

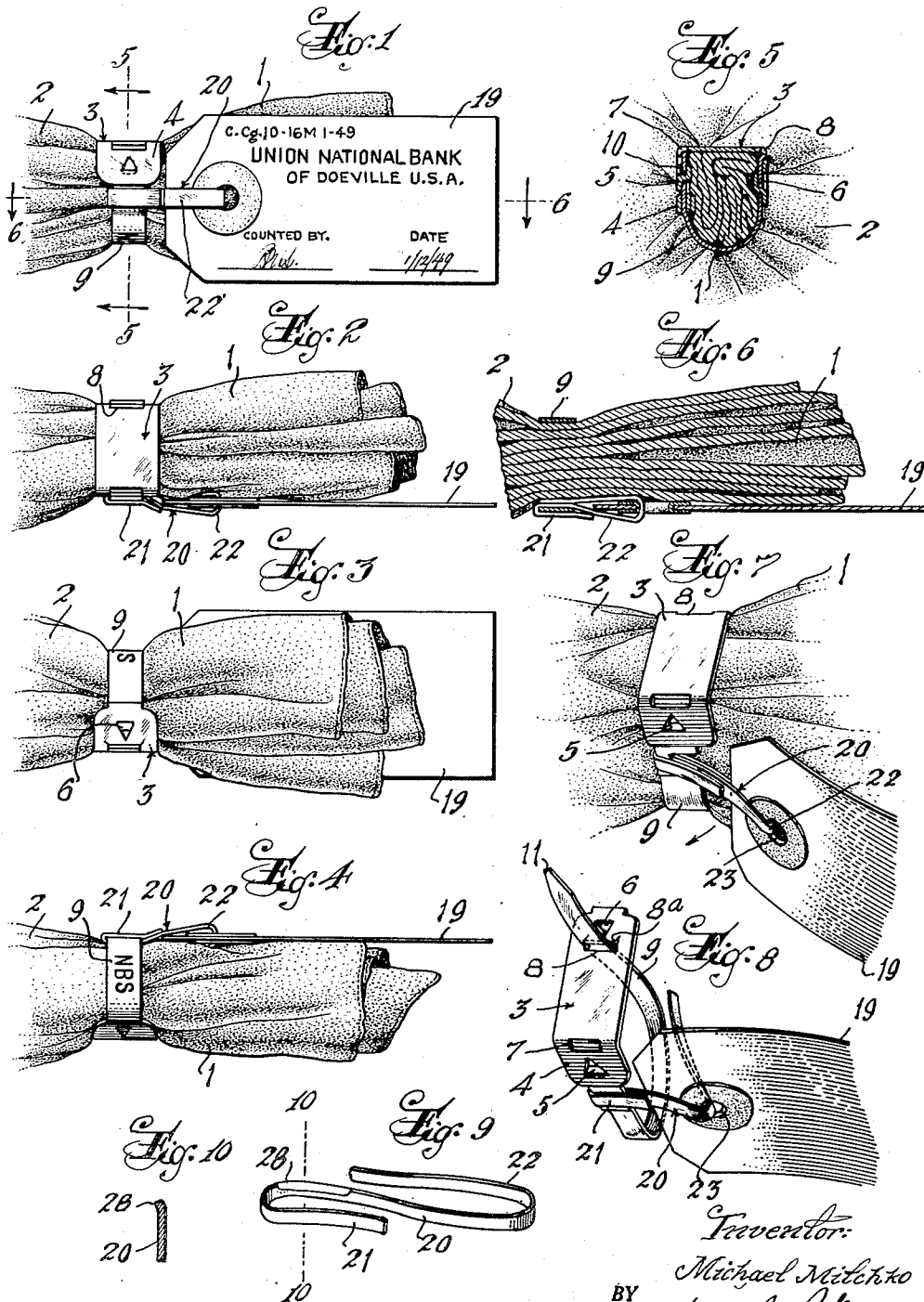
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M. MITCHKO
BAG SEALING DEVICE

