Dec. 6, 1960 E. H. HEDQUIST 2,962,852

ARTICLE WRAPPING MACHINE

Filed April 20, 1959 4 Sheets-Sheet 1

FIG_1

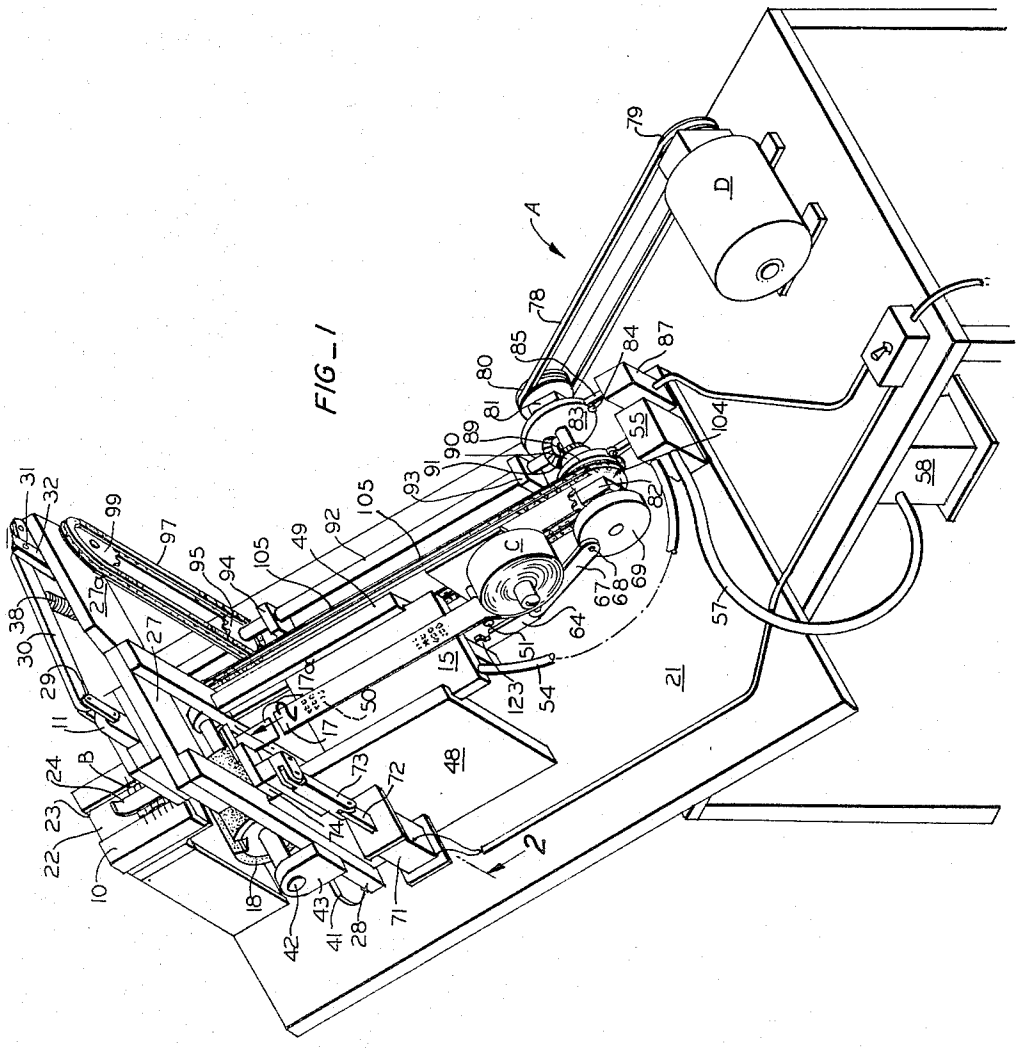
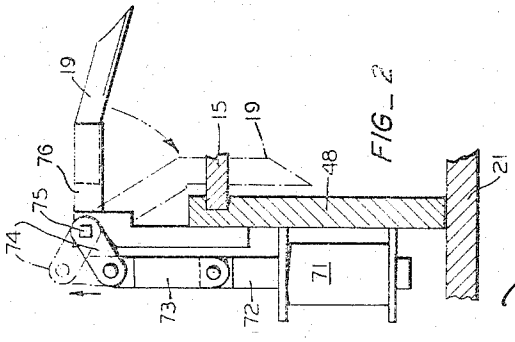


FIG_2



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Dec. 6, 1960 E. H. HEDQUIST 2,962,852

