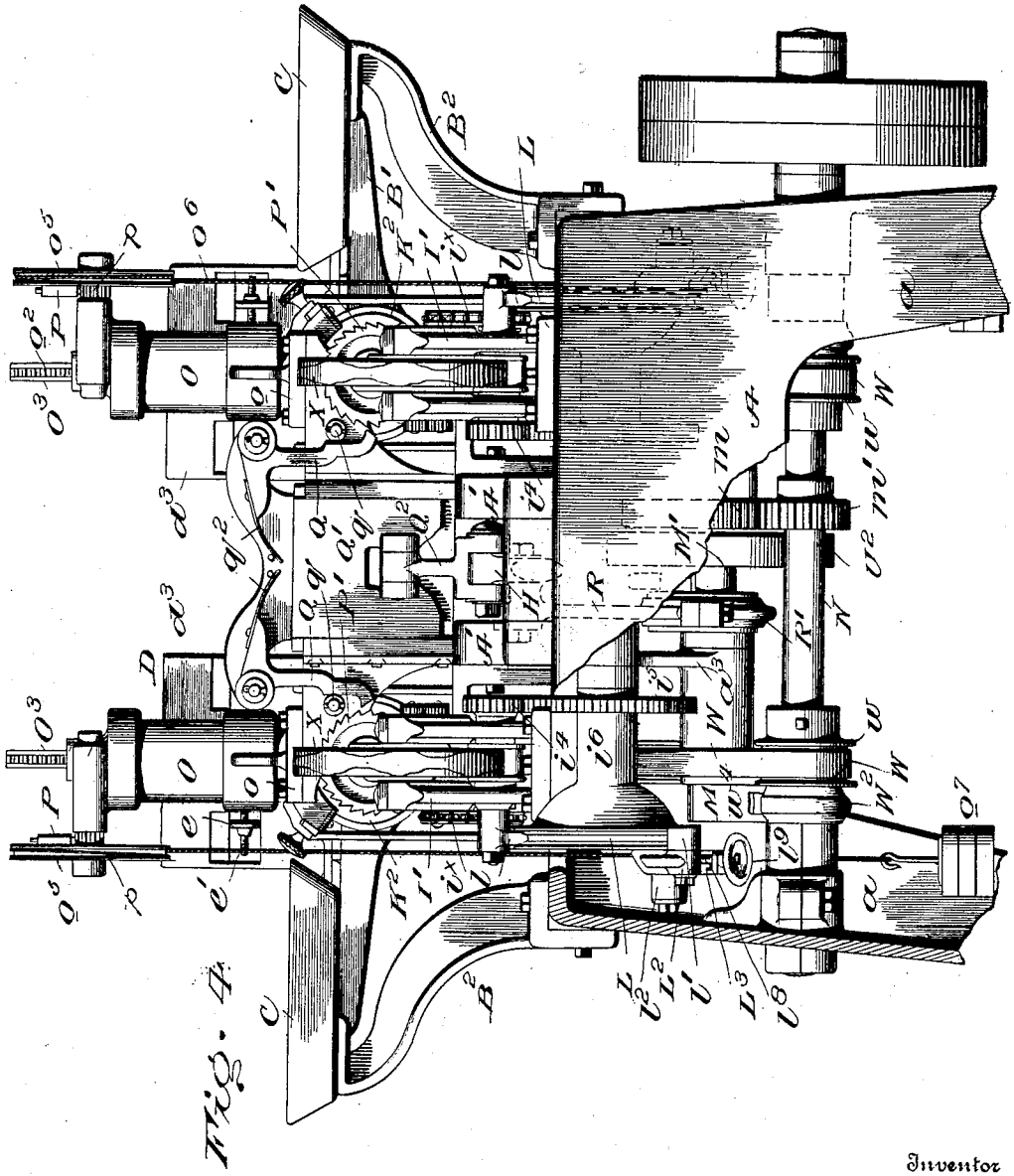

Fig. 4.

Witnesses

Jno. Bruce

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No. 762,681. PATENTED JUNE 14, 1904.

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NO MODEL. 14 SHEETS—SHEET 5.

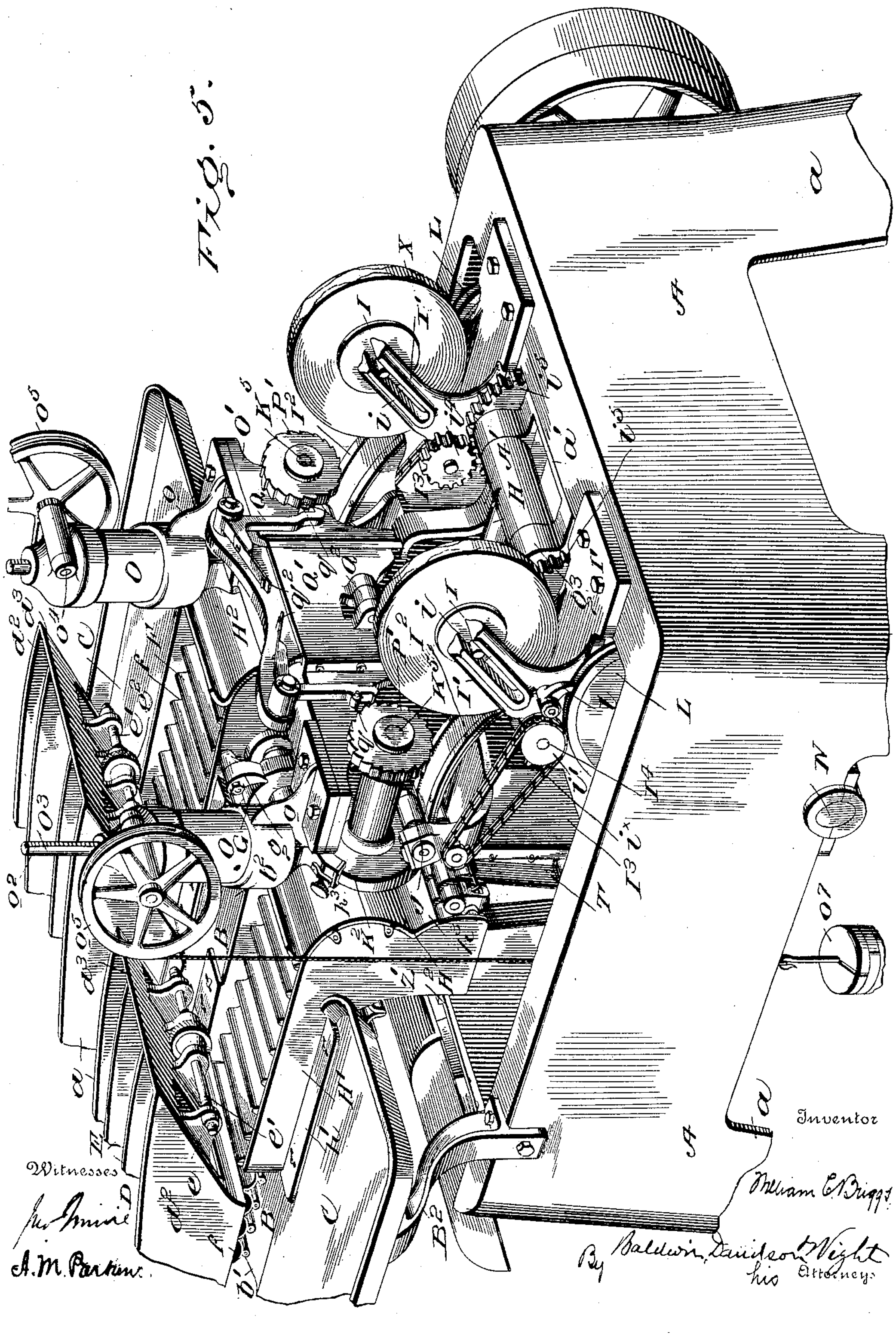

Fig. 5.

Witnesses

Inventor

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By Baldwin, Davidson & Wight his Attorneys

No. 762,681. PATENTED JUNE 14, 1904.

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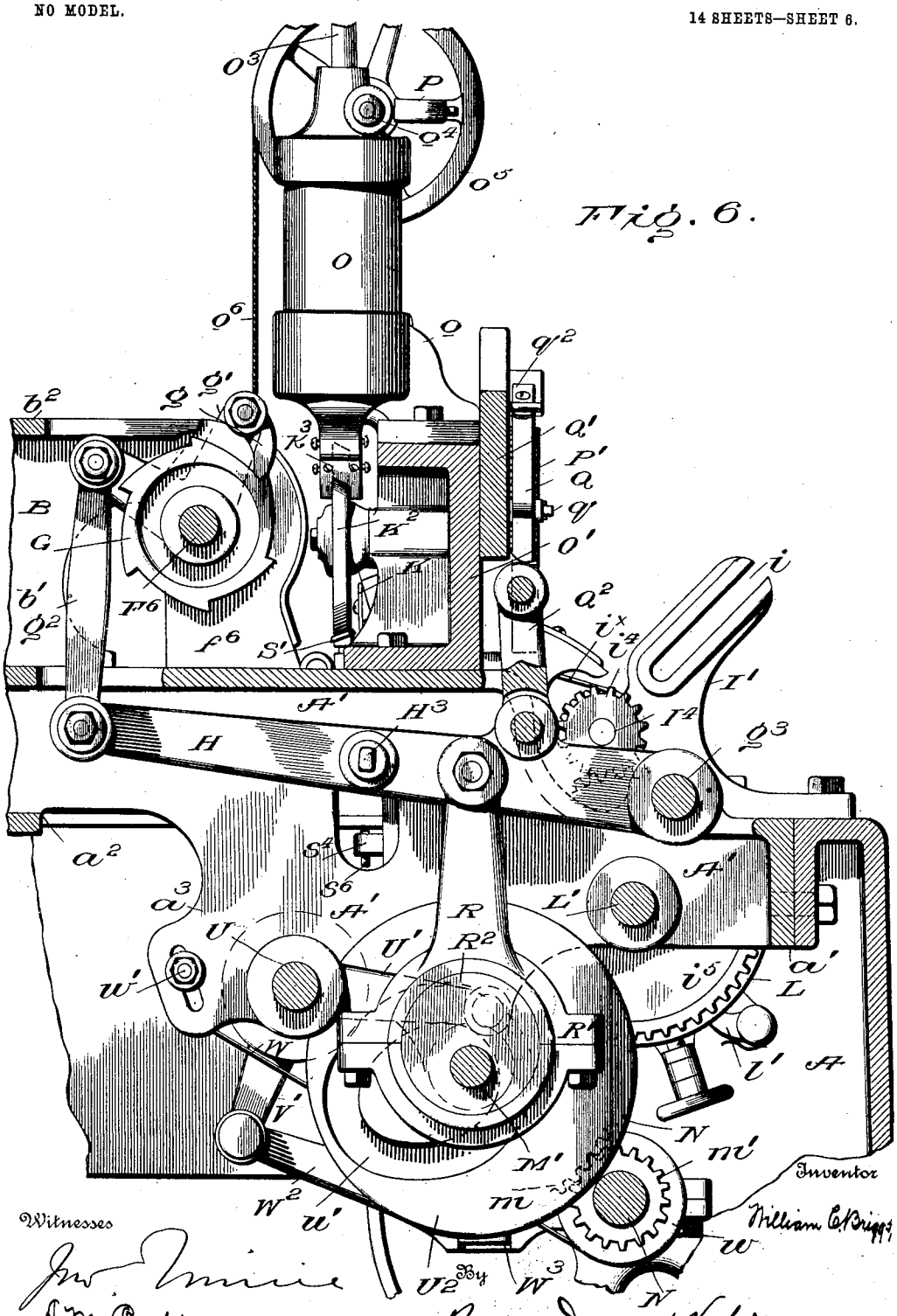
NO MODEL. 14 SHEETS—SHEET 6.

