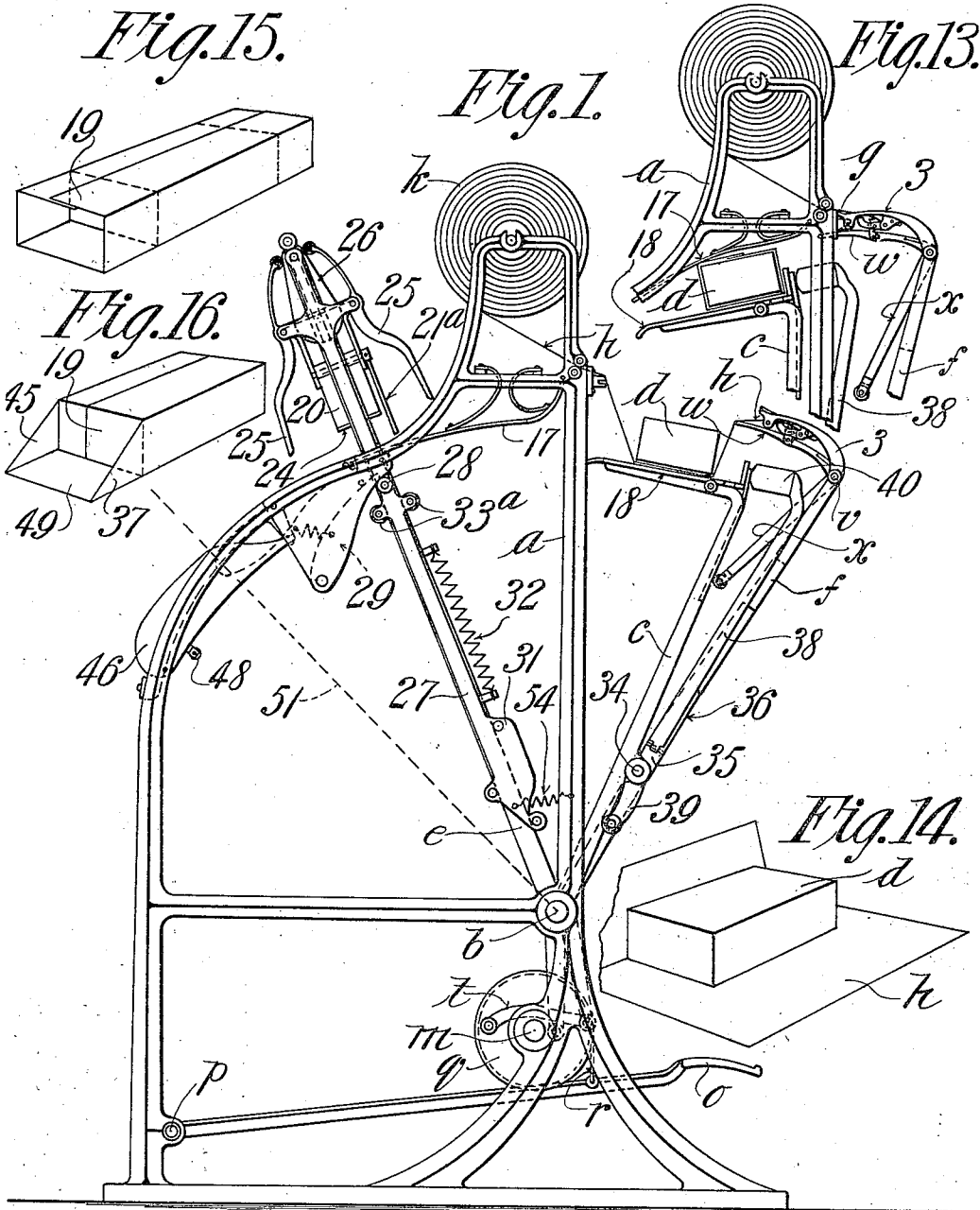


H. O. FISCHER.
WRAPPING MACHINE.
APPLICATION FILED FEB. 19, 1909.

1,016,067.

Patented Jan. 30, 1912.

6 SHEETS—SHEET 1.



WITNESSES:

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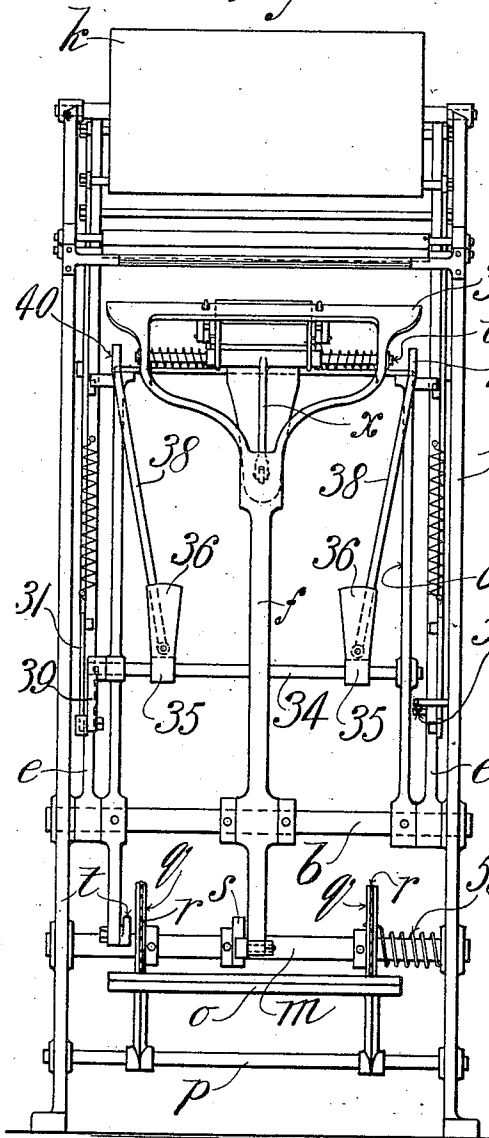
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6 SHEETS—SHEET 2.

Fig. 2.

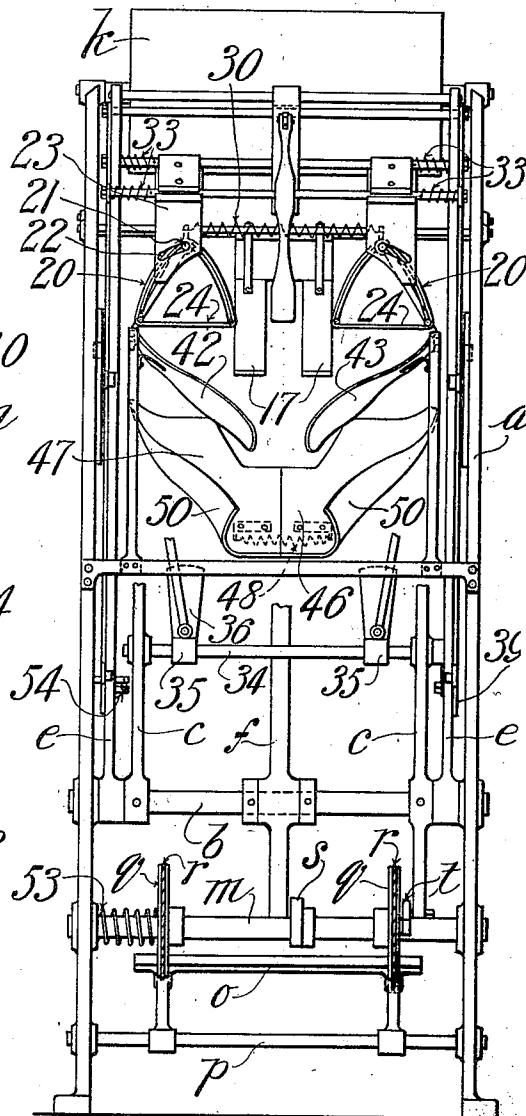


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Fig. 3.



