H. J. KEMPF.

WRAPPING MACHINE.

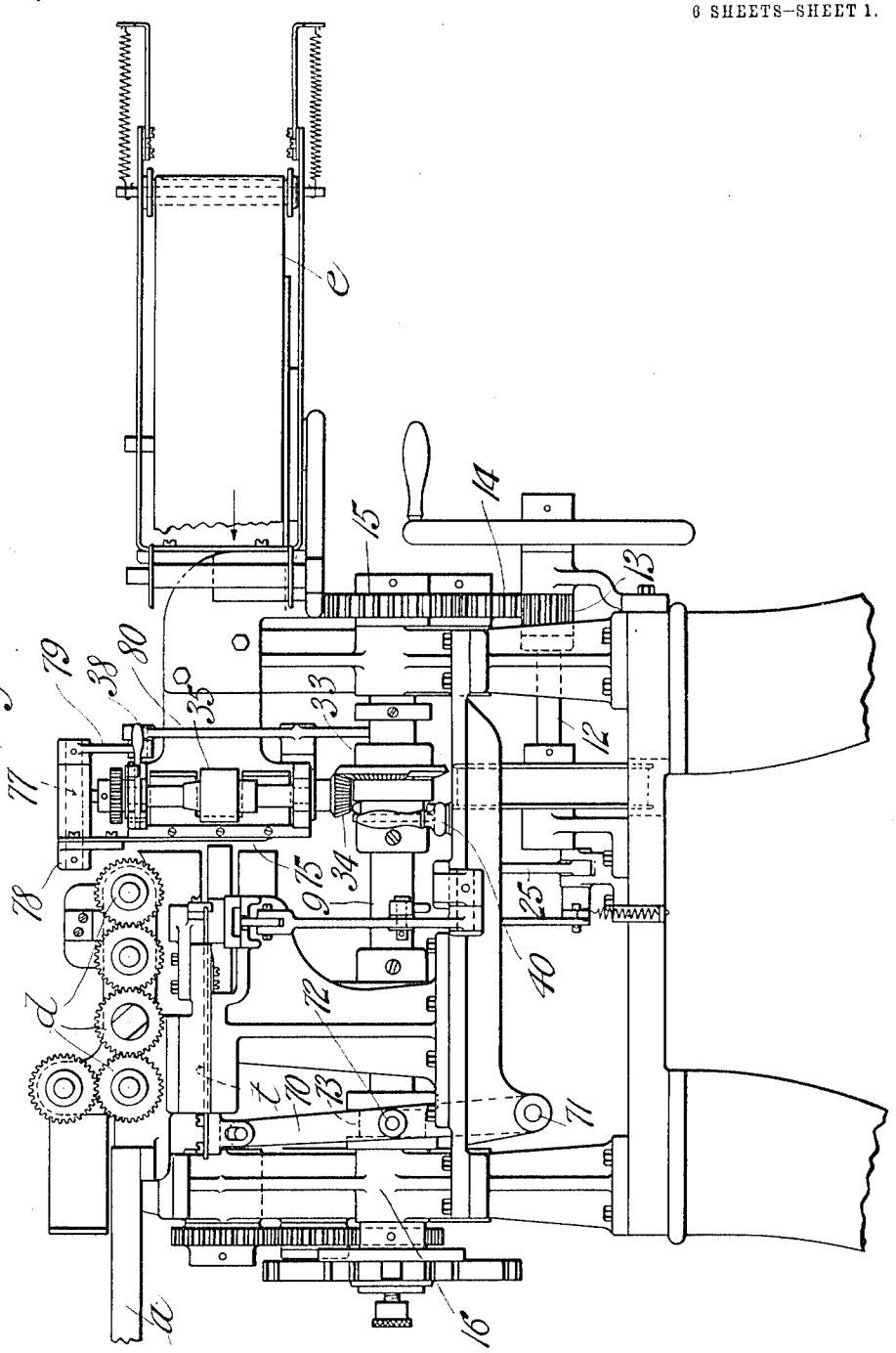
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1,079,012.

Patented Nov. 18, 1913.

6 SHEETS—SHEET 1.

Fig. 1.



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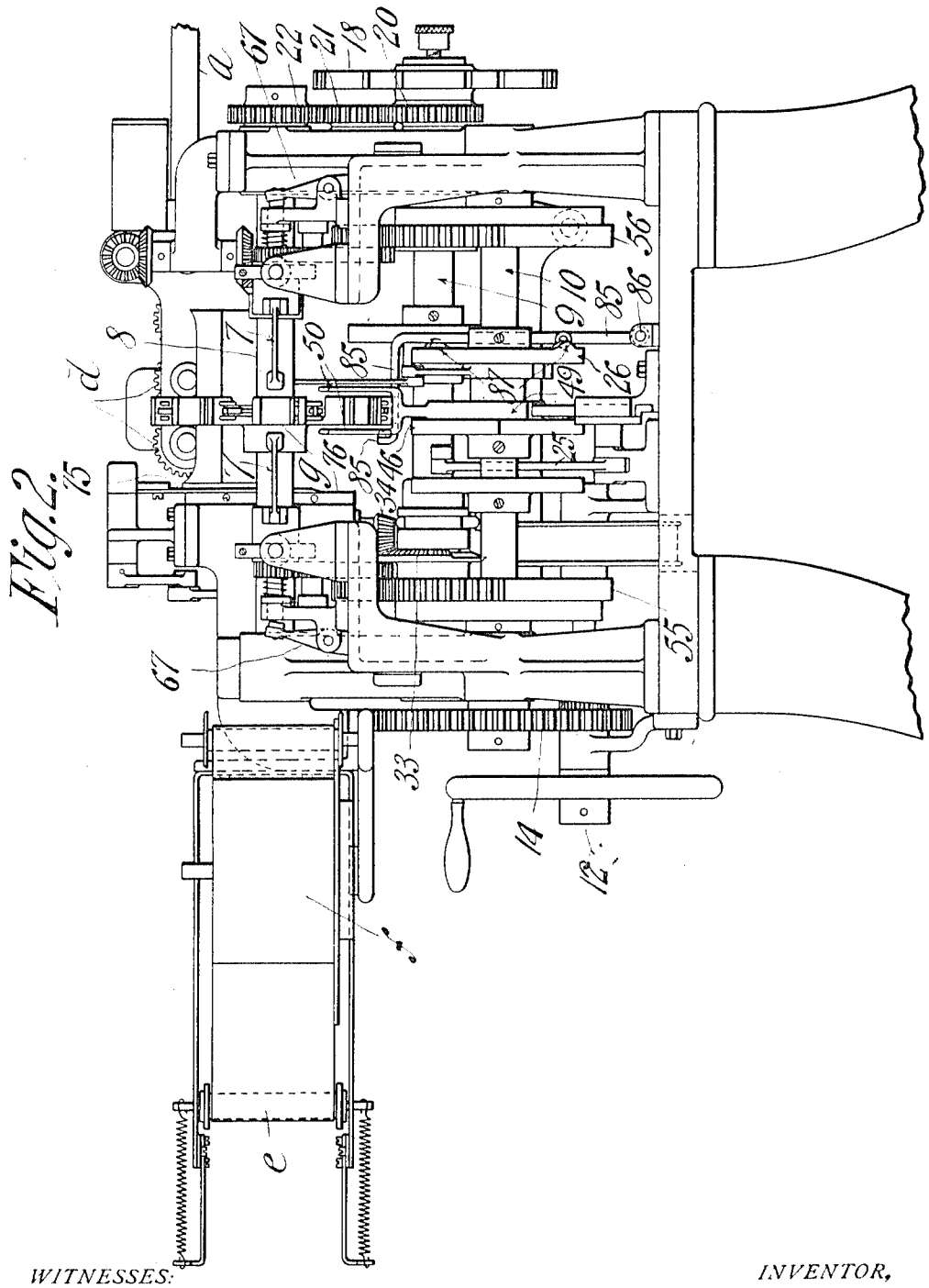


