Feb. 3, 1959 J. A. TOSTADO 2,872,061

MECHANISM FOR SEALING BAGS

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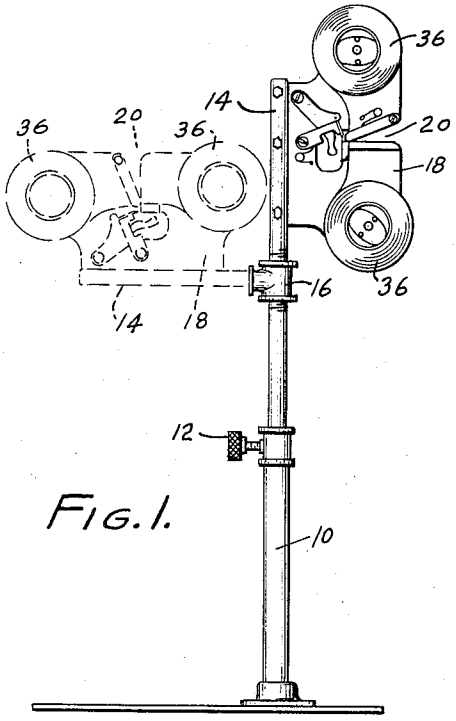


FIG. 1.

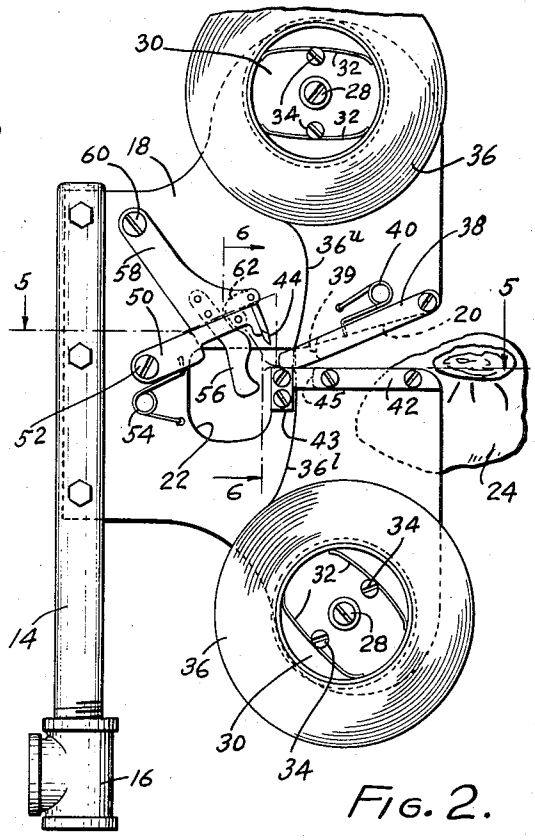
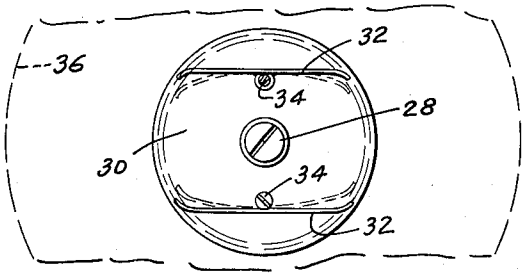


FIG. 2.

FIG. 7.



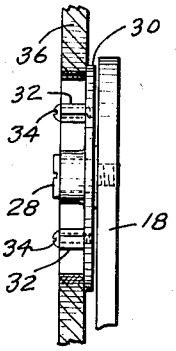


FIG. 8.

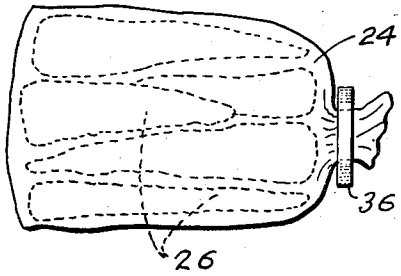


FIG. 9.

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FIG. 3.