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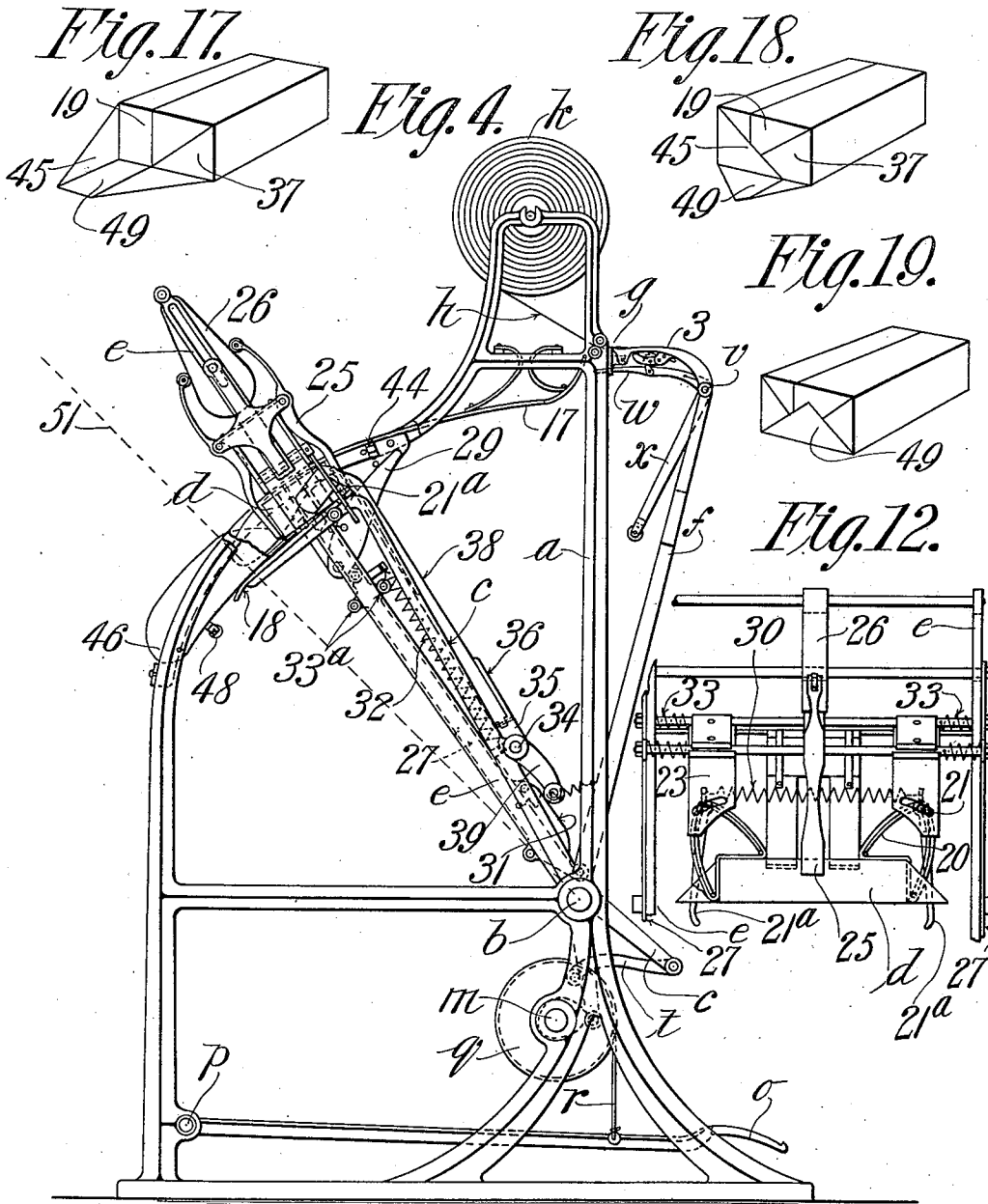
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6 SHEETS—SHEET 3.



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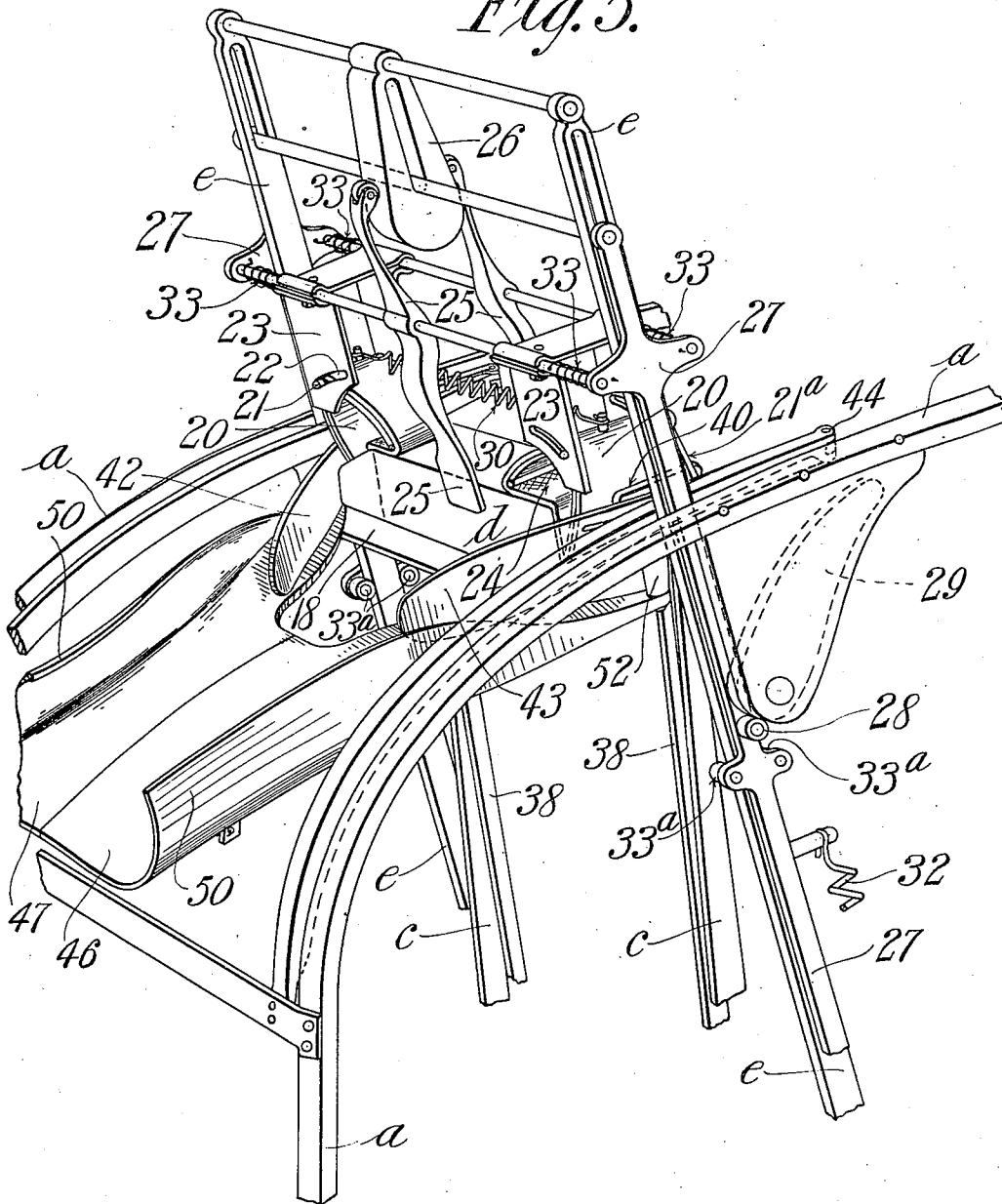
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1,016,067.

