July 3, 1951 R. J. AMBLER 2,559,556

LOOSE-LEAF FILING DEVICE

Filed June 8, 1949 3 Sheets-Sheet 1

FIG. 1.

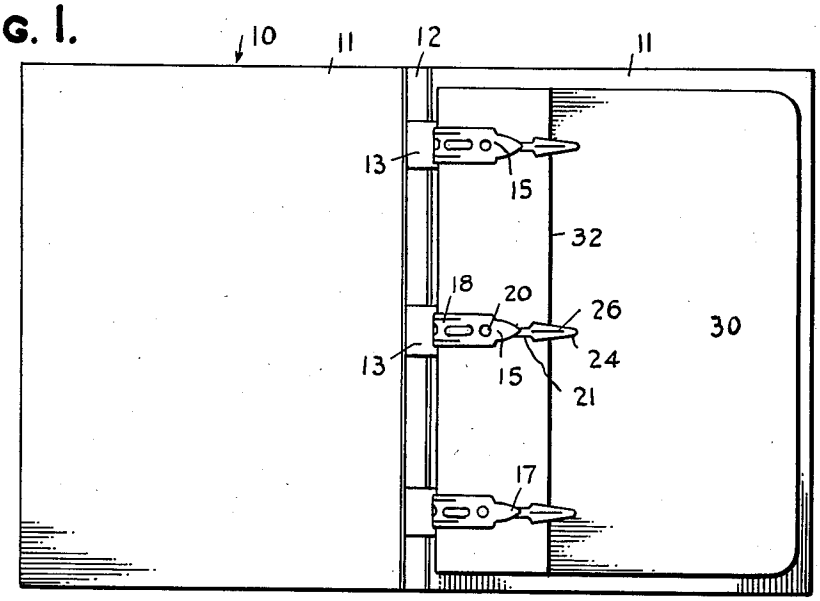


FIG. 2.

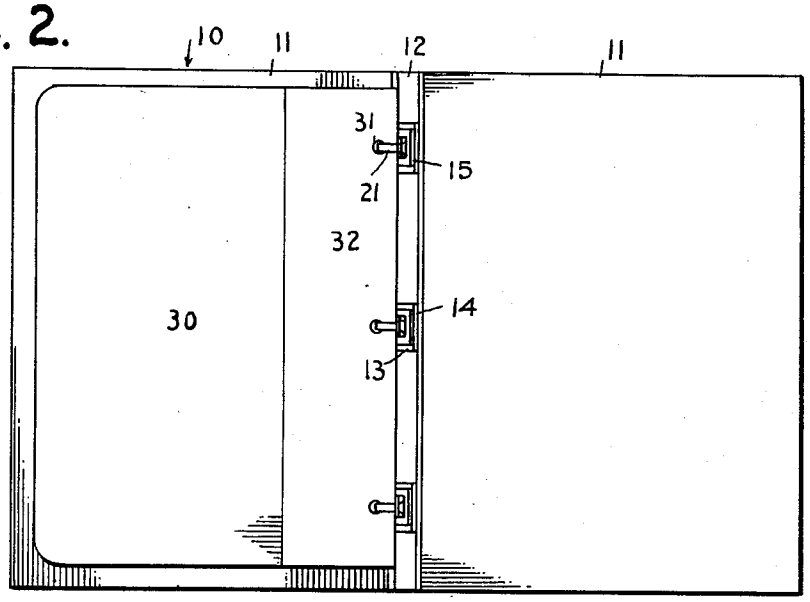


FIG. 3.

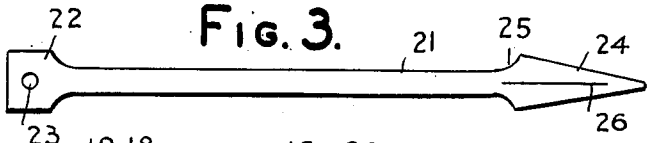
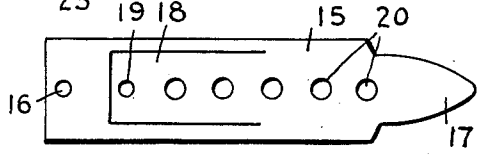


FIG. 4.



