

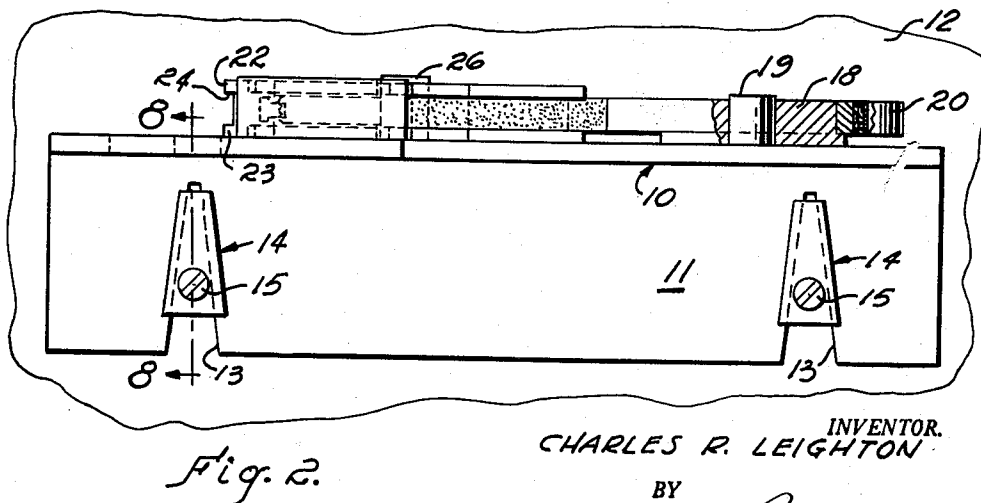
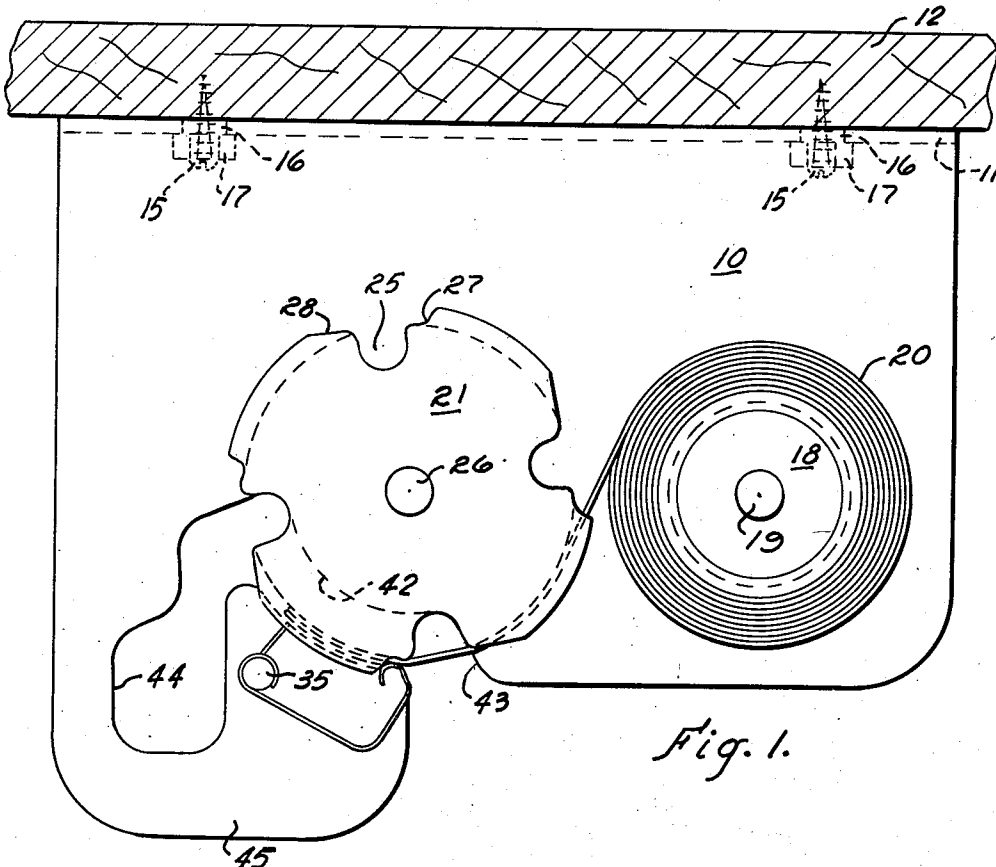
April 21, 1959

