Sept. 20, 1971 R. D. LYNCH 3,606,436

RECEPTACLE DEVICE

Filed March 10, 1970 2 Sheets-Sheet 1

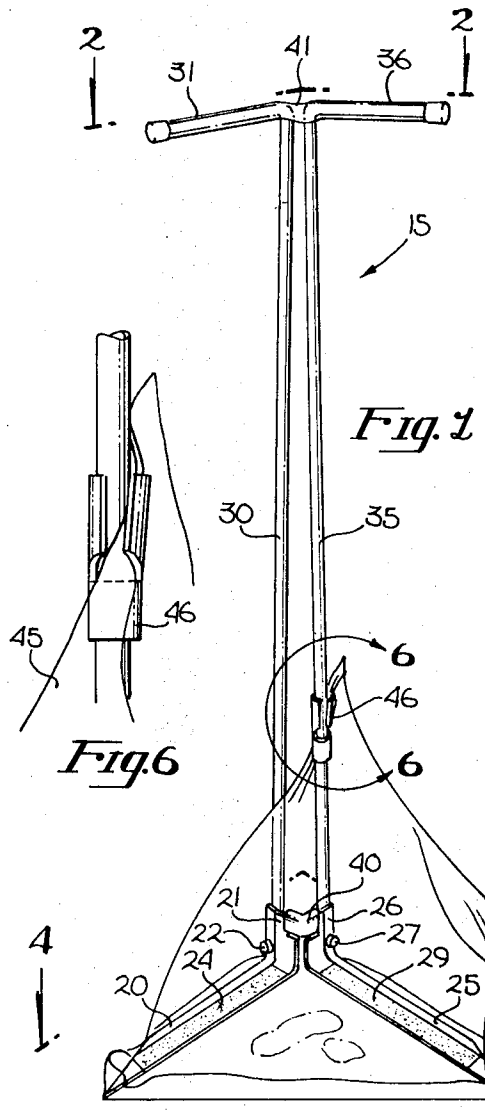


Fig. 1

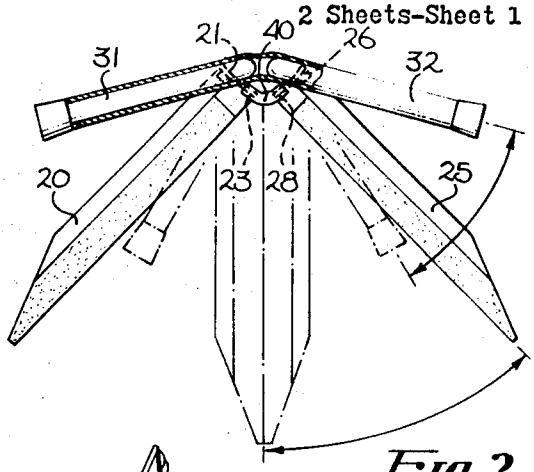


Fig. 2

Fig. 6

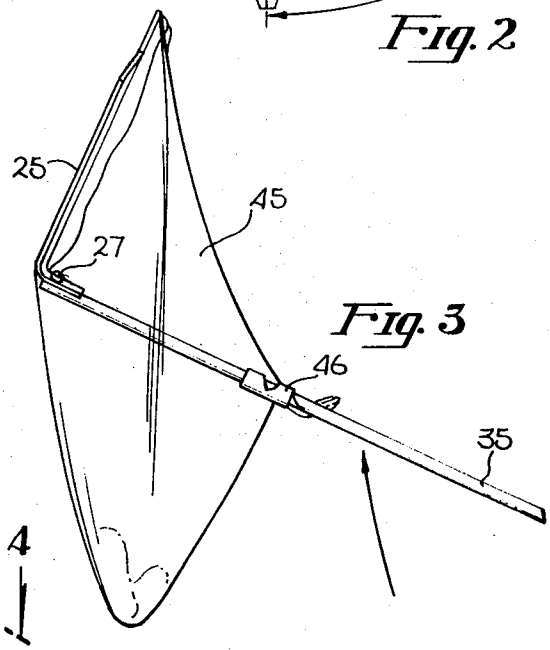


Fig. 3

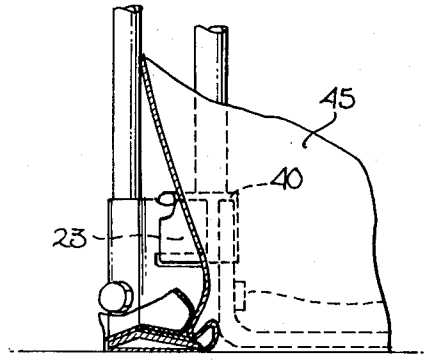