ARTICLE WRAPPING MACHINE

Filed April 20, 1959 4 Sheets-Sheet 2

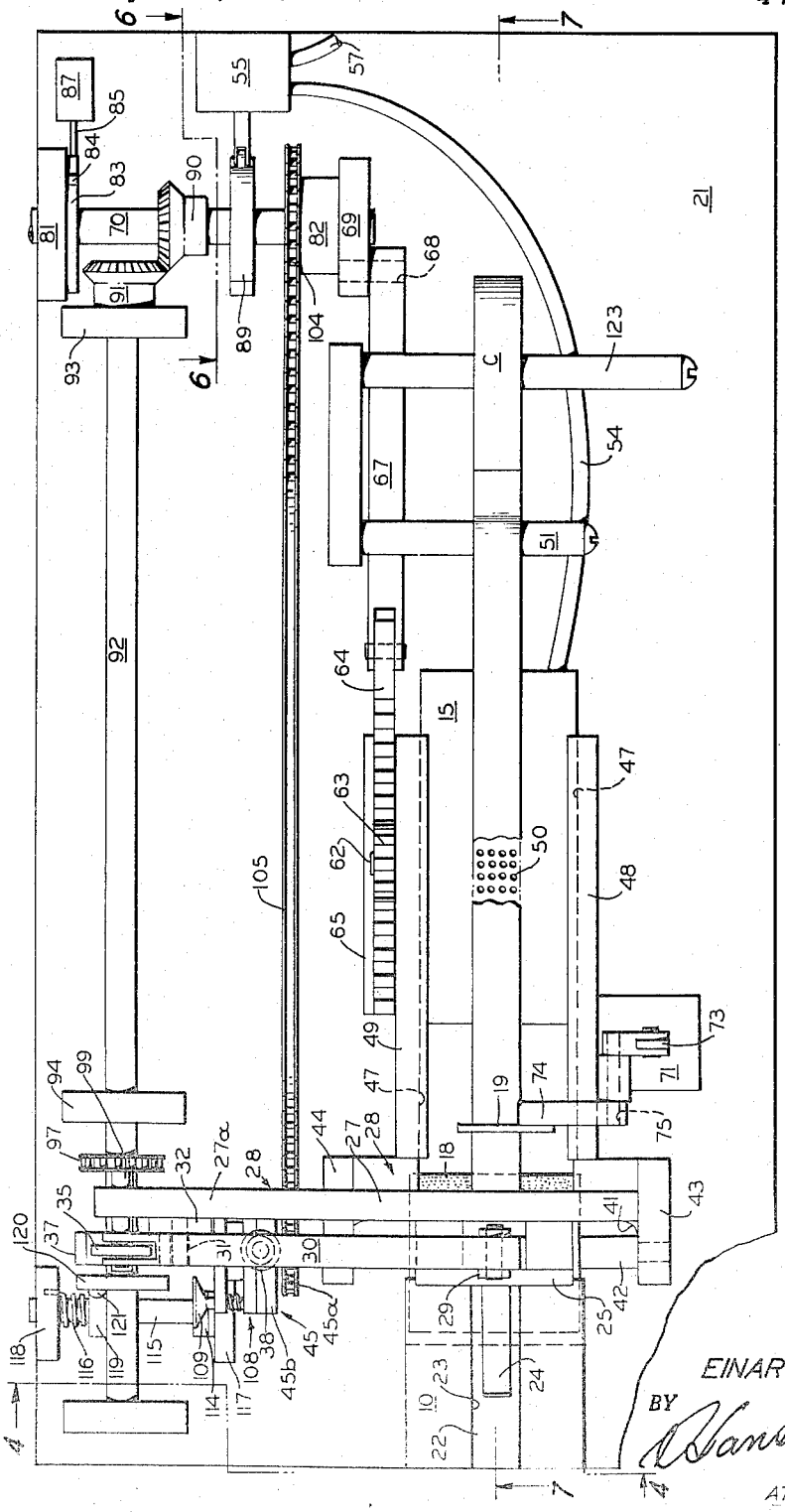


FIG_3

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Dec. 6, 1960 E. H. HEDQUIST 2,962,852

ARTICLE WRAPPING MACHINE

Filed April 20, 1959 4 Sheets-Sheet 3

FIG_6

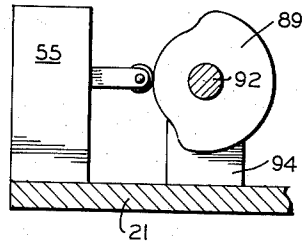
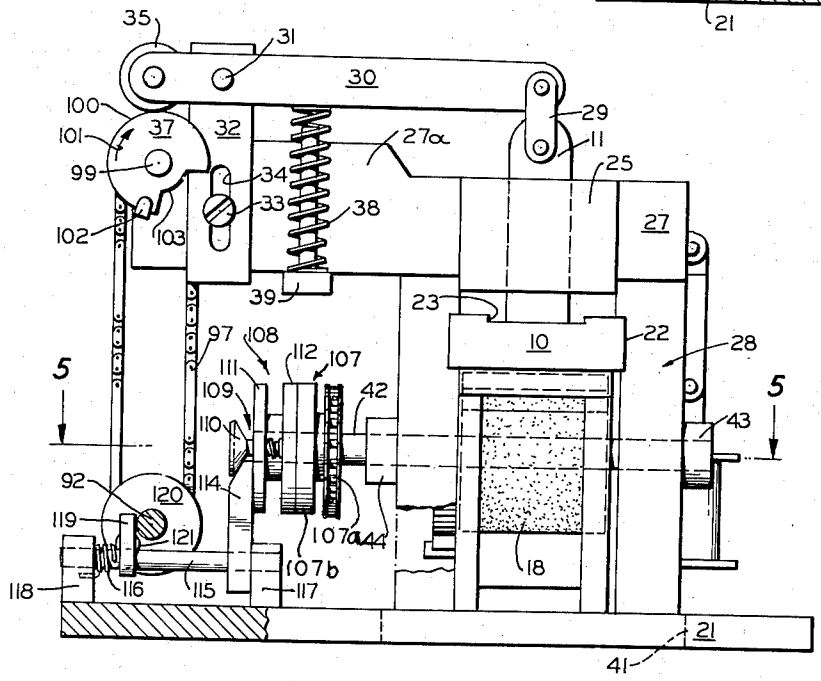