INVENTOR.
RICHARD J. AMBLER
BY
ATTORNEY

July 3, 1951 R. J. AMBLER 2,559,556

LOOSE-LEAF FILING DEVICE

Filed June 8, 1949 3 Sheets-Sheet 2

FIG. 5.

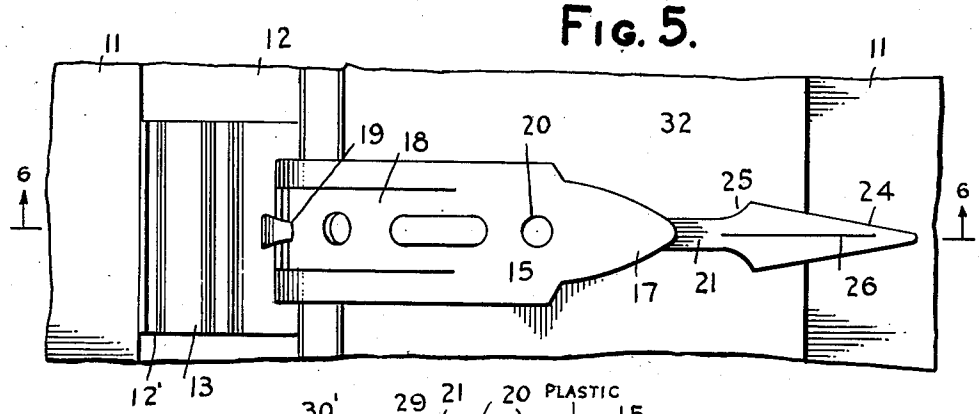
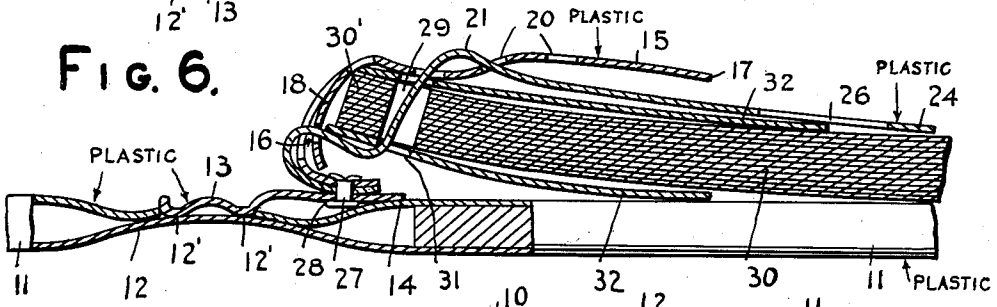


FIG. 6.



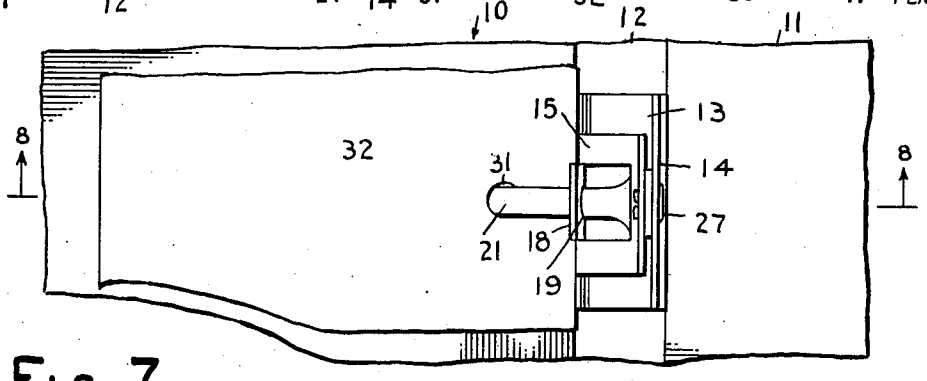


FIG. 7.

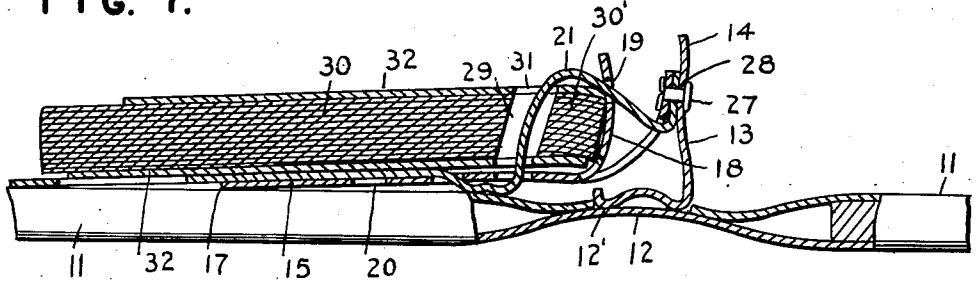


FIG. 8.