Patented Jan. 30, 1912.

6 SHEETS—SHEET 4.

Fig. 5.



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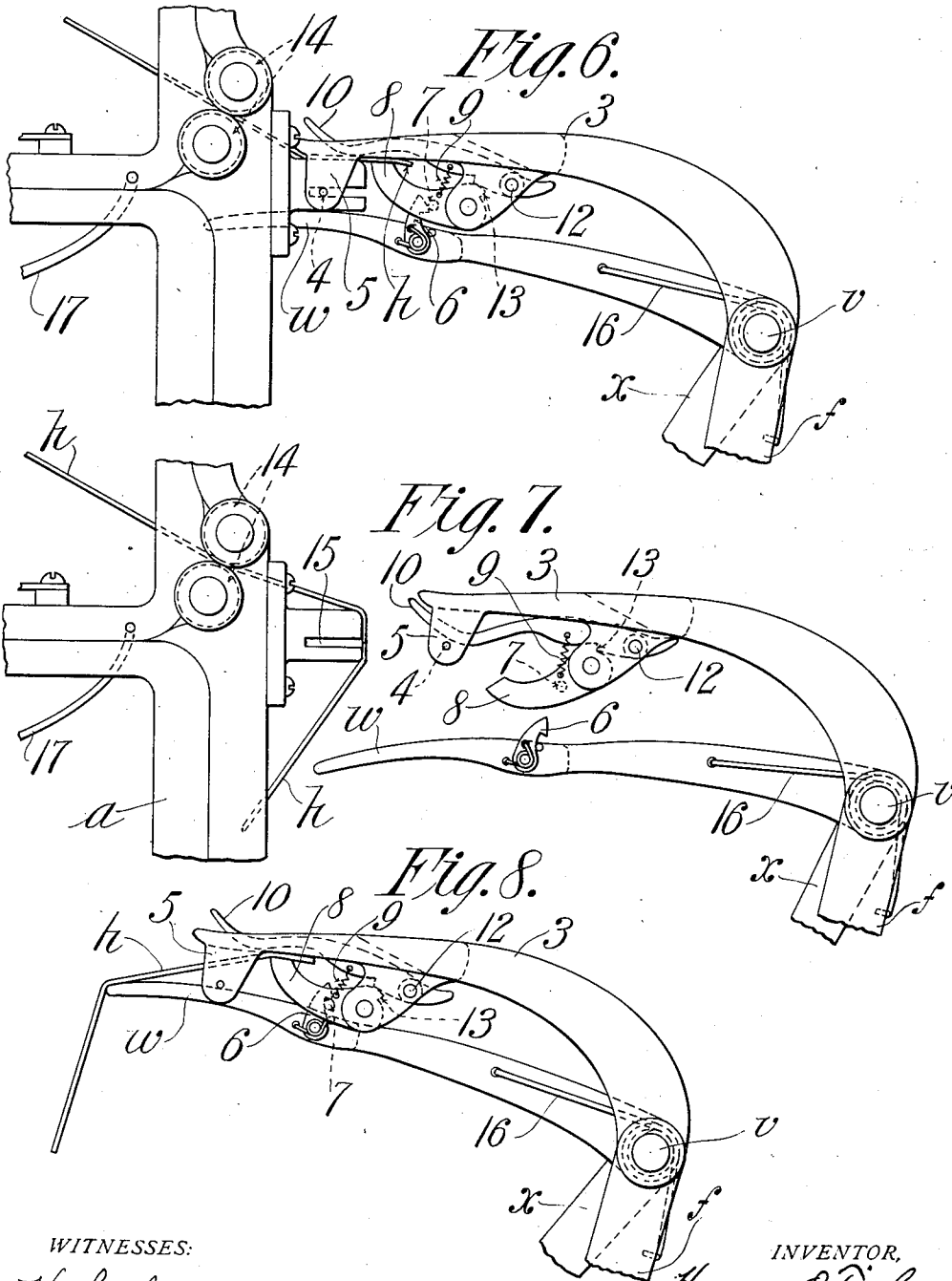
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6 SHEETS—SHEET 5.