FIG_4



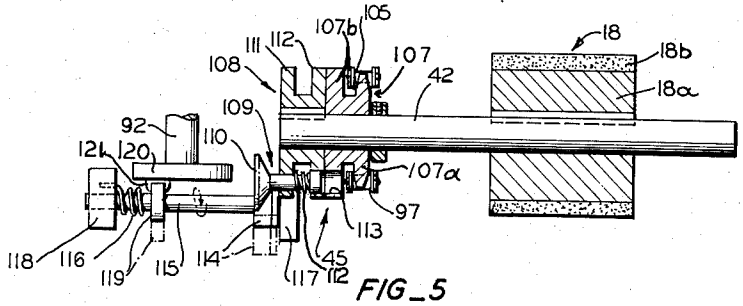


FIG_5

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Dec. 6, 1960 E. H. HEDQUIST 2,962,852

ARTICLE WRAPPING MACHINE

Filed April 20, 1959 4 Sheets-Sheet 4

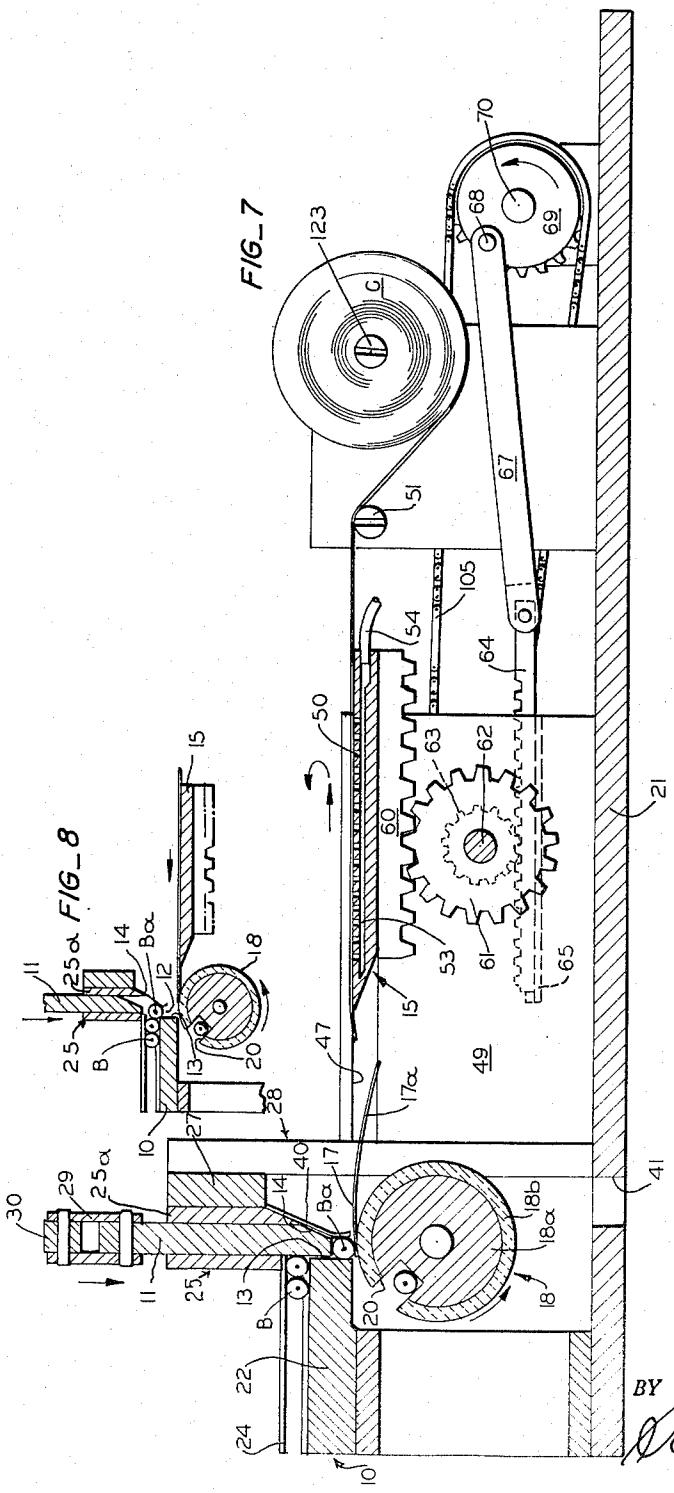


FIG_7

FIG_8

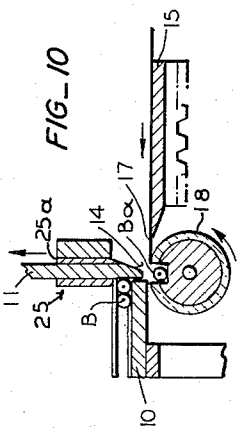


FIG_10

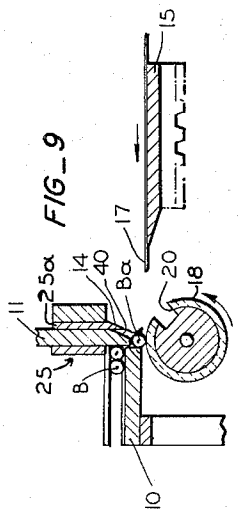


FIG_9

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United States Patent Office 2,962,852 Patented Dec. 6, 1960

2,962,852

ARTICLE WRAPPING MACHINE

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Filed Apr. 20, 1959, Ser. No. 807,535

4 Claims. (Cl. 53—198)

The present invention relates to wrapping mechanism, and pertains more particularly to a mechanism for rotating an article about an axis thereof with one end of a strip of adhesive coated sheet wrapping material applied thereto, thereby to wrap the article in such material.

The invention provides an improved and simplified machine for wrapping articles capable of being rotated about an axis thereof.

The invention also provides for the wrapping of articles by gripping an end of an adhesive coated strip of sheet material between an article to be wrapped and a drive surface having a high coefficient of friction moving past the article, thereby to rotatively drive the article and to cause it to wrap the strip of sheet material about itself.

A further object of the invention is to provide feeding, rolling, cutting and discharging mechanism operating in timed sequence and in recurring cycles to wrap successive articles placed in the feedway of such mechanism.

These, and other objects and advantages of the invention, will be apparent from the following description and the accompanying drawings, consisting of four sheets, wherein:

Fig. 1 is a perspective view of a wrapping mechanism embodying the present invention.

Fig. 2 is an enlarged fragmentary, sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is an enlarged plan view the portion of the mechanism mounted on the sloping base member of Fig. 1.

Fig. 4 is a sectional view taken along line 4—4 of Fig. 3.

Fig. 5 is a fragmentary sectional view taken along line 5—5 of Fig. 4.

Fig. 6 is a sectional view taken along line 6—6 of Fig. 3.

Fig. 7 is a sectional view taken along line 7—7 of Fig. 3, portions being broken away, the base plate being shown in horizontal position.

Figs. 8, 9 and 10 are diagrammatic sectional views in reduced scale generally similar to Fig. 7, but showing different stages in a cycle of operation of the mechanism illustrated in Fig. 7.

Brief description

