Dec. 6, 1938. J. W. YOUNG 2,139,480

LOOSE LEAF BINDER

Filed July 10, 1935

Fig. 1.

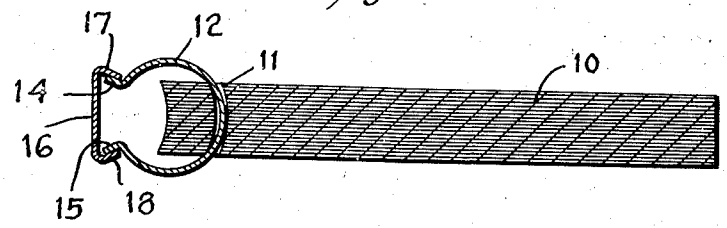


Fig. 2.

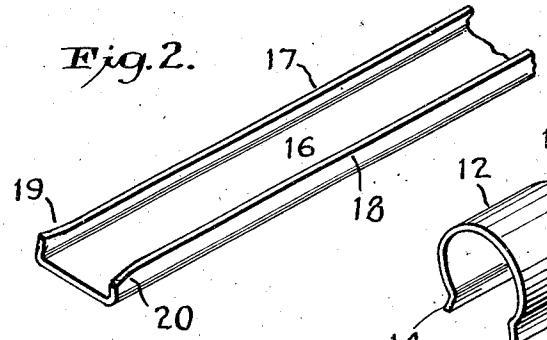


Fig. 3.

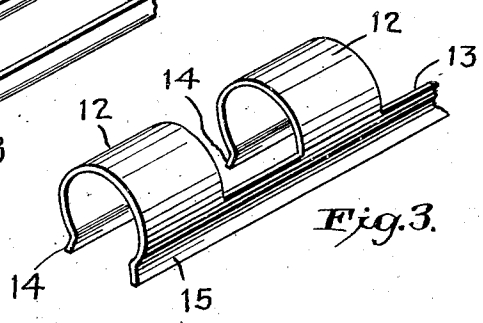


Fig. 4.

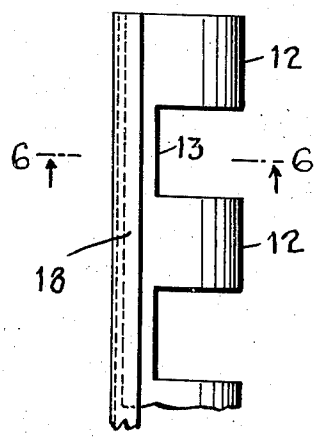


Fig. 5.

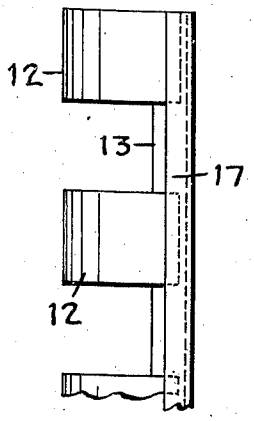
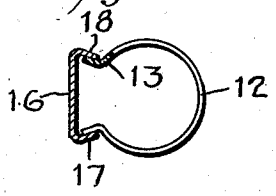


Fig. 6.



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LOOSE LEAF BINDER

John Wesley Young, Jamaica, N. Y.

Application July 10, 1935, Serial No. 30,648

2 Claims. (Cl. 129—1)

This invention relates generally to loose leaf binders, and more particularly to such binders wherein the individual sheets are carried by a binding element and are locked thereon by a retaining plate which engages the said binding element.

The main object of this invention is the provision of structure whereby a plurality of individual sheets are retained in pad form, and firmly held against accidental disengagement, yet the device permits of such easy loading and unloading that it is highly practicable for use in the large scale production of books and catalogues, etc.

Another object of this invention lies in the production of an article of the class described which is inexpensive to manufacture because of simplicity of the structure thereof, and the consequent low cost of dies and assembling operations.

While this loose leaf binder is light, neat, compact and sturdy, and intended primarily for infrequent changing of the bound sheets it nevertheless permits of more frequent changes of the bound sheets where this is found desirable.

