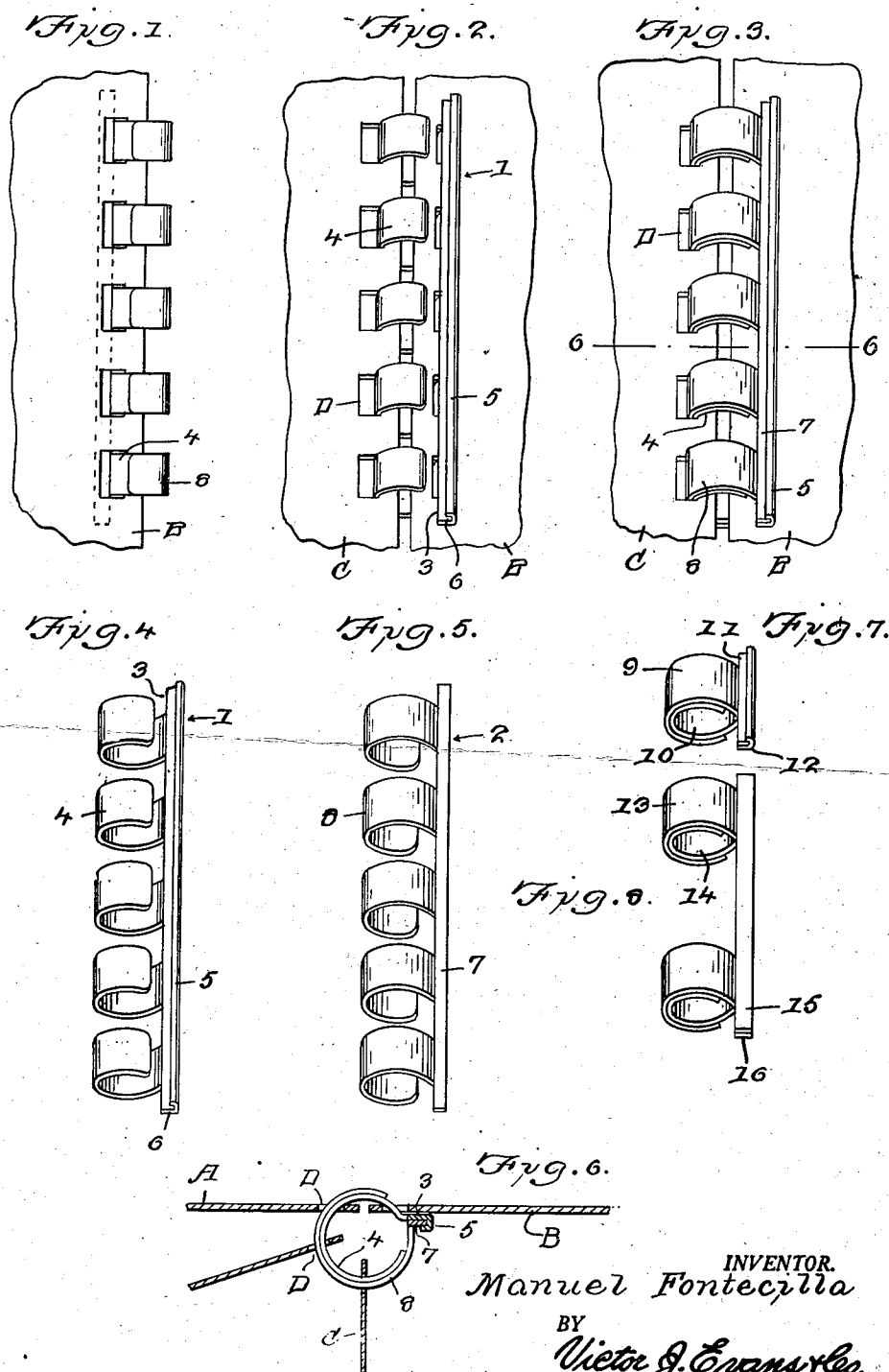


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LOOSE LEAF BINDING DEVICE
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LOOSE LEAF BINDING DEVICE

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10 Claims. (Cl. 129—1)

This invention relates to loose leaf binding devices and its general object is to provide a device that is primarily designed for binding perforated loose leaves or sheets, particularly in pamphlet or book form, with or without covers, and which is separate from and can be quickly and easily applied to the sheets, and to the cover when a cover is used, to bind the same one to the other, and can be quickly and easily removed therefrom to permit the sheets to be separated.