Fig. 6.



No. 762,681. PATENTED JUNE 14, 1904.

W. C. BRIGGS.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 7.

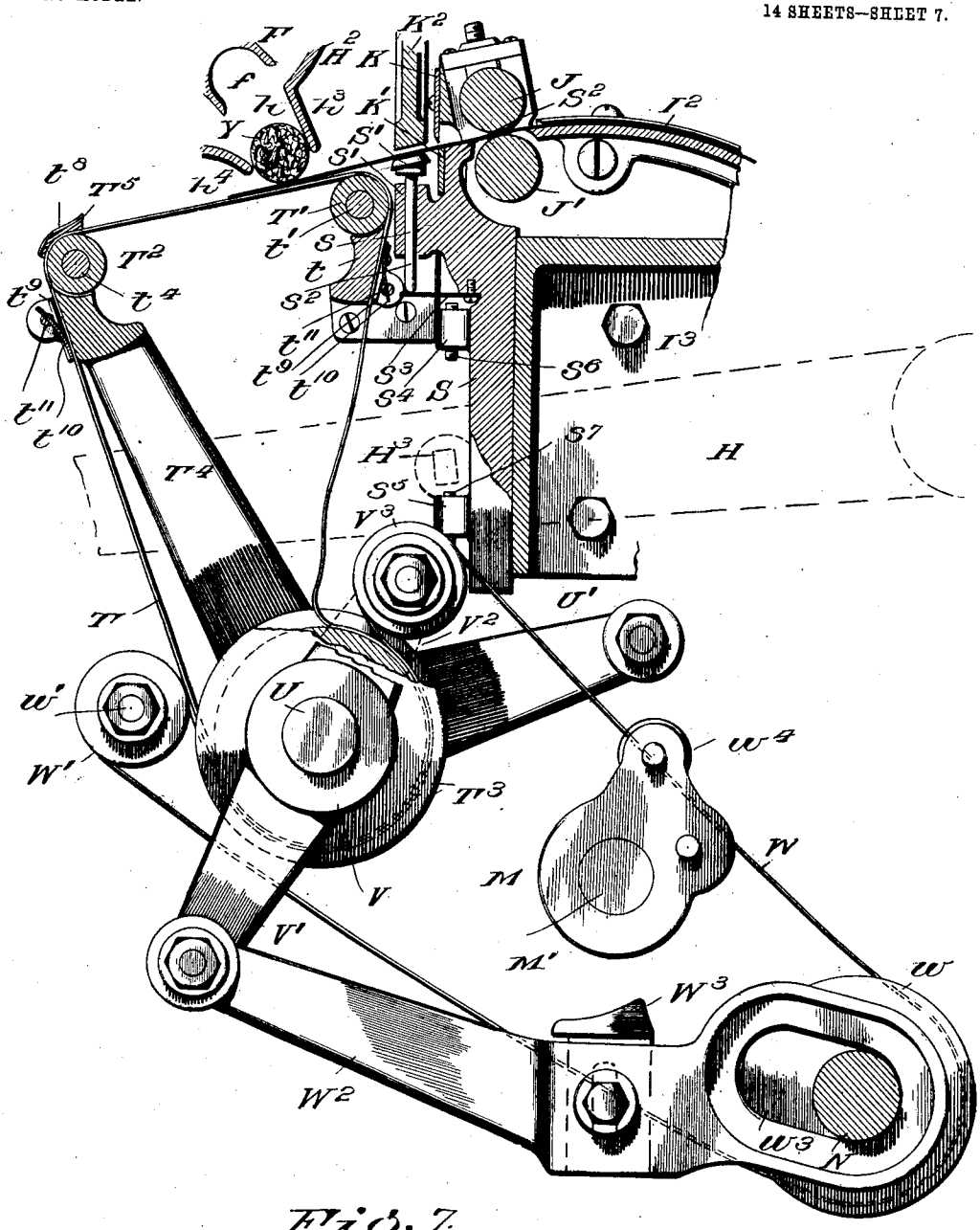


Fig. 7.

Witnesses

A. M. Parkins.

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His Attorneys

No. 762,681.

PATENTED JUNE 14, 1904.

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MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL.

14 SHEETS—SHEET 8.

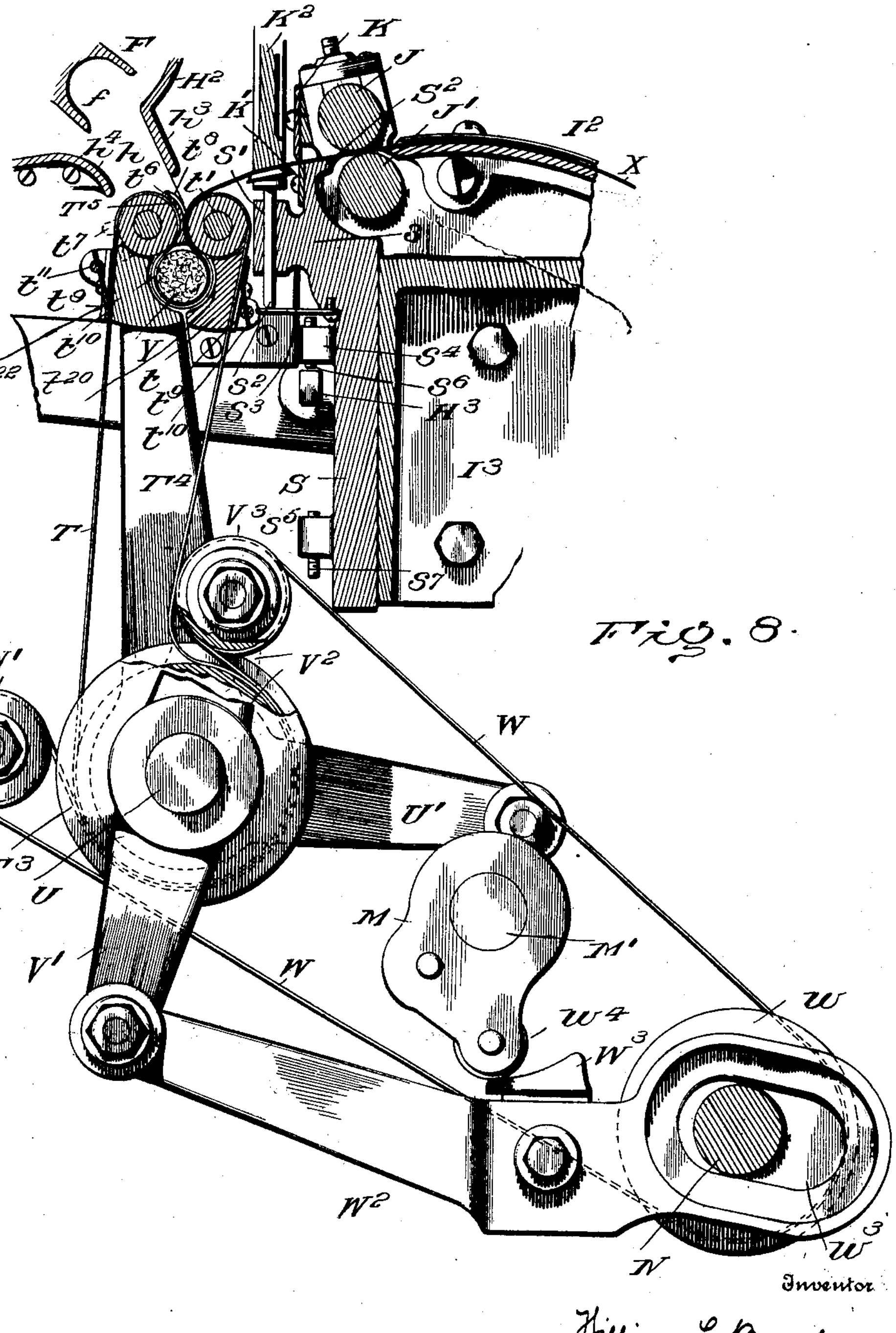

Fig. 8.

Inventor

William C. Briggs

Witnesses

Jno. [illegible]

A. M. Parkins

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

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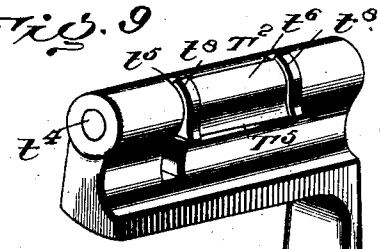
APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 9.