Fig. 2.

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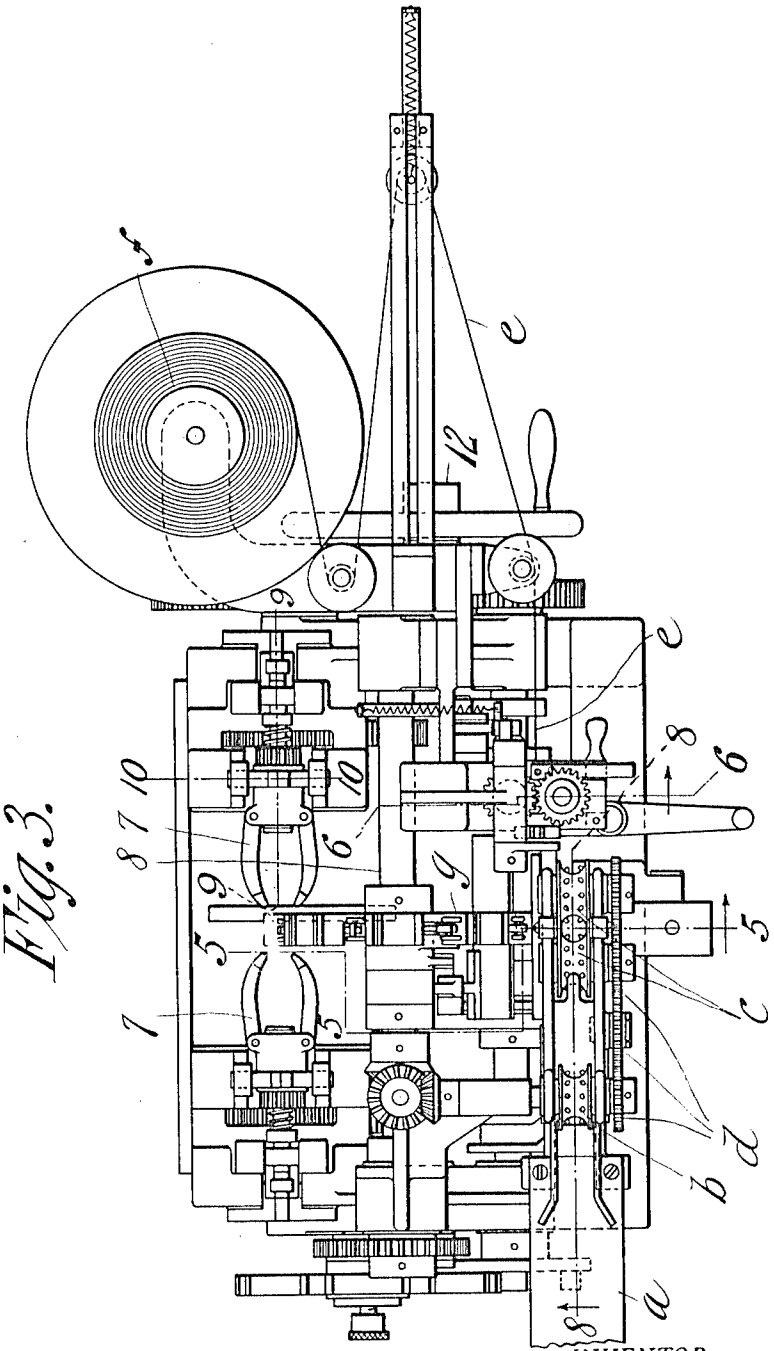
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6 SHEETS—SHEET 3.

Fig. 3.



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6 SHEETS—SHEET 4.

Fig. 7.

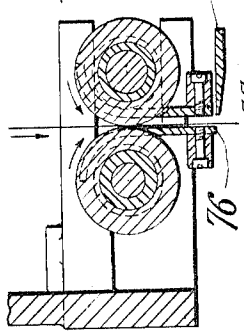


Fig. 6.