WITNESSES:
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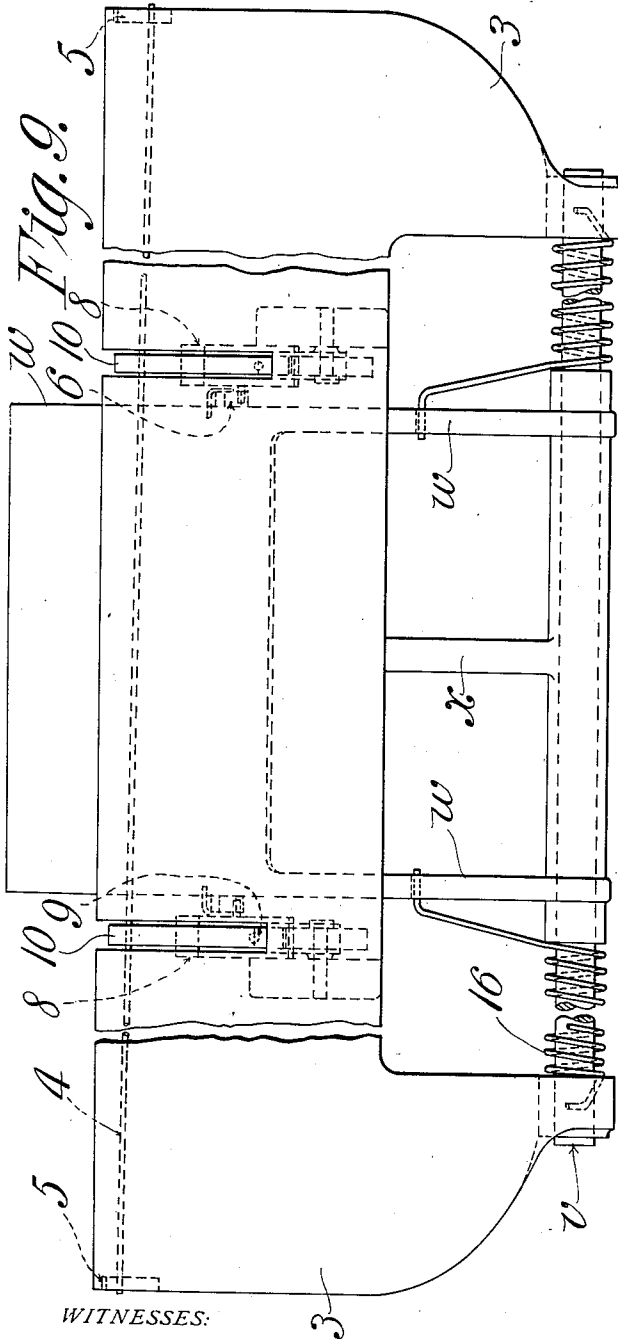
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H. O. FISCHER.
WRAPPING MACHINE.
APPLICATION FILED FEB. 19, 1909.

1,016,067.

Patented Jan. 30, 1912.

6 SHEETS—SHEET 6.



WITNESSES:

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Harry W. Town

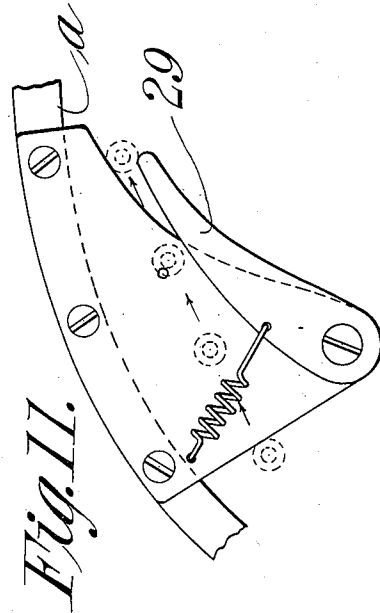


Fig. 11.

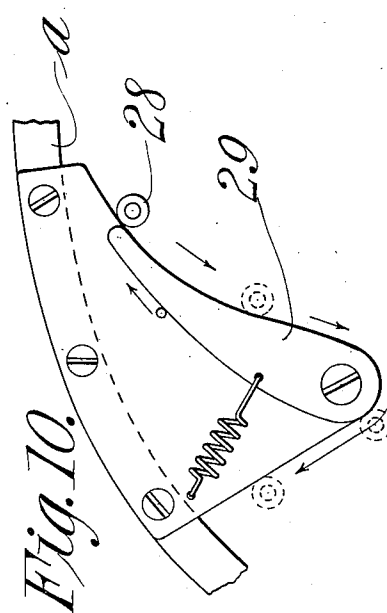


Fig. 10.

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UNITED STATES PATENT OFFICE.

HERMAN O. FISCHER, OF SPRINGFIELD, MASSACHUSETTS.

WRAPPING-MACHINE.

1,016,067.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed February 19, 1909. Serial No. 478,818.

To all whom it may concern:

Be it known that I, HERMAN OTTO FISCHER, a subject of the Emperor of Germany, 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 for its object, broadly, the construction of a machine capable of wrapping up packages of different dimensions, whether the variation in dimension be either of length, breadth, or thickness, or all of these; the machine being capable of automatically adjusting itself, within certain practicable limits, to packages of varying dimensions without manual adjustment of any kind on the part of the operator: and the invention consists in the construction and arrangement of the mechanical devices hereinafter described and clearly pointed out in the claims appended hereto.

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

Figure 1 is a side elevation of a machine embodying the invention, the parts being shown in the position they would occupy when a package is laid on the table ready for wrapping. Fig. 2 is a front elevation of the machine,—viz., looking from the right-hand of Fig. 1. Fig. 3 is a rear elevation of the machine, viz., looking from the left side of Fig. 1, certain parts in each of these Figs. 2 and 3 being omitted for the sake of avoiding confusion. Fig. 4 is a side elevation like Fig. 1 but showing the position of the parts of the machine when the package is in position to have the final end fold of the wrapper made. Fig. 5 is a perspective view of the principal folding mechanism of the machine showing the means for folding the four flaps against the ends of the package. Figs. 6, 7, and 8 are enlarged side elevations of the nippers which draw the paper from the roll by the movement of the arm on which they are mounted, and pass the paper around a package resting on the web of paper by the movement of the arm in the direction opposite to that which

it follows in drawing the paper off of the roll. Specifically, Fig. 6 shows the nippers having just engaged the end of the strip of paper, Fig. 8 shows the nipper-arm swung backward to its fullest extent, and Fig. 7 shows the nipper arm when it has swung forward again to pass the end of the web of paper over the top of the package, this end being released from the nippers to the end that it may be pushed or folded in under the web of paper as the package moves along just prior to the severing of the web, all as described in detail further on. Fig. 9 is a plan view on the same scale as in Figs. 6, 7, and 8 of the top of the nipper devices and showing also the top-folding plate associated with the nipper devices whereby the end of the paper carried by the nippers is folded down on top of the package after the paper is cut. Figs. 10 and 11 are parts of the side frame shown in side elevation and showing a swinging cam thereon in two positions. Fig. 12 is an elevation showing the mechanism for infolding the upper end-flaps of the package which is the first of the folding operations. Fig. 13 is a side elevation showing that part of the machine through which the package passes just after the paper has been wrapped around it lengthwise, and before the first of the end-folding operations, this condition of the package being that shown in Fig. 15. Fig. 14 shows a package lying on the table of the machine on the web of paper. Fig. 15 shows the package around which the paper has been passed longitudinally. Fig. 16 shows the package having the first end-fold made from the top downward. Fig. 17 shows the package having the first side flap folded in. Fig. 18 shows the second side flap folded in, and Fig. 19 shows the last end-flap folded up from the bottom to complete the operation.

Broadly stated, the invention resides in the provision of mechanism to fold a length of paper around a package which, on its passage through the machine, is subjected to the action of folding devices which may yield in the direction of their action on the package, whereby they may adapt them-

selves to packages presented successively thereto, whose dimensions may vary either as to length, breadth, or thickness, a length of the paper constituting the wrapper being drawn off a roll properly proportioned to the package to be wrapped, that is to say, the paper wrapper will be shorter for one package than for another, which may be of greater circumference.

The preferred embodiment of the machine is shown in the accompanying drawings, and in this machine the package moves through a curved path.