A further object of the invention is to provide such a binding device which will permit the sheets to be easily turned and to lie flat in an open position.

A further object of the invention is to provide such a binding device in which superposed binding members extend through the sheets to be bound and are so arranged that each member will prevent the removal of sheets from the other member.

A further object is to provide a binding device that is simple in construction, neat in appearance, inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a fragmentary top plan view illustrating one form of my device applied to a pamphlet with the latter in closed position.

Figure 2 is a similar view with the pamphlet in open position and with only one of the sections applied thereto.

Figure 3 is a similar view with the pamphlet in open position, and with both of the sections in applied position.

Figure 4 is a perspective view of one of the sections per se.

Figure 5 is a similar view of the other section.

Figure 6 is a sectional view taken approximately on line 6—6 of Figure 3.

Figure 7 is a perspective view of a modified form that includes only one pair of fingers.

Figure 8 is a similar view of a further modified form that includes two pairs of fingers.

Referring to the drawing in detail, the letters

A and B respectively indicate the front and back covers of a pamphlet, and C the leaves or sheets thereof, the covers and sheets each being provided with a row of perforations or slots D arranged longitudinally adjacent one edge thereof.

In this drawing I have illustrated one embodiment of the invention, together with certain minor modifications thereof; but it is to be understood that the several parts of the device may take various forms and may be assembled in various ways without departing from the spirit of the invention.

As here illustrated the device comprises one or more pairs of superposed substantially ring shaped members, each member having its ends spaced one from the other to provide an opening which enables the member to be inserted through the perforations in the sheets to be bound, each member closing the opening in the other member. The two members of each pair may be superposed one on the other by inserting them successively and in opposite directions through the perforations in the sheets, and preferably one or both members is or are resilient to enable the member last inserted to be sprung over the member first inserted. Each member is attached at one end to a second member, such as an elongate strip, which prevents that end thereof from passing through the perforations, and when a plurality of pairs of ring shaped members are used the elongate members serve to connect the corresponding ring shaped members of the several pairs one with the other. The spacing between adjacent ring shaped members is immaterial except that the spacing in the two parts or sections of the device must be the same. The sections may be formed of any suitable material, such as sheet metal, Celluloid or the like and preferably each section is formed from a single piece of material.

In the particular form illustrated in Figures 1 to 6 inclusive, the companion sections are broadly indicated by the reference numerals 1 and 2 respectively, and the section 1 includes a relatively narrow straight longitudinal strip 3 having formed on and along one longitudinal edge thereof, in equidistantly spaced relation with each other, a plurality of substantially ring shaped fingers 4 that extend laterally from the strip and have their free ends disposed in close proximity thereto, as best shown in Figure 4. Formed on the opposite longitudinal edge of the strip throughout the length thereof is a flange 5 that is curved toward the strip for cooperation with a flat face thereof to provide a channel 6.

The section 2 likewise includes a relatively narrow straight longitudinal strip 7 of a length co-extensive with that of the strip 3 and having formed on one longitudinal edge thereof, a plurality of substantially ring like fingers 8 spaced one from the other the same distances that the fingers of section 1 are spaced and having their free ends spaced from the strip 7. In fact, the two sections are identical, with the exception that the strip 7 is not provided with a flange, and when the sections are in use, the strips 3 and 7 are disposed in face to face engagement, with the longitudinal edge of the strip 7 mounted in the channel 6 of the section 1, to hold the strips against relative lateral movement, as best shown in Figure 6.