Fig. 9



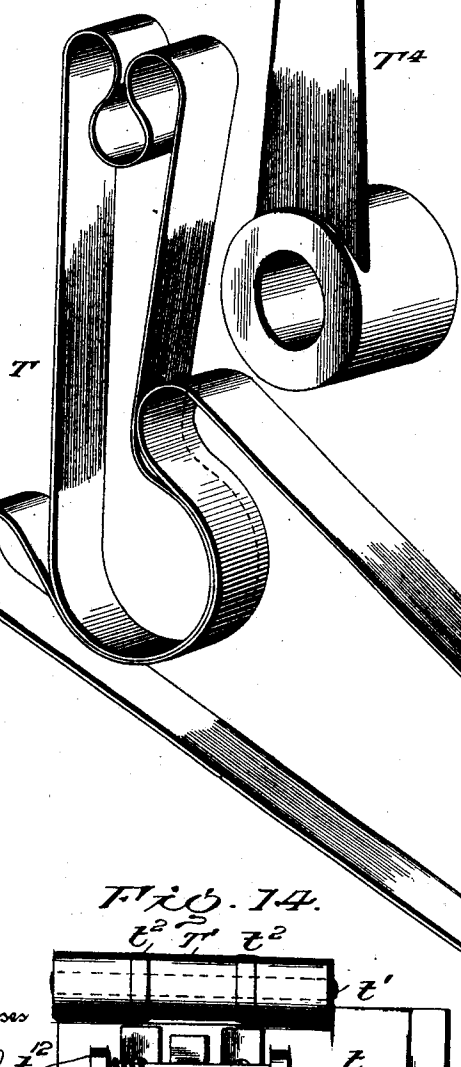


Fig. 11

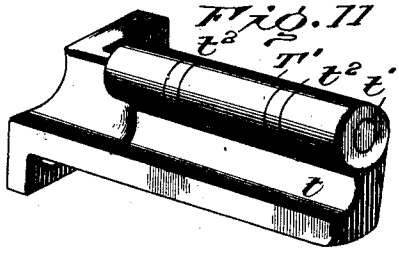


Fig. 12.

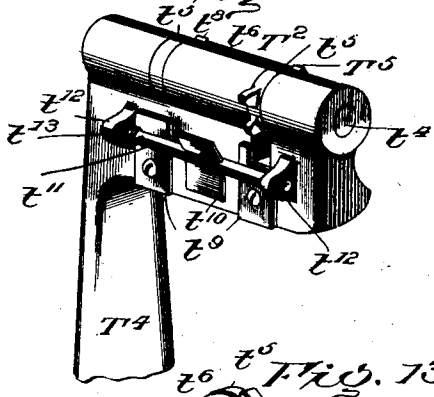


Fig. 13.

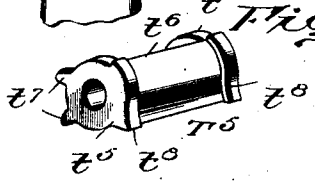
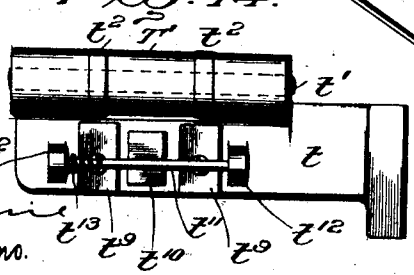


Fig. 10.

Fig. 14.



Witnesses

A. M. Parkins.

Inventor

William C. Briggs,

By Burton Davidson & Wright

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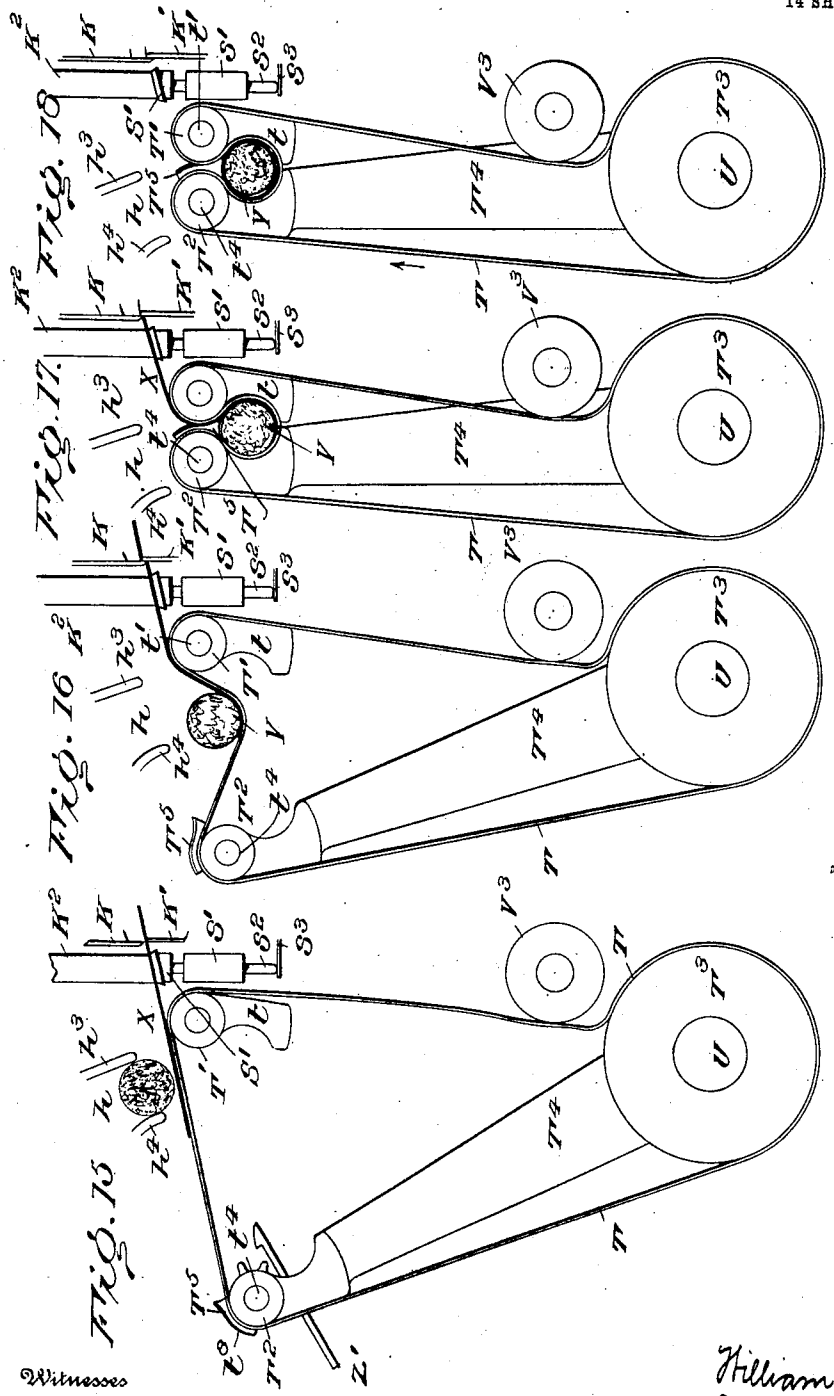
No. 762,681. PATENTED JUNE 14, 1904.

W. C. BRIGGS.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 10.



Witnesses

Inventor

William C. Briggs,

By Baldwin, Davidson & Wright

his Attorneys

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

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NO MODEL. 14 SHEETS—SHEET 11.

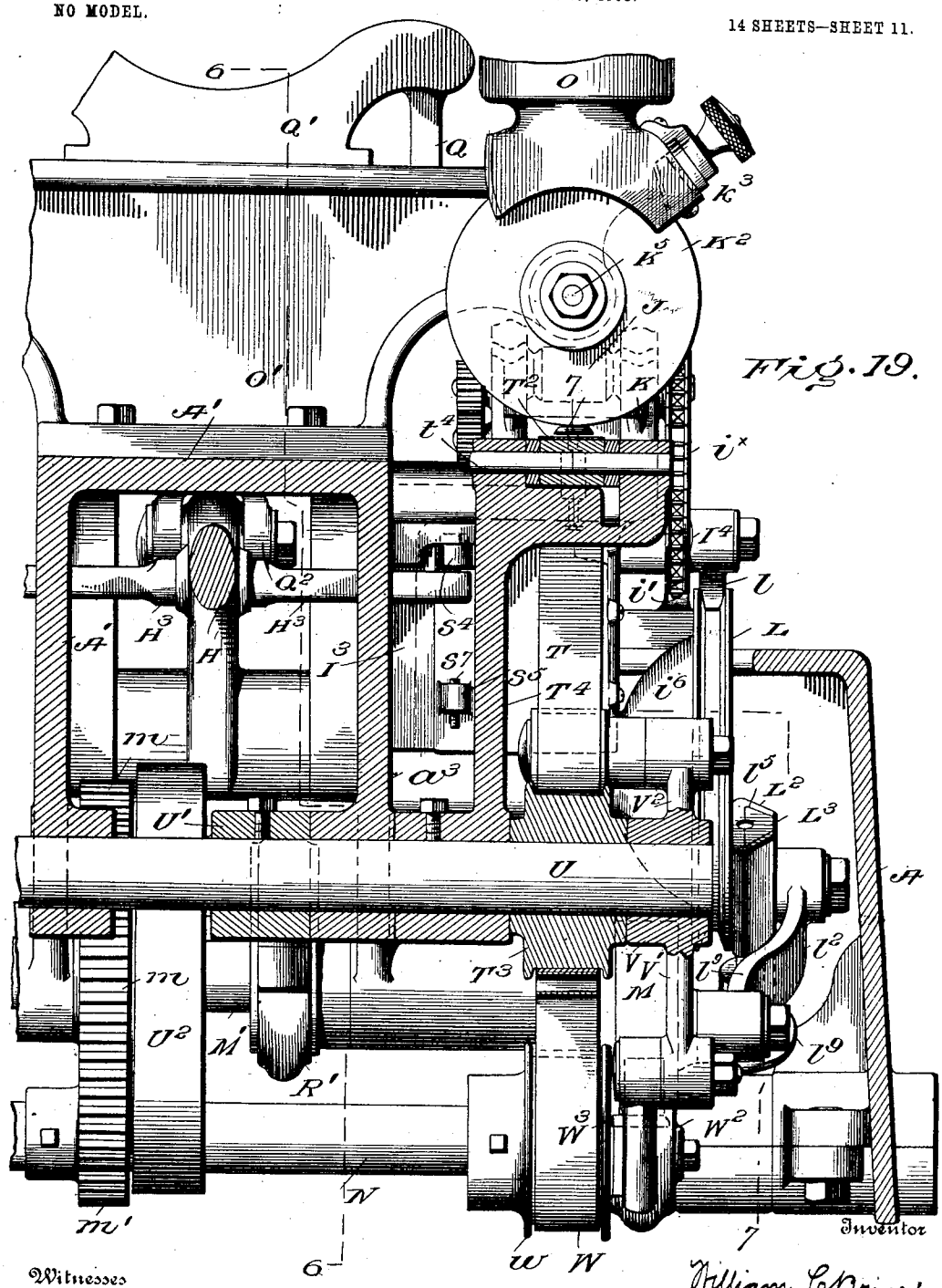

Fig. 19.