Briefly, the illustrated form of the invention comprises a machine A for the wrapping of cylindrical articles B, such as, for example, electrical capacitors with conductor wires B_1 projecting from one or both ends thereof. A sloping feedway **10** is provided to hold a plurality of articles B to be wrapped in axially parallel and laterally aligned relation. The feedway is inclined from the horizontal at an angle that will cause the articles to gravitate downwardly toward a plunger **11** located at the lower end of the feedway. When the plunger **11** is raised clear of the lowermost article B*a* in the feedway **10**, such article gravitates down into a gap **12** between the upright end face **13** of the feedway (Fig. 7) and a leaf spring **14**. With the plunger thus raised, and an article B*a* supported by the spring **14**, a tape feed platen **15**, having vacuum tape-retaining means embodied therein, carries the end

portion **17** of a roll C of adhesive coated wrapping tape between the article B*a* and a drive roller **18**. The plunger **11** then is lowered to its position shown in Fig. 7 to grip the tape end **17** between the article B*a* and the drive roller. The platen **15** is then retracted from the plunger **11** to expose a length **17***a* of the tape, which is then severed from the remainder of the roll of tape by the actuation of a severing knife **19**.

The drive roller **18** dwells stationary during the preceding operations, and is then driven rapidly through one complete revolution in the direction of the arrows associated therewith in Figs. 7–10, thereby rolling the article B*a* about its own axis, and winding the severed length **17***a* of tape thereon. Just prior to the completion of each revolution of the drive roller **18**, a discharge notch **20** in the roller **18** moves into register beneath the plunger **11**, and the now wrapped article B*a* therebeneath, and simultaneously therewith the plunger **11** is given an additional slight downward thrust, thereby forcing the wrapped article B*a* into the discharge notch **20** as shown in Fig. 10. The drive roller **18** then continues to rotate a slight distance farther, or substantially to the position shown in Figs. 7 and 8, where it again dwells while the plunger **11** moves upwardly to its initial position shown in Fig. 7, thereby allowing the next article B in the feedway **10** to drop into feeding position against the leaf spring **14**.

Detailed description

Referring to the drawings in detail, the illustrated wrapping mechanism A may be mounted upon a sloping base plate **21** for the purpose of simplicity in providing for gravity feed of the articles B to be wrapped. As illustrated, the feedway **10** comprises a metal plate **22** having a groove **23** longitudinally therein of a width to receive and retain a plurality of the articles B to be wrapped in a single layer, and in axially parallel, and laterally aligned relation therein. A guide strip **24** is preferably provided to extend lengthwise over the articles B in the feedway.