2,645,514

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2 Sheets-Sheet 1



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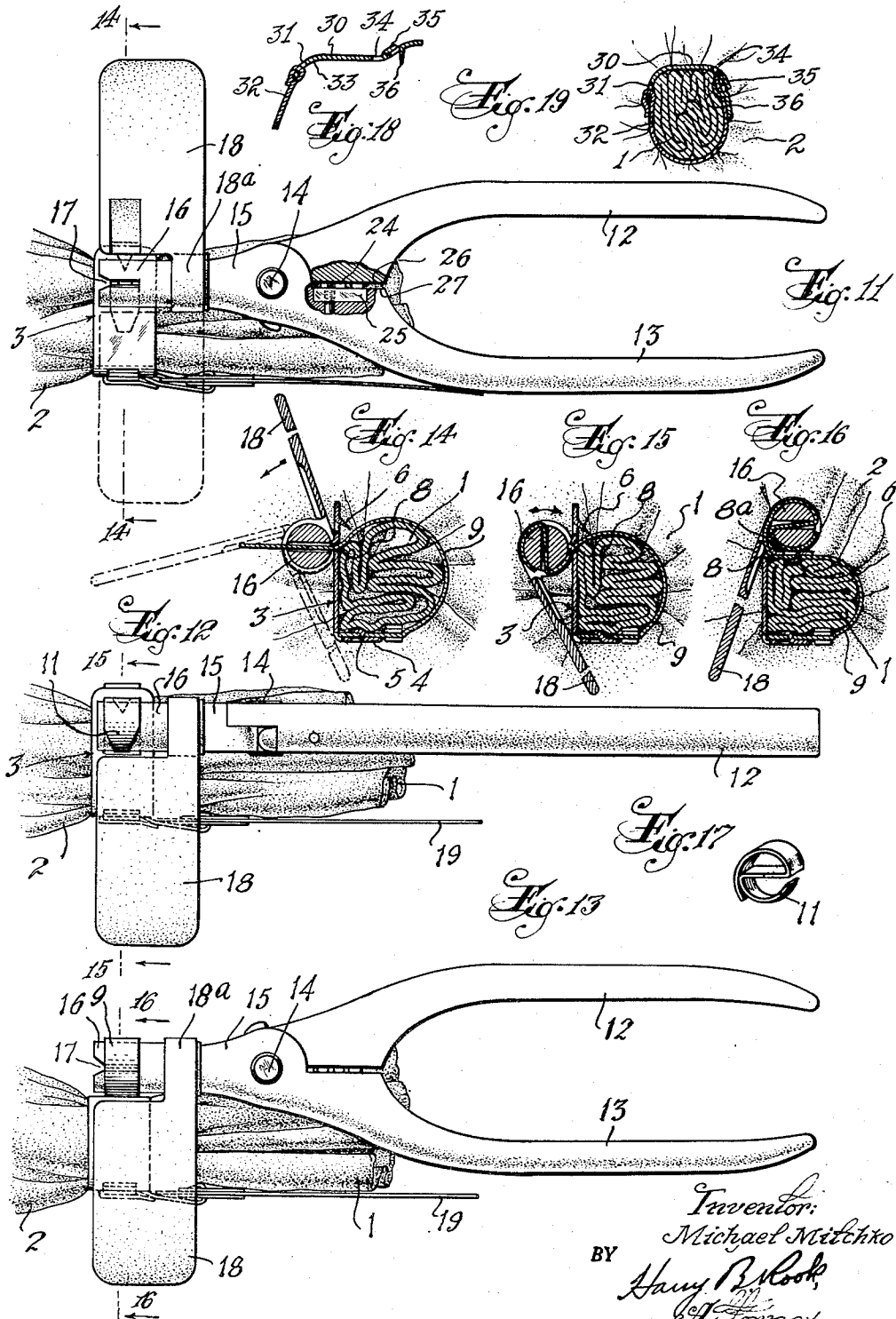
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BAG SEALING DEVICE

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2 Claims. (Cl. 292—307)

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My invention relates to bag sealing and identification mechanism.

A prime object of the present invention is to provide a sealing device that will securely seal the opening in the mouth of a flexible bag or the like.

Another object of the invention is to provide such a sealing device with novel means for supporting an identification tag.

Still another object is to provide a sealing device that is tamper proof.

A further object is to provide a novel form of tool for manipulating the sealing device and for printing identification data thereon.

Yet another object is to provide a sealing and identification device that is simple in construction, economical to manufacture and highly efficient in use.

Other objects and advantages of the invention will be apparent from the description thereof to follow taken in connection with the accompanying drawings in which—

Figure 1 is a side elevation of a bag sealing and identification device embodying my invention applied to the mouth of a flexible bag.

Figure 2 is a view looking from the top of Figure 1.

Figure 3 is a view looking from the rear of Figure 1.

Figure 4 is a view looking from the bottom of Figure 1.