When the binding device is to be applied to a group of sheets or a pamphlet the fingers of one section of the device are inserted through the perforations in the several sheets from one side of the group with the elongate member or strip extending along the edges of the sheets. The fingers of the other section are then inserted through the same perforations from the other side of the group of sheets and in so doing are sprung over the corresponding previously inserted fingers and the elongate member moved into face to face contact with the elongate member of the first section. When no cover is provided the elongate members or strips usually extend along the bound edges of the sheets but they may, if desired, be arranged between the sheets. When covers are provided it is usually preferable that the elongate members be arranged between the back cover and the last sheet. To accomplish this the fingers 4 of section 1 may be inserted through the perforations in the back cover B from the inner side of the latter, as shown in Fig. 6, then through the perforations in the front cover from the outer side of the latter and then through the perforations in the several sheets. The fingers 8 of section 2 are then inserted in the opposite direction by inserting them first through the perforations in the sheets, then through the perforations in the front cover and are, of course, sprung over the fingers 4 in so inserting them. Ordinarily the fingers 8 do not extend through the perforations in the back cover. When the strip 3 of section 1 is provided with a flange 5 the outer edge of strip 7 of section 2 is placed in contact with the strip 3 on the inner side of the flange 5 and as the fingers 8 are sprung over the fingers 4 the strip 7 is moved to a position parallel with the strip 3 with its outer edge beneath the flange 5. A convenient method of applying the device is to arrange the sheets in a pile with the front cover A on the bottom, to then fold the back cover B under the front cover with its outer face in contact with the outer face of the front cover and to then insert the fingers of section 1 upwardly through the aligned perforations, and to thereafter insert the fingers of section 2 downwardly through said perforations.

The binding device may comprise any suitable number of pairs of fingers and one or more devices may be used in binding a single group of sheets or pamphlet. In the form shown in Fig. 7 the device includes a single pair of fingers, 9 and 10, which are similar to the fingers 4 and 8 of Figs. 1 to 6, and while the strips or elongate members 11 and 12 of this form are similar to the strips of the form shown in Figs. 1 to 6 they are of course shorter due to the use of a single pair of fingers. It will be obvious that a single

device of the form shown in Fig. 7 can be used alone to bind the sheets, particularly to bind narrow sheets or cards, or that any number of such devices may be used for binding a single group of sheets, such as a pamphlet or the like, either with or without covers.

The flange 5 shown in Figs. 1 to 7 is preferable when it is desired to prevent the relative lateral movement or separation of the elongate members or strips and to reinforce them, such as in the case of rather large or heavy pamphlets or the like, but in many cases the flange may be omitted as a flat strip usually has ample strength and the strips have little tendency to separate when the bound pamphlet or the like is in use, and even if they should separate slightly the sheets will not come off the fingers. In Fig. 8 there is shown a device similar to that shown in Figs. 1 to 6 except that it includes only two pairs of fingers, 13 and 14, and both of the strips 15 and 16 are flat, the flange being omitted. The two sections are thus connected one to the other only by the superposed fingers and while the strips may at times separate slightly one from the other this will not interfere with the operation of the binder and the flangeless form of the device is entirely satisfactory in use and in many cases is preferable to the flanged form of the device.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A device for binding perforated sheets comprising two separate substantially ring shaped members superposed one upon the other, both members being adapted to extend through the same aligned perforations in all the sheets to be bound, each member having separated ends to enable it to be inserted through said perforations, one end portion of at least one of said members being movable with relation to the other end of that member to permit it to be superposed on the other member, and both ends of both members being arranged on the same side of a diametrical line transverse to said sheets.