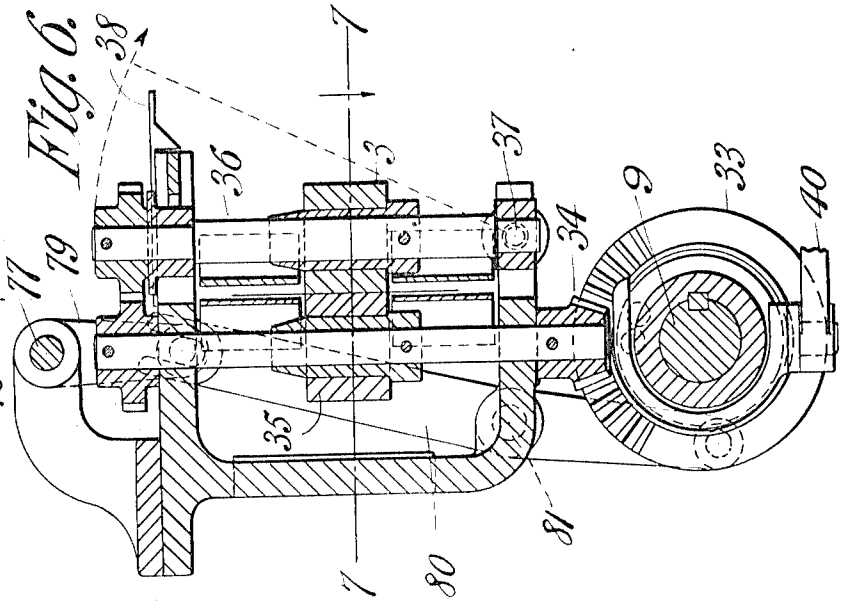
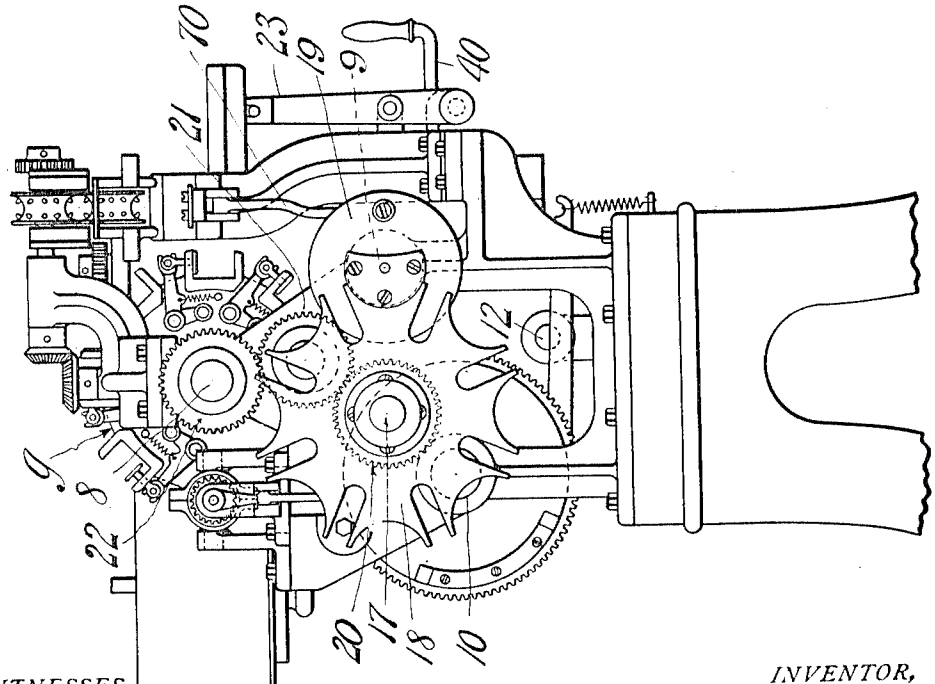


Fig. 4.



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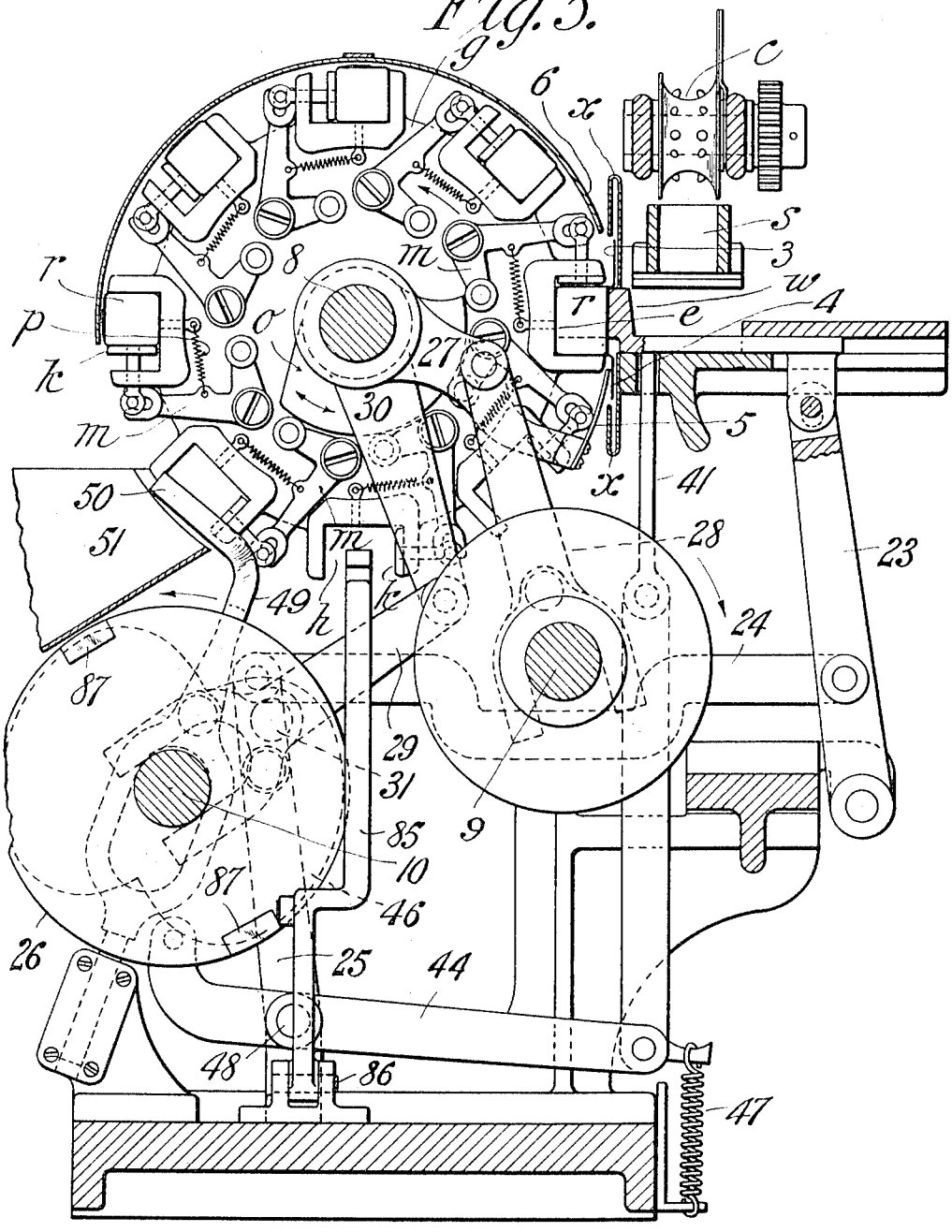
APPLICATION FILED NOV. 3, 1911.