Figure 5 is a vertical sectional view taken on the plane of the line 5—5 of Figure 1.

Figure 6 is a vertical sectional view taken on the plane of the line 6—6 of Figure 1.

Figure 7 is a perspective view of the improved device showing the seal partly broken.

Figure 8 is a perspective view of the improved device showing the manner of attaching an identification tag.

Figure 9 is a perspective view of the tag supporting strap.

Figure 10 is a vertical sectional view taken on the plane of the line 10—10 of Figure 9.

Figure 11 is a side view of the sealing and identification device in position on the mouth of a bag and showing a manipulating tool in operative position thereon, parts of the tool being shown broken away.

Figure 12 is a view similar to Figure 11 showing the tool partly turned counterclockwise in sealing operation.

Figure 13 is a similar view showing the tool turned back to the position of Figure 11 in final sealing and strip cutting operations.

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Figure 14 is a vertical sectional view taken on the plane of the line 14—14 of Figure 11.

Figure 15 is a vertical sectional view taken on the plane of the line 15—15 of Figure 12.

Figure 16 is a vertical sectional view taken on the plane of the line 16—16 of Figure 13.

Figure 17 is a perspective view of the cut off portion of the sealing strap.

Figure 18 is a vertical longitudinal sectional view through a modified form of the bag sealing and identification device embodying the invention, and

Figure 19 is a view similar to Figure 5 showing the bag sealing and identification device of Figure 18 applied to a bag.

Referring to the drawings, the sealing and identification device is shown applied to the mouth 1 of a bag 2 formed of fabric material such as canvas and employed by banks for the transportation of coin. As shown in detail in Figure 8, the device comprises a plate member 3 of rigid sheet metal having one end 4 bent at right angles to the plane of the body of the plate. Adjacent its ends, the plate is provided with instructed prongs 5 and 6. Inwardly of prong 5 a slot 7 and inwardly of prong 6 a slot 8 are formed. An elongated narrow flat strap 9 of pliable metal has one end perforated as indicated at 10 for securing the strap to the instructed lug 5. The other end 11 of the strap is pointed to facilitate insertion through the slot 8 which has an upwardly extending curved lip 8a.

The material forming the mouth of the bag is gathered together and twisted into folds, as shown in Figures 5 and 6. Plate member 3 and the attached strap 9 are wrapped around the folds of the material and the pointed end 11 of the strap is slipped through slot 8.

A tool such as shown in Figures 11, 12 and 13 is now used for tightening the plate and strap around the folds in order to securely seal the opening in the mouth of the bag. This tool comprises a pair of pivoted arms 12 and 13, one of which, for example arm 12, may be pivoted to arm 13 by a pivot pin 14. Arm 13 is formed with an extension 15 having a nose portion 16 at the end thereof. The nose portion is formed with a medial slot 17. A plate member 18 is pivotally connected to the nose portion of the tool by means of an extension 18a formed along the edge of one end, said extension being looped around the inner end of the nose portion and frictionally engaging the same so that the nose portion may be rotated relatively to said plate member.

Referring to Figure 14, the plate 18 is swung

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out of the way and the slotted portion 17 of the nose portion of the tool is slid over and along the protruding portion of the strap 9 until said nose portion engages the plate member 3 at which time the slot 17 is in alignment with and adjacent to the slot 8 of the plate member, as shown in Figure 14. Then the plate member 18 is swung in the direction of the arrows in Figure 14 into contact with the plate 3 to bend the free end of the strap 9 around the nose of the tool, as shown in broken lines, and to serve as a finger grip during manipulation of the tool, as shown in Figure 15. The tool is then turned by hand in the direction of the arrow in Figure 15, thereby pulling the strap further through the slot 8 of the plate member 3 and at the same time winding the free end of the strap around the nose portion, the lip 8a smoothly guiding the strap through the slot. This action shortens the length of strap around the folds and thereby tightens said folds further, as shown in Figure 15.

Rotation of the tool is continued in the direction of the arrow of Figure 15 while the finger of the operator is placed on plate member 18 and pressure exerted thereon to prevent the plate member 3 from turning with the tool. This action pulls the strap 9 further through slot 8 and at the same time bends the normally flat end of the plate member 3 bending the prong 6 along the weakened zone formed by the slot to the position at right angles to said plate member 3, at the same time causing the prong 6 to penetrate the strap 9 and said plate end to become flattened into contact with the strap, as shown in Figure 16. The prong at the same time is clinched or bent under the strap and securely fastens the strap to the plate member 3. The folds of the mouth of the bag are thus securely sealed against opening without destruction of the seal.