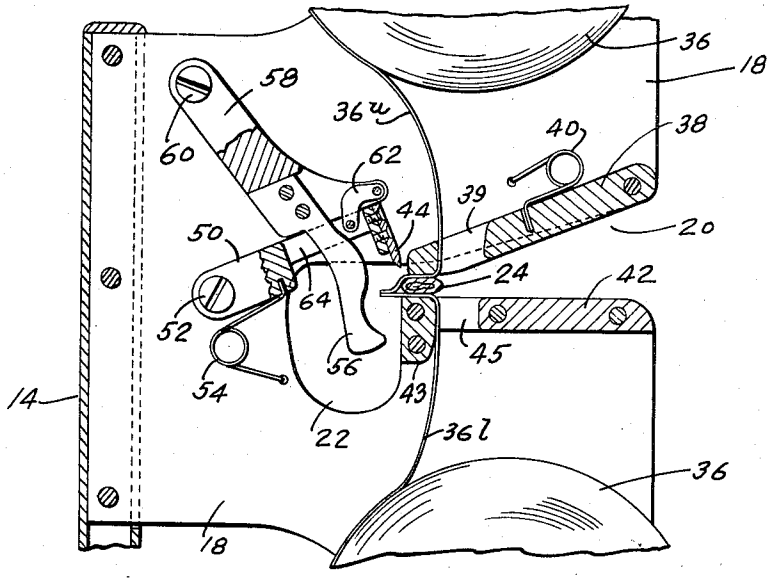
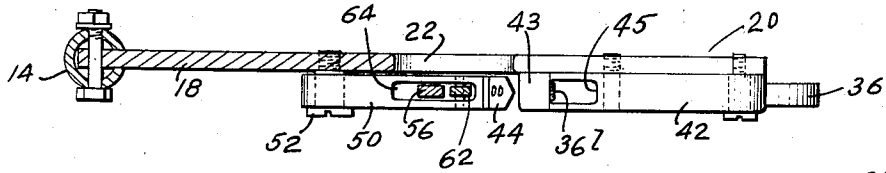


FIG. 5.



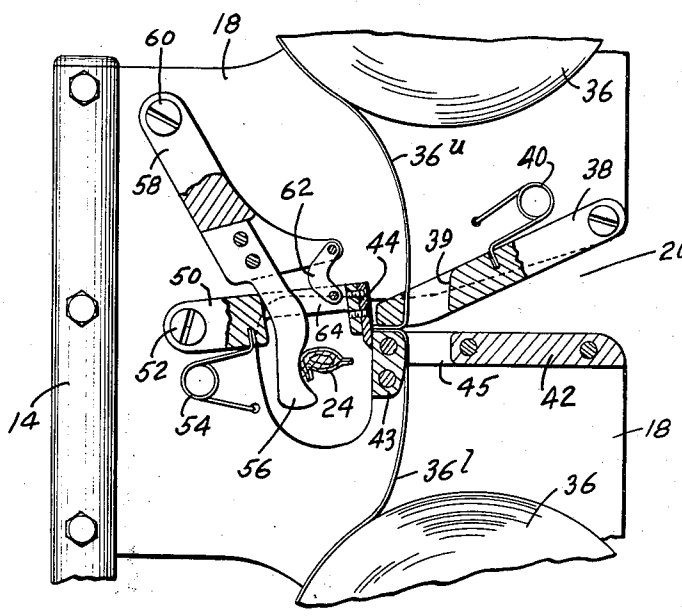


FIG. 4.

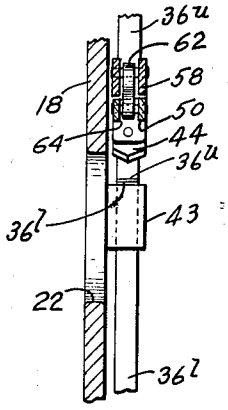


FIG. 6.

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MECHANISM FOR SEALING BAGS

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Application July 2, 1956, Serial No. 595,313

1 Claim. (Cl. 216—29)

This invention relates to a mechanism for sealing bags, and the present apparatus, comprising an improvement over the structure disclosed and claimed in my previously filed application for United States Letters Patent dated January 3, 1955, Serial No. 479,366.

One of the important objects of this invention is to provide a device of the class described, which will operate more satisfactorily, which will be of a better construction, and which will be less liable to inaccuracies and delays in operation.