The plunger **11** is mounted for slidable movement toward and away from the dirve roller **18** in a rectangular box guideway **25**, secured to the transverse top bar **27** of a vertical frame **28** on the base plate **21**. The article supporting leaf spring **14** is secured to the beveled lower end of the inner guideway portion **25***a* (Figs. 7–10) in position to engage each endmost article B as the latter is released by elevation of the plunger **11**, and to support said article in position B*a* beneath the plunger **11**. As shown in Fig. **8**, each article thus supported by the spring **14** retains the next successive article B in the feedway **10** and beyond the effective reach of the plunger on its next downward stroke.

The upper end of the plunger **11** is connected by a link **29** to one end of an actuating lever **30**. The latter is pivotally mounted on a pivot pin **31** near the upper end of an upright frame member **32**, secured in vertically adjusted position to a projecting portion **27***a* of the upper transverse frame member **27** by a screw **33** (Fig. 4). The screw **33** rides in a slot **34** provided therefor in the adjustable frame member **32**, which permits vertical adjustment of the latter to control the stroke of the plunger **11**.

It will be noted, particularly in Fig. 3 and 7 that the path of the articles along the feedway from the feedway down through the space between the lower end **13** of the feedway and the support spring **14**, and around the drive roller **18** is free of endwise obstructions which might interfere with the conductor lead wires B_1 on the articles to be wrapped.

A cam follower roller **35** is provided on the other end of the plunger actuating lever **30** from the link **29**, and is held in following relation with a rotary cam **37** by a coil spring **38**, mounted in compression between the under side of the plunger actuating lever **30** and an abut-

ment 39 provided therefor on the transverse top frame member 27. The plunger actuating cam 37 and other drive elements will be described in detail later herein.

The lower end of the plunger 11 is beveled at 40 (Figs. 7–10) so as to clear the leaf spring 14 on each upward stroke of the plunger.

The drive roller 18 comprises a solid core portion 18*a*, which may be of metal, and is covered with an outer layer 18*b* of resiliently compressible material having a relatively high coefficient of friction, such as, for example, foam rubber.

The discharge notch 20 in the roller 18 is positioned to receive each article B upon completion of a wrapping operation thereon, and a discharge slot 41 (Fig. 7) is provided in the base plate 21 through which the wrapped articles gravitate when released from the notch 20 as the latter is carried around the under side of the drive roller upon each rotation thereof.

The drive roller 18 is fixedly secured to a shaft 42, journaled in bearing brackets 43 and 44 (Figs. 1 and 2) secured to the upright frame 28. Said shaft 42 is driven intermittently by single rotation clutch means 45 (Figs. 4 and 5) to be described in detail later herein.

The feed platen 15 is slidably mounted in grooves 47 provided therefor in the inner faces of a pair of upright side plates 48 and 49, secured to the base plate 21. The platen 15 is provided with a plurality of perforations 50 throughout the portion of the upper surface thereof which is overlaid by the tape while feeding the latter from the roll C thereof, over a horizontal guide pin 51 and toward the upper side of the drive roller 18. The perforations 50 communicate with a vacuum chamber 53 provided within the platen 15, and thence, through a first suction tube 54, vacuum valve 55, and second suction tube 57, with a vacuum pump 58 of conventional type. The vacuum valve 55 is of the self-venting type, so that when the first tube 54 is shut off from the vacuum pump 58, said tube, and the chamber 53, will be vented to atmosphere. Since such valves are well known, and since its structure is not a feature of the present invention, it will be unnecessary to describe it in detail herein.

A first rack 60 is secured to the under side of the platen 15, and is in meshed engagement with a first pinion 61 mounted between the side plates 48 and 49 on a shaft 62 journaled in bearings provided therefor in said side plates. A second and smaller pinion 63 is also secured to the shaft 62 on the outer side of the side plate 49, and this smaller pinion is in meshed engagement with a second rack 64, slidably mounted in an angle guideway 65 secured to the outer face of said side plate 49.

This second rack 64 is connected, by a connecting rod 67, to a crank pin 68 provided on a disc 60 secured coaxially to one end of a main drive shaft 70. Thus, the platen 15 is driven reciprocally back and forth along its guide grooves 47 by the rotation of the crank disc 69. The two racks 60 and 64, drivingly interconnected by the different sized pinions 61 and 63, cause the platen 15 to move oppositely to, and through a greater distance than, the throw of the crank pin 68.

As the platen 15 approaches its rearmost or retracted position as shown in Fig. 7 and clears the knife 19, a knife actuating solenoid 71 is energized to swing the tape severing knife 19 from its solid to its broken line position of Fig. 2. The knife actuating solenoid 71 is mounted on the upright side plate 48, and the solenoid core 72 is connected by a link 73 to a lever arm 74 secured to the same rock shaft 75 as that to which a knife support arm 76 also is secured. The knife 19 is fixedly secured to the support arm 76, so that upon energization of the solenoid 71, the solenoid core 72 is drawn sharply upwardly, thereby elevating the link 73 and swinging the support arm 74 and knife 19 to their broken line positions of Fig. 2, thereby severing the length 17*a* of tape from the remainder of the roll C thereof.