Referring to the drawings, and first to Figs. 1 to 5 inclusive: *a* indicates the frame of the machine, the front, rear, and base of which constitute a rectangle, and the upper part of which, from the front to the rear, is of circular form through an arc of forty degrees, more or less, the axis of which is the center of a shaft *b* located in the lower part of the frame *a* at the front side, which shaft extends transversely across the machine. On this shaft are mounted two swinging frames,—one indicated as a whole by *c*, which carries the package *d*, through its curved path through the machine and past the end-folding devices, and the other frame, indicated as a whole by *e* which carries mechanism for folding down the upper end-flap and mechanism to grasp the package from front and rear sides while said upper end-flaps are being folded down against the ends thereof. A third frame is also hung on said shaft this being the nipper-frame, indicated as a whole by *f*, which swings only from the position shown in Fig. 1 to that shown in Fig. 4,—that is only up to the point *g* at which the paper web is cut and where, by suitable means to be described, the nippers grasp the end of the web, indicated by *h* ready to draw another length off the roll *k*. These various frames above referred to are actuated by suitable connections with a shaft *m* which, in turn, is actuated by means of a treadle *o* pivoted to the rear of the frame at *p* there being two drums *q* on said shaft, and straps *r* run partially around the drums and are brought down and secured to the treadle. In the shaft *m* is a cam *s* against which the lower end of the nipper frame bears by gravity; the upper end of this frame being always forward of its axis will thus hold its lower end against the cam. The lower end of one side of the frame *c* which extends below the shaft *b* is connected with one of the drums *q* by a curved link *t* pivotally connected both to the side of the drum and the end of said frame, and it will be observed that the said point of connection with the drum is a little below the center when the parts are in the position shown in Fig. 1. Therefore, when the treadle *o* is depressed and the shaft *m* rotated, the nipper-frame,

through its cam *s*, will start to move in advance of the frame *c* thus carrying the end of the strip of paper forward over the top of the package.

It will be observed that the web of paper passes under the package and then up over the edge of an elbow-lever pivotally supported on a shaft *v* which extends across the upper end of the nipper frame, as shown in detail in Fig. 9, and whose position in the nipper frame is clearly shown also in Fig. 2. As shown in Fig. 9, the upper arm of this elbow-lever consists of a flat plate *w* which extends out under the upper part of the nipper frame and somewhat beyond the edge of the latter, the other arm of said lever (indicated by *x*) extending from its axis toward the carrier-frame *c* against which it bears, said arm *x* being provided at its extremity with a roller.

The nipper devices proper, (soon to be described), are carried on the under side of the broad plate 3, shown in Fig. 9, which constitutes the upper part of the nipper frame and is preferably of about the full width of the web of paper. This plate also carries under the edge thereof the wire 4 supported under tension between two lugs 5 located respectively at the corners of the said plate.

The plate *w* of the elbow lever carried on the shaft *v* is held in the position shown in Fig. 1 and in Fig. 8 by means of latches 6, one of which is pivotally supported on either side of said plate *w* and engages a pin 7 in the nipper-jaw 8, said jaw being held up against the end of the web of paper *k* by means of a spring 9 extending from said pin to a latch-lever 10 pivoted at 12 in a lug on the underside of the plate 3. All of this construction is clearly shown in Figs. 6, 7, and 8. It will therefore be seen that the nipper-frame, as it moves forward, will cause the arm *x* of said elbow-lever to bear against the flat side of the frame *c* and depress the free end of the plate *w* of said elbow-lever thus carrying the end of the web held by the nippers down against the top of the package; and this downward movement of the plate *w* will, by means of the latch 6, heretofore described, draw down the nipper-jaw 8 and release the end of the web of paper which, as the frame *f* swings forward, will be carried over the top of the package toward the web of paper on the other side thereof. This drawing down of the nipper-jaw 8, as described, will cause the engagement of a shoulder 13 thereon with a notch on the underside of the latch-lever 10, thereby locking the nipper-jaw open. All these movements take place before the edge of the nipper-frame reaches the position shown in Fig. 4. Referring still to Figs. 6 and 7, it will be seen that the web of paper passes through a couple of

rolls 14 and is then drawn over the edge of a plate having a slot 15 therein, which slot lies in the path of the cutting wire 4 on the nipper-frame and soon after the end of the web *h* has been released by the nippers this wire will pass through the web and enter the slot 15 severing the web at about the time the upwardly curved end of the latch-lever 10 comes to a bearing on the upper edge of the plate in which said slot 15 is located, thus holding the web firmly, the end of the latter, as soon as severed, straightening out under the latch-lever 10. At about this time, the movement of the carrier frame *c* becomes accelerated because the connections between the actuating shaft *m* and the lower end of the carrier frame, by means of the link arm *t*, is at that time at the point of its most rapid movement, that is to say the end of said link-arm connected to the drum *g* approaches a position vertical to the axis of the shaft *m*; hence, the frame *c* will move away from the frame *j*, thereby permitting the plates *w* of the elbow-lever supported on the shaft *v* to swing up under the end of the nipper-frame to the position shown in Fig. 6 which is far enough to allow the nipper-jaw 8 to grasp the web of paper and then, when the nipper-frame swings backward again, to the position shown in Fig. 1, it starts back in advance of the frame *c*; thus the plate *w* will swing up far enough to permit the latch 6 to again snap over the pin 7. The plate *w* is normally maintained in the position shown in Fig. 8 by means of a spring 16 which is coiled about the shaft *v* as shown in Fig. 9, one end being secured to the plate 3 and the other to the plate *w*. It is thus seen how the package is inclosed by the wrapper leaving the tubular ends of the latter in position to be folded in, it being necessary, however, before this folding operation can take place, to hold the overlapping ends of the wrapper close against the top of the package, and this is effected by the continued movement of the carrier-frame *c* which, after the nipper-frame has come to a stop, and just after the web of paper has been severed, carries the package under the spring-arms 17 which have a sufficient range of compression to hold any package, from the thinnest to the thickest which the machine is capable of handling firmly against the table 18 of the carrier-frame. It will therefore be observed that the invention embodies means for severing the body portion of the web at a point where it overlaps the free end thereof. We have now the package, in the form shown in Fig. 15, held between the table 18 and the vertically yielding springs 17, and the next movement of the machine is for the purpose of making the fold of the wrapper shown in Fig. 16, that is folding

down the end-flaps 19 from the top toward the bottom of the package, which operation is performed simultaneously at each end thereof by means of the yielding folders consisting of the substantially V-shaped arms 20 made of some suitable spring material and axially supported on a small shaft 21 which may have a sliding movement in an inclined slot 22 in the box-like supports 23. These spring-like folding devices 20 have attached to the lower ends thereof a strip of canvas 24, or other pliable material, and as shown in Fig. 5, these spring-like arms 20 of the folding device are of sufficient width to embrace more or less of the end of the package, though they need not necessarily be as wide as the package but only wide enough to turn down the top end-flap 19. These folders for this flap are carried on a frame which slides lengthwise of the frame *c*, and besides carrying the folding devices for the flaps 19, carries also two gripping arms 25 which grasp the front and back sides of the package, just as the folding devices above referred to force the flaps 19 down against the ends thereof.