Fig. 5

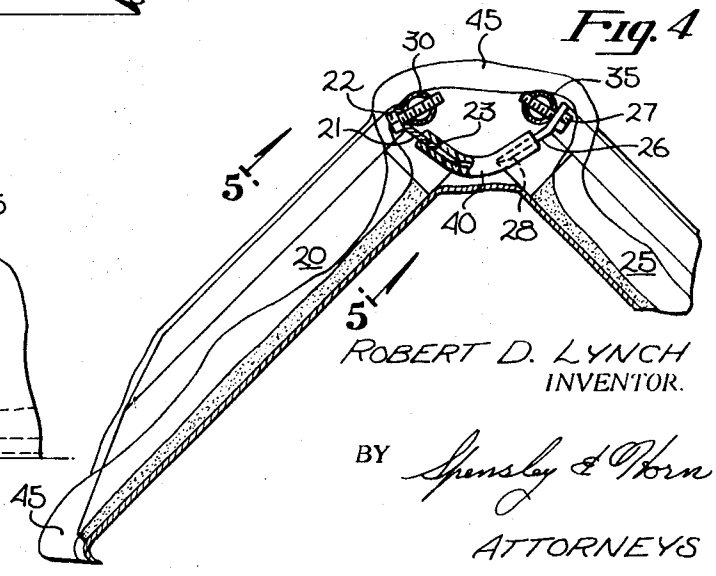


Fig. 4

ROBERT D. LYNCH
INVENTOR.

BY Spensley & Horn

ATTORNEYS

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RECEPTACLE DEVICE

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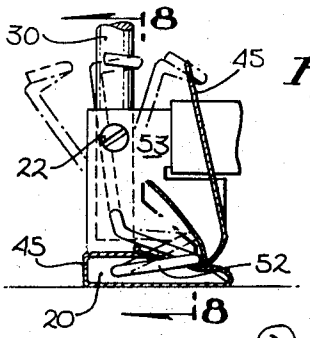