Drive means

The various parts of the mechanism are driven in timed sequence by suitable power drive means such as an electric motor D, preferably of the gear-reduction type. The motor D is operatively connected by means of a V-belt 78 and grooved pulleys 79 and 80 to the main drive shaft 70, which makes one complete revolution for each article wrapping cycle of the machine A. The shaft 70 is journaled in bearings 81 and 82 secured to the base plate 21.

For actuating the knife solenoid 71, a disc 83 is secured to the main drive shaft 70 and is provided with a trip pin 84 mounted to engage the actuating arm 85 of a solenoid actuating switch 87 once during each rotation of the crank shaft 70.

A vacuum valve actuating cam 89 (Figs. 2 and 6) is also secured to the main drive shaft 70, and is mounted to actuate the vacuum valve 55 approximately as the platen 15 reaches the limit of its rearward or retracting stroke and to hold said vacuum valve in vacuum applying condition to grip the tape as the platen 15 moves on a tape feeding stroke thereof toward the drive roller 18. The vacuum valve actuating cam 89 is shaped as shown in Fig. 6 to move the vacuum valve 55 to atmospheric venting condition during each retractive stroke of the platen 15, and to move said valve to vacuum applying condition during each forward stroke of the platen toward the drive roller 18.

A beveled drive pinion 90 is also secured to the main drive shaft 70, and is in meshed, driving engagement with a similar bevel pinion 91 mounted at the rear end of a driven shaft 92, which is journaled in bearings 93 and 94 to extend longitudinally of the base plate 21. A sprocket wheel 95 is secured to the driven shaft 92 near its forward end, and, by means of a link chain 97, drives a second sprocket wheel 98 mounted on a shaft 99 journaled in a bearing provided therefor in the upper transverse frame member 27. The plunger actuating cam 37, mentioned previously herein, is also affixed to the same shaft 99 as that to which the upper sprocket 98 is secured.

The plunger actuating cam 37 is formed with a coaxial intermediate portion 100 (Fig. 4) which, by its action on the cam follower roller 35 when riding thereon, retains the plunger 11 in article wrapping position on the drive roller 18 as shown in Figs. 4 and 7 during rotation of the drive roller. This plunger actuating cam 37 rotates in the direction of the arrow 101 in Fig. 4, and has a high spot 102 at the terminal end of its intermediate portion 100. This cam high spot 102 engages the cam follower roller 35 as the plunger 11 registers with the discharge notch 20 and pushes the plunger downward slightly for discharging the then wrapped article into said notch. Beyond the high spot 102 of the cam 37, a low area or notch 103 is provided, which allows the spring 38 to elevate the plunger 11 to its cycle initiating position shown in Figs. 1 and 8 to thereby free the lowermost article B for gravitation from the feedway 10 onto the leaf spring 14.

For intermittently driving the drive roller 18 through one complete revolution, a drive sprocket 104 is connected to the main drive shaft 70, and, by means of a link chain 105 drives the clutch means 45. As illustrated, the clutch means 45 comprises a combined sprocket and clutch plate 107 journaled on the shaft 42 of the drive roller 18. The sprocket portion 107*a* of the member 107 is one third the circumference of the drive shaft mounted sprocket 104, so that the former turns three revolutions to each one of the latter.

A clutch disc 108 is keyed to the drive roller shaft 42 alongside the clutch plate portion 107*b* of the combined sprocket and clutch plate 107, and a clutch pin 109, with a truncated conical cam head 110, is slidably mounted in axially aligned holes provided therefor in flanges 111 and 112 of the clutch plate 108. A coil spring 112 urges the pin 109 toward the driven member 107, which is pro-

vided with a hole 113 therein adapted to register with and receive the clutch pin 109 upon each release of the latter by a cam lever 114.

For withdrawing the clutch pin 109 from clutch engagement with the clutch plate portion 107*b* upon the completion of each rotative cycle of the drive roller 18, the cam lever 114 is fixedly secured to a rock shaft 115, journaled in bearing standards 117 and 118 secured to the base plate 21. A short, cam follower lever arm 119 also is secured to the rock shaft 115, and the upper end of this short lever arm is urged by a torsion coil spring 116 toward a side of a cam disc 120 mounted on the longitudinal shaft 92. A cam dome 121 projects from the side of the cam disc 120 against which the upper end of the short lever arm 119 is urged by the torsion spring 116.

Upon each rotation of the clutch actuating cam disc 120 the upper end of the short lever arm 119 is engaged by the cam dome 121 and is swung thereby outwardly, away from the cam disc 120. This swings the rock shaft 115 and with it the clutch pin cam lever 114, thereby swinging the upper end of said lever 114 to its broken line position of Fig. 5, and clear of the clutch pin 109. Thereupon the coil spring 112 urges the clutch pin 109 toward the member 107, and when the rotation of said member 107 brings the hole 113 in the member 107 into register with the pin 109, the latter enters said hole 113. This causes the clutch plate 108 and clutch member 107 to rotate together for one complete revolution.