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6 SHEETS—SHEET 5.

Fig. 5.



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6 SHEETS—SHEET 6.

Fig. 8.

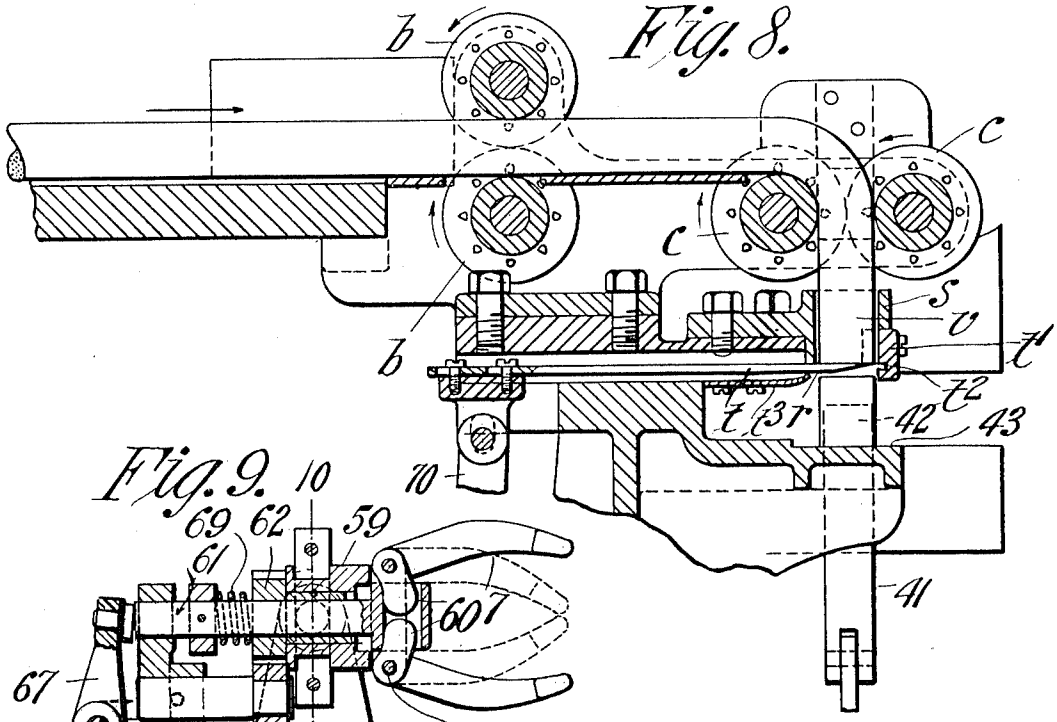


Fig. 9.

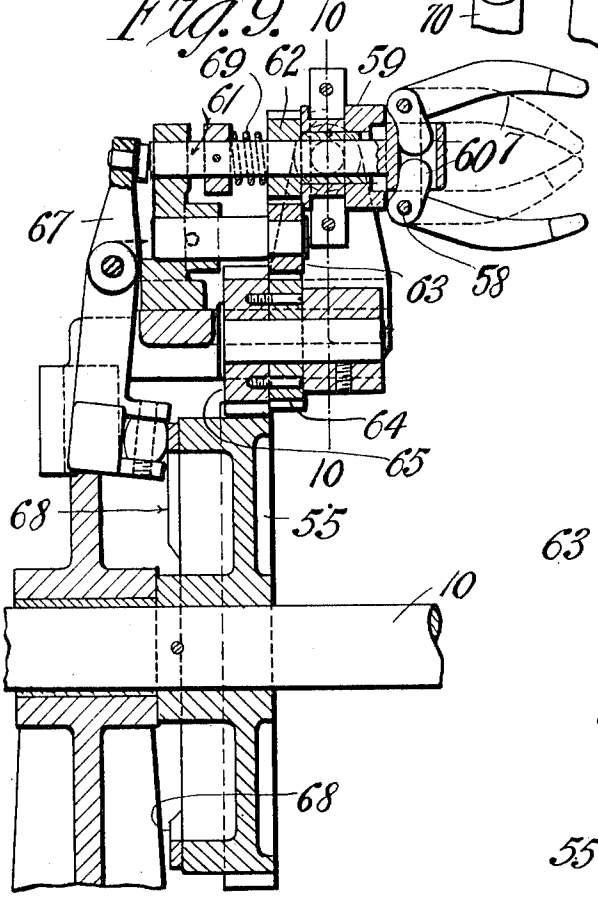
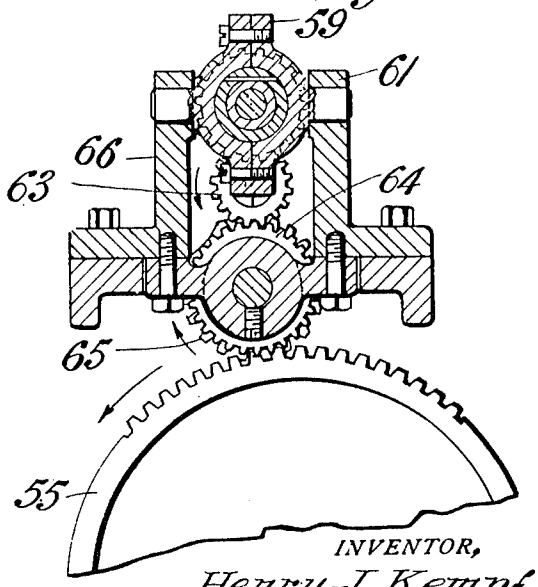


Fig. 10.