INVENTOR.
RICHARD J. AMBLER
BY

ATTORNEY

July 3, 1951 R. J. AMBLER 2,559,556

LOOSE-LEAF FILING DEVICE

Filed June 8, 1949 3 Sheets-Sheet 3

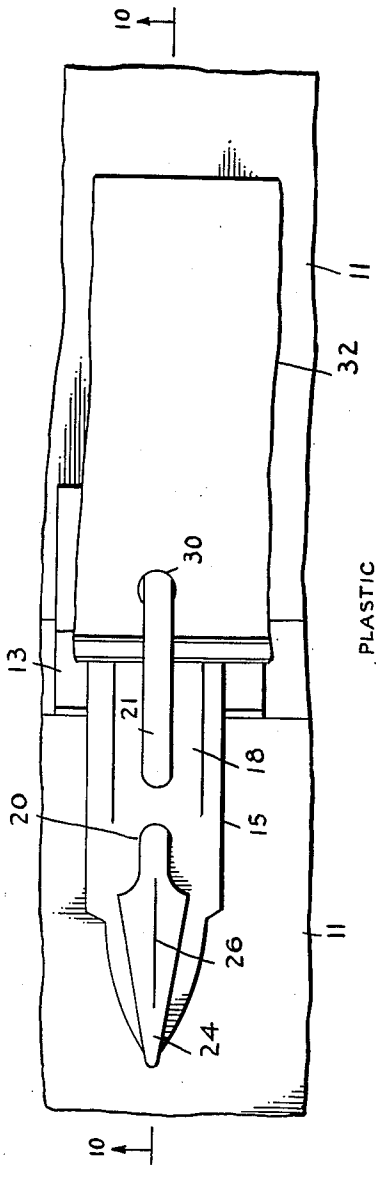


FIG. 9.

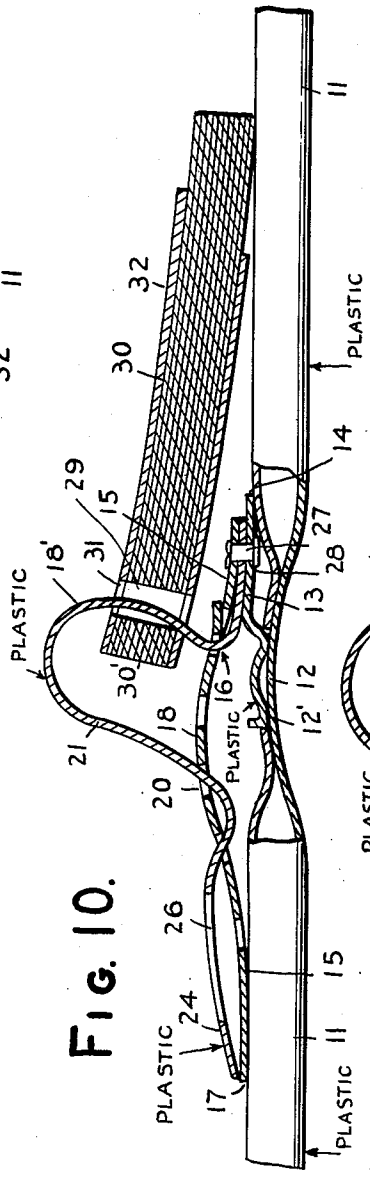


FIG. 10.

