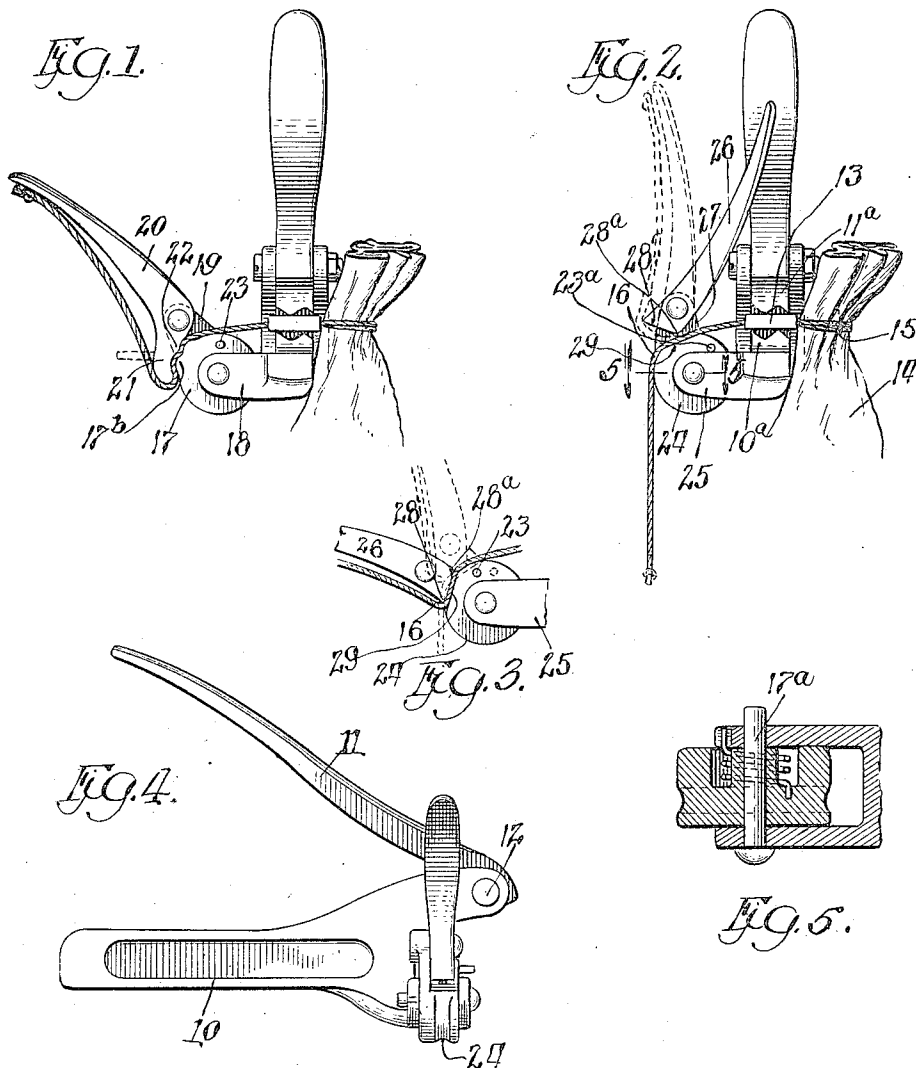


J. J. TUOHY.
SEALING IMPLEMENT.
APPLICATION FILED AUG. 28, 1915.

1,182,602.

Patented May 9, 1916.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SEALING IMPLEMENT.

1,182,602.

Specification of Letters Patent.

Patented May 9, 1916.

Application filed August 28, 1915. Serial No. 47,907.

To all whom it may concern:

Be it known that I, JOSEPH J. TUOHY, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sealing Implements; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in an implement for use in sealing bags or the like where a tie loop is drawn about the neck of the bag and sealed in a sealing block that is clamped upon the ends of the tie loop in such manner as to hold it securely gripped about the neck of the bag. The object of the invention is to provide a sealing device of the kind described with improved means for drawing the tie loop taut about the neck of the bag and for holding it in this position while the seal is clamped by the implement upon the ends of the tie loop.

The invention is illustrated as applied to a device of the type shown and described in Letters Patent No. 702,351 granted June 10th, 1902, to H. W. Abbott.