Referring to Fig. 5 especially: It will be seen that the frame *e* extends upward considerably above the curved path of the package and carries at the upper end thereof a wedge-shaped member 26. The frame on which the folding devices and the gripping arms 25 are carried may be indicated as a whole by 27, and it has an endwise sliding movement on the frame *c*. This vertical movement of the frame 27 in the manner described takes place during the movement of the frame *c* from the position shown in Fig. 1 to that shown in Fig. 4, said frame *e* being pushed along by the frame *c* which comes up into contact with it, the two frames thereafter moving together. As the frame *e* moves in the manner described, a stud 28 having a roll thereon comes against the underside of a curved cam 29 carried on the frame *a* of the machine, and as this stud 28 runs down under the cam 29, it of course draws the frame 27 downward, and as this frame moves downward, the pliable base-part 24 of the folding devices 20 will be brought down against the opposite upper corners of the package *d*, and the latter forming a point of resistance to further movement of the folding devices, the continued downward movement of the frame 27 will cause the opposite ends of the spring sides of these folding devices to be drawn together very much like the action of the thumb and finger respectively against the top and the ends of the package, thus making the desired fold of the flap 19.

The length and inclination of the slot 22 will cause the two shafts 21 to adjust themselves relative to the direction of thrust re-

sulting from the bearing of the spring-arms of the folding device on the top and against the ends of the package, and this position of course may be modified by the relative length of the packages,—in one case, for example, the upper corner of the package might come near the outside of the base 24 of the folding devices and on the next package, which might be shorter, it would fall more nearly to the other side perhaps. In either case, the spring-folding devices for these upper flaps will adjust themselves to the package automatically with sufficient accuracy to fold down said flaps 19.

The upper extremities of the two folding devices 20 just described are connected together by a spiral spring 30, shown in Figs. 3, 5, and 12, to the end that the ends of said folding devices which bear on the top of the package may be held firmly there-against as the folders adapt themselves to the end of the package after they have come to a bearing against the upper surface, and the continued downward movement of the frame causes the canvas base 24 of the folders to be stretched over the upper corners of the package bearing against the top and ends thereof,—one of the spring members of the folder against the top and the other against the end, and this brings about their automatic adjustment to the form of the upper ends of the package; and then when the frame *e* has been carried so far as to allow the stud 28 to pass around the end of the cam-arm 29 and thus permit the frame 27 to ascend, this spring 30 will, by its contraction, draw the two shafts 21 into the upper ends of the slots 22 again, and thus position the folders 20, as seen in Fig. 3, ready for a succeeding operation.

It will be seen that the end of the frame 27 fits closely against the side of the frame *e* and outside of the latter and extends nearly down to the shaft *b*, and on the end thereof is located a cam-plate 31 whose function will soon be described. The frame 27, when it is pulled downward, distends a spiral spring 32 one end of which is secured to the frame 27 and the other to the frame *e*, and the reaction of this spring causes the frame to ascend in the manner described when the frame *e* reaches that point in its swinging movement which will allow the stud 28 to pass around the end of the cam 29.

Each leg of the frame 27 is provided with a spring 32, and one of them with a cam-plate 31, see Figs. 1 and 4. The shafts of the gripping arms 25 are provided with torsion springs 33 to hold the upper ends of the arms in contact with the wedge-cam 26. To maintain the alinement of the legs of the frame 27 relative to the frame *e*, each leg is provided with rolls 33^a to embrace the edges of the frame *e*, as shown in Figs. 1 and 5.

Referring to Figs. 2 and 3 as front and rear elevation, and Fig. 1 for a side elevation, it will be seen that the two side members of the frame *c* are united by a shaft 34 on which are fixed two hubs 35 having flat, upstanding projections 36 thereon, and on these hubs are pivoted two folding arms 38 for infolding the side-flaps 37 of the wrapper, see Fig. 17. These folding arms are adapted to swing on their supports on the hubs 35, transversely of the machine, viz.,—in the plane of the frame, and they also move with the frame *c* when it swings forward and back, and the purpose of the upstanding projections 36 is to strengthen these folding arms where they are pivoted to the hubs 35. The folding arms are so positioned on their supports as to normally swing outward, their upper ends being flattened as shown in the side elevations, in the vertical plane, and as they swing forward with the frame *c* these upper ends follow closely the sides of the frame *a* of the machine, and the frame *c* then lying close against the frame *e*, the depending crank-arm 39 fixed on the shaft 34, will have its lower end lying in the path of the cam-plate 31 on the depending leg of the frame 27; and thus when the last named frame is moved down, as described, to fold in the top-flaps 19, the L-shaped ends of the folding arms 38 will, just after the folders 20 have been forced down into the position shown in Figs. 5 and 12, be forced forward against the flaps 37, (the edge cam 31 acting against the crank-arm 39, effecting this movement). At the same time, the upper ends of these folding arms 38 will be forced inward toward the end of the package as follows: On the end of each of the shafts 21, toward the front of the machine, is a depending arm 21^a, (shown in Figs. 4 and 12) between which and the folders 20 the flattened end of the folder 38 is positioned, and thus when the folders 20 are forced downward and begin to tilt side-wise over the ends of the package, the arms 21^a bearing against the folders 38, will bring the flaps 37 up against the outside of the folders 20, as described. As the latter rise, the slightly incurved ends of the arms 21^a depending below the folders 20 give the folders 38 a still further inward movement. At about the time this folding movement takes place, the package enters the space between the two spring arms 42 and 43, supported at the point 44 on the frame *a*, this latter, at this curved part thereof consisting of two members, as shown only clearly in Fig. 5, between which two members the arms of the frames *e* and 27 swing. The two spring folding-arms 42 and 43 are adapted to yield in a horizontal plane, each arm being curved toward the other in converging lines, said arms being made of

spring steel, preferably, and at that point where the package enters between said arms, that is just before it arrives at the position shown in Fig. 5, the space between them is wide enough to receive the package substantially as in the shape shown in Fig. 15. As this space between the folding-arms 42 and 43 gradually narrows however, and while the end flaps 19 and 37 are being folded in the manner heretofore described, the other side flaps 45, (one of which is shown in Fig. 17 particularly) are pressed against the inner surface of said wings and as the package moves forward fold the flaps 45 down against the end of the package. These folding wings 42 and 43 lead into a sort of a trough consisting of two parts 46 and 47, longitudinally divided, and spring-held together in the position shown in Fig. 5 by means of the spring 48, shown in dotted lines in Fig. 3, particularly, and there is space between the underside of the wings 42 and 43 and the bottom surface of the trough to permit the bottom end-flaps 49 of the package to extend under the lower edge of said wings.

That part of the longitudinally divided trough above referred to into which the wings 42 and 43 extend, is wider than said wings and from that point the upstanding and inwardly curved sides 50 thereof converge toward the center of the trough, that is the space between the side walls of the trough narrows at substantially the same angle as do the wings 42 and 43.