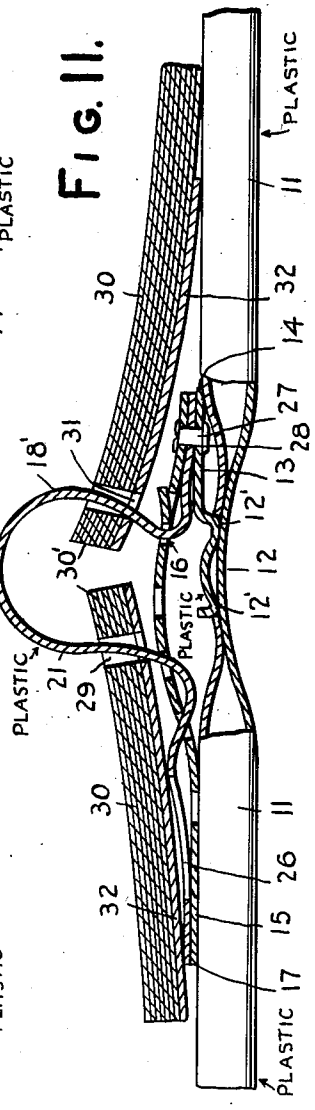


FIG. 11.

INVENTOR.
RICHARD J. AMBLER
BY B. M. Miller

ATTORNEY

Patented July 3, 1951

2,559,556

UNITED STATES PATENT OFFICE

2,559,556

LOOSE-LEAF FILING DEVICE

Richard J. Ambler, Montreal, Ontario, Canada

Application June 8, 1949, Serial No. 97,844

4 Claims. (Cl. 129—41)

1

My invention relates to filing means for holding loose leaves.

An important object of the invention is to provide a filing device which will securely retain the loose leaves in place and which will permit of the ready and convenient insertion and removal of the leaves, and which is adjustable to contract or enlarge the loops, to permit of the proper turning of the leaves.

A further object of the invention is to provide a loose leaf holding device, the engaging parts of which have proper frictional engagement to prevent displacement, but so constructed that they may be readily assembled and separated.

A further object of the invention is to improve the arrow head of the narrow strap to facilitate the folding of the arrow head.

A further object of the invention is to provide means for forcing the free end of the wide strap against the edge of the stack of leaves.

A further object of the invention is to provide means for mounting the filing device upon or within a binder and which will permit of the opening of either cover of the binder without strain upon the mounting means.

A further object of the invention is to provide filing devices of the above mentioned character which are adjustable for receiving different thicknesses of stacks of leaves.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a plan view of filing devices embodying my invention, applied to a binder, the filing devices being in a flat position, the loops contracted, and the stack of leaves resting upon the back cover of the binder,

Figure 2 is a similar view with a stack of leaves arranged upon the front cover, the attaching hinges being vertical, and the loops contracted,

Figure 3 is a plan view of a narrow strap included in the filing device,

Figure 4 is a similar view of the body portion of the filing device,

Figure 5 is an enlarged plan view of one of the filing devices in the position shown in Figure 1,

Figure 6 is a longitudinal section taken on line 6—6 of Figure 5,

Figure 7 is a plan view of one of the filing devices in the position shown in Figure 2,

Figure 8 is a longitudinal section taken on line 8—8 of Figure 7,

2

Figure 9 is an enlarged plan view of one of the filing devices, showing the body portion pulled to the open position, to expand the loop,

Figure 10 is a longitudinal section taken on the line 10—10 of Figure 9, showing the stack of leaves arranged over the back cover.

Figure 11 is a similar view, showing parts of the stacks of leaves arranged over the front and back covers.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a loose leaf binder including front and back covers 11, secured together by a flexible back 12. These parts are preferably formed of plastics material, which is flexible.

Arranged upon the inner face of the back 12 are flexible hinges 13, preferably formed of plastics material. These hinges are secured to the back 12 by electric welding, as indicated at 12', although the hinges may be attached to the back by cement, staples, rivets or the like. It is thus seen that the hinges 13 have corresponding ends attached to the back 12, while their opposite ends 14 are free. I have shown three hinges, and three filing devices, but of course this number may be varied.

Each filing device comprises an elongated body portion 15, which is preferably formed of plastics material. This body portion is flexible and slightly elastic. The body portion is provided at its attaching end and transverse center with a small opening 16, and at its opposite free end, with a pull tongue 17. The body portion 15 has a wide strap 18 stamped therefrom, one end of which is integral with the body portion. The free end of the wide strap 18 is provided with a small opening 19, and longitudinally spaced large openings 20 are formed in the strap 18 and the body portion 15 and all of these openings are arranged at the transverse center of the body portion and constitute a longitudinal group. The small openings 16 and 19 are preferably of the same size and smaller than the openings 20, and the openings 20 are preferably of the same size. Co-acting with the body portion 15 is a flexible narrow strap 21, formed of plastics material. This narrow strap is considerably longer than the body portion 15. The narrow strap is slightly longitudinally elastic and preferably has a higher degree of elasticity than the body portion. As is well known, there are plastics materials upon the market which are slightly elastic and are in general use in making belts, suspenders or the like, and this is the plastics

material which I use. At one end, the narrow strap 21 has a head 22 provided with a small opening 23. At its opposite end the narrow strap 21 has an arrowhead 24, formed with inclined shoulders 25. The arrowhead has a longitudinal slit 26 whereby the arrowhead may be more easily folded transversely upon its longitudinal axis to be passed through the openings.