Another important object of this invention is the provision of a better cutting action for the blade which severs the sealing tape, together with a more accurate adjustment of same whenever such becomes necessary.

Yet another object is to provide a better mounting for the blade, and a more positive cooperation between this mounting and its operating trigger.

A further object of the invention is the provision of a simpler but better retaining means for the rolls of sealing tape, whereby the same can be readily positioned for immediate and continuous operation.

Still another important object of the invention resides in the provision of means for variably shifting and positioning the actual operating element itself, whereby the sealing of bags containing various products can be accomplished by either a horizontal or a vertical movement and at any angle which is most convenient to the operator.

Another and still further important object of the invention is to provide a pivoted sealing bar for the apparatus wherein a better final sealing action results, even under extreme conditions of operation, including temperature and humidity variations and the actual speed of the operator.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawings and following specification.

The invention, in a preferred form, is illustrated in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is an elevation of the improved mechanism for sealing bags as contemplated by this invention, and shows the apparatus in two different operating positions.

Figure 2 is an enlarged view of the main portion of the structure shown in Figure 1, showing the same in position for a bag sealing operation.

Figure 3 is a view of a portion of the structure shown in Figure 2, and illustrates the bag to be sealed as actually passing through the mechanism and with approximately one-half of the sealing operation completed.

Figure 4 is a view similar to Figure 3, but showing the apparatus in position after the bag has been sealed therein, and the sealing tape severed.

Figure 5 is an enlarged section taken on the line 5—5 of Figure 2, looking in the direction indicated by the arrows, but with the bag omitted.

Figure 6 is a vertical section on the broken line 6—6 of Figure 2, looking in the direction indicated by the arrows.

Figure 7 is a detail view showing improved means for retaining the rolls of adhesive tape in position for operation by the machine.

Figure 8 is an end view of the structure of Figure 7 parts being shown in section.

Figure 9 is a perspective view of a bag sealed by the means and mechanism of this invention.

As shown in the drawings:

The reference numeral 10 indicates generally the supporting stand or pedestal for the improved mechanism for sealing bags of this invention, and preferably comprises two telescoping pipes, the final height of which can be adjusted by notch 12. A further pipe or rod 14 is provided which can be screwed or otherwise fitted into a retaining element 16 at the top of the stand 10, and two sockets are provided in this element 16, one for holding the mechanism in a poistion for horizontal movement of the bags therethrough as shown by the full lines in Figure 1, and another for supporting the mechanism in position for vertical movement of the bags therethrough as shown by the dotted lines in that figure.

The device itself comprises essentially a supporting plate 18 of some suitable metal or other material which is bolted or otherwise securely affixed to the support 14. This plate 18 is of a desired shape as illustrated, and is provided with an external V-shaped notch or passage 20 and an internal recess 22, whereby bags 24 to be sealed can be manually passed into and through the mechanism.

As described in my previous application for patent, the bags 24 can contain a variety of products and commodities, but the mechanism was primarily designed for sealing transparent plastic bags, adapted to contain carrots or some similar vegetable, as indicated at 26 in Figure 9.

Screw-threaded studs 28 are fitted into the upper and lower extremities of the plate 18, and these support circular plates 30 (Figures 7 and 8), for rotatable movement. Each plate is provided with a pair of leaf springs 32, fastened onto the plate by screws or the like 34, and these springs are so constructed that when bent slightly inwardly, as shown by the dotted lines in Figure 7, a roll 36 of adhesive tape or similar material can be fitted thereon for subsequent sealing operation. There are two rolls of tape 36, the tape from both rolls converging at the inner end of the notch 20, for a bag sealing operation as best shown in Figure 3.

A pressure bar 38 is pivotally mounted on the face of the main plate 18, the pivot point being adjacent the upper, outer edge of the notch 20, and the inner end of this bar 38 is normally impelled into a downward position by means of a spring 40. The bar is provided with a slot 39 through which the tape 36*u* from the upper roll passes.