As soon as the cam dome 121 passes the short lever arm 119, the torsion spring 112 returns the rock shaft 115 to its solid line position of Fig. 5, thereby swinging the cam lever 114 back into its solid line position of Fig. 5, and ready, upon the completion of one revolution of the clutch member 108, to slide beneath the cam head of the clutch pin 109 and thereby to cam the clutch pin 109 out of the hole 113. This action arrests further rotative movement of the clutch member 108 and the drive roller shaft 42, and allows the combined sprocket and clutch member 107 to again rotate freely upon the roller shaft 42, until the cam dome 121 again engages the short lever arm 119.

The operation of the mechanism A is as follows: With a roll C of tape mounted on a usual support spindle 123 and the tape led from the under side of the roll and over the guide pin 51 and across the tape feed platen 15, and with a supply of the articles B to be wrapped in the sloping feedway 10; it will be assumed that the parts are initially in the positions thereof shown in Fig. 7, but without the severed length 17*a* of tape, and with no article B beneath the then lowered plunger 11.

Upon rotation of the main drive shaft 70 by the motor D the platen 15 moves toward the plunger from substantially its position shown in Fig. 7 toward its position shown in Fig. 8. During this movement of the platen, the vacuum chamber 53 will be vacuumized by actuation of the vacuum valve 55 by the cam 89, to hold the tape to the platen. As the platen 15 approaches the position thereof shown in Fig. 8 follower roller 35 passes into the cam notch 103 and allows the spring 38 to raise the plunger 11 clear of the feedway 10. This allows the lowermost article B*a* in the feedway to gravitate downwardly into the gap 12 where it is supported by the leaf spring 14 in the position shown in Fig. 8.

As the end 17 of the tape arrives beneath the article B*a* supported on the leaf spring 14, the cam follower roller 35 rides onto the intermediate cam portion 100 and moves the plunger 11 downwardly to force the suspended article B*a* downwardly to the position thereof shown in Fig. 7, thereby to grip the tape end 17 between the article B*a* and the drive roller 18. At the same time, the vacuum valve 55 is opened by the cam 89 (Fig. 6) and vents the platen vacuum chamber 53 to atmosphere. This frees the tape from the platen as the latter is then moved rearwardly away from the drive roller 18 by the crank disc 69 and its associated racks and pinions. However, in the event that no article B*a* is beneath the plunger when the latter is lowered, the end 17 of the tape will not be gripped, and the weight of the tape on the platen will carry the tape back with the platen on its rearward stroke.

As the retracting platen 15 clears the plane of movement of the severing knife 19, the solenoid actuating switch 87 is closed by the trip pin 84 on the disc 83, thereby energizing the solenoid 71 and causing the knife 19 to swing across the tape. Providing the end 17 of the tape is gripped between an article B*a* and the drive roller 18, this action severs the length 17*a* of tape (Fig. 7) from the remainder of the roll C. In the event that the end 17 of the tape is not gripped between an article B*a* and the drive roller 18, however, no tape will be severed, and the mechanism will continue to cycle without cutting any tape until another article B*a* is introduced beneath the plunger.

At this point in the cycle of operation of the machine A the dome 121 on the cam disc 120 passes beneath the short lever arm 119, thereby rocking the rock shaft 115 and swinging the cam lever 114 clear of the clutch pin 109 (Figs. 4 and 5). Since the combined sprocket and clutch member 107 is driven by the chain 105 to rotate at three times the speed of the main drive shaft 70, the hole 113 in this member 107 will rapidly be brought into register with the clutch pin 109, whereupon the spring 112 forces the clutch pin into clutch engagement in the hole 113, thereby causing the clutch plate 108 secured to the drive roller shaft 42 to rotate therewith. This action rotates the drive roller 18 secured to said shaft 42 and rolls the article B*a* (Fig. 9) about its own axis thereby causing the severed tape length 17 to be wrapped about the article.

As the discharge notch 20 in the drive roller 18 moves into register beneath the then wrapped article (Fig. 10) the high spot 102 (Fig. 4) on the plunger actuating cam 37 passes beneath the cam follower roller 35, thereby giving the plunger 11 a slight downward tap (Fig. 10) to insure discharge of the wrapped article into the discharge notch, after which the cam follower roller 35 enters the cam notch or low spot 103 in the plunger actuating cam 37, and allows the plunger return spring 38 to elevate the plunger to its initial position of Fig. 8.

As the discharge notch 20 in the drive roller passes beyond the plunger 11 to the position thereof shown in Figs. 7 and 8, the clutch cam actuating lever 114, having been moved by the spring 112 back into its solid line position of Fig. 5, has cam engagement with the conical inner face of the head 110 of the clutch pin 109 and withdraws said pin from its hole 113 in the rotating member 107. This action frees said rotating member for free rotation about the drive roller shaft 42, and arrests the drive roller 18, allowing the latter to dwell in the position thereof shown in Figs. 7 and 8. This completes one wrapping cycle of the machine and initiates the next cycle by allowing the next successive article B in the feedway to drop down into the gap 12 and onto the leaf spring 14.