In assembling, starting with the hinges 13 being attached to the back 12, the head 22 of the narrow strap 21 is arranged next to the hinge adjacent to its free end, and the attaching end of the body portion 15 is placed upon the head 22, the opening 23 registering with the opening 16 for receiving a metallic attaching element 27, such as a brad or rivet. The attaching element passes through an opening 28 in the hinge. It is thus seen that the body portion and narrow strap are arranged in superposed relation and secured to the inner face of the hinge, which is remote from the back. The arrowhead is folded transversely upon the longitudinal slit 26 and is passed through the small opening 19 in the free end of the wide strap 18 and this brings the narrow strap 21 into the opening. Since the opening 19 is considerably smaller in diameter than the width of the narrow strap, these parts have considerable frictional engagement, may be adjusted but there is little tendency for the wide strap to slip upon the narrow strap. The narrow strap, Figure 6, is now passed through the openings 29 in the stack of loose leaves 30 and through the openings 31 in the binder leaves 32; the narrow strap 21 is now passed through selected openings 29, and the narrow strap is pulled to the right, Figure 6, and slips with relation to the body portion 15. This contracts the loop 18' formed by the wide strap 18 and narrow strap 21, and this loop receives the portion 30' of the loose leaves. The narrow strap has its arrowhead extending beyond the pull tongue 17. The free end of the wide strap is in close relation to the stack of loose leaves as it is drawn into this relation by the pull upon the narrow strap, and substantially retains this position. The openings 29 are circular to facilitate the passing of the arrowhead through such openings, and these openings have a diameter slightly smaller than the width of the narrow strap, to afford proper frictional engagement with the narrow strap so that the wide and narrow straps will not have improper sliding engagement to expand the loop 18'. With the parts thus arranged, the front cover may be opened, Figure 6, or the back cover opened, Figure 8, and the loose leaves will lie flat. When it is desired to turn the leaves, the operator engages the pull tongue 17 and pulls the body portion to the left, Figure 10, while pressing down upon the loose leaves. The narrow strap 21 slides with respect to the wide strap 18, expanding the loop 18', Figure 10. The leaves may be readily turned, and will lie flat upon the front and back covers, Figure 11. When the folder is to be closed, all loose leaves are returned to the position over the back cover and the narrow strap is pulled and swung to the right, contracting the loop 18', and returning the parts to the adjusted position, Figure 6.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without

departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. An adjustable flexible filing device for use in connection with a binder for holding a stack of leaves having openings near its edge, said device comprising an elongated flexible body portion having an attaching end and a free end, a strap stamped from the body portion and extending longitudinally thereof and having one end secured to the body portion and having an opposite free end arranged inwardly of and near the attaching end of the body portion, said strap having a longitudinal group of spaced openings, one end opening of the group being arranged adjacent to the free end of the strap, a second elongated flexible strap having a free end and an attaching end, the attaching end of the second strap being arranged adjacent to and upon one side of the attaching end of the body portion, a flexible hinge to be secured within the binder, means for securing the attaching ends of the body portion and second strap to the flexible hinge, the second strap being of a width so that it may be first passed through the opening adjacent to the free end of the first strap and then through further opening or openings in the first strap, the free end of the second strap being movable from the attaching end of the body portion to be arranged in close relation to the edge of the stack of leaves, the free end of the first strap and the adjacent portion of the second strap forming a closed loop for holding a portion of the stack of leaves, the closed loop being held in the contracted position by the second strap and being adjustable in size by moving the second strap longitudinally with respect to the first strap, the closed loop being adapted to be swung to invert the stack of leaves by virtue of the flexibility of the flexible hinge and the body portion without increasing the size of the closed loop.