Witnesses

Jno. Purcell

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No. 762,681. PATENTED JUNE 14, 1904.

W. C. BRIGGS.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 12.

Fig. 20.

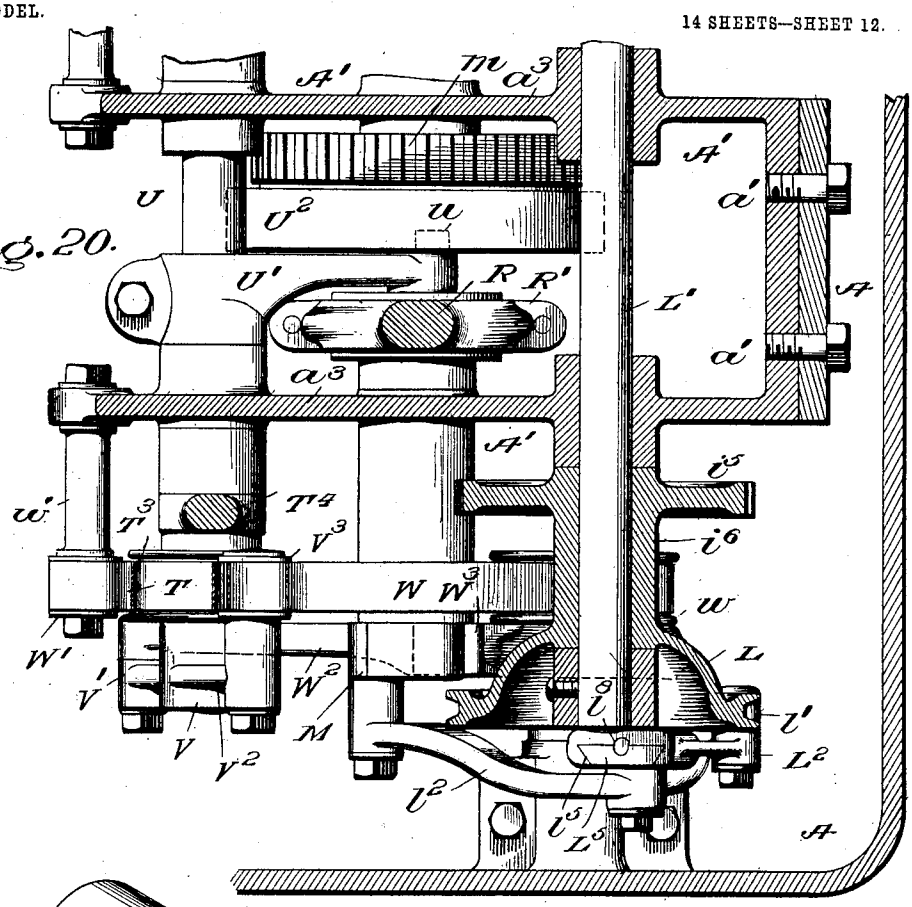


Fig. 21.

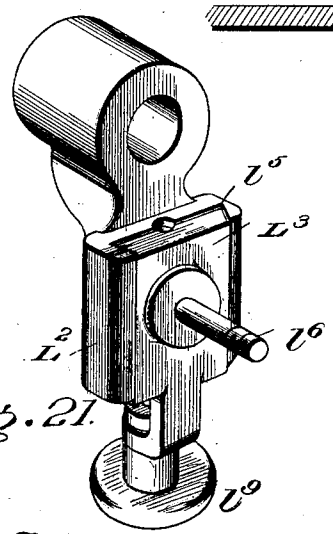
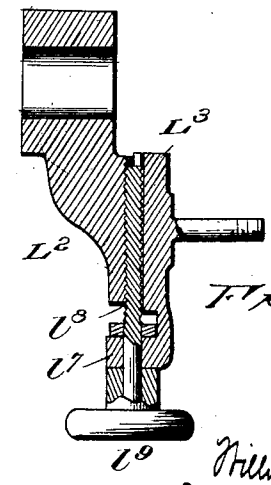


Fig. 22.



Witnesses.

A. M. Parkins.

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W. C. BRIGGS.

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NO MODEL. 14 SHEETS—SHEET 13.

Fig. 23.

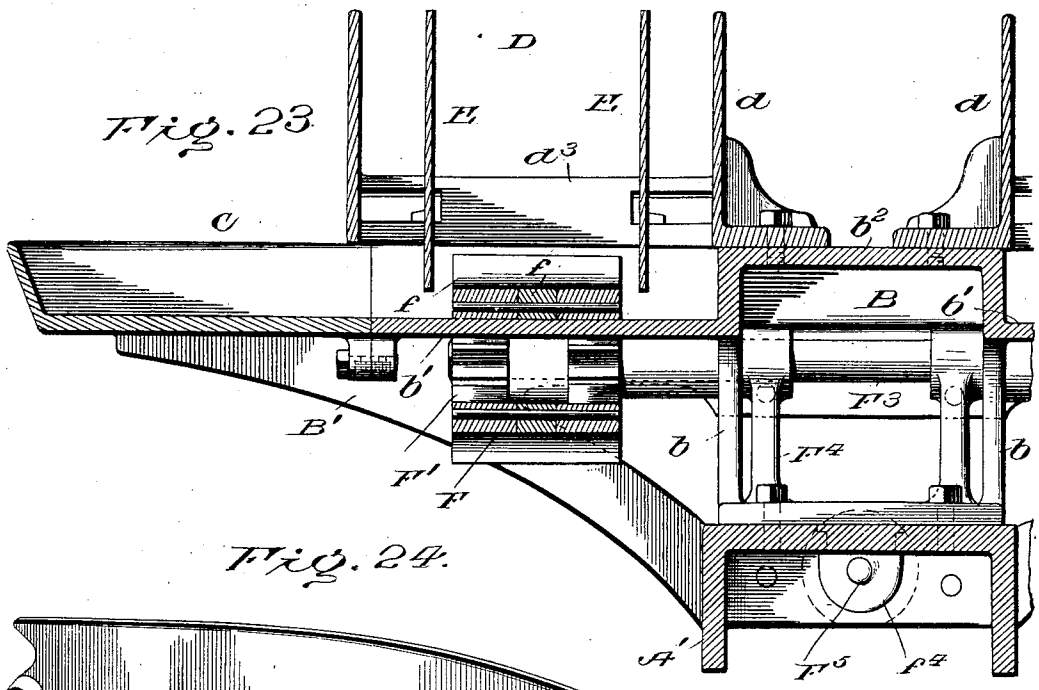


Fig. 24.

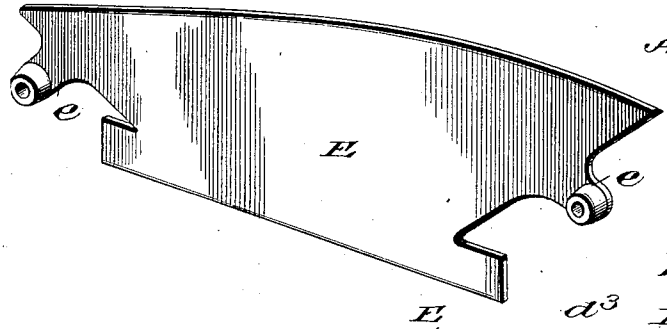
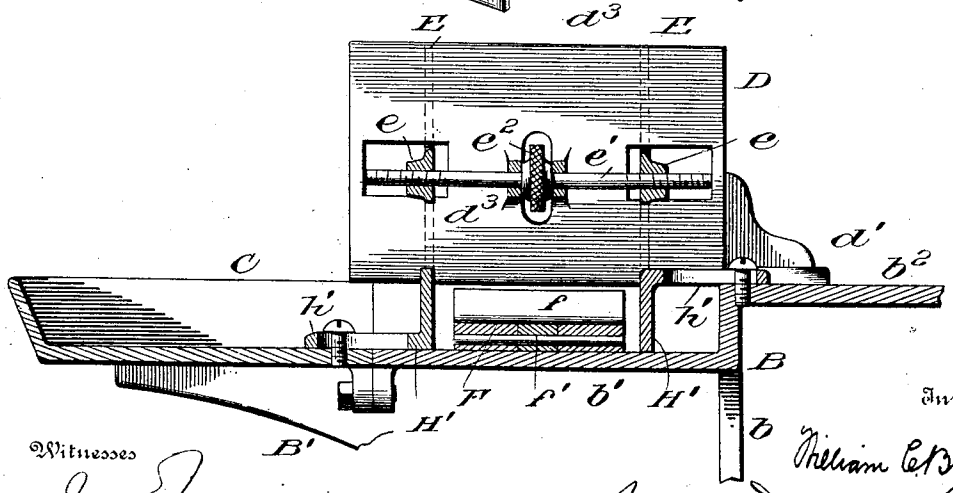


Fig. 25.



Witnesses

Jno. Irvine

A. M. Parkins.

Inventor

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By Baldwin Davidson & Wright

his Attorneys

No. 762,681. PATENTED JUNE 14, 1904.

W. C. BRIGGS.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

APPLICATION FILED MAR. 27, 1903.

NO MODEL. 14 SHEETS—SHEET 14.

Fig. 26.

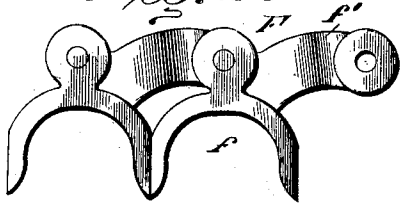


Fig. 27.