Fig. 7

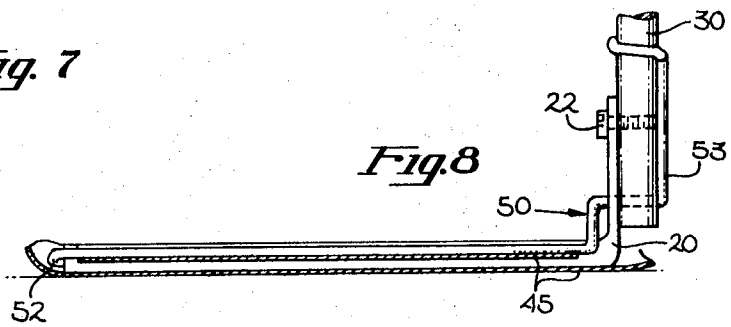


Fig. 8

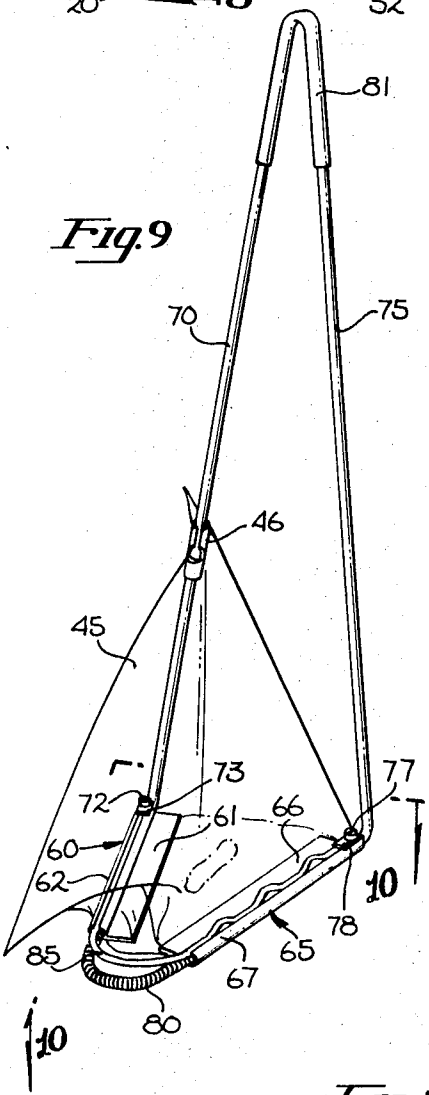


Fig. 9

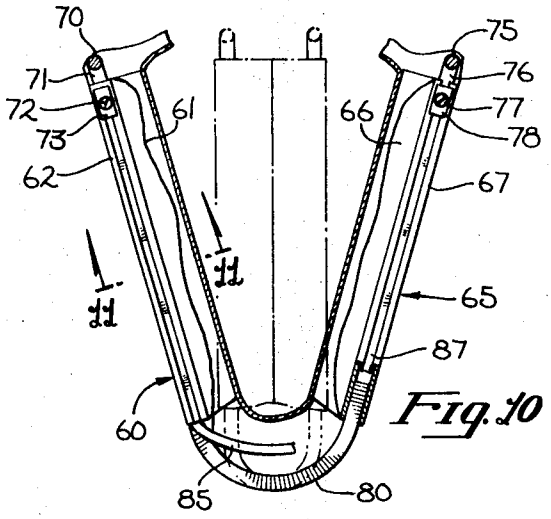


Fig. 10

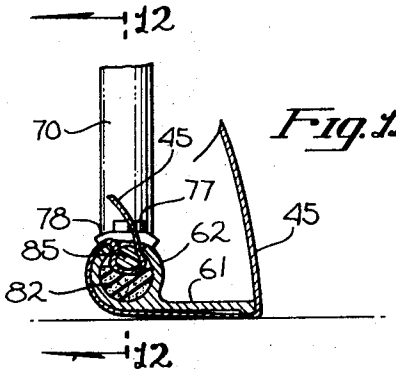


Fig. 11

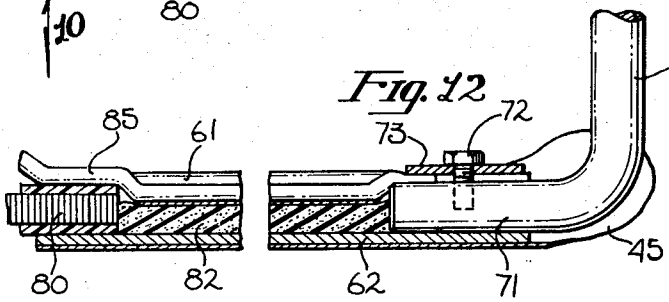


Fig. 12

ROBERT D. LYNCH
INVENTOR.

BY Spensley & Horn
ATTORNEYS

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3,606,436

RECEPTACLE DEVICE

Robert D. Lynch, 3520 5th Ave.,
Los Angeles, Calif. 90018

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Int. Cl. A47f 13/08
U.S. Cl. 294—19R 10 Claims

ABSTRACT OF THE DISCLOSURE

Portable device for picking up small objects underfoot, having a pair of blade-like members secured in superincumbent relationship to the lower ends of a pair of operating rods and arranged for pincers-like movement upon manipulation of the rods. A limp bag is invertedly mounted with its mouth secured to the blade-like members. The blade-like members are placed to straddle the object and the rods manipulated to bring the members together beneath the bag and to close the bag, crossing of the members then urging the object into a sagging portion of the bag.

BACKGROUND OF THE INVENTION

The present invention is directed toward a portable, lightweight device for picking up small objects from the ground without bending over or touching the object with the hands, a particularly useful application of the device being to pick up dog waste and other debris. In order to achieve maximum convenience, such a device should have a disposable receptacle, be simple to operate, and be capable of picking up more than one object before it becomes necessary to empty or replace the receptacle.

SUMMARY OF THE INVENTION

The present invention device basically consists of two complementary assemblages, each comprising an elongate operating rod having a blade-like member secured to its lower end. The two assemblages are hinged together with the blade-like members in superincumbent relationship and arranged for cooperative pincers-like movement upon manipulation of the rods. A limp bag is mounted to the assemblages in an inverted position with its open end secured along the lengths of the blade-like members and a portion of its closed end secured to one of the operating rods, whereby the bag is opened and closed upon the pincers-like movement of the members resulting from manipulation of the rods.