An anvil bar 42 is fixed onto the plate 18 with its upper face in alignment with the lower face of the notch 20, and this terminates in an inner portion 43, the face of which cooperates with a cutting blade 44 which acts to sever the tape when the bag sealing operation is completed. This bar 42 likewise has a slot or opening 45 therein through which tape 36*l* from the lower roll 36 passes.

As best shown in Figures 3 and 4, the cutting blade 44 is removably and adjustably mounted on the end of an arm 50, which is pivoted at 52 on the supporting plate 18, and this arm 50 is normally maintained in an uppermost position by means of a spring 54. The bar 50 which supports the blade 44 is mounted just above the central opening 22 in the plate 18.

A trigger 56 for operating the blade 44 is fixed on a trigger support 58, which in turn is pivoted at 60 on the plate 18, and a bell crank or link 62 connects the end

of a trigger support 58 to the end of the blade support 50, whereby desired simultaneous action is accomplished. The blade support 50 is grooved or notched at 64 for passage of the trigger 56 therethrough.

In operation the two tapes 36*u* and 36*l* are taken off their respective rolls and passed through the proper openings in the bars 38 and 42. These openings are indicated by the reference numerals 39 and 45, respectively. These tapes are treated with an adhesive on their inner faces and the ends are joined and passed under the nose of the pressure bar 38, all as shown in Figure 2.

The preliminary crimped neck of a bag 24 is then held in the two hands of an operator, pushed in front of the slot 20 as shown in Figure 2, and then passed inwardly to the position shown in Figure 3, whereupon the joined ends of the tapes 36*u* and 36*l* will be pulled inwardly about the neck of the bag 24, and further movement of the bag by the operator will result in pulling more of the juxtaposed tapes into position about the crimped neck, and after the bag has passed beyond the nose of the pressure bar 38, the tapes 36*u* and 36*l* will then be joined in a sealing relationship behind the neck of the bag. At about this time the bag, still held in the hands of the operator, strikes the trigger 56 which is moved rearwardly from the position shown in Figure 3 to that illustrated in Figure 4, whereupon the blade 44 is moved downwardly from the position shown in Figure 3 to that shown in Figure 4, at which time the joined tapes are severed, resulting in a bag sealed at the neck by the tapes, as best shown in Figure 9. As soon as the severing operation has been completed, the bag is removed from its position in the opening 22 and the operation repeated. The spring 54 will move the trigger 56 and blade 44 back to their original positions as shown in Figure 1, and the spring 40 will always operate to move pressure bar 38 into a tape contacting and bag sealing relationship.

The apparatus can be employed for a horizontal movement of the bags therethrough as shown by the full lines in Figure 1, and for a vertical downward movement of the bags therethrough as shown by the dotted line in Figure 1, and the angle of operation can be changed to suit the operator's convenience at any time.

The device herein above described provides a substantial increase in efficiency of construction and operation over my earlier invention. A higher rate of production is easily accomplished, there are less delays in operation, a better sealing results, and the cutting blade and its appurtenances are much less likely to get out of order. Additionally, the rolls of tape can be more readily installed and provide more facile operation.

I am aware that many changes may be made and numerous details of construction varied throughout a wide range without departing from the principles of this invention, and I, therefore, do not propose limiting the patent granted hereon otherwise than as necessitated by the prior art.

I claim as my invention:

In a mechanism for sealing bags, the combination of a flat supporting plate adapted for selective vertical and horizontal positioning, a stand therefor, said plate having an opening and a V-shaped bag receiving passage communicating with said opening, a pair of rotatable supports for adhesive tape provided on said plate at opposite sides of said passage, a stationary anvil element and a pivoted hammer element provided on said plate at opposite side edges of said opening, a spring urging said hammer element against said anvil element, said hammer and anvil elements having slots therein for feeding of tape from said rotatable supports therethrough, a spring-pressed support bar having one end thereof pivoted to said plate, a blade secured to the other end of said support bar and disposed adjacent the junction of said passage and said opening, a trigger support, a pivot element attaching one end of said trigger support to said plate, a trigger secured to the other end of said trigger support and extending into said opening, and a link having one end thereof pivoted to said support bar adjacent said blade and having its other end pivoted to said trigger support at a point between said trigger and said pivot element, whereby to operatively connect said trigger support to said support bar.

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