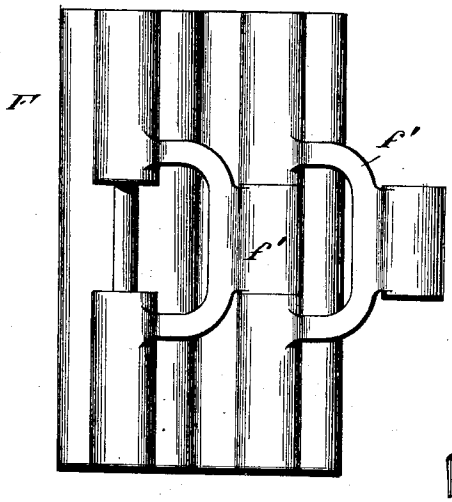


Fig. 28.

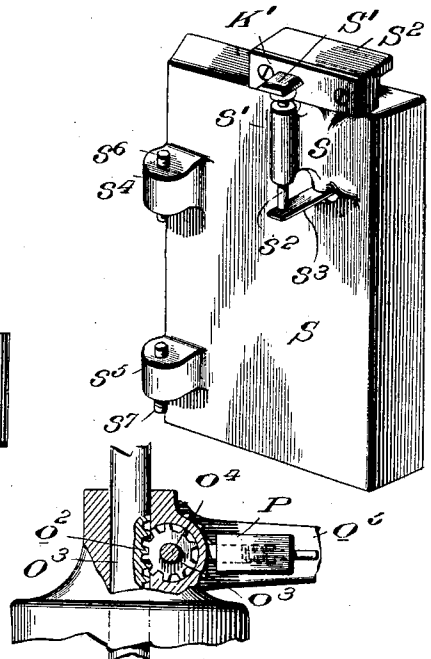


Fig. 29.

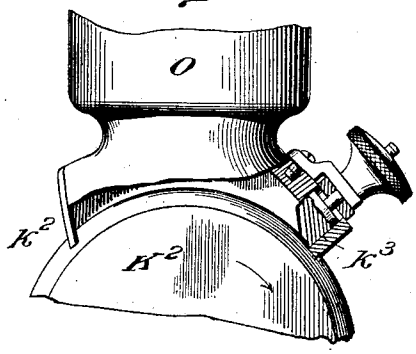
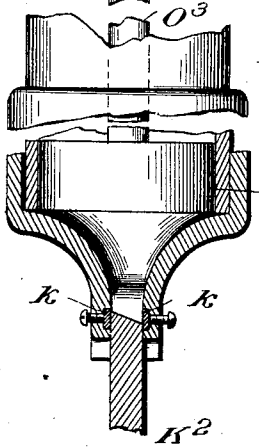


Fig. 30.



Witnesses

A. M. Parkins.

Inventor

William C. Briggs,

By Baldwin, Davidson & Wright

his Attorneys

No. 762,681. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM C. BRIGGS, OF WINSTON-SALEM, NORTH CAROLINA.

MACHINE FOR APPLYING BANDS OR LABELS TO CIGARS OR OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 762,681, dated June 14, 1904.

Application filed March 27, 1903. Serial No. 149,836. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. BRIGGS, a citizen of the United States, residing at Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Machines for Applying Bands or Labels to Cigars or other Articles, of which the following is a specification.

The primary object of my invention is to provide a machine for applying to cigars the small bands or labels often used, especially on the higher grades of cigars. So far as I am aware no machine has heretofore been made for this special purpose, although many machines have been patented for applying bands and labels of various kinds and sizes to cans, bottles, boxes, and the like.

While my primary object is to provide a machine for applying bands or labels to cigars, the machine which I have produced contains many features of construction which may be employed in machines for applying labels and the like to bottles, cans, and many other articles or bundles of articles. In fact, without material change or with very slight modification my machine may be adapted to operate on other articles than cigars. This will more fully appear after the description of the machine is fully understood. For the present I will confine the description to mechanism especially adapted for applying bands or labels to cigars.

Unlike bottles and cans, cigars are of small diameter and are comparatively soft, yielding, and somewhat brittle, necessitating care in handling, and as the presence of paste on the tobacco is undesirable provision must be made for applying the paste to the labels and not to the cigars in the manner that it is often applied to bottles and cans. Furthermore, as it is customary to remove the band or label from a cigar before it is smoked the label-applying mechanism must be such that the band will be wound around the cigar without being made to adhere thereto so tightly that it cannot be easily slipped off endwise.

In carrying out my invention in the way now best known to me I provide a strip or ribbon of labels of indefinite length carried by a spool or reel which is mounted in such manner that the labels can be drawn from the reel by feed devices acting on the end label, and these devices project the end label across the path of a paste-applying wheel, which at the proper time applies paste to the inner end of the label, which is moved up against the wheel when its inner or rear end has assumed the proper position relatively to the wheel. Immediately after the paste is applied the front or end label is separated from the others while still being clamped against the paste-wheel, and at this time the label projects below the mouth of the cigar-feeding mechanism and above the cigar-wrapping mechanism, which latter consists of an endless belt passing around three rollers, two of which are arranged close together below the mouth of the cigar-feeding mechanism, while the third is arranged a considerable distance below the other two. One of the upper rollers is carried by a swinging arm which when swung in one direction straightens the belt horizontally below the cigar-feeding mechanism to receive the label and cigar; but when moved in the opposite direction the belt is allowed to drop or sag between the upper rollers and form a pocket into which the cigar is allowed to fall, carrying with it a label from which the band is formed. When the rollers are brought close together, the cigar is surrounded for the most part by the belt, and a portion of the label is inclosed in the pocket around the cigar. When the cigar and label are thus arranged in the pocket, the belt is moved and the label is wrapped around the cigar, the outer end of the label containing the paste being caused to overlap the opposite end of the label and to adhere thereto. Provision is made for preventing the paste-carrying end of the label from coming in contact with the belt and for holding the leading end of the label in contact with the cigar until it is overlapped and pasted. The device used for this purpose consists of a guard or shield which when the pocket is closed covers the inner upper portion of the belt next the swinging roller and holds the label out of contact with the belt while the label is being drawn into the pocket. Inasmuch as the labeled or banded cigar is discharged over the swinging roller, the guard

is made movable relatively to the roller in such manner that it swings away from it and allows the cigar to pass over it. The guard or shield is so formed that the leading end of the label is prevented from passing out between the rollers and is caused to lie close to the cigar while the latter is being revolved. The wrapping-belt is driven by means of another belt having frictional contact therewith. This belt is driven from the power-shaft and is provided with means for tightening and loosening it in such manner that at times it is idle and permits the wrapping-belt to remain stationary, while at other times it causes the wrapping-belt to move.

I have only indicated some of the steps in the operation of banding cigars and have only outlined some of the general features of construction. These will be hereinafter more fully explained.

In the accompanying drawings, Figure 1 shows a top plan view of my improved labeling-machine with parts of the trays broken away. Fig. 2 shows a longitudinal section thereof on the line 2 2 of Fig. 1, the lower portion of the main supporting-frame, however, being omitted. Fig. 3 shows a front elevation of the machine. Fig. 4 shows a rear elevation with parts broken away in order to better illustrate other parts. Fig. 5 is a perspective view of the rear portion of the machine. The remaining views are on an enlarged scale. Fig. 6 shows a vertical section on the line 6 6 of Fig. 19, illustrating particularly the mechanism for actuating the cigar-feeding devices and the means for operating the pasting devices. Fig. 7 shows a section on the line 7 7 of Fig. 19 and illustrates particularly the manner of feeding labels to the wrapping devices, the manner of opening and closing the wrapping devices, and the means for driving the wrapping-belt. Fig. 8 is a view similar to Fig. 7 with the parts in a different position. Fig. 9 is a perspective view of the swinging roller-carrying arm forming part of the wrapping devices. Fig. 10 is a diagram showing the form of the wrapping-belt and the manner in which it is driven by its driving-belt. Fig. 11 is a perspective view of one of the rollers forming part of the wrapping devices and the stationary support in which it is mounted. Fig. 12 is a perspective view of one of the rollers of the wrapping devices with certain parts connected therewith. Fig. 13 is a perspective view of the guard or shield carried by the swinging arm of the wrapping devices. Fig. Fig. 14 is a detail view of the roller shown in Fig. 11, and this figure also shows other parts associated with said roller. Figs. 15 to 18 are diagrams illustrating the manner in which the wrapping devices receive labels and cigars and wrap the former around the latter. Fig. 19 is a detail view in section on the line 19 19 of Fig. 2 looking in the direction of the arrow. Fig. 20 is a view in horizontal section on the line 20 20 of Fig. 2. Fig. 21 is a perspective view of part of the mechanism for actuating the label-feed mechanism. Fig. 22 shows a vertical central section through the devices shown in Fig. 21. Fig. 23 is a local section taken at the front end of the machine on the line 23 23 of Fig. 2. Fig. 24 is a perspective view of one of the adjustable plates employed in the hoppers of the cigar-feed mechanism. Fig. 25 shows a local section on the line 25 25 of Fig. 2. Fig. 26 is a detail view showing portions of the endless carrier which feeds the cigars to the wrapping devices. Fig. 27 is a plan view of the devices shown in Fig. 26. Fig. 28 is a perspective view of a vertically-moving slide carrying one member of the label-cutting devices and a table which presses the label against the paste-wheel. Fig. 29 is a detail view of a portion of the pasting mechanism. Fig. 30 is a view showing portions of the pasting mechanism.

The main supporting-frame of the machine A is provided with legs or standards a, and this frame supports a longitudinal frame-piece A′, which extends from front to rear of the machine. This frame-piece is U-shaped in cross-section and serves to support many of the operating parts of the machine. It is bolted to a downwardly-projecting flange at the rear portion of the main frame, as indicated at a', and it rests on the top of the front portion of the main frame at a^2. This longitudinal frame-piece also has downwardly-projecting flanges a^3, which extend through the top opening of the main frame and serve to support parts of the mechanism. The front portion of the frame-piece A′, as indicated in Fig. 2, presents a flat upper surface on which is supported a casting B, comprising standards b, attached to the top of the frame-piece A′, laterally-projecting wings b', and a raised U-shaped central portion b^2. To the outside edges of the wings b' are attached trays C, which may be filled with cigars preparatory to being placed in the hoppers D. Another tray, C′, extending across the front of the machine, connects with the trays C and may be used for the same purpose.