The upper surface of each blade-like member is tapered toward the longitudinal edge opposing the other member, these thinner edges being blunt since no cutting function is intended. Hence, throughout the specification and claims these members are referred to as "blade-like" members rather than blade members.

When the members come together during operation they contact each other in substantially parallel alignment, similar to the movement of plier jaws as opposed to the angular or shearing contact of scissors blades. However, because of the tapering of the opposing longitudinal edges, one member slides beneath the other so that the members can cross, the resultant superincumbent relationship being achieved either by superincumbent mounting of rigid members or by mounting somewhat resilient members in the same rotational plane. Hence, although the present invention blade-like members do not function by grasping the object between them, their movement is herein referred to as "pincers-like" to distinguish it from a scissors-like movement.

Attachment of the blade-like members in substantially perpendicular alignment to the operating rods results in

vertical orientation of the rods during use. The rods are manipulated at their upper ends, an approximately waist-high rod length enabling convienent device operation without stooping or bending over. The rod upper end portions can be directly grasped or they can be provided with operating handles. It is presently preferred to normally bias the free ends of the blade-like members away from each other, so that the bag is normally open.

To use the device it is positioned so that the blade-like members are on the ground and straddling the object to be picked up, the open inverted bag covering the object. The operating rods are then manipulated to overcome the bias and rotate the blade-like members to bring them together with a pincers-like movement. As the blade members approach each other and contact the object, they are in substantially parallel alignment. The tapered opposing longitudinal edge portions of the blade-like members contact the object first and tend to wedge the object upwards as the members are brought even closer together, the tapered surfaces sliding under the object. When the members contact each other the object is then completely supported by the members and the device can be lifted and tilted to one side to slide the object off of the members and into a sagging portion of the bag. However, even further motion of the members will result in crossing of the members, the object then being supported only on the tapered surface of the uppermost member, whereupon the object will slide off into the bag with only very little motion of the device.

By securing only one corner of the closed end of the flexible bag to the operating rod, the main portion of the bag will sag, and by using an envelope type bag of approximately square dimensions the unsecured closed corner of the bag will droop down almost to the blade-like members and form a pouch for retention of the object when the bag is subsequently opened.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a receptacle device in accordance with the present invention;

FIG. 2 is a view, partly cut away, taken along the line **2—2** of FIG. 1;

FIG. 3 is a perspective view of the lower portion of the device in an elevated position;

FIG. 4 is a view taken along the line **4—4** of FIG. 1;

FIG. 5 is a view taken along the line **5—5** of FIG. 4;

FIG. 6 is an elevation view of portion **6—6** of the device of FIG. 1;

FIG. 7 is an elevation view, partly in cross-section, of the device lower portion and showing an alternative embodiment of bag securing means;

FIG. 8 is a view taken along the line **8—8** of FIG. 7;

FIG. 9 is a perspective view of another embodiment of the present invention receptacle device;

FIG. 10 is a view taken along the line **10—10** of FIG. 9;

FIG. 11 is a view taken along the line **11—11** of FIG. 10; and,

FIG. 12 is a view taken along the line **12—12** of FIG. 11.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to the drawings, in FIG. 1 there is shown a presently preferred embodiment in accordance with the present invention concepts, the receptacle device being generally indicated by the reference numeral **15**. A pair of blade-like members **20** and **25** are secured to the lower end of a pair of respective operating rods **30** and **35**, the upper end portions of the operating rods being bent at right angles to form operating handles **31** and **36**.

Blade-like members **20** and **25** are fabricated of alu-

minum, and are of slightly angular cross-sectional configuration as indicated in FIG. 5. As can best be seen from FIGS. 1 and 4, one end of each blade-like member is tapered and the other end bent upwards at right angles to form respective mounting flanges **21** and **26**, the members being secured to the operating rods by means of screws **22** and **27**.