C. R. LEIGHTON
BAG-TYING MACHINES

2,882,663

Filed April 24, 1956

2 Sheets-Sheet 1



INVENTOR.
CHARLES R. LEIGHTON
BY
Rockwell B. Bartholomew
ATTORNEY

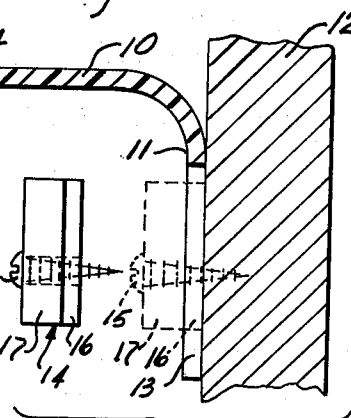
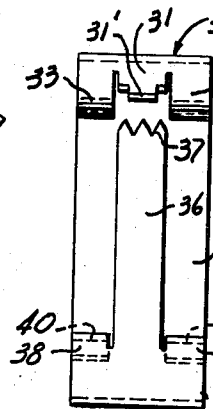
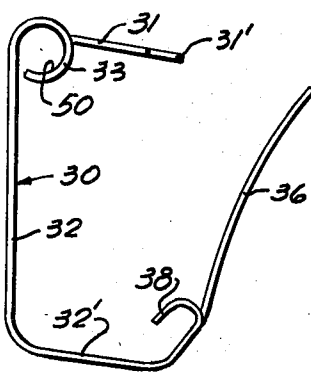
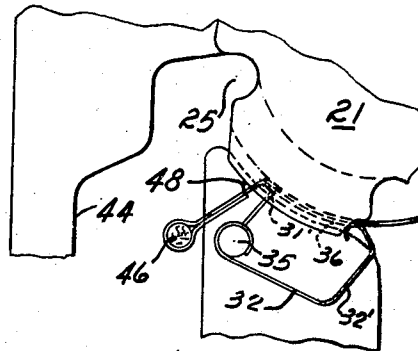
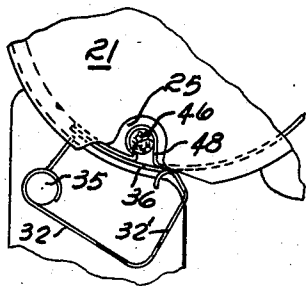
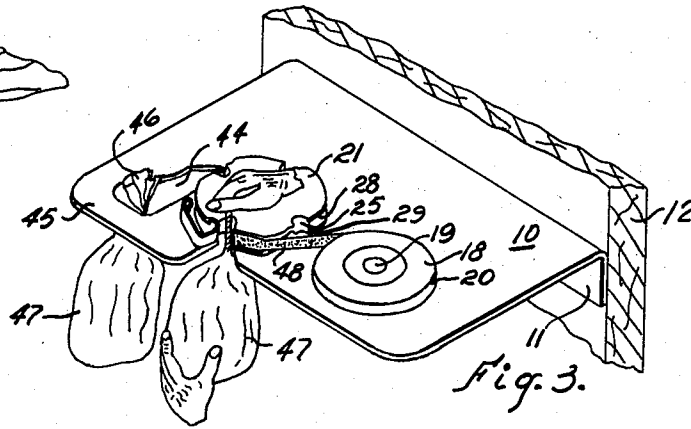
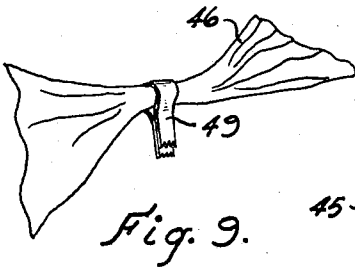
April 21, 1959

C. R. LEIGHTON
BAG-TYING MACHINES

2,882,663

Filed April 24, 1956

2 Sheets-Sheet 2



INVENTOR.
CHARLES R. LEIGHTON

BY

Bochum & Barchetta
ATTORNEY

1

2,882,663

BAG-TYING MACHINES

Charles R. Leighton, Limestone, Maine

Application April 24, 1956, Serial No. 580,226

8 Claims. (Cl. 53—198)

This invention relates to a bag-tying machine.

It is an object of the present invention to provide a machine for tying bags with tacky tape.

It is a further object of the invention to provide a machine for tying bags with tacky tape which, in a continuous operation, takes tape from a roll, wraps it around the folded top portion of a bag, and then severs the tape to permit the removal of the tied bag from the machine.