As the package moves forward, (the final position of which is shown by the dotted line 51 on Figs. 1 and 4,) if it is wider than the trough, the two sides of the latter will yield and spread apart, each side being supported pivotally on a boss 52 on the frame (only one of which, however, is shown in Fig. 5) and owing to the upstanding borders of the trough, and their inwardly curved shape, the end-flaps 49 of the package will be folded up against the end of the latter, as shown in Fig. 19.

When the frames *e* and *c* reach the position indicated by the line 51, Figs. 1 and 4, (which is the limit of forward movement) if the foot of the operator be removed from the treadle *o*, a suitable spring, as 53 for example, on the shaft *b*, will cause the frame *c* to swing back to normal position, as shown in Fig. 1, and another spring 54, between the frames *a* and *e*, will retract the latter, the machine now being ready to receive another package on the table 18, the one already folded remaining in the grip of the trough on the delivery end of the machine, from which position it may be withdrawn for tying up; whereupon the spring 48 will close the two parts of the trough, or a succeeding package will force out the one remaining in the trough.

In the various figures of the drawings which show the various steps in wrapping a package, the latter is shown as though it were of two rectangular forms, and as though the articles to be wrapped were of uniform size; whereas, this machine is adapted particularly to enwrap packages of relatively soft material which may vary in any one of the three dimensions thereof, as already explained; or, in all of those dimensions within the limits of the machine, these limits being determined for example, as to the thickness of a package by the degree of compressibility of the springs 17, and the length of the package by the space between the folding wings 42 and 43, and the two parts 46 and 47 of the delivery trough wherein the last fold of the end-flap is completed.

The throw of the nipper-frame *f* is sufficient to wrap up circumferentially, as shown in Fig. 15, any package which is capable of passing under the spring-arm 17; that is to say that the length of the paper drawn off of the roll *k* when the nipper-frame swings back from the position shown in Fig. 4 to that shown in Fig. 1, together with the length drawn off of the roll when a package is placed on the web of paper and the package is then moved under the spring-arm 17, will be sufficient to completely encircle that package.

It will be observed that the cam 29 is pivotally supported on the frame by its lower end, to the end that when the frame 27 ascends the stud 28, and the latter comes to a position of rest behind the cam, and when the frame *e* swings back again to normal position, it must depress the free end of the cam. To that end a suitable spring (not shown) is supplied to bear on said cam to permit its said free end to be depressed, as described.

What I claim, is:—

1. A wrapping machine including means for supplying a continuous web of wrapping material to the machine, means adapted for coöperation with a package to be wrapped to draw off a length of the web commensurate with the circumference of the specific package and fold it around the package in one direction until the web overlaps the free end thereof, and means for severing the said web at the overlapping portion thereof.

2. A wrapping machine including means for moving a package through the machine, means for supplying a web of wrapping material to the machine, the said web extending across the path of the package and under the said package, means for moving the free end of the web over the package and holding it against the same to partially enwrap the package, the movement of the package serving to carry it against the body

of the web to complete the enwrapping thereof, and means for severing the web.

3. A wrapping machine including a package carrier movable through the machine, means for supplying wrapping material to the machine, the said wrapping material extending over the package carrier and under a package placed thereon, and means for moving the free end of the wrapping material over the package and holding it against the same to partially enwrap the package, the movement of the carrier serving to carry the package against the body of the wrapping material to complete the enwrapping of the package.

4. A wrapping machine including a package carrier movable through the machine, means for supplying wrapping material to the machine, the said wrapping material extending over the package carrier and under a package placed thereon, a gripper engaging the free end of the wrapping material, and means for moving the gripper to bring the free end of the wrapping material over the package and hold it against the same to partially enwrap the package, the movement of the carrier serving to carry the package against the body of the wrapping material to complete the enwrapping of the package.

5. In a wrapping machine, means to wrap a piece of paper or the like around a package in one direction, and a device to fold down the top end-flaps of the wrapper against the ends of the package, said flap-folding device including a flexible member held under tension and adapted to bear first on the top of the package and then have a rocking movement over the ends thereof to press the flaps against said ends.

6. In a wrapping machine, a package carrier underlying a strip of wrapping material extending thereover from a roll on which strip goods to be wrapped are placed, means to move the end of the wrapping material over the package operable in advance of the movement of the carrier, a device to sever the strip of paper after the latter has been passed around the package, together with mechanism to fold the sides of the strip of paper over the ends of the package.

7. In a wrapping machine, a carrier to successively move packages through the machine, there being a strip of suitably supported wrapping material extending over the carrier, a strip-holding device to grip the free end of said strip, and means to move said strip-holding device over the top of a package on the carrier in advance of the beginning of the movement of the carrier, to partially enwrap the package with the end portion of said strip, the movement of the carrier serving to carry the package against the body of the strip to complete the enwrapping of the package in one direction

circumferentially, together with devices to fold in the sides of the wrapping material against the ends of the package.

8. A wrapping machine including a carrier for moving packages through the machine, means for supplying a continuous web of wrapping material to the machine, the said web extending over the package carrier and under a package placed thereon, means for moving the free end of the web over the package and holding it against the same to partially enwrap the package, the movement of the package carrier serving to carry the package against the body of the web to complete the enwrapping of the package, a yielding abutment arranged over the path of the package for holding the overlapping edges of the wrapper against the package, and means for severing the wrapper from the web.

9. In a wrapping machine, provided with a roll of paper, a nipper-frame to grip the end of the paper, said frame being movable in one direction to draw the paper off of said roll, and in the opposite direction to carry said end of paper over a package placed on the paper, a package carrier-frame, and another frame carrying certain of the flap-folding devices, said carrier-frame being movable against and with said frame carrying the flap-folding devices whereby said folding devices may be actuated to infold certain of the end-flaps together with means past which said carrier-frame moves to effect the infolding of the other of said end-flaps.

10. A package wrapping machine including a carrier for moving packages through the machine, means for supplying a web of wrapping material to the machine, the said web of wrapping material extending over the said carrier and under a package upon the same, a gripper for engaging the free end of the web, means for moving the gripper over the top of the package and holding it against the same to partially enwrap the package, the movement of the carrier serving to carry the package against the body of the web to complete the enwrapping of the package, means carried by the gripper for severing the web, and a yielding abutment arranged over the path of the package for holding the overlapping portions of the wrapper against the package.

11. A package wrapping machine including a carrier for moving packages through the machine, means for supplying a web of wrapping material to the machine, the said web of wrapping material extending over the said carrier and under a package upon the same, a gripper for engaging the free end of the web, means for causing the gripper to move the free end of the web over the package and hold it against the same to partially enwrap the package, the movement of

the carrier serving to carry the package against the body of the web to complete the enwrapping of the package, means carried by the gripper for severing the web and gripping the severed edge thereof to withdraw a fresh portion of the web upon the reverse movement of the package carrier, and a yielding abutment arranged over the path of the package carrier for holding the ends of the wrapper against the package.

