

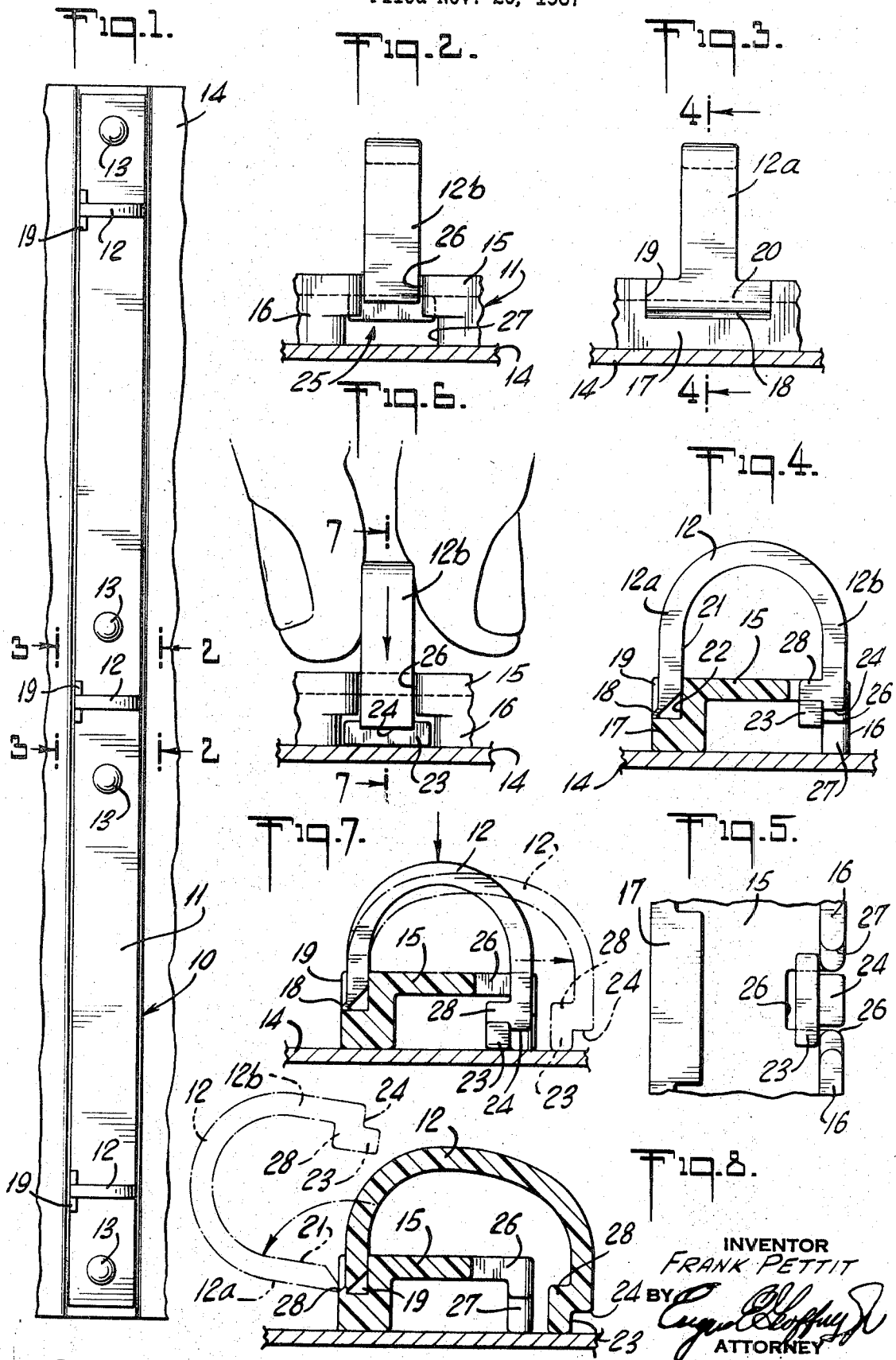
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RING BINDER

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RING BINDER

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2 Claims

ABSTRACT OF THE DISCLOSURE

A ring binder for loose leaf notebooks and the like having ring segments formed of resilient material hinged to one side of a base and having a transverse tab on the free end for engaging a slot formed in the opposite side of the base to releasably hold said other end of the arcuate member in engagement with the base and retain the ring segment in a closed position.