The mechanism comprises a simple, positive acting, high speed wrapping mechanism, which mechanism has been found admirably suited to the wrapping with insulative plastic tape, coated with pressure sensitive adhesive, various types of capacitors used in electronic mechanisms. The invention also can be used for the wrapping of numerous other articles which are capable of being rolled or rotated about an axis thereof while held in position between a rotary driving surface and another surface.

While I have illustrated and described a preferred embodiment of the present invention, it will be understood, however, that various changes and modifications may be made in the details thereof without departing from the scope of the invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to protect by Letters Patent is defined in the following claims:

1. A machine for wrapping articles comprising a frame, a plunger mounted for endwise reciprocating motion on said frame, means for feeding an article to be wrapped beneath the inward end of said plunger upon each outward reciprocation thereof, a friction drive member having a resilient outer portion mounted endwise beyond the plunger and spaced therefrom at a limit of inward reciprocation of the plunger by a distance slightly less than the diameter of such article, thereby to lightly grip such article between the plunger and the drive member, a tape feed platen mounted to reciprocate along a path toward and away from the portion of the drive member adapted to grip an article, suction means in said platen for gripping a tape overlying said platen for advancing an end of said tape between the drive member and such article with the coated side of the tape toward such article, whereby such tape end is gripped lightly between the drive member and such article, means for severing a length of the tape thus gripped upon a movement of the platen away from the drive member, means for moving the drive member relative to an article interposed between the plunger and the drive member for rolling such article about its axis and wrapping the article in a severed length of tape, and timed drive means for operating the components of said machine in timed relation.

2. A machine for wrapping cylindrical articles each having a conductor wire extending endwise from an end thereof and comprising an inclined feedway adapted to receive a plurality of such articles, a spring support spaced from the lower end of said feedway and adapted to support an article beyond the lower end of the feedway in a position to retain other articles in the feedway, a plunger mounted for reciprocating movement transversely of the lower end of the feedway, and having an upper limit of movement clear of a lowermost article in the feedway to allow such article to gravitate into supported position by said spring, a resilient surfaced roller mounted below the plunger and spaced therefrom by a distance slightly less than the diameter of such article at the lowermost limit of plunger movement, said roller having a discharge notch therein positioned to pass beneath the plunger just prior to the completion of a rotative cycle by the roller, means for interposing an end of a length of adhesive coated tape between an article and the roller with the adhesive coated side of said tape toward the article, means for severing a length of tape with its end thus interposed for wrapping such article, and timed drive means mounted to drive the component parts of said wrapping machine in timed sequence, whereby each lowermost article in the feedway is successively released by the plunger for advance onto said support spring, an end of the tape is interposed between such article and the roller, the article is carried downwardly by the plunger on a lowering movement thereof into lightly gripped relation between the plunger and the roller with the tape interposed therebetween, the roller is rotated through one complete cycle thereby rotating the article to wrap the tape therearound, and upon completion of such wrapping operation such article drops into the discharge notch in the roller for discharge upon the next rotative cycle of the roller.

3. A machine for wrapping articles comprising a frame, a plunger mounted for endwise reciprocating motion on said frame, means for feeding an article to be wrapped beneath the inward end of said plunger upon each outward reciprocation thereof, a friction drive member having a resilient outer portion mounted endwise beyond the plunger and spaced therefrom at a limit of inward reciprocation of the plunger by a distance slightly less than the diameter of such article, thereby to lightly grip such article between the plunger and the drive member, a tape feed member mounted to reciprocate along a path at right angles to the axis of such gripped article toward and away from the portion of the drive member adapted to grip an article, tape holding means movable with said tape feed member for advancing an extreme end portion of said tape between the drive member and such article with the coated side of the tape toward such article, whereby such tape end is gripped lightly between the drive member and such article, means for severing a length of the tape thus gripped upon a movement of the tape feed member away from the drive member, means for moving the drive member relative to an article interposed between the plunger and the drive member for rolling such article about its axis and wrapping the article in a severed length of tape, and timed drive means for operating the components of said machine in timed relation.

4. A machine for wrapping a generally cylindrical article comprising a frame, an article feed member mounted for reciprocating motion on said frame, means for feeding an article to be wrapped beneath the said article feed member upon each outward reciprocation thereof, a friction drive member spaced from the feed member at the limit of inward reciprocation of the latter by a distance slightly less than the diameter of such article, thereby to lightly grip such article between the feed member and the drive member, a tape feed member mounted to reciprocate along a path at right angles to the axis of such article toward and away from the portion of the drive member adapted to grip an article, means for gripping a tape overlying said tape feed member and movable with the latter for advancing an extreme end of such tape between the drive member and such article with the coated side of the tape toward such article, whereby such tape end is gripped lightly between the drive member and such article, means for severing a length of the tape thus gripped upon a movement of the tape feed member away from the drive member, means for moving the drive member relative to an article interposed between the article feed member and the drive member for rolling such article about its axis and wrapping the article in a severed length of tape, and timed drive means for operating the components of said machine in timed relation.

References Cited in the file of this patent

UNITED STATES PATENTS

1,272,799 Greer ---------- July 16, 1918