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UNITED STATES PATENT OFFICE.

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WRAPPING-MACHINE.

1,079,012. Specification of Letters Patent. **Patented Nov. 18, 1913.**

Application filed November 3, 1911. Serial No. 658,314.

To all whom it may concern:

Be it known that I, HENRY J. KEMPF, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Wrapping-Machines, of which the following is a specification.

This invention relates to wrapping machines and has especial reference to the wrapping of confections, and the like, in wrappers folded about the article in one direction, the ends of the wrapper then being twisted to close the same, as distinguished from that type of wrapping machines in which the ends of the wrappers are folded over or against the ends of the article. Certain features of the invention however can be applied to the second type of wrapping machines mentioned.

The object of the present invention is to provide a machine to which the confection may be fed in a plastic mass, cutting and rolling means being provided to divide the mass into pieces of proper shape and size, which pieces are first compressed and then inclosed in wrappers cut from a roll of wrapping material fed into the machine, all as hereinafter fully described and pointed out in the claims. The machine is constructed and arranged so that after the pieces of candy or articles to be wrapped are fed to the machine said articles are substantially compressed or mechanically shrunk before the wrapping operation is completed. In wrapping articles of certain classes it is important to thus mechanically shrink each article before it is completely wrapped. For instance in wrapping molasses kisses by the ordinary methods the confection shrinks after it has been wrapped and kept for any length of time. The wrapper then looks crumpled and the confection looks stale rendering it unsalable. These same articles as wrapped in applicant's machine are mechanically shrunk before being wrapped. They can not ordinarily shrink any more. Therefore when the wrapper is properly placed around the article each wrapped piece will have a plump fresh appearance making it salable at all times. While applicant prefers to compress the article when it is partially wrapped and then complete the wrapping operation it is clear that the compressing operation could take place before the articles are partially wrapped.

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

Figure 1 is a side elevation of one side of the machine showing, in a general way, the relation of the confectionery feeding devices and the roll of wrapping material to each other and to the packing mechanism. Fig. 2 is a side elevation of the opposite side of the machine in which the means for twisting the ends of the wrapper and the ejection of the wrapped article are clearly shown in their relation to the carrier-wheel in the peripheral pockets of which the articles are received for wrapping, and transferred from one part of the machine to another. Fig. 3 is a plan view of the top of the machine as it would be projected over from Fig. 1. Fig. 4 is an end elevation of the machine looking at the left-hand end of Fig. 3, this and the preceding figures all being on the same scale. Fig. 5 is a cross sectional view on an enlarged scale on line 5—5, Fig. 3, showing, in elevation, the carrier-wheel and means for feeding confections thereto, and also shows much of the operating mechanism of the machine. Fig. 6 is a sectional elevation, also on an enlarged scale, showing the construction of the feeding devices for the strip of wrapping material,—the plane of this section being on line 6—6, Fig. 3. Fig. 7 is a cross sectional view of the mechanism shown in Fig. 6, taken on line 7—7 of said last named figure. This view shows the relation of the cutting devices to the feed-rolls for the wrapping material. Fig. 8 is a sectional elevation in the plane of line 8—8, Fig. 3, showing the means for feeding the confectionery material into the machine and cutting the same into suitable uniform pieces. Fig. 9 is a sectional elevation in the plane of line 9—9, Fig. 3, showing the construction of the mechanism for grasping and twisting one end of a wrapper. This mechanism is duplicated for the opposite end of the wrapper, the two working in unison. The device used for opening and closing the jaws of the twisters is also shown in this view. Fig. 10 is a sectional elevation on the line 10—10, Fig. 3, at right angles to the section shown in Fig. 9, and illustrating more particularly the intermittent driving mechanism for the twister jaws.

Referring now to the general views of the machine, (Figs. 1 to 4 inclusive) the confectionery stock is fed into the machine over a table *a* between toothed grooved rollers *b* and c (shown in Fig. 8 particularly), whereby it is reduced to the proper dimensions, these feed rollers being rotated by a suitable train of gears *d* shown in Figs. 1 and 3. *e* is the web of wrapping material from which the wrappers are cut, this being drawn off from a reel *f*. As shown in Fig. 3, the wrapping material and the confectionery move one toward the other and meet at a point opposite the periphery of the carrier-wheel *g*, all of which is clearly shown in Fig. 3. *g* is used to designate the carrier-wheel only in a general way as it is composed of a number of working parts which will be referred to separately. As shown in Fig. 5, this carrier-wheel *g* is provided with equally spaced peripheral pockets *h* extending transversely across the wheel, each pocket having one movable side *k* in the form of a plunger and actuated by an elbow-lever *m* pivotally supported on the side of the carrier-wheel *g*,—one arm of which lever is engaged by a cam *o* to effect the withdrawal of the movable side of the pocket just referred to, against the tension of a spring *p* which spring serves to compress and hold a piece of confection *r* in the pocket. This carrier-wheel is rotated step-by-step in time with the operation of the cutting device which cuts off a piece of confection from the strip fed down from the pair of grooved rollers *c* through a tubular member *s* beneath said rollers (see Fig. 5), and across the bottom of which member the knife *t* is reciprocated, as shown in Fig. 8, a piece of confection *r* being indicated in that figure as just cut off from the piece of stock *v*. A block t^1 is screwed to the frame opposite the cutting edge of the knife and has a slot t^2 in it for the edge of the knife to enter. This block thus backs up the stock and prevents a thin edge of confection from following the knife edge on either side,—which thin edge may harden and subsequently cut through its wrapper. A spring scraper t^3 is placed beneath the knife *t* to keep the beveled edge of the latter free from any stock that may stick to it. The upper side of the knife clears itself,—all of which is shown in Fig. 8. Referring still to Fig. 5, *e* is used to distinguish the wrappers as well as the web from which they are cut off, and in this figure the wrapper cut from the web is shown in its relation to the periphery of the carrier-wheels, and the position of a piece of confection just cut off and forced into one of the pockets of the wheel by a plunger *w* which has a sliding movement beneath the member *s* and toward one of the pockets in the carrier-wheel, the wrapper *e* having been moved to a position opposite the mouth of the pocket, by means of the feed-rolls shown in Figs. 6 and 7, just in advance of the movement of the piece of confection into the pockets. The two metal guides *x* afford means to support the wrapper in proper position in front of the pocket, the plunger *w* moving through the space between these guides forcing the confection against the central part of the wrapper into the pocket and covering three sides of the confection, leaving two flaps 3 and 4 to be folded over the article in the usual manner. During the pause of the carrier *e* for receiving a piece of confection in the pocket, immediately after the plunger *w* retires, the flap-folding plate 5 is operated to swing its edge across the mouth of the pocket and thus fold the flap 4 over the confection in said pocket, whereupon after the return of said flap-folding plate, or at about the same time, the cam *o* is given a slight movement contrary to the direction of rotation of the carrier-wheel, whereby the elbow-lever *m* is released from restraint and its spring which is designed to have sufficient strength for the purpose, forces the movable side *k* of the pocket toward the confection *r* substantially compressing the same, and at this time, this pocket is carried by the movement of the wheel under the end of the concentric folding plate 6, whereby the remaining flap 3 of the wrapper is folded over the flap 4, the plate 6 serving, (owing to its position close to the periphery of the wheel,) to hold the folds of the wrapper in place. The object of compressing the confection after its insertion in the pocket is to prevent its subsequent shrinking, whereby it becomes loose in its wrapper. This is an important improvement in the art. The degree of compression is sufficient to positively shrink each article sufficiently to prevent any further considerable shrinkage after the article is wrapped. This is indicated in Fig. 5 by the size of the piece partially wrapped which has just been put into a pocket by the plunger *w* compared to the size of the pieces in all the other pockets which have all been mechanically shrunk by the compression plunger *k* located in each pocket. It will be obvious from a consideration of Fig. 5 that the cross dimension of each pocket in the carrier wheel must be somewhat larger then the cross dimension of the article when first put in the pocket. This is necessarily so because when the article is compressed by the compression plunger *k* it expands somewhat along its cross dimension not sufficiently however to obviate the compression effect in the article. After the compression has taken place the article has approached the same cross dimension as the pocket. If these dimensions did not correspond the ends of the wrapper would not be properly made. The article is therefore wholly con-