This invention relates to ring binders for loose leaf notebooks and the like and more specifically to a novel and improved ring binder structure that is characterized by its simplicity, ease of manufacture and relatively low cost.

While the ring binder in accordance with the invention may be fabricated of a variety of materials, the elements of the binder are so arranged and designed that it may be fabricated of plastic material with the ring segments formed integrally with the cooperating base during the molding process. By reason of the improved construction of the ring segment and the cooperating base design, the ring segments may be readily engaged with the base to secure pages of the loose leaf notebooks in place and may be quickly and easily released for removal of one or more pages.

Accordingly, one object of the invention resides in the provision of a novel and improved ring binder having a base, at least one ring segment hinged to the base and improved means for engaging the opposing end of the ring segment with the base to retain it in closed position.

Another object of the invention resides in the provision of a novel and improved ring binder embodying a base and ring segments and wherein both the base and the ring segments may be fabricated integrally of a resilient material such as plastic or the like.

Still another object of the invention resides in the provision of a novel and improved ring binder as characterized by its dependability, ease of manufacture, and relatively low cost.

The above and other objects of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIG. 1 is a plan view of a ring binder in accordance with the invention;

FIGS. 2 and 3 are side views of FIG. 1 taken in the directions of the arrows 2—2 and 3—3 respectively;

FIG. 4 is a cross-sectional view of FIG. 3 taken along the line 4—4 thereof;

FIG. 5 is a bottom view of a fragmentary section of the structure shown in FIG. 1; and

FIGS. 6, 7, and 8 illustrate steps in the operation of releasing the free end of the ring segment from engagement with the base element of the binder.

It will become more apparent from the following description that the ring binder in accordance with the invention may be made of a variety of materials though it is particularly designed for fabrication of plastic material wherein the ring segments are formed integrally with the cooperating base member.

Referring now to the drawings, the ring binder which may include one or more ring segments is generally de-

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noted by the numeral 10 and in the illustrated embodiment of the invention comprises a base 11, three ring segments 12 and a plurality of rivets 13 extending through the base 11 for fastening the base to a suitable cover 14. The base 11 is provided with a top wall 15 and a pair of side walls 16 and 17. Thus the base member 11 is in the form of an inverted channel and may of course include end walls if desired.

The ring segments 12 are each generally U-shaped with one leg 12a integrally formed with the wall 17 by a connecting web or hinge 18. More specifically, the wall 17 of the base is provided with three corner recesses 19 each having a length somewhat greater than the width of the segments 12. The leg 12a of the segment 12 is provided with an elongated portion 20 as may be viewed more clearly in FIG. 3 and forms, as viewed in FIG. 3, a structure resembling an inverted "T." The utilization of the elongated member 20 on the leg 12a of each ring segment 12 provides a relatively long web 18 which forms a sturdy and dependable hinge and permits rotation of the ring segment from the position shown for instance in FIG. 4 to the dotted line position shown in FIG. 8. Since the ring segments 12 are formed integrally with the base 11, the entire binder can be fabricated in a single molding operation and does not require subsequent assembly. The wall 17 of the base 11 is made somewhat thicker at those portions embodying the recesses 19 in order to provide adequate strength. It will be observed in FIG. 4 that when the ring segments are in the closed position as illustrated in that figure, the inner wall 21 of the ring segment bears against the adjoining wall 22 of the recess 19 and places sufficient stress on the ring segment 12 to hold the other leg 12b in engagement with the base in the manner now to be described.