2. A device for binding perforated sheets comprising two elongate members adapted to be arranged face to face, and fingers extending from the respective members in different directions and in planes transverse to the respective elongate members, said fingers being curved substantially to ring form with the free ends thereof spaced from the respective elongate members and being so arranged that when said elongate members are placed face to face said fingers will be disposed one within the other and the open space in each finger will be closed by the other finger.

3. A device for binding perforated sheets comprising two separate elongate members superposed one upon the other and each having a plurality of substantially ring shaped fingers provided with openings to enable them to be inserted through corresponding perforations in the sheets to be bound, the fingers of one member extending about the corresponding fingers of the other member and the openings in the corresponding fingers of the two members being adjacent to and on opposite sides of the plane of the adjacent faces of said elongate members.

4. A device for binding perforated sheets comprising two elongate members arranged face to face and substantially ring shaped fingers extending from the adjacent edges of the respective elongate members and each having its free end spaced a relatively short distance from the corresponding elongate member, the ring shaped fingers of the respective members being adapted to be inserted in opposite directions through the perforations in the sheets to be bound so that each finger will extend across the space between the free end of the other finger and the corresponding elongate member.

5. A device for binding perforated sheets comprising two substantially ring shaped members each having ends spaced one from the other to form narrow openings, said members being superposed one on the other with one end portion of each member extending across the opening in the other member, and separate members arranged face to face and secured respectively to said end portions of said ring shaped members.

6. A device for binding perforated sheets comprising two substantially ring shaped members each having ends spaced one from the other to form narrow openings, said members being superposed one on the other with one end portion of each member extending across the opening in the other member, separate members arranged face to face and secured respectively to said end portions of said ring shaped members, and means for preventing the relative displacement of said separate members.

7. A device for binding perforated sheets comprising two sections, each section including a plurality of substantially ring shaped members each having ends spaced one from the other and an elongate member secured to the corresponding ends of said ring shaped members, the elongate members of the two sections being adapted to be placed face to face and said ring shaped members being resilient and being so arranged that the ring shaped members of one section may be sprung over the corresponding ring shaped members of the other section when said elongate members are placed face to face.

8. A device for binding perforated sheets comprising two sections, each section including a plurality of substantially ring shaped members each having ends spaced one from the other and an elongate member secured to the corresponding ends of said ring shaped members, the elongate members of the two sections being adapted to be

placed face to face and said ring shaped members being resilient and being so arranged that the ring shaped members of one section may be sprung over the corresponding ring shaped members of the other section when said elongate members are placed face to face, one of said elongate members being provided at its outer edge with a flange to overhang the other elongate member and hold the same against lateral displacement.

9. A binding device for perforated sheets and perforated front and back covers therefor, comprising a pair of separable companion sections each being formed from a single piece of resilient material to provide a straight longitudinal relatively narrow strip, a flange formed along one longitudinal edge of the strip of one section and providing a channel for receiving one longitudinal edge of the strip of the other section for securing the strips together in face to face contact, a plurality of substantially ring shaped fingers formed on each strip and extending laterally from the opposite longitudinal edges thereof, each of said fingers having its free end spaced from but disposed in close proximity to the strip thereof, and the fingers of one section being adapted for disposal in overlapped relation with the fingers of the other section to form continuous rings and for passage through the perforations for connecting the sheets and covers together.

10. A device for binding perforated sheets comprising two separate substantially ring shaped members bodily movable with relation one to the other and adapted to be inserted successively in the same perforations in the sheets to be bound and superposed one upon the other, each member having spaced ends forming a narrow opening to enable said member to be inserted in said perforations, and also having at one end thereof a part forming a stop to prevent said end from passing through said perforations, the stops of the two members being arranged in juxtaposition, said members extending circumferentially in opposite directions from the respective stops and the narrow opening in each member being located adjacent the stop in the other member, the member last inserted being resilient to enable it to be sprung over the previously inserted member to insert the same in said perforations and move its stop into juxtaposition to the stop of the previously inserted member.

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