The casting B is prolonged forwardly from the wings b', and it is attached to a wide front piece B′, which latter is also attached to the longitudinal frame-piece A′ in the manner indicated in Figs. 2 and 3. The front piece B′ is attached to and supports the trays C C′ in the manner indicated in Figs. 1 and 2, while the trays C are supported at their rear ends by brackets B^2, attached to the main frame A in the manner indicated in Figs. 3 and 5. To the top of the raised portion b^2 of the casting B are attached two vertical plates d, which constitute the inner sides of two hoppers D on opposite sides of the machine. The flanges d' of these plates are clearly seen in Fig. 1

and are permanently attached to the casting B in the manner indicated in this figure. The side plates d are connected with outside plates d^2 by front and rear plates d^3, thus forming on each side of the machine a hopper with side and front and rear walls. The upper edge of each hopper is preferably inclined, as indicated in Fig. 2, and the front and rear walls converge inwardly in order to cause the cigars to better engage the carriers hereinafter referred to. Within each hopper are arranged two adjustable plates E, formed with lugs e at front and rear that project through openings in the front and rear plates of the hoppers. These openings are shaped to guide the lugs, and the lugs have threaded openings through which extend screw-rods e', each of which is provided with a small adjusting-wheel e^2. Each screw-rod is reversely threaded at its opposite ends, so that by turning the adjusting-wheels e^2 the plates E may be adjusted toward and from each other to vary the width of space between them to accommodate cigars of different lengths, it being desirable in order to effect a uniform delivery of the cigars to the carriers that they shall be held strictly parallel with each other and parallel with the pockets of the carriers. Below each hopper is arranged an endless carrier F, consisting of a series of connected links having pockets f, each of suitable size and shape to receive and carry a cigar. The links of the carriers are preferably of the shape shown particularly in Figs. 2, 26, and 27, each link comprising a pocket portion f and a connecting-arm f'. The manner of connecting the links is clearly shown in the drawings and needs no further description. The carrier may be of course formed in other ways. Each carrier passes around suitably-formed sprocket-wheels F′ and F². The front sprocket-wheels F′ of the two carriers are secured to a shaft F³, mounted in bearings at the upper end of brackets F⁴, the base of which has a downwardly-projecting lug f^4, extending through a longitudinal slot in the frame-piece A′ and engaged by a horizontally-adjustable screw F⁵, which passes through the front frame-piece B′ and the front of the longitudinal frame-piece A′. By adjusting the screw F⁵ the bracket F⁴ may be moved longitudinally to regulate the tension of both carriers simultaneously. The rear sprocket-wheels F² are attached to a shaft F⁶, mounted in standards f^6, connected with the longitudinal frame-piece A′, and this shaft F⁶ carries a ratchet-wheel G, which is engaged by a pawl g, carried by a bell-crank lever g', which latter is connected by a link or pitman g^2 with a vertically-oscillating lever H, arranged inside the flanges of the frame-piece A′ and pivotally connected therewith at g^3.

As the lever H is moved vertically the ratchet mechanism is operated and both carriers F are simultaneously moved in such manner as to pass below the hoppers from the front toward the rear end of the machine and to deliver cigars one at a time through the chutes h to the wrapping devices below them. Inasmuch as the hoppers D cover only a portion of the carriers, I employ adjustable side pieces H′ for closing the ends of the pockets in the carriers between the hoppers and the discharge-chutes h. These side plates are formed with flanges h', which are adjustably connected in the manner clearly shown to the trays C and to the raised portion b^2 of the casting B. The side plates H′ may be adjusted in opposite directions to conform to the adjustments given at any time to the plates E, the arrangement being such that the cigars may be held from endwise movement in the pockets by means of the plates E and H′ while traveling toward the discharge-chutes h.

End plates H² are provided at the rear end of each carrier, suitably curved to allow the cigars while in the pockets to pass downwardly without falling out until they arrive at the chutes h, and in order that the plates H′ may be adjusted properly each end plate H² may be secured to one of the side plates H′ and overlap the other. Each end plate H² is formed with a downwardly-projecting portion h^3, arranged in rear of a guide-piece h^4, these parts h^3 h^4 containing between them the discharge-chutes for the cigars.

It will be understood, of course, that the machine illustrated is intended to wrap two cigars simultaneously. For this reason most of the mechanism is duplicated, although some of the mechanism may be employed in connection with both sets of feeding and wrapping devices.

The labels are made in the form of strips or tapes of indefinite length wound on spools I, the shafts of which are received in open bearings i, formed in brackets I′, attached to the main frame A. While each label is distinct in itself—that is, each contains the desired design and printed matter—they are all permanently connected, there preferably being no perforations or indentations between the labels, a suitable cutter being provided to properly separate them, the feed mechanism being such as to advance the strips of labels properly so that the cutter will operate to sever labels from the strips at the proper points. The strips pass from the spools I, through guides I², to feed-rollers J J′, thence between the knives K K′, and thence beneath the paste-wheels K² to the wrapping devices. The guides I² are mounted on the top of brackets I³, attached to the longitudinal frame-piece A′, and the feed-rollers J J′ are mounted in bearings projecting upwardly from the brackets I³. The upper rollers are preferably arranged in adjustable yielding bearings, while the lower rollers are connected by sprocket-chains $i^\times$ with sprocket-wheels i' on shafts I⁴, each carrying a pinion i^4, engaging a gear

l^5, formed on a hub l^6, which latter is formed with a peripherally-grooved wheel L. Each hub l^6 is mounted on a shaft L′, but is free to turn thereon. The shaft L′ is suitably supported in bearings formed in the longitudinal frame-piece A′.

Each wheel L is prevented from moving prematurely or in the wrong direction by means of a pawl l, and each wheel is moved in the proper direction by means of a pawl l', carried by a frame L^2 on each end of the shaft L′. Each frame L^2 is adapted to swing back and forth to a limited extent about the axis of the shaft L′ and to move the wheels L the proper amount each time that they move forward. The frames L^2 are connected, by means of pitmen l^2, with cranks M on opposite ends of a shaft M′, which extends horizontally across the machine, being mounted in bearings in the frame-piece A′. This shaft M′ carries a spur-wheel m, gearing with a pinion m' on the power-shaft N. The pitman l^2 connects with an adjustable portion L^3 of the frame L^2, by which means the amount of movement given to the wheel L may be regulated. Figs. 21 and 22 show the devices for obtaining this adjustment. As there shown, the frame L^2 is provided with a recess l^3, in which fits the adjustable portion L^3, consisting of a sliding plate carrying a wrist-pin l^6 for the pitman and having a laterally-projecting lug l^7, through which extends a screw-rod l^8, carrying an adjusting-wheel l^9. The frame L^2 and the slide L^3 are recessed to allow the screw l^8 to pass upwardly between them. The recess in the frame L^2 is threaded, while the recess in the slide L^3 is not threaded. In this way the slide L^3 may be conveniently adjusted radially with reference to the axis of the shaft L′ and when once adjusted will remain in the desired position. It will thus be seen that a very delicate adjustment may be obtained for the devices which actuate the rolls which feed the labels. Wheels driven by pawls engaging frictionally therewith are capable of much nicer adjustment than could be obtained where toothed gearing is employed in place of them.

The paste is contained in receptacles O, mounted on brackets o, attached to the opposite ends of the vertical frame-piece O′, which in turn is supported on the longitudinal frame-piece A′. No particular novelty is claimed for the paste-receptacle shown, and therefore their details of construction need not be elaborately explained. As shown, however, each receptacle O contains a piston O^2, having a vertical rod O^3 provided with a vertical series of teeth o^2, engaging a pinion o^3, attached to a shaft o^4, on the outer end of which is a pulley o^5, around which passes a rope o^6, carrying a weight o^7. The pulley o^5 is loose on the shaft o^4. Each pulley carries a pawl or detent P, engaging a ratchet p, fast on the shaft o^4. Normally the weights tend to press the pistons downward, so as to force the paste downwardly through the discharge-openings in the bottoms of the receptacles. As the pulleys revolve or turn about their axes the detents cause the ratchet-wheels to be turned and through the mechanism described cause the pistons to descend. By removing the weighted ropes from the pulleys the pistons can be easily raised by hand. The weights can be raised while the machine is in operation by withdrawing the pawls P and holding the pistons down by hand. Each paste-receptacle O has a relatively long narrow discharge-opening at the bottom, into which the paste-wheel K^2 projects. The edge or periphery of the paste-wheel is preferably beveled or inclined, as indicated in Fig. 30, and adjustable wearing-plates k are employed on opposite sides of the discharge-opening in the paste-receptacle, and they bear against the opposite sides of that portion of the wheel which enters the mouth of the receptacle. The wheels revolve in the direction indicated by the arrow in Fig. 29. One end of the discharge-orifice is closed at k^2, and the opposite end is provided with an adjustable scraper or doctor k^3. The paste-wheels K^2 are each secured to a shaft K^5, mounted in bearings in the vertical frame-piece O′ and carrying on its rear end a ratchet-wheel P′. These ratchet-wheels P′ are engaged by depending pawls Q, carried by a vertically-moving slide Q′, guided in the frame-piece O′. Pins q, projecting rearwardly from the frame-piece O′, engage the pawls at times and hold them out of engagement with the ratchet-wheels P′. When the frame Q′ is depressed or lowered to its full extent, the pawls Q are free to engage the ratchet-wheels, and as the frame Q′ rises the ratchet-wheels are moved, and the paste-wheels are correspondingly moved; but after the frame Q′ has been partially raised the pawls come in contact with the pins q and are disengaged from the ratchet-wheels, thus causing the paste-wheels to stop. It will be observed by reference to Fig. 4 that the pawls Q have their edges next to the pins q formed in different vertical planes for the purpose of allowing them to engage and separate from the ratchets in the manner before described.

The frame Q′ is connected by means of a link Q^2 with the vertically-oscillating lever H, before referred to. This is clearly shown in Fig. 6. There is only one lever H, and this serves to actuate the slide Q′, which is connected with both pawls and operates the paste-wheels on opposite sides of the machine. The pawls Q are provided with springs q^2, which press them toward the ratchet-wheels and cause them to engage therewith when not held out of engagement by the pins q.

The lever H is pivotally connected with a vertical lever R, connected with an eccentric-strap R′, surrounding an eccentric R^2, at-

tached to the shaft M′. This eccentric is located near the central vertical plane of the machine, as shown in Fig. 4, and is of such form as to oscillate the lever H vertically in the proper manner to give the proper relative movements at the proper times through the connections before described to the cigar carrying or feeding mechanism, the paste-wheel-actuating mechanism, and the label-feed devices. The lever H also operates other mechanism which will be next described.