It is a still further object of the invention to provide a machine for tying bags with tacky tape in which tape from a roll is wrapped about the folded top of a bag while the bag top is being drawn through a slot and in which the tape is severed after the bag has been tied.

It is another object of the invention to provide a machine for tying bag tops with tacky tape taken from a roll in which the tape passes around a rotating guide wheel having in its periphery a plurality of notches for receiving the folded top of a bag, and in which a spring-pressed or spring-loaded element pressing against the wheel periphery holds the tape when the machine is ready for use, effects the wrapping of the tacky tape around the bag top when a bag is being passed through the machine, and cuts the tape by means of its knife-like end as the tied bag is moved away from the wheel.

It is still another object of the invention to provide a bag-tying machine which can be supported at a convenient height on a wall or the like.

Other objects of the invention are to provide a bag-tying machine having the above objects in mind which is of sturdy and simple construction, is inexpensive to manufacture, has a minimum number of parts, is compact, light in weight, easy to operate, of pleasing appearance and efficient and effective in use.

For other objects and a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a top plan view of the bag-tying machine, attached to a wall, embodying the features of the present invention;

Fig. 2 is an elevational view, broken away in part, of the bag-tying machine shown in Fig. 1;

Fig. 3 is a perspective view of the machine illustrating the manner in which a bag is thrust into the machine for tying and also showing a bag at the end of the tying operation ready for removal from the machine;

Fig. 4 is an enlarged fragmentary plan view of the machine illustrating the manner in which the machine wraps the tacky tape about a folded bag top;

Fig. 5 is a similar view of the same machine showing a completely tied bag just prior to severing the tape;

Fig. 6 is a plan view of the spring and knife member removed from the machine;

Fig. 7 is a side view of the spring and knife member shown in Fig. 6;

Fig. 8 is an enlarged fragmentary sectional view of the bag-tying machine as viewed on line 8—8 of Fig. 2

2

and showing the method of attaching the machine to a wall; and

Fig. 9 is an enlarged perspective view of the tacky tape tied about the folded portion of a bag, only a fragment of the bag being shown.

Referring now to the figures, 10 represents a bag-tying machine base or frame plate having a depending flange 11 by means of which the machine may be removably attached to a wall 12 (Figs. 1, 2, 3 and 8). Two inverted V-shaped slots 13 extend upwardly from the bottom of flange 11. These V-shaped slots are adapted to receive similarly spaced and inverted V-shaped blocks 14 secured to the wall by means of screws 15. The blocks 14 have tapered portions 16 just large enough to be received by the V-shaped slots 13 and enlarged portions 17 adapted to prevent outward movement of the flange on the supporting block. Fig. 8 shows a supporting block 14 and screw 15 in dotted lines in position in an inverted V-shaped slot 13 and again in full lines apart from wall 12 and the machine so that details of both the V-shaped slot and of the block may be shown clearly.

It will be obvious that the machine may be attached to the wall by bringing flange 11 down so that the V-shaped slots 13 receive the tapered block portion 16. The enlarged block portions 17 hold the flange firmly against the wall. To remove the machine from the wall, it is merely necessary to lift it off of the tapered blocks.

On the base plate 10 there is a reel 18, rotatable on a pivot 19 extending upwardly from the base plate. The reel is adapted to carry a roll of conventional tape 20, tacky on one surface, and of about one-quarter inch in width. This tape is drawn off from roll 20 over a notched guide wheel 21, tacky side out. The guide wheel has a top flange 22 and a bottom flange 23, which provide, between them, a recess or groove 24 to receive the tape, and a plurality of notches or recesses 25 extending inwardly from the periphery of the wheel to receive the gathered end of a bag. The notched guide wheel 21 is rotatably mounted on a pivot 26 extending upwardly from base plate 10. On one side of each notch 25 there is a small indexing notch 27 in each of the flanges 22 and 23, and on the other side of each notch 25 the flanges are relieved or beveled, as shown at 28 and 29 respectively. The purposes served by the indexing notches and by the relieved shoulders will be made clear later.