tained in the pocket both before and after the shrinking operation. It will be understood that the wrapper is of such width that its ends may extend far enough beyond the ends of the article inclosed by it to be grasped by the twister jaws 7 when the carrier-wheel has brought the confection into proper position between these jaws, the twisting of the ends of the wrapper taking place at a point substantially opposite that at which the confection is fed into the pocket.

The various movements of the devices hereinbefore referred to and the proper timing thereof are effected by various cams and gears to be referred to later, carried on the three principal shafts of the machine, viz.,—the carrier-wheel shaft 8 and the two main cam-shafts 9 and 10. The driving-shaft 12 is shown in Figs. 1, 2, 3, and 4, and by a pinion 13 on this shaft (see Fig. 1) movement is imparted to the cam-shaft 10 through the gear 14 in mesh with said pinion, and a gear 15 on the cam-shaft 9 in mesh with the gear 14. To avoid confusion, reference should now be had to Fig. 4, wherein it will be seen that the axis of the shaft 9 is in the same plane, horizontally, as the stud 17, which, in Fig. 1, appears to be the same as the shaft 9: Fig. 4, however, shows that the stud 17 carries the star-wheel 18 of the ordinary so-called Geneva train, of which the operating wheel 19 is located on the shaft 9; and on the stud 17 is a gear 20 which, through an intermediate gear 21 and a gear 22 on the carrier-wheel shaft 8, imparts intermittent movements to the shaft 8 on which the carrier-wheel g is mounted.

Referring to the movements of some of the parts shown in Fig. 5 and heretofore referred to: the plunger w, which forces the pieces of confection into the pockets of the carrier-wheel, is actuated by means of the pivotally connected levers 23 and 24, the free end of the latter being supported on the rocking arm 25 at the juncture of which with said lever 24, the latter engages with the groove of the face-cam 26, shown in Fig. 2. The folding blade 5, which effects the first fold of the flap 4, is, as shown in Fig. 5, carried on an arm 27 swinging on the shaft 8 and actuated by the arm 28 pivotally connected thereto and engaging a cam on the shaft 9. The cam o on the shaft 8 (which, as described swings freely thereon) is given an oscillatory movement in either direction, at the proper time, to release the elbow-lever m and allow the plunger k, which constitutes the movable side of the pocket, to engage the confection; this cam being actuated by means of the arm 29, pivotally connected to another arm 30, extending from the hub of the cam o, the arm 29 having a stud and roller thereon, indicated by 31, in engagement with a gear on the shaft 10. The paper-feeding mechanism shown in Figs. 6 and 7 is driven intermittently by a broken gear 33 on the shaft 9 meshing with the pinion 34 fixed on the shaft carrying one of the feed-rolls which are indicated by 35. These feed-rolls have their shafts geared together, as shown in said Fig. 6, to rotate them in the proper direction—one of the shafts, indicated by 36, being pivotally supported in its frame at 37 to swing away from the opposite shaft, in order to permit the wrapper material to be freed therefrom, should the web from which the wrappers are cut become jammed between the rolls, as sometimes happens. The shaft 36 is held in proper operative relation to its opposite shaft by means of a locking lever 38. For the purpose of stopping the feed of the rolls 35 at any time, the broken gear 33 is held in driving engagement with the shaft 9 by means of a clutch operated by the arm 40.