The leg 12b of the ring segment 12 has a transverse tab 23 that extends below the bottom edge 24 of that leg and has an outer surface coplanar with the inner surface of the leg segment. The side wall 16 of the base 11 has a notch or slot generally denoted by the numeral 25 for each of the ring segments. Each slot extends through the side wall 16 and into the top wall 15 of the base 11 as will be observed more clearly in FIG. 4. The upper portion 26 has a width just slightly greater than the width of the ring segment 12 and extends from the top surface of the wall 15 downwardly to include part of the side wall 16 as shown in FIG. 2. The lower portion 27 of the slot 25 has a width slightly greater than the length of the tab 23 and a height corresponding to the width of the tab 23. It will be observed with reference to FIG. 4 that the leg 12b of the ring segment 12 is also provided with an inwardly extending portion 28 which has a width corresponding to the width of the leg 12b, and the tab 23 depends from this inwardly extending portion. The ring segment 12, the inwardly extending portion 28 and the tab 23 are preferably integrally formed though it of course is apparent that they may comprise separate elements cemented one to the others.

In the operation of the ring binder as described above, let it be assumed that the tab 23 is in engagement with the base 11 as illustrated in FIGS. 2 and 4 of the drawings. In this position the hinge 18, the cooperation of the inner wall 21 of the ring segment 12 with the wall 22 of the recess 19, and the resilience of the ring segment 12 all cooperate to hold the tab 23 in the uppermost position with the ends of the tab bearing against the edges of the top wall 15 adjoining the slot portion 26. To release the tab from engagement with the base, the ring segment is grasped between the fingers as illustrated in FIG. 6 and pressed downwardly as shown in FIGS. 6 and 7. Upon completion of the downward motion, the leg 12b of the ring segment 12 is moved outwardly as shown in the dotted line position in FIG. 7 and the full line position in

FIG. 8 whereupon the ring segment can be pivoted about the hinge 18 to the dotted line position shown in FIG. 8. In effecting engagement of the tab 23 with the slot 25, the ring segment is merely rotated toward the closed position and the leg 12b is moved outwardly a distance sufficient to just clear the edge of the top wall 15. Since the ring segment 12 is pressed downwardly to a position corresponding to that shown in FIG. 6 and then released, the tab 23 will automatically move inwardly and the ring segment 12 upwardly to lock the ring segment in the closed position.

While only one embodiment of the invention has been illustrated and described, it is apparent that alterations, modifications and changes may be made without departing from the true scope and spirit thereof as defined by the appended claims.

What is claimed is:

1. A ring binder comprising an elongated rectangular base having top and side walls, at least one resilient ring segment spanning the upper side of said top wall and adapted to engage openings in articles to be retained thereby, means hinging said segment at one end to one side wall of said base, and a tab carried by the other end of said segment, said tab extending beyond the sides of said segment, said base including an inverted T-shaped slot in the other side wall opposite said one side wall, the narrow upper portion of said slot slidably receiving that portion of said segment adjoining said tab and the lower portion of said slot having a width at least equal to the length of said tab, the resilience of said segment removably retaining said tab in said slot to secure said other end of

said segment in engagement with said base, upon flexing said other end of said element outwardly and downwardly for engaging said tab with and moving it through the lower portion of said slot until it clears the inner surface of said other side wall and then moving said tab upwardly to bring it in engagement with the inner surface of said other side wall adjoining the upper portion of said slot said rectangular base being in the form of an inverted channel, and said upper narrow portion of said slot extending downwardly through said top wall and into a portion of said other side wall.

2. A ring binder according to claim 1 wherein said base includes a corner recess in said one side wall and intersecting the top wall, said hinging means connects said one end of said ring segments to the surface of said recess adjoining said one side wall so that the inner surface of said segment will bear firmly against the other surface of said recess adjoining said top wall when the segment is in the engaged position.

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