The upper ends of the flanges **21** and **26** are provided with transverse slits, that portion of the flange between the slit and the upper flange surface defining respective tabs **23** and **28**. The assemblage comprising member **20** and rod **30** is pivotally interconnected to the member **25**-rod **35** assemblage by a length of bent, heavy plastic sleeving **40**, each of its ends being inserted onto the tabs **23** and **28**, and by a length of suitably sized plastic tubing **41** covering the operating handles **31** and **36**. The tubing **41** is readily installed by longitudinally slitting its wall at the center of the tube and inserting the end of each operating handle through the slit, the plastic deforming at the slit portion to accept the round rods. It is presently preferred to utilize vinyl type plastic for the sleeving **40** and the tubing **41**, this type of plastic being durable and exhibiting little tendency of tearing or splitting at the ends of cut or slit portions. Thus, in this embodiment two hinging means are provided, the sleeving **40** at the lower end and the tubing **41** at the upper end. The sleeving and tubing walls are somewhat thick in order to provide the desired stiffness while still being resilient enough to allow bending to provide the hinging action. Some stiffness is desired to provide a biasing force to normally hold the blade-like members **20** and **25** in the open position shown in FIGS. 1 and 4, this position resulting from the bend in sleeving **40** and the tendency of tubing **41** to return to a straight configuration.

A limp bag **45**, of thin polyethylene or other suitably flexible material, is mounted in an inverted position with its open end secured to the blade-like members **20** and **25** and its closed end secured to operating rod **35** by means of a tubular clip **46**. As can best be seen from FIG. 6, clip **46** is a length of plastic tubing slit longitudinally downward from its upper end to a transversely extending cut at about the middle of the tube. The bag **45** is preferably of the envelope type, i.e. not of the expanding rectangular bottom type, and of approximately square dimensions, the bag bottom being secured to clip **46** by grasping a corner of the bag bottom and pulling it into the slit in the clip, the plastic slightly bending outward and then pinching the bag material against the operating rod to securely retain it.

The open end of the bag is secured to the upper surfaces of the members **20** and **25** by means of respective adhesive strips **24** and **29**, such as transparent cellulose tape for example. It is presently preferred to wrap the bag material around the blade-like members, as shown in FIG. 5, both for strength and for member cleanliness. The edge surface of the bag mouth is taped to the upper surface of the blade-like members most conveniently through the use of tape which has adhesive on both sides. Thus the bag is easily detachable for replacement, it being merely necessary to pull it loose from the adhesive and to unclip the upper corner from the clip **46**.

In operation, the device is placed over the object to be picked up with the blade-like members open and the bag covering the object, as shown in FIG. 1. Next the operating handles **31** and **36** are rotated toward each other to bring the members together underneath the object, as indicated by the phantom line portions of FIG. 2. The lower portion of the device is rotated upwards and the object flipped into the sagging portion of the bag, as indicated in FIG. 3. By using a bag of square configuration and securing its closed end only at one corner, the sagging portion of the bag is sufficiently large to flop over into a pouch-like portion to retain the picked-up object when the device is returned to an upright position and when the bag and blade-like members are subsequently opened to pick up another object.

Turning now to FIGS. 7 and 8, there is shown an alternative technique for securing the bag mouth to the blade-like members. Instead of using an adhesive strip for securing the bag, an elongate spring **50** is provided, the spring having a straight intermediate portion **51** terminating in a hooked end portion **52** secured to the free end of the blade-like member **30**. The other end of the spring **50** is of irregular shape defining a lever arm portion **53** operating on the rod **30**. The bag mouth is pinched between the straight portion **51** of spring **50** and the upper surface of blade-like member **20**, and there secured by rotating lever arm portion **53** against the spring torsion of straight portion **51**, the end **52** being hooked over the end of member **20**, and hooking it to the operating rod **30**. To release the bag, the spring **50** is unclamped by rotating the lever arm portion **53** slightly clockwise (as viewed in FIG. 7 and indicated in various phantom lined positions) to unhook it from the rod **30**, and then letting it rotate counter-clockwise to release the spring pressure.

FIGS. 9–12 illustrate another preferred embodiment of the receptacle device in accordance with the present invention concepts. Again, two assemblages of operating rods and blade-like members are used, a member **60** being secured to the lower end of a rod **70** and a member **65** being secured to the lower end of another rod **75**. In cross section, the blade like members **60** and **65** define flat portions **61** and **66**, terminating in hollow arcuate portions **62** and **67**, the hollow portions defining a circular opening.

The lower ends of operating rods **70** and **75** are bent to form respective right angle tip portions **71** and **76**, these tip portions being inserted into the ends of hollow arcuate portions **62** and **67** of the blade-like members, and there secured by means of screws **72** and **77**, these screws extending through respective elongate clamping plates **73** and **78** which are for a purpose to be hereinbelow explained.