12. In a wrapping machine, a carrier for moving packages through the machine, a suitably supported roll of wrapping material, a device to grip the free end of said material and to hold it extended over the carrier, means to effect the movement of the strip-holding device over a package on the carrier in advance of the movement of the carrier in the same direction, the movement of the carrier and package against the web of material serving to rotate the roll of material and permit the delivery of such a length thereof as is required by the dimensions of the package, and means on the strip-holding device to sever the strip from the roll at the proper time.

13. A wrapping machine including a carrier for moving packages through the machine, means for supplying a continuous web of wrapping material to the machine, the said web of wrapping material extending over the package carrier and being spaced above the same, a gripper engaging the free end of the web and remaining fixed while a package is placed upon the carrier so that the weight of the package will draw off a portion of the web, means for moving the gripper over the package to partially enwrap the same, the movement of the carrier serving to carry the package against the body of the web to complete the enwrapping of the package, and means for severing the web.

14. A wrapping machine including a carrier for moving packages through the machine, means for supplying a web of wrapping material to the machine, the said web of wrapping material extending over said carrier and under a package placed thereon, means for gripping the free end of the web and carrying it partly around the package, means for severing the web after it has been drawn around the package, means for holding the overlapping edges of the wrapper against the package, and means for infolding the ends of the wrapper against the package.

15. In a package wrapping machine, a carrier device to move packages through the machine, there being a strip of wrapping material extending over said carrier and under a package on the carrier, mechanism to carry the free end of said strip partly around the package, and mechanism to cut from the strip a part thereof proportionate

to the circumference of the package to be wrapped, and a device on the strip-carrying mechanism to grasp the free end of the strip from which said portion was severed, whereby by its movement in the opposite direction said strip-carrying mechanism may again draw the strip over the carrier in position to receive another package.

16. In a package-wrapping machine, means to support a web of wrapping material in the form of a roll or the like, a gripper device to hold the free end of said material, means to guide said web as it is drawn from the roll, said web extending around the front and bottom of the package to be wrapped and said gripper device being constructed to hold the end of the material in fixed relation to the package during part of the movement of the latter, means to move the package and gripper device simultaneously against the web of wrapping material extending past the front of the package to carry the latter past the guide for said web, whereby the wrapping material may completely encircle the package in the direction of the line of movement of the latter, and means to sever that portion of the wrapper which envelops the package from the web at the proper time.

17. A package wrapping machine including means for moving a package through the machine, means for supplying wrapping material to the machine, the said wrapping material extending across the path of the package and under the said package, guide means for the wrapping material, means for moving the free end of the wrapping material over the package and holding it against the same to partially enwrap the package, the movement of the package serving to carry the package against the body of the wrapping material and past the guide means for the same so as to complete the enwrapping of the package, and means for holding the ends of the wrapping material against the package.

18. In a package-wrapping machine, a carrier for the package, there being a web of wrapping material extending from a roll or the like past one side of the package, and across the path of movement of the latter, and a device to grip the free end of said web and to hold the same against one side of the package, the package being movable against the web of wrapping material whereby the package may be encircled in one direction by wrapping material drawn from the roll by the movement of the package, and means actuated by the web-gripping device to sever the web of wrapping material at a point at which said web overlaps the free end of said web.

19. A package wrapping machine including means for moving a package through the machine, means for supplying wrapping material to the machine, the said wrapping

material extending across the path of the package and under the said package, guide means for the wrapping material, means for bringing the free end of the web over the package and holding it against the same so as to partially enwrap the package, the movement of the package serving to carry it against the body of the wrapping material and past the said guide means for the wrapping material so as to complete the enwrapping of the package, means for holding the ends of the wrapper against the package, and means acting upon the package as it continues in its movement for folding the end flaps against the same.

20. In a wrapping machine, a package support whereby said package may be moved from one part of said machine to another, means to suitably support a roll, or the like, of wrapping material, whereby the web of said material extending toward the package-support may intersect the path of movement of the package, means to hold the free end of the web of wrapping material in fixed relation to the package during the movement of the latter, the package being movable against said web of wrapping material to completely encircle the package in one direction and a device to sever the web of wrapping material, actuated by the means which hold the free end of said material to the package.

21. In a package-wrapping machine, mechanism to move packages through the machine in one direction, means to supply a web of wrapping material to the machine, said web extending toward and past one side of a package to be wrapped from a direction contrary to the line of movement of the package; a device movable with the package to hold the free end of said wrapping material in fixed relation to the package, the package being movable against said material to envelop it therein, together with means to sever the web of wrapping material at a point where it overlaps the end held in fixed relation to the package.

22. In a package wrapping machine, mechanism to move packages through the machine in one direction; means to supply a web of wrapping material to the machine, said web extending toward and past one side of a package to be wrapped, from a direction contrary to the line of movement of the package; a device movable with the package to hold the free end of said wrapping material in fixed relation to the package, the package being movable against said material to envelop it therein, together with means to sever the web of wrapping material at a point where it overlaps the end held in fixed relation to the package, in combination with mechanism to fold the wrapping material over the ends of the package.

23. A wrapping machine including means for moving a package through the machine, means for supplying a continuous web of wrapping material to the machine, means for folding the web about the package, and a flap folding device formed with a flexible member held under tension and adapted to engage an edge of the package for folding an end flap against the same.

24. A wrapping machine including means for folding a wrapper around a package in one direction, and a flap folding device comprising a pair of yielding arms connected by a flexible strip which is held under tension thereby, the said strip being designed to engage an edge of the package to fold an end flap against the same.

25. A wrapping machine including means for folding a wrapper around a package in one direction, and a flap folding device mounted to have a rocking movement and comprising a pair of yielding arms connected by a flexible strip which is held under tension thereby, the said flap folding device being designed to bear first on one side of the package and then to rock over an end thereof to fold the end flap against the package.

26. A wrapping machine including means for folding a wrapper around a package in one direction, pivotally mounted flap folding devices for folding the end flaps against the ends of the package, the pivots of the said flap folding devices being shiftable toward and away from each other, and yielding means normally tending to draw the pivots of the flap folding devices toward each other.

27. A wrapping machine including means for folding a wrapper around a package in one direction, and a flap folding device comprising a V shaped arm having a flexible strip stretched over the same, the said arm being designed to bear first on one side of the package and then to rock over an end thereof to fold the end flap against the package.

28. A wrapping machine including a main frame, a package carrying frame mounted upon the main frame, means for supplying a wrapper to the package and folding the same circumferentially around the package in one direction, a second frame movable with the package carrier during a portion of its movement, a slide mounted upon the second frame, means carried by the slide for infolding a portion of the end flaps, and means for infolding the remainder of the end flaps.

29. A wrapping machine including a main frame, a package carrier mounted upon the main frame, means for supplying a wrapper to the package and folding it around the package in one direction, a second frame movable with the package car-

rier during a portion of its movement, a
slide mounted upon the second frame to
move in a direction transverse to the move-
ment thereof, means upon the slide for
5 gripping the package and infolding a por-
tion of the end flaps, and yielding abut-
ments adapted to engage the package in its

movement to infold the remainder of the
end flaps.

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Witnesses:

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