A spring-pressed or spring-loaded member is provided adjacent the periphery of the wheel 21 to engage the tacky side of the tape and hold it in position to span one of the notches 25. As shown, this member is itself of resilient material although it may be formed of rigid stock and spring pressed toward the wheel. Also, as illustrated, it is formed integrally with a severing element. This spring member is shown at 30 (Fig. 6) and comprises a piece of spring steel having one end cut longitudinally to provide a central piece 31 which is bent at approximately right angles to a portion 32, and the two side pieces 33 and 34, formed by the longitudinal cuts made to form piece 31, are curved back on portion 32 to provide an eye 50 by means of which the member 30 can be mounted on a post 35 which extends upwardly from the base plate 10. The member also comprises a portion 32' which extends at approximately right angles to the portion 32, and beyond the portion 32', it is cut longitudinally to provide a spring-pressed wiping portion 36 which is slightly narrower than the recess 24 within which it rides, urged by its resiliency, against the periphery of the guide wheel 21 between the flanges. The wiping portion 36 is bent with respect to portion 32' and is curved slightly so that it, in general, follows the periphery of the wheel 21. The free end of wiping portion 36 is provided with serrations 37, which as will later be explained in detail, serve as a cutting edge,

3

Short pieces 38 and 39, formed by the longitudinal cuts made to produce the spring-urged wiping portion 36, are bent back toward portions 32' to provide shoulders 40 and 41 which serve a purpose that will subsequently be explained in detail.

When the spring and knife member 30 is mounted on pivot 35, the spring-loaded wiping portion 36 presses resiliently against the periphery of guide wheel 21 within recess 24 and the free end 31' of piece 31 is directed toward the portion 36 at a point near its serrated end. The base plate 10 has a curved passage 42 having an enlarged mouth opening 43. The curved passage 42 substantially registers with the notches 25 in the periphery of guide wheel 21 and terminates in a blind enlarged end 44 which is disposed in an extended portion 45 of base plate 10.

The operation of the bag-tying machine will now be described. A roll of tacky tape 20 is placed upon reel 18, which is rotatable on pivot 19, and the free end of the tape is pressed, tacky side out, against the periphery of guide wheel 21, within the recess 24, by the member 36 to which the tacky side of the tape clings. Guide wheel 21 is then rotated on its pivot 26 until the spring shoulders 40 and 41, which are resiliently pressing against guide wheel flanges 22 and 23, enter an indexing notch 27. The guide wheel is then held, ready to receive a folded bag top, until a force is exerted upon it sufficient to overcome the retaining action of the spring shoulders.

A folded or gathered top 46 of a bag 47 is thrust through enlarged mouth opening 43 into an aligned notch 25 of guide wheel 21 (Fig. 3). Tacky tape 48 from roll 20, which spans the notch, tacky side out, in its passage along the wheel periphery is thus caused to adhere to the folded bag top at this point. The bag is then moved, with its folded top in the notch, toward blind enlarged end 44. When the guide wheel is thus turned so that the notch moves away from mouth opening 43, the relieved portions 28 and 29 of guide wheel flanges 22 and 23 guide the spring shoulders 40 and 41 smoothly on to flanges 22 and 23 to keep the member 36 from bottoming in the recess 24 during rotation of the wheel. This prevents the part of the tape following the bag from engaging the spring-loaded member 36 until the shoulders 40 and 41 enter the succeeding notches 27. As the folded bag top is moved toward the blind end, tacky tape drawn from the roll adheres to one side of the bag top while the portion of the tacky tape which was held by pressure wiping portion 36 peels back and adheres to the other side of the bag top (Fig. 4). When the folded bag top passes into blind end 44, it is completely tied (Fig. 5). The tacky tape is severed by merely pulling the bag top away from the guide wheel 21. When this is done, pressure wiping portion 36 is pulled outwardly by the tape until it brings up against end 31'. When the outward movement of portion 36 is thus checked, its serrated end 37 cuts the tape, leaving the machine ready to receive and tie another bag. The tied bag (Fig. 3) may be removed from the machine by simply lowering it until it is free of blind end 44. The tie 49 obtained by the use of this machine is shown in a fragmentary view of a folded bag top (Fig. 9).

By way of example only, it may be mentioned that the parts of the machine, except spring and knife member 30, may be made of molded plastic, in which case base plate 10, flange 11, pivots 19 and 35 and extended portion 45 may be in one piece.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim is:

1. A bag-tying machine comprising a frame member, a reel rotatably mounted thereon to carry a supply roll of tape tacky on one side, a wheel rotatably mounted on the frame over the periphery of which the tape is trained, said wheel having a peripheral notch spanned by the tape,

4

a spring-urged member adjacent the periphery of the wheel on the side of said notch opposite the supply roll to which the tacky side of the tape clings to hold the tape in a position spanning said notch, said member urging the tape toward the periphery of the wheel, and means on the wheel to hold said member away from the periphery of the wheel when the latter is turned.