The other ends of hollow arcuate portions **62** and **67** of the blade-like members are pivotally interconnected by an elongate coil spring **80**, the ends of the spring being inserted part way into the ends of the members. The upper ends of the operating rods **70** and **75** are pivotally interconnected also, by a length of plastic tubing **81**. In this embodiment the blade-like members are normally biased in an open position by the tendency of the coil spring **80** and the tubing **81** to assume a straight configuration. The device is operated by squeezing the operating rod upper ends together in a manner similar to operating a pair of tweezers, pincers-like movement of the blade-like members resulting since they are hinged together at the ends away from the operating rods.

The hollow portion of each blade-like member, intermediate the operating rod tip portions and the coil spring ends, is partially filled with a rod of resilient material, these rod inserts being indicated by the reference numerals **82** and **87**. A length of flexible plastic tubing **85** is used to retain the open end of the bag to the blade-like members, the clip **46** hereinabove described with reference to FIGS. 1–6 being used to retain the upper corner of the bag **45** to the operating rod **70**.

The open end of the bag **45** is folded around the tubing **85** and the tubing then pushed into the hollow portion of the blade-like members above the inserts **82** and **87**, the tubing being squeezed to allow it to pass into the interior of the member hollow portion and then expanding to securely retain the bag mouth by pinching it against the interior surfaces of the member hollow portions, as can best be seen in FIG. 11. The ends of the tubing **85** are permanently secured by pinching between the operating rod tips and the clamping plates **73** and **78**, intermediate portions lying within the members to secure the

bag mouth, and the central portion being looped over the coil spring **80**.

To remove the bag it is merely necessary to grasp the central loop portion of tubing **85** and pull it upwards, the tubing collapsing inwardly as it pulls out of the hollow portions of the blade-like members. The installation of a bag is equally simple, the bag-wrapped tubing **85** being pressed with the thumb into the hollow member portions and depressing the resilient inserts, it again being preferred to wrap the bag around the flat portion of the blade-like members.

Thus there has been described two basic embodiments of a receptacle device in accordance with the present invention concepts, the two embodiments utilizing different hinging arrangements yet resulting in identical movement of the blade-like members. Three different methods of securing the bag mouth to the members have been disclosed, and various other methods and configurations will be apparent to those skilled in the art. Thus, although the invention has been described with a certain degree of particularity, it is understood that the description and drawings are for the purposes of illustration only, the scope of the invention being defined by the following claims.

I claim:

1. Portable device for picking up objects underfoot, comprising:

(a) a first assemblage including a first blade-like member secured to the lower end of a first operating rod and projecting angularly therefrom;

(b) a second assemblage including a second blade-like member secured to the lower end of a second operating rod and projecting angularly therefrom;

(c) hinging means pivotally interconnecting said first and second assemblages for pincers-like movement of said blade-like members upon manipulation of said operating rods; and,

(d) a bag having a portion of its open end detachably secured to said first blade-like member, another portion of its open end detachably secured to said second blade-like member, and a portion of its closed end detachably secured to one of said operating rods so that the inverted bag is selectively opened and closed by the pincers-like movement of said blade-like members resulting from manipulation of said operating rods.

2. A device as defined in claim **1**, wherein said bag is of limp material, and wherein the portions of the bag open end are secured along the substantial entirety of the length of said first and second blade-like members.

3. A device as defined in claim **2**, wherein said blade-like members are secured at a first one of their ends to said operating rods, and wherein said hinging means interconnects said first and second assemblages at an end of said blade-like members.

4. A device as defined in claim **3**, wherein said hinging means interconnects said first and second assemblages at said first one of the ends of said blade-like members.

5. A device as defined in claim **3**, wherein said hinging means interconnects said first and second assemblages at the second one of the ends of said blade-like members.

6. A device as defined in claim **4**, further including an operating handle angularly extending from the upper end of each of said operating rods.

7. A device as defined in claim **3**, further including second hinging means pivotally interconnecting said first and second assemblages at the upper ends of said operating rods.

8. A device as defined in claim **1**, wherein said hinging means normally biases an end of said blade-like members away from each other so that said bag is normally open.

9. A device as defined in claim **4**, wherein said hinging means comprises a length of semi-flexible sleeving extending transversely between said blade-like members and operating rods.

10. A device as defined in claim **5**, wherein said hinging means comprises a coil spring having its ends secured to the second ends of said blade-like members.

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EVON C. BLUNK, Primary Examiner

J. D. CHERRY, Assistant Examiner

U.S. Cl. X.R.

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