The lower knives K′ of the cutters are carried by vertically-moving slides S, guided in the brackets I^3. Each slide is formed with a bracket s, having a vertically-perforated boss s', through which extends the stem s^2 of a small table S′, arranged directly under the paste-wheel K^2. The stem s^2 of the table is free to move vertically in the boss; but its lower end rests upon a flat spring s^3, extending forwardly from the slide S. The upper edge of the cutter K′ lies close to the upper surface of a stationary table S^2, carried by the slide S. As the labels X pass from the guides I^2 and feed-rollers J J′ they pass over the tables S^2, between the cutters K K′, and then between the paste-wheels and tables S′. Thence they pass to wrapping mechanism hereinafter described.

Each slide is formed with two lugs s^4 s^5, provided with adjusting-screws s^6 s^7. These lugs are arranged some distance apart, one above the other, and between the lugs of each slide projects an arm H^3, extending transversely from the lever H in the manner indicated in Fig. 19, as well as in other figures of the drawings. The slides S are held by friction, but may be moved up and down when power is positively applied. Any suitable means for producing friction may be employed. When the lever H moves upwardly, the arms H^3 engage the upper screws s^6 and cause the slides S to be raised. When the lever H moves downwardly, it first does so without moving the slides S; but after a time the arms H^3 come in contact with the screws s^7 and move the slides S downward to their lowermost position. Fig. 7 shows one of the slides and parts connected therewith in the lowered position, while Fig. 8 shows the slide and the parts connected therewith raised. When the parts are in the position shown in Fig. 7, the feed-rollers are actuated to feed the labels forward toward the wrapping mechanism, and at this time also the paste-wheels may be turned. After this is done and the lever H has moved to a greater extent upwardly, the slides S are raised, and the tables S′ engage the under sides of the labels and press them against the paste-wheels, which at this time are at rest. The springs s^3 cause the tables S′ to press the labels upwardly with a yielding pressure against the paste-wheels, allowing the labels to be drawn forward between the wheels and tables and to have the paste properly applied. The upward movement of the slides S also causes the cutters to operate. This occurs shortly after the tables S′ engage the labels and before the wrapping mechanism is put into operation to draw the labels forward.

As the machine is constructed to apply labels to two cigars simultaneously, two sets of wrapping mechanism are employed on opposite sides of the machine. Each wrapping-belt T passes over three rollers, T′, T^2, and T^3. The rollers T′ T^2 are some distance above the roller T^3 and are of smaller diameter than the lower roller. The roller T′ is mounted in a stationary frame t, attached to the main frame in any suitable way. This roller T′ is free to revolve on its shaft t', and this shaft also carries at each end of the roller T′ a smaller roller t^2 for a purpose hereinafter described. Each roller T^2 is carried on the upper end of a swinging arm T^4, secured to a shaft U, mounted in suitable bearings in the frame. The roller T^2 is free to revolve about its shaft t^4, and this shaft also carries a guard or shield T^5 (clearly shown in Figs. 9 and 13) and as there shown consists of two end pieces t^5, connected by a cross-piece t^6. One of the end pieces has teeth t^7, and both end pieces have ribs t^8, which are adapted to bear at times against the rollers t^2. The belt T passes over the rollers in the manner clearly indicated, for instance, in Fig. 15, and it passes between guides t^9 on the support t and on the upper end of the arm T^4. Between each set of guides is arranged a flat plate t^{10}, carried by a shaft t^{11}, mounted in bearings in lugs t^{12}. Each shaft t^{11} carries a spring t^{13}. One end of the spring is secured to the shaft, while the other end is secured to one of the lugs t^{12}. The arrangement is such that the plates t^{10} will bear upon the belts T and prevent them from slipping while the arm T^4 is being swung to form the pocket.

The stationary frame t is formed with a curved recess t^{20}, and the laterally-projecting upper end of the arm T^4 has a corresponding recess t^{22}. When the arm T^4 is swung to the position shown in Fig. 8 and the pocket is formed around the cigar, the pocket will be incased in metal, the walls of the metal casing surrounding the pocket, so that the cigar is held in proper position as the pocket is being formed.

To the shaft U is secured an arm U′, which extends rearwardly from the shaft and carries a pin u, engaging a cam-groove u' in a cam U^2, secured to the shaft M′. By this mechanism the shaft U is oscillated, causing the arms T^4 on opposite sides of the machine to be oscillated to the extent indicated in Figs. 15 to 18, inclusive. The shaft U carries near opposite ends the large rollers T^3, before referred to, about which the belts T pass. These rollers T^3 are loose on the shafts U, and motion is imparted to them and to the belts T in the manner next to be described.

On opposite ends of the shaft U are loosely mounted hubs V, carrying laterally-projecting arms V′ V². The upper arm V² of each hub V carries an idle roller V³, over which passes a driving-belt W. This belt also passes around a pulley *w*, fast on the driving-shaft N, and each belt W also passes around an idle pulley W′, carried by a shaft *w*′, projecting from the frame-piece A′, but adjustable therein in the manner indicated in Fig. 6. Each belt W also passes around the roller T³, but outside the belt T, in the manner indicated in Figs. 7 and 8. The lower arm V′ on each side of the machine is pivotally connected with a frame W², which has an elongated slot *w*³ at its rear end, through which the driving-shaft N extends. In this way each frame W² is supported at its rear end by the driving-shaft, but may move back and forth to a limited extent thereon. Each frame W² carries a vertically-adjustable shoe W³ of the form clearly shown in Figs. 7 and 8, with which engages at times a roller *w*⁴, carried by the crank M. A portion of the upper surface of each shoe W³ is curved concentric with the axis of the shaft M′, so that as the cranks M revolve they may move for a time without giving any movement to the frames W²; but the construction is also such that as the cranks M revolve and engage the shoes W³ they will first move the frames from the position shown in Fig. 7 to that shown in Fig. 8, the frames W³ remaining in the position shown in Fig. 8 for a short time during the wrapping operation, and then after this is completed the rollers *w*⁴ pass out of engagement with the shoes.

By reference to Fig. 7 it will be observed that the belts T and W are slack; but when the frames W² are moved rearwardly to the position shown in Fig. 8 the upper arms V² are moved forwardly, thus tightening the belts T and W, and at this time the belts W and T are revolved, the former being revolved from the driving-shaft and the latter being revolved by reason of the frictional contact which they have with the belts W.

When the wrapping-belts are in the position shown in Fig. 7 and also in Fig. 15, the labels X are projected across the tops of the belts and below the chutes *h*, as indicated. At this time the end labels have been fed forward to their full extent, but have not yet been severed from the strips, and the belts T are stationary. Soon after this the arms T⁴ are moved rearwardly to the position shown in Fig. 16, the end labels are cut off, and the cigars Y fall into pockets formed in the belts. As the arms T are moved farther rearward the pockets are deepened and the cigars are gradually inclosed by the wrapping-belts, the front ends of the labels being also drawn inside the pockets, as indicated in Fig. 17; but up to the time that the parts reach the position shown in Fig. 17 the belts T are not driven by the friction-belts W. Immediately after this, however, the belts are driven, being moved in the direction indicated by the arrow in Fig. 18, causing the end labels to be drawn into the pockets and revolved with the cigars until the labels are wrapped around the cigars, overlapped, and made to adhere. It will be understood that while the labels are being drawn into the pockets they receive paste from the paste-wheels K². It will be observed that the paste is applied to the upper sides of the rear ends of the labels, and hence there is a tendency for the rear ends of the labels to move over against the belts carried by the front rollers T²; but the shields T⁵ prevent this. As will be observed, they come in between rollers T′ and T² and guide the labels in such manner as to hold them out of contact with the belts. It will also be observed that the shield or guard is so formed that it holds the leading end of the label close to the cigar and prevents the label from passing out between the rollers T′ T². After the labels have been wrapped around the cigars a reverse movement to that indicated in Figs. 15 to 18 occurs, the pockets being gradually opened and the wrapped cigars rolled down from the aprons into chutes Z and discharged by said chutes into any suitable receptacles. The cigars have momentum enough to clear the shields T⁵; but it is necessary to move these shields about their axes while the pockets are being opened and closed in order that the belts may be properly operated. For this purpose I provide spring-hooks Z′, attached to the main frame beneath the chutes and adapted to engage the teeth *t*⁷ on the shields. As the arms T⁴ move forward the hooks Z′ engage the teeth and throw the shields forward to the position shown in Fig. 15. Soon after the arms T⁴ begin to move rearwardly the hooks Z′ again engage the teeth *t*⁷ and turn the shields inward and downward to the position shown in Fig. 17, so that they shall lie between the rollers T′ T². In order that the shields may not engage the belts T, so as to impede their free movement, the ribs *t*⁸ of the shields are made to bear against the antifriction-rollers *t*², arranged as indicated in Fig. 11, which rollers are adapted to move independently of the rollers T′.

The mechanism is so organized and the several parts are so arranged and connected that the labels are fed forward and supplied to the wrapping mechanism coincidentally with the supply of a single cigar to each set of wrapping devices. While the wrapped or labeled cigars are being discharged the mechanism is engaged in preparing new labels for other cigars, and these labels are fed to the wrapping mechanism at exactly the right time to enter it slightly in advance of the cigars to be wrapped thereby. Inasmuch as the wrapping-belt is quite slack when not being revolved, it will accommodate itself to cigars of

different sizes, as when the belt is tightened it is merely held with sufficient pressure to hold comparatively loosely the cigar. The only adjustments that are required in the machine for cigars of different sizes are the adjustments of the plates E in the feed mechanism, which are adjusted to accommodate cigars of different lengths.

I wish it understood that while I have for the most part described my machine as especially intended for wrapping cigars the mechanism may be employed for applying bands, labels, or wrappers to other articles or bundles of articles. While it is important when applying labels to cigars that the ends of the labels should overlap and that no paste should be applied to the cigars, when applying labels to other articles they need not necessarily be made to overlap, but may be pasted directly to the articles. I have shown in the drawings and have described in detail a machine for applying labels to cigars constructed in the best way now known to me; but it is obvious that many changes may be made in the mechanism without departing from my invention.