Referring now to the drawings: Figure 1 is a view representing in front elevation a sealing implement of the general kind shown in the Patent No. 702,351 heretofore mentioned. Fig. 2 is a like view showing the sealing implement as modified in accordance with the present invention. Fig. 3 is a fragmentary view like Fig. 2 showing the parts in a different position. Fig. 4 is a view representing a side elevation of the sealing implement shown in Fig. 2. Fig. 5 is a view representing a transverse section through Fig. 2 in a plane indicated by the line 5—5 of Fig. 2.

Referring now to the drawings:—10 and 11 indicate cooperating, die-carrying levers fulcrumed on a bolt or pin 12 and carrying respectively dies 10^a and 11^a which are adapted to coact upon and crimp between them a sealing block 13, through which parts of the tie-loop and the draw-ends extend in the usual manner.

14 indicates the bag or like article to be tied and 15 indicates the tie loop in the

process of being drawn about the neck of said bag.

16 indicates the draw-ends of the tie-loop which pass through the sealing block and beyond the same and are used to draw up the loop about the neck of the bag in a familiar manner.

In the construction as shown in the patent to Abbott No. 702,351, hereinbefore referred to, and shown herein in Fig. 1, there is provided a disk 17 mounted in arms 18 extending parallel to the apertures in the sealing block through which the draw-ends of the tie-loop extend when the sealing block is in proper position for crimping it between the dies of the implement. Said disk is spring-controlled (see Fig. 5), a coiled spring 17^a tending to rotate it toward the space between the dies. A laterally extending pin 23 fixed to the side of the disk and adapted to engage one of the arms 18 limits the rotation of the disk in said direction. The disk 17 has a radial extension 19 to which is pivoted a lever 20. The lever 20 has an arm 21 provided adjacent to the periphery of the disk 17 with teeth 22 which are adapted to coact with corresponding teeth 17^b on the disk 17 to grip the draw-ends 16 of the loop.

In the operation of the device, the draw-ends of the loop 16 are drawn by hand as taut as may be about the neck of the bag and the levers 10 and 11 are then drawn together to preliminarily grip, without crimping, the sealing block which is placed between them. The lever 20 is then swung (to the left according as illustrated in Fig. 1) to grip the draw-ends between the teeth 22 on the lever and the teeth 17^b on the disk. A further movement of the lever will manifestly then act to rotate the disk 17 and the draw-ends are thus drawn to take up the tie loop and pull it tightly about the neck of the bag. The die levers 10 and 11 are then manipulated to crimp the sealing block. The lever 20 is now released, the spring 17^a rotates the disk 17 back to its initial position, and the sealing block is released by manipulating the levers 10 and 11. The draw-ends and seal are then removed from the sealing implement, which is ready for another operation.

I have found that in the operation of the aforesaid device, the means for gripping the

draw-ends is not as efficient as it may be. The coacting teeth provided between the arm 21 of the lever 20 and the surface of the disk may in operation slip or give on the draw-ends of the tie loop under a hard pull so that while the one loop of the tie about the neck of the bag may be drawn so as to draw the neck of the bag against the end of the sealing block, a maximum grip is not provided about the bag neck. It is to improve the implement in this respect that the device shown in Figs. 2, 3 and 4 has been modified.

24 indicates the disk in this case journaled as before in arms 25 fixed to the lever 10, and 26 indicates the lever which is intended to coact with said disk and which is pivoted to a radial arm 27 on the disk 24. The disk 24 (provided with the usual peripheral groove 24^a for the loop cord ends) is cut away to provide a preferably flat gripping surface 29 which is inclined upwardly toward the space between the dies 10^a, 11^a, when the disk is in its normal position. The lever 26 adjacent to the drum 24 is provided with a preferably flat, inclined gripping face 28 which is adapted to be brought into parallel, closely spaced relation to the gripping surface 29 of the disk 24 in one position of the lever. The parts are so designed that when the lever is in position to bring its gripping end 28 into the closely spaced relation to the gripping surface 29 of the disk 24 above referred to, the gripping end will be spaced from the gripping surface a distance sufficiently less than the diameter of the cord of the tie loop to forcibly grip the cord in a line between the central rotative axis of the disk 24 and the fulcrum of the lever 26.