Referring now to Figs 5 and 8: as previously stated, the candy stock comes down through the collar s onto a table across which the plunger w has a sliding movement, as described, and to position the piece of material which is to be moved by the plunger, an arm 41 is provided which extends up through the table and has a forked end, indicated in Fig. 8 by 42, one of the ends of the fork being shown therein only in dotted lines behind the piece of confectionery r which has just been cut off. The arm 41 is given a vertically reciprocating movement through the table 43 at the proper time to be in position to receive and position the piece of stock r, and it then retires through the table while the plunger w moves this piece forward into the pocket of the carrier-wheel. The arm 41 is given its proper movement by means of the cam-operated lever 44, shown in Fig. 5, which is operated by the double heart cam 46 shown in said figure in dotted lines. The arm 41 is jointed, as shown, to give it a free vertical swing, and is moved in one direction by the spring 47. The lever 44 is pivoted on a part of the frame at 48. This double heart-cam 46 has another function whereby, by means of a cam-groove in its side, (not shown in the drawings,) the ejector arm 49 is actuated. This arm has a forked end 50 which may be seen in Fig. 2, the two ends of the fork lying on either side of the pocket of the carrier-wheel whereby, as soon as the piece of confection at this point completely inclosed in its wrapper is released by the retirement of the movable side of the pocket, due to the engagement of the elbow-lever m with the cam o, the forked end of the ejector-arm engaging the twisted ends of the wrapper will force the article out of the pocket into the trough 51 whereby it will be conveyed to some point out-

side the machine. This ejector-arm is necessitated owing to the nature of the material handled, since a small perforation in the paper which would permit any of the confection to be forced through it, would cause it to stick to the side of the pocket.

There remains to be described the mechanism for twisting the ends of the wrapper, which mechanism is shown in Figs. 9 and 10 on an enlarged scale, and in Fig. 2 on a smaller scale, in which their relation to the carrier-wheel is clearly shown.

Referring to Fig. 2, on the shaft 10 are two large broken gears 55 and 56, whereby the proper intermittent movement is imparted to the twister jaws 7, and whereby they are timed to stop in a position relative to the folded over ends of the wrapper, to grasp the latter always in the same way before the twisting movement is imparted thereto. Only one of these twisting mechanisms has been illustrated in detail as they are identical in construction and operation. The jaws 7 of the twisters are pivotally supported at 58 in a swiveled head 59, each of the jaws being provided with inwardly extending arms 60 which enter a slot in the head of a shaft 61, which shaft has an endwise movement through the head 59 and through the pinion 62, whereby said head 59 is rotated. Intermittent rotation is imparted to the pinion 62 and the jaws 7, which rotate therewith, by the train of gears 63, 64, and 65, the latter being in mesh with the gear 55, the gear 64 being pinned to the side of the gear 65, and the gear 63 being merely an intermediate. The swiveled head 59 is hung on trunnions between a couple of arms 66, as shown in Fig. 10. Whenever the gear 65 runs off the teeth of the broken gear 55, the jaws 7 of the twister will always come to a stop with their ends open, these ends being positioned respectively directly above and below the end of the wrapper to be engaged, thereby. The jaws are opened by means of a cam-arm 67, shown in Fig. 9, which is pivotally supported between its ends on the frame, the upper end bearing against the end of the shaft 61 and its lower end being provided with a roller which bears against a face-cam 68 which consists merely of a strip of metal secured to the edge of the gear 55, in such position that just before the teeth of the gear 55 engage the gear 65, the roller on the arm 67 will run off the cam 68 and allow the spring 69 to throw the shaft 61 in a direction to close the ends of the jaws 7 against the ends of a wrapper which at that time will be positioned between the jaws. The jaws 7 do not quite come together against the wrapper but in their operative position are spaced apart slightly, as shown in Fig. 9. The ends of the wrapper are practically flat tubes when grasped by the jaws, and as these ends are shortened, by twisting, they can draw through the jaws without tearing. This improvement is important since it does away with the necessity of providing means to allow the jaws to approach the ends of the confection during the twisting operation, which is necessary when the wrapper ends are grasped tightly by the jaws. As soon as the jaws have gripped the wrapper, they are given a certain number of turns, (determined by the number of gear teeth on the gear 55), whereupon the twist having been put into the ends of the wrapper, another cam-plate 68 on the gear 55 will engage the arm 67 and force the jaws 7 open. At this moment, the carrier-wheel makes another step forward moving the article just wrapped toward the ejector devices and bringing another article between the jaws 7 ready for another operation.

The knife *t*, (Figs. 1 and 8) which cuts the confectionery stock into suitable pieces, is actuated by an arm 70 pivoted to the frame at 71, which arm has a roller 72 thereon engaging the cam-groove 73.

As has been stated, the web of wrapping material *e* has an intermittent feed movement into the machine by means of the rolls 35 already described, and a piece of this material is cut off from the web of the length required to wrap each piece of confection cut off from the stock, the wrapper being severed from the web by means of a knife 75 (see Figs. 1 and 7), which has a swinging movement across the face of a steel plate 76 (Fig. 7) which movement is imparted thereto by a rock-shaft 77 (see Figs. 1 and 6) having on one end an arm 78 to which the knife is secured, and on the other end another arm 79 connected with an arm 80, (shown in Fig. 6 on an enlarged scale,) and which is pivoted to the frame at 81, the lower end of the arm extending down back of the hub of the broken gear 33, where it engages a cam projection, not shown, which at the proper time imparts movement to it, which, in turn, swings the rock-shaft 77 to actuate the knife 75.

Referring again to Figs. 6 and 7, it will be seen that above and below the feed-rolls 35 are arranged guide-plates for the web *e* which extend out beyond the rolls in parallel relation thus providing a narrow passage through which the web must pass, the upper and lower part of the plates (all indicated by 76) being secured together by any suitable means. These bars are secured at their extremities to the upper and lower members of the U-shaped frame in which the feed-roll shafts are mounted and clearly shown in Fig. 6.

Another important mechanism is shown in Figs. 2 and 5, and that is the ejector arm 85 pivotally supported at 86 on the bottom frame-part, and which is given a swinging movement beneath and transversely of, the

carrier-wheel by means of a cam projection 87 on the cam-wheel 26, the upper end of the arm 85 being so timed that it will sweep through the pocket which has last passed the point where the ejection of the confection from the pocket takes place. As stated above, the ejection is effected by the forked arm 49 engaging the twisted ends of the wrapper extending beyond each end of the pocket, but if for any reason this ejection should not take place the confection would be carried around to the feeding point and then the attempt to force a new piece into the pocket would result in the disabling of the machine. The application of the arm 85 to the machine makes such an accident impossible, and is of great value in totally preventing the damage to the machine above referred to.