Further rotation of the tool in the same direction will cause the protruding portion of the strap 9 to be broken or sheared off along the edge of the slot 8. The sheared off portion of the strap is wrapped around the nose portion of the tool and when slipped off said nose portion assumes the shape as shown in Figure 17.

It will be seen from Figure 5 that the folds of material of the mouth of the bag are tightly flattened against each other thereby securely sealing the bag at this point. The prongs and the free end of strap 9 are pinched underneath the plate member 3 so that no tool can reach them for breaking of the seal by unauthorized persons.

Referring to Figures 1 and 8, an identification tag 19 of thin material such as pasteboard is secured to the strap 9. Suitable identification data such as the name and address of a bank, date, etc. may be printed on the tag. The tag is secured to strap 9 by a metal strap 20 turned upon itself at one end to form a short hook 21 which is looped around the strap 9 and turned upon itself at its other end to form a long hook 22 which is adapted to be inserted through an opening 23 in the tag as shown in Figure 8. Strap 20 is preferably attached to strap 9 before the latter is wrapped around the folds of the mouth of the bag. When so attached the tag lies flat against the folds of the mouth of the bag as shown in the drawings and may be glued in place in order to prevent unauthorized removal or changing of the tag.

The sealing tool shown in Figures 11, 12 and

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13 is also provided with printing mechanism in the form of dies 24 and 25 on the opposite faces 26 and 27 of the arms 12 and 13, respectively, adjacent the pivot pin 14 as shown in Figure 11. By placing the strap 9 between said dies any suitable identification data may be printed thereon such as the letters or initials "NBS" shown in Figure 4.

When it is desired to break the seal, the hook portion 22 of the strap 20 is grasped by the fingers of the operator and said hook portion lifted outwardly away from the folds of the mouth of the bag as shown in Figure 7 whereupon a knife edge formed by a flange 28 on the strap adjacent said hook portion will cut across and through strap 9 which is made of flexible metal thereby severing the same so that the sealing device can be removed from the mouth of the bag and the bag opened with no danger of cutting or damaging the bag.

A modification of the invention is shown in Figures 18 and 19 wherein the plate 30 corresponding to the plate 3 has a slot 31 in one end thereof through which one end of the strap 32 is looped and pressed to attach the strap to the plate, and said end of the plate is also curved as indicated at 33 so as to more closely conform to the folds of the bag when the device is in bag-sealing position as shown in Figure 19.

The slot 34 corresponding to the slot 8 in the plate 3 is formed by slitting the plate and bending a portion thereof bounded by the slits backwardly over the top side of the plate at one edge of the slot, as indicated at 35, so as to provide a strong well-rounded edge over which the strap is drawn during application of the device to a bag. The returned portion 35 also reinforces the body portion of the plate so that the prong 36 corresponding to the prong 6 may be located nearer to the slot and thereby reduce the length of the end portion of the plate beyond the slot and consequently make it more difficult to bend said end portion backwardly in such a way as to permit removal of the device from a bag. Preferably the end portion of the plate opposite the strap is also initially curved upwardly as shown in Figure 18 to permit the plate to be more easily slipped over the folded portion of the bag during the application of the device to the bag.

Changes in details of construction might be made without departing from the principle of the invention.

What I claim is:

1. A sealing device for a bag of flexible material comprising a metal plate for partially encircling the folded mouth of the bag, a flexible metal strap secured at one end to said plate with the main portion of the strap to encircle the remainder of the mouth of the bag, said plate having a slot adjacent one end thereof, the free end of said strap being insertable through said slot and the strap being adjustable lengthwise through the slot for tightening the folds of the mouth of the bag, said end portion of the plate being weakened and bendable along said slot against the main portion of the strap when the strap extends through said slot, said end portion of the plate having a prong projecting from the side thereof toward the strap to penetrate and clinch upon said strap as said end of the plate is bent toward the main portion of the strap after the strap has been tightened around the folds of the bag.

2. A bag seal comprising in combination a bag

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of flexible material folded at its mouth, a rigid metal plate having opposite bent end portions partly encircling the folded mouth of the bag, a flexible strap connected to one end of said plate and looped tightly around the remainder of the folded mouth of the bag with the other end of said strap underlying the other bent end portion of the plate, and a prong on the second-mentioned bent end of the plate penetrating and clinched upon the strap and fastening the strap to the plate.

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