2. An adjustable flexible filing device for use in connection with a binder for holding a stack of leaves having openings near its edge, said device comprising an elongated flexible body portion having an attaching end and a free end, a first flexible strap carried by the body portion and extending longitudinally thereof and having one end secured to the body portion and having an opposite free end arranged inwardly of and near the attaching end of the body portion, the first strap having a longitudinal group of spaced openings, the end opening of the group being arranged adjacent to the free end of the first strap, a second flexible strap having a free end provided with an arrow head having a longitudinal slit near its transverse center and also having an attaching end, the attaching end of the second strap being arranged adjacent to and upon one side of the attaching end of the body portion, means for securing the attaching ends of the second strap and body portion in place within the binder, the second strap being adapted to be first passed through the opening adjacent to the free end of the first strap and then through the opening in the stack of leaves and through the other opening or openings of the first strap, the second strap extending longitudinally of the first strap, the free end of the first strap being movable from the attaching end of the body portion to be arranged in close relation to the edge of the stack of leaves, the free end of the first strap and the adjacent portion of the second strap

forming a closed loop for holding a portion of the stack of leaves, the closed loop being held in the contracted condition by the second strap and being adjustable in size by moving the second strap longitudinally with respect to the first strap, the closed loop being adapted to be swung to invert the stack of leaves by virtue of the flexibility of the body portion without increasing the size of the closed loop.

3. An adjustable flexible filing device for use in connection with a binder for holding a stack of leaves having openings near its edge, said device comprising an elongated flexible body portion having an attaching end and a free end, a first flexible strap carried by the body portion and extending longitudinally thereof and having one end secured to the body portion and having an opposite free end arranged inwardly of and near the attaching end of the body portion, the first strap having a longitudinal group of spaced openings, the end opening of the group being smaller than the remaining openings of the group and arranged adjacent to the free end of the first strap, a second flexible strap having a free end and an attaching end, the attaching end of the second strap being arranged adjacent to and upon one side of the attaching end of the body portion, means for securing the attaching ends of the second strap and body portion in place within the binder, the second strap being of a width to be first passed through the smaller opening adjacent to the free end of the first strap and having sufficient friction engagement therein for holding the free end of the first strap in the adjusted position and then passed through the opening in the stack of leaves and through the other opening or openings of the first strap, the second strap extending longitudinally of the first strap, the free end of the first strap being movable from the attaching end of the body portion to be arranged in close relation to the edge of the stack of leaves, the free end of the first strap and the adjacent portion of the second strap forming a closed loop for holding a portion of the stack of leaves, the closed loop being held in the contracted condition by the second strap and being adjustable in size by moving the second strap longitudinally with respect to the first strap, the closed loop being adapted to be swung to invert the stack of leaves by virtue of the flexibility of the body portion without increasing the size of the closed loop.

4. An adjustable flexible filing device for use in connection with a binder for holding a stack of leaves having openings near its edge, said device comprising an elongated flexible body portion having an attaching end and a free end, a first flexible strap extending longitudinally of the body portion and having an attaching end secured to the body portion and an opposite free end arranged inwardly of and near the attaching end of the body portion, the first strap having a longitudinal group of spaced openings, the end opening of the group being arranged adjacent to the free end of the first strap, a second flexible strap having a free end and an attaching end, the attaching end of the second strap being arranged adjacent to and upon one side of the attaching end of the body portion, means for securing the attaching ends of the second strap and body portion in place within the binder, the second strap being first passed through the opening adjacent to the free end of the first strap and then passed through the openings in the stack of leaves and through the other opening or openings of the first strap, the second strap extending longitudinally of the first strap, the free end of the first strap being movable from the attaching end of the body portion to be arranged in close relation to the edge of the stack of leaves, the free end of the first strap and the adjacent portion of the second strap forming a closed loop for holding a portion of the stack of leaves, the closed loop being held in the contracted condition by the second strap and being adjustable in size by moving the second strap longitudinally with respect to the first strap, the closed loop being adapted to be swung to invert the stack of leaves by virtue of the flexibility of the body portion without increasing the size of the closed loop.

RICHARD J. AMBLER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
735,710	Chiger	Aug. 11, 1903
1,895,174	Shonts	Jan. 24, 1933
2,468,355	Ambler	Apr. 26, 1949

FOREIGN PATENTS

Number	Country	Date
365,538	Germany	Dec. 16, 1922