What I claim, is:—

1. A wrapping machine comprising a feeding device to feed stock to be wrapped, a second feeding device to feed a wrapping material, both feeding devices operable to feed to a common point in the machine, and means located at said common point in the machine operable to partially wrap a part of the stock, and an operative compression means arranged to substantially compress the stock which is partially wrapped, together with wrapping mechanism to complete the wrapping of the stock which has been compressed.

2. In a wrapping machine, the combination with mechanism for feeding stock, a paper feeding device to feed paper for wrapping the stock to a point opposite the point where the stock is fed, means for cutting the stock into suitable lengths to be wrapped, and means for severing the paper into suitable wrapping lengths, means for partially wrapping the stock comprising a pocket, a plunger to force the stock against the severed paper and into the pocket, rotating mechanism to intermittently rotate the pocket, a pivoted plate operable to fold one side of the paper over the stock in the pocket, a stationary means to fold the other side over the stock as the pocket rotates, rotatable jaws arranged to twist the ends of the paper and complete the wrapping of the stock, said jaws being arranged so that the ends never touch, so that the paper, as it is twisted, may slip through said jaws without tearing.

3. A wrapping machine comprising a guiding and feeding means for a continuous rope of stock, a severing means for severing said stock into suitable parts to be wrapped, a series of pocket forming elements, means to guide and feed a strip of material for wrapping said parts, a severing means to sever the strip into lengths suitable for wrapping, a plunger arranged to force each part of the stock against a severed strip of wrapping material and into one of said pockets, means to fold the sides of the material around the stock, means to twist the ends of the material as the stock is held in the pocket, mechanism to rotate the pocket-forming elements, an ejecting device arranged to throw the wrapped stock from a pocket comprising means to engage the twisted ends of the package, and a second ejecting device comprising means to throw from a pocket any package which the first ejecting device did not eject by engagement with the body of the package.

4. The combination in a wrapping machine, of guiding and feeding mechanism arranged to feed candy stock, a knife to cut the candy stock into suitable lengths, a series of pocket-forming elements mounted on a movable carriage, mechanism to intermittently move said carriage, a guiding means for guiding a strip of wrapping paper, means to cut said paper in suitable lengths, a slide operable to force a piece of candy stock against a piece of wrapping paper into one of the pockets, means to substantially compress the stock in the pocket where it is partially wrapped, means for folding the sides of the paper around the compressed stock, and mechanism for twisting the ends of the paper to completely wrap the candy.

5. A wrapping machine comprising in combination means for feeding thereto a continuous spongy or pliable strip of stock, a device to separate the strip into units for wrapping, mechanism to mechanically shrink each unit together with wrapping devices operable to completely wrap the separate units in their shrunken condition whereby the wrapped article will not shrink away from its wrapper, all for the purpose described.

6. A wrapping machine comprising, in combination, a stock feeding means and a wrapping material feeding means, a receptacle in which the wrapping material and the stock is placed, means to place the wrapping material and the stock in the receptacle, wrapping mechanism to form the wrapping material around the stock leaving loose tubular ends, and rotating jaws arranged adjacent the receptacle, means to keep said jaws open to a certain extent, said jaws being thereby adapted to engage said tubular ends loosely and twist them to complete the wrapping operation.

7. A wrapping machine comprising, in combination, a guiding means for stock to be wrapped, an intermittently rotating carriage comprising a series of pockets, means to feed wrapping material across the face of a pocket, a plunger to force part of the stock against the material and with the material into a pocket, an oscillatable plate operable to fold one side of the material around the stock, a stationary plate to fold the other side around the stock as the pock-

ets rotate, rotatable jaws arranged to twist the ends of the material, said jaws being arranged so that they never meet but always have enough space therebetween to allow the material being twisted to slip when necessary.

8. In a wrapping machine of the class described, the combination of means for holding the articles to be wrapped, rotatable jaws, means to keep said jaws open, said jaws being thereby arranged to have a slipping grip on tubular ends of the wrapping material to twist the same without tearing, and means to rotate the jaws.

9. The combination of a wrapping machine having a carrier comprising a series of pockets adapted to contain articles wrapped around the body portion and twisted on the ends, an ejector mounted for movement into engagement with the twisted ends to throw the wrapped articles from the pockets, a second ejector mounted for movement into engagement with the body portion of the article to eject it from the pocket if the first ejector fails to eject the article.

10. In a wrapping machine, the combination of a series of pocket forming elements, mechanism to move the pocket forming elements in a cycle, means to feed wrapping material and stock to be wrapped into said pocket-forming elements, wrapping mechanism to wrap the material around the stock, an ejecting device arranged to throw the wrapped stock from each pocket, and a second ejecting device comprising means to throw from a pocket any package which the first ejecting device did not eject by engagement with the body of the package.

11. In a stock wrapping machine, the combination with a series of pocket-forming elements, means to feed stock which has one dimension considerably less than one of the dimensions of each pocket and in so doing to partially wrap the stock as it is fed to the pockets, and compression plungers mounted in the pockets to compress the partially wrapped stock to increase its dimension in one direction and causing it to approach the dimension of the pocket in the same direction, and means to complete the wrapping of the stock.

12. In a wrapping machine, a stock feeding means, mechanism to feed wrapping material, together with a series of pocket-forming elements into which the stock and wrapping material are fed to partially wrap said stock, an operative compression plunger in each pocket arranged to compress the partially wrapped stock until the ends thereof are forced toward the sides of the pockets, and means to complete the wrapping of the stock.

13. A wrapping machine for wrapping candy of a spongy or pliable nature comprising in combination means for feeding the pliable strip of candy, mechanism to completely wrap each separate piece of candy fed to the machine together with compression means to mechanically shrink each piece passing through the machine before the same is completely wrapped, all constructed and arranged so that the completely wrapped candy is of less bulk than the same candy when fed to the machine whereby the tendency of the candy to shrink in its wrapper is avoided.

14. In a wrapping machine, means for wrapping articles in one direction to leave tubular end extensions thereon, together with twisting devices to thereafter twist said end extensions, said twisting devices being so constructed and arranged that a space is left between the wrapper engaging portions thereof during the twisting operation whereby the wrapper may freely slip therethrough, including means for moving the wrapper and the twisting devices relatively to each other during the twisting.

HENRY J. KEMPF.

Witnesses:
FRANKLIN G. NEAL,
HARRY W. BOWEN.