The operation of the device is as follows: The draw ends of the loop (after the loop has been put about the bag neck and its ends threaded through the seal in the usual manner and the seal placed between the dies of the implement and the preliminary grip given to the seal as heretofore described) are drawn forward over the flat gripping surface 29 of the disk 24 as shown in full lines in Fig. 2, the lever 26 being thrown toward the plane of the die levers 10, 11, as illustrated in said figure in full lines. The draw ends of the loop are then brought up against the side of the lever and the lever 26 is swung away from the aforesaid plane into the position shown in dotted lines in Fig. 2. This brings the edge of the gripping end 28 nearest the said plane into engagement with the draw ends of the loop as shown in said figure. The said edge is preferably rounded, as indicated at 28^a in order that it may grip without cutting the cord of the tie loop. The further swinging of the lever provides sufficient friction between the lever and the gripping surface

29 of the disk 24 with the cord interposed between them to rotate the disk 24 with the lever toward the left, as indicated in Fig. 3, through the position in dotted lines shown therein to the position shown in full lines. In the position shown in dotted lines in Fig. 3 the gripping face 28 at the end of the lever is at a wide angle with the gripping surface 29 of the disk 24. As the parts are moved, this angle is gradually diminished until the gripping face 28 at the end of the lever approaches the parallel relation shown in full lines of the said figure. A movement of the parts beyond this position will manifestly bring the gripping face 28 into angular gripping contact with the cords engaged between the said face and gripping surface. In this movement the cord becomes more and more wedged between the lever end and the gripping surface of the disk, rapidly increasing the grip on the cord as the lever is swung, so that the required increased pull on the lever as it is swung to more tightly draw the tie loop about the bag neck is fully met in the increased grip between the gripping end of the lever and the disk, thus preventing any slip of the draw ends of the loop.

The advantage of the improved construction and the force of the grip on the draw ends of the tie loop that may be produced by it in the operation of the device will be manifest to a mechanic familiar with the art. No slippage of the draw ends between the gripping end of the lever and the gripping surface of the disk is possible, no matter what force is used to draw the loop about the bag neck, since any force applied to draw the loop about the bag neck is greatly multiplied in applying the frictional grip to the draw ends of the tie loop between the gripping surfaces of the lever end and disk respectively.

I claim as my invention:

1. In an implement of the character described, the combination with suitably connected levers and dies carried thereby, of a disk rotatively mounted on one of said levers adjacent to said dies, said disk being cut away at one part to provide a gripping surface normally inclined toward the space between said dies, said disk being provided with a projecting arm and a lever pivoted to said arm and being provided at its end with a gripping face adapted to be brought into substantially parallel relation with the gripping surface of said disk when said end is between the fulcrum of said lever and the rotary axis of said disk.

2. In an implement of the character described, the combination with suitably connected levers and dies carried thereby, of a spring-controlled disk rotatively mounted on one of said levers adjacent to said dies, said disk having a substantially flat gripping

surface which is normally inclined upwardly toward the space between the said dies, said disk having a radial arm, and a lever fulcrumed to said arm and having an end provided with a flat gripping face which is adapted to be brought into parallel relation with the gripping surface of said disk when said gripping end is located between the fulcrum of said lever and the rotative axis of said disk and which face, upon further movement of the parts, is adapted to be brought into an angular gripping position with respect to the gripping surface of said disk.

3. In an implement of the character described, the combination with suitably connected levers and dies carried thereby, of a spring-controlled disk mounted on one of said levers adjacent to said dies, said disk being provided with a stop for limiting its rotative movement toward said dies, and

being provided with a radially projecting arm, a lever pivoted to said arm, said disk having a substantially flat gripping surface which is normally inclined upwardly toward the space between the said dies, and said lever having a flat gripping face which terminates in a rounded edge at the end nearer the dies and in a biting edge at the end farther from the dies and said face being inclined to the lever in such manner that it may be brought into close parallel juxtaposition to the gripping surface of said disk.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 17th day of August, A. D. 1915.

JOSEPH J. TUOHY.

Witnesses:

KARL W. DOLL,
ETHEL A. KRULEWICH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."