2. A bag-tying machine comprising a frame member, a reel rotatably mounted thereon to carry a supply roll of tape tacky on one side, a wheel rotatably mounted on the frame over the periphery of which the tape is trained, said wheel having a peripheral notch spanned by the tape, a spring-urged member adjacent the periphery of the wheel on the side of said notch opposite the supply roll to which the tacky side of the tape clings to hold the tape in a position spanning said notch, said member urging the tape toward the periphery of the wheel, and a flange on the wheel to contact a part of said member and hold it away from the periphery of the wheel when the latter is turned.

3. A bag-tying machine comprising a frame member, a reel rotatably mounted thereon to carry a supply roll of tape tacky on one side, a wheel rotatably mounted on the frame over the periphery of which the tape is trained, said wheel having a peripheral notch spanned by the tape, a spring-urged member adjacent the periphery of the wheel on the side of said notch opposite the supply roll to which the tacky side of the tape clings to hold the tape in a position spanning said notch, said member urging the tape toward the periphery of the wheel, said wheel having projecting flanges at its peripheral edge providing a peripheral groove into which the tape is urged by said member, and means on said member engaged by the flanges to prevent said member from bottoming in said groove.

4. A bag-tying machine comprising a flat base plate, a reel journaled in said base plate adapted to support a roll of tacky tape, a tape guide wheel journaled on said base plate, said guide wheel having a plurality of radial bag-top-receiving notches and an indexing notch adjacent one side of each bag-top-receiving notch, a curved passage in said base plate adjacent a portion of the periphery of said guide wheel terminating in an enlarged blind end and having an open mouth to receive the gathered end of a bag, spring-urged means adapted to press the tape toward the periphery of said guide wheel along said curved passage, cutting means carried by the plate adjacent the blind end of the passage to sever the tape after a bag is tied, and said spring-urged means including an indexing member to engage one of said indexing notches.

5. A bag-tying machine as defined in claim 4, wherein said tape guide wheel has a peripheral tape guide recess and relieved peripheral portions adjacent the second side of each bag-top-receiving notch.

6. A bag-tying machine as defined in claim 4, having a notched flange depending from one side of said base plate whereby said bag-tying machine may be removably affixed to spaced tapered supporting means.

7. A bag-tying machine comprising a flat base plate, a reel journaled on said base plate adapted to support a roll of tacky tape, a tape guide wheel journaled on said base plate, said guide wheel having a plurality of bag-top-receiving notches and an indexing notch adjacent each bag-top-receiving notch, a curved passage in said base plate beneath a portion of the periphery of said guide wheel terminating in an enlarged blind end, a mouth portion providing access to said curved passage, and an indexing and pressure member pivotally mounted on the base plate, said indexing and pressure member having a spring-urged indexing portion to engage said indexing notch and index the guide wheel, and a flat pressure wiping portion resiliently urged toward the periphery of said wheel along said curved passage, said pressure wiping portion having a free cutting end ad-

5

adjacent said blind end of the passage and a stop member directed toward said pressure wiping portion adjacent the free end thereof to engage the latter and limit separation of the pressure-wiping portion from the wheel.

8. A bag-tying machine comprising a flat base plate, a tape-roll-supporting reel journaled on said base plate, a tape guide wheel journaled on said base plate, said guide wheel having a plurality of radial bag-top-receiving notches and a peripheral indexing means adjacent each notch, a curved bag top passage having an opening through the edge of the plate at one end and extending under a portion of the periphery of said guide wheel, a spring-urged indexing member on the plate adapted to cooperate with said peripheral indexing means on the wheel, a flat spring-urged pressure wiping member dis-

5

10

15

6

posed adjacent, and urged toward, the periphery of said guide wheel above said curved passage, and means on the plate for severing the tape after the completion of the tying operation.

References Cited in the file of this patent

UNITED STATES PATENTS

1,116,560	Buhse -----	Nov. 10, 1914
1,193,506	Brown -----	Aug. 8, 1916
2,005,846	Parsons -----	June 25, 1935
2,536,455	Miller -----	Jan. 22, 1951
2,543,323	Marsh -----	Feb. 27, 1951
2,651,900	Heilman -----	Sept. 15, 1953
2,762,179	Young -----	Sept. 11, 1956