The machine, as shown, is adapted to simultaneously apply labels to two cigars, and much of the mechanism is duplicated. It will of course be understood that the mechanism may be simplified or made to operate upon one cigar at a time, or the mechanism may be adapted to operate simultaneously on a larger number of cigars, although I do not consider this advisable.

I claim as my invention—

1. The combination of means for feeding articles and bands or labels, means for applying paste to the labels, and wrapping devices comprising an endwise-moving belt, rollers on which it is supported, guides for the belt close to the rollers, means for forming a pocket in the belt, devices engaging the belt outside of the pocket and on opposite sides thereof for preventing the belt from slipping while the pocket is being formed, and means for driving the belt.

2. The combination with means for feeding the articles and the bands or labels, of wrapping devices comprising an endwise-moving belt, means for supporting it, means for collapsing and distending a portion of the belt to alternately form a pocket therein and to remove the pocket therefrom, devices engaging the belt outside the pocket and at opposite ends of the pocket-forming portion thereof for preventing longitudinal movement of the belt relatively to its supporting means while the pocket is being formed and means for driving the belt in one direction only.

3. The combination of means for feeding the articles, a strip or band of labels, means for feeding the labels toward the articles to be wrapped, means for cutting the strip into proper length, devices for applying paste to one end of each label after it is cut from the strip, and wrapping devices comprising an endwise-moving belt, means for supporting it, means for forming a pocket in the belt to receive the articles and labels, means for driving the belt to draw the labels past the paste-applying devices, and to wrap them around the articles, and means for preventing the pasted side of the label from coming in contact with the belt.

4. The combination of means for feeding the articles to be wrapped, means for feeding labels into engagement with the articles, and wrapping devices comprising an endwise-moving belt, rollers traversed by the belt, a swinging arm carrying one of the rollers, means for oscillating this arm to alternately form a pocket in the belt below the article-feeding mechanism and to remove the pocket therefrom, devices carried by this arm and engaging the belt outside the pocket-forming portion thereof for preventing the belt from slipping longitudinally over the roller carried by said arm while the pocket is being formed, and means for driving the belt.

5. The combination with means for feeding the labels and articles, of wrapping devices comprising an endless belt, rollers traversed by the belt, an oscillating arm carrying one of the rollers, one or more plates engaging the belt outside the pocket-forming portion thereof to prevent it from slipping on the rollers and a spring or springs for applying pressure to the plate or plates.

6. The combination with means for feeding the articles to be labeled and the bands or labels, of wrapping devices comprising an endwise-moving belt, means for causing it to travel longitudinally, means for forming a pocket in the belt, guides for the belt close to the pocket-forming portion thereof, and a shield movable into and out of the pocket for closing the mouth thereof.

7. The combination with means for feeding the articles to be labeled and the bands or labels, of wrapping devices comprising an endwise-moving belt, means for causing it to travel longitudinally, means for forming a pocket in the belt, and a shield or guard in the mouth of the pocket which guides the label as it enters the pocket and prevents it from depositing paste on the belt.

8. The combination with means for feeding the articles to be labeled and the bands or labels, of wrapping devices comprising an endwise-moving belt narrower than the article to be labeled, means for supporting, guiding and driving the belt, means for forming a pocket in the belt, a casing surrounding the pocket-forming portion of the belt and which extends beyond the opposite edges of the belt to support the article while the pocket is being formed, and a shield at the mouth of the pocket for preventing the label from depositing paste on the belt.

9. The combination with means for feeding the articles and labels, of a wrapping-belt, means for forming a pocket therein, and a guard or shield extending longitudinally along the mouth of the pocket for preventing the label from passing out of the pocket and for holding it closely in contact with the article to be wrapped.

10. The combination with means for feeding the articles and labels, of a wrapping-belt, rollers on which it is supported, an oscillating arm carrying one of the rollers and a shield carried by this arm and interposed between the rollers for the purpose specified.

11. The combination with means for feeding the articles and labels, of a wrapping-belt, a roller mounted on a stationary support over which the labels are fed and which the belt traverses, an oscillating arm carrying another roller traversed by the belt, a third roller which the belt traverses and a shield carried by said oscillating arm close to the roller mounted thereon, and adapted to lie between two of the rollers traversed by the belt for the purpose specified.

12. The combination with means for feeding the articles and labels, of a wrapping-belt, a roller mounted on a stationary support and traversed by the belt, another roller which the belt traverses, an oscillating arm carrying a third roller traversed by the belt, a shield carried by this arm and means for shifting the shield as the arm oscillates.

13. The combination with means for feeding the articles and labels, of a wrapping-belt, rollers supporting the belt, an oscillating arm carrying one of the rollers, a shield carried by the oscillating arm and comprising end pieces, one of which has teeth and a connecting cross-piece and a hook engaging said teeth for shifting the shield at proper times.

14. The combination with means for feeding the articles and labels, of a wrapping-belt, a roller traversed by the belt and mounted in stationary bearings, antifriction-rollers arranged at opposite ends of said belt-carrying roller, another roller traversed by the belt, an oscillating arm, a third roller carried thereby, an oscillating shield carried by the arm and rails thereon adapted to engage the before-mentioned antifriction-rollers.

15. The combination with means for feeding the articles and labels, of a wrapping-belt, means for supporting it and for forming a pocket therein, a driving-belt engaging the wrapping-belt, means for tightening the driving-belt to cause it to firmly engage frictionally the wrapping-belt and means for actuating the driving-belt.

16. The combination with means for feeding the labels and articles, of a wrapping-belt, means for supporting it and for forming a pocket therein, a driving-belt engaging the wrapping-belt, a roller revolving about a fixed axis for guiding the driving-belt, an oscillating arm carrying another guiding-roller for the driving-belt, a frame connected with this arm and means engaging the frame to move the arm to shift the guide-roller engaged therewith and thus tighten the belt.

17. The combination with means for feeding labels and the articles to be wrapped, of a wrapping-belt, means for supporting it and for forming a pocket therein, a driving-belt engaging the wrapping-belt, a stationary guide-roller for the driving-belt, another guide-roller therefor, an arm on which it is mounted, a frame connected with this arm, means for supporting the frame, a shoe carried by the frame, a rotary crank and devices carried thereby which engage the shoe and shift the frame to tighten the driving-belt, and to thus actuate the wrapping-belt.

18. The combination with the wrapping devices, of a carrier for the articles, a hopper for conveying the articles to be fed to the wrapping devices, adjustable plates within the hopper and adjustable plates outside the hopper on the opposite sides of the carrier.

19. The combination with the wrapping devices, of an endless carrier, a hopper arranged above the carrier, the adjustable plates within the hopper, adjustable plates on the outside thereof and between it and the wrapping devices, an end plate in rear of the carrier and above the wrapping devices, and a chute for the articles in front of the end plate.

20. The combination of the main frame, the longitudinal frame-piece attached thereto, a casting mounted on the front portion of said frame-piece and having laterally-projecting wings and a raised central portion, trays attached to the wings, an endless carrier passing above and below the wings, shafts at opposite ends of the carrier for supporting it, and a longitudinally-adjustable bracket for adjusting one of the shafts.

21. The combination with wrapping devices of feed-rollers for the labels, a friction-wheel, gearing connecting the friction-wheel with the feed-rollers, a pawl engaging the friction-wheel, a swinging frame to which the pawl is pivoted, a sliding plate carried by the frame, a pitman connected with said plate, an adjusting-screw engaging the frame and plate for adjusting the plate and thus varying the movement of the pawl and means for actuating the pitman.

22. The combination with the wrapping devices, of means for feeding labels thereto, a paste-wheel, a ratchet-wheel connected therewith, a pawl engaging the ratchet-wheel, means for at times holding the pawl out of engagement with the ratchet-wheel, an oscillating lever, and connections between said oscillating lever and the pawl.

23. The combination with the wrapping devices, of means for feeding labels thereto, a paste-wheel, a ratchet-wheel connected therewith, a pawl adapted to engage said ratchet-

wheel, a vertically-moving frame by which said pawl is carried, means for at times holding the pawl out of engagement with the ratchet-wheel, an oscillating lever, connections between said lever and the pawl-carrying frame, a rotary shaft, an eccentric secured thereto, an eccentric-strap surrounding said eccentric, and a connection between said eccentric-strap and the oscillating lever.

24. The combination with wrapping devices and means for forming a pocket therein, of means for feeding a strip of labels toward the wrapping devices, a wheel for applying paste to the labels, a stationary cutter, a vertically-moving slide, a cutter carried thereby, a yielding table carried by the slide and means for actuating the slide to cause the table to yieldingly press a label against the paste-wheel and thereafter to cause the cutter which it carries to sever a label from the strip.

25. The combination of wrapping devices, a paste-wheel, a stationary cutter, a vertically-moving slide, a cutter carried thereby, a table carried by the slide, means for intermittently moving the paste-wheel, means for feeding the labels toward the wrapping devices while the paste-wheel is at rest, means for raising the slide to cause the table to press the label against the paste-wheel while the latter is stationary, and for thereafter severing a label from the strip, and means for then actuating the wrapping devices to draw the label from between the paste-wheel and the table.

26. The combination with the wrapping devices, of means for feeding labels thereto, a stationary cutter, a paste-wheel, a vertically-moving slide, a cutter carried thereby, and a yielding table carried by the slide, adapted to press the label against the paste-wheel.

27. The combination with the wrapping devices of means for feeding labels thereto, a paste-wheel, its actuating mechanism, a stationary cutter, a vertically-moving slide, a cutter carried thereby, a table carried by the slide, lugs projecting from the slide, an oscillating lever, an arm projecting therefrom, adapted to engage the lugs and connections between said oscillating lever and the paste-wheel-actuating mechanism.

28. The combination with the wrapping devices, of an endless carrier, pawl-and-ratchet mechanism for operating it, an oscillating lever connected with said pawl-and-ratchet mechanism, a paste-wheel, connection between the paste-wheel and said oscillating lever, means for feeding labels to the wrapping mechanism, a stationary cutter, a vertically-moving slide, a cutter carried thereby, lugs projecting from the slide, an arm carried by the oscillating lever engaging the lugs, and means for actuating said oscillating lever.

In testimony whereof I have hereunto subscribed my name.

WILLIAM C. BRIGGS.

Witnesses:
W. A. WILKINSON,
HY. F. SHAFFREER.