A still further object of this invention is to provide a loose leaf binder which presents the trim appearance of a permanent binder and allows the book to lie flat when opened. This trim and good looking appearance permits the first and last sheets of the bound material to be of leatherette or slightly heavier in weight than the rest of the sheets and thereby form covers for the book, without the need for any external cover.

These objects, and further incidental ends and advantages will more fully appear in the progress of this disclosure and as pointed out in the appended claims.

The accompanying drawing shows a preferred form of the present invention in which corresponding reference characters designate corresponding parts throughout the several views thereof.

Figure 1 is a transverse sectional view of the device with the binding element carrying a pad of sheets and in engagement with the back plate.

Figure 2 is an enlarged fragmentary view in perspective of the channelled back plate.

Figure 3 is an enlarged fragmentary view in perspective of the binding element.

Figure 4 is an enlarged fragmentary view in side elevation showing the binding element engaged by the channelled back plate as seen from one side thereof.

Figure 5 is view similar to Figure 4 but seen from another side thereof.

Figure 6 is a sectional view of Figure 4 along the line 6—6 thereof.

Broadly speaking, the invention contemplates a binding element comprised by a plurality of co-axially aligned circularly bent bands, integrally mounted in fixed spatial relation on a longitudinal connecting bar. Suitably perforated paper is placed with the said bands penetrating these perforations, and the binding element and paper thereon is slid within the channelled back plate.

A pad 10 of individual sheets is perforated at 11 with a row of longitudinal slits or long narrow holes with rounded ends parallel to and adjacent the edge of said sheets to be bound. These slits are spaced to correspond with the spacing of the circularly bent bands 12 along the longitudinal bar 13.

The bands 12 form less than a complete circle and at the terminals thereof are outwardly obtusely offset to form integral tongues 14 and 15. Tongue 15, since it is formed from the bands 12 and the bar 13 thereat, constitutes one longitudinal member, whereas the tongues 14 are disconnected, there being one for each band 12.

The channelled back plate 16 is provided with two longitudinal flanges 17 and 18 co-extensive therewith. Flanges 17 and 18 are acutely bent with relation to the upper face of back plate 16 (as seen in Figures 1 and 6) and serve to frictionally engage and retain therewithin the tongues 14 and 15 respectively. As indicated at 19 and 20 the outer ends of flanges 17 and 18 at either one or both ends of plate 16 are divergently spread or splayed to form a wider channel thereat to facilitate the insertion of the binding element by gently easing the introduction of the first-entering edges of tongues 14 and 15.

The width of the back plate 16 with relation to the diameter of the circularly bent bands 12 may be varied to accommodate different thicknesses of the pad 10 without affecting the efficacy of the device, but for more purposes the said width and diameter will be found to approximate each other in size.

The width of the bar 13 is determined to a certain extent by the strength and rigidity of the material used, but if it is increased considerably it will interfere with the loading of the device with paper or the ability of the pages to lie flat when the book is opened on a plane surface.

The back plate 16 is preferably stiff and rigid as it serves as the main support of the device,

while the binding element is preferably stiff with a slight resiliency and these parts may be advantageously composed of spring steel, alloy, celluloid, or other cellulose material. Because of the continuous and uniform repetitive formation of the device, long dies may be used and blanks of comparatively shorter length struck off from these dies, one set of dies serving to form binders of various lengths.

The outer or under surface of plate 16 being plane offers an ideal surface upon which to impress printed matter such as titles, or the name of the firm issuing the catalogue, and this operation may be conveniently performed at the time this element is stamped out.

As is apparent to those versed in the art, the plate 16 may be riveted or eyeletted to an external or auxiliary cover, in which case plate 16 acts as a support for both the cover and the binding element.

The width (incontradistinction to the diameter) of the bands 12 and the spacing therebetween is governed largely by considerations of page size, as for example in a book of four inch by five inch page size, bands one-quarter inch wide with one-quarter inch spacing have been found satisfactory.

Since this binder is especially adapted for large editions of books, catalogues, etc., it is extremely inexpensive to load. The sheets, having been punched as described, are laid on the edge of a table, and with the channelled back plate 16 of the binder slid off, the tongues 14 are simultaneously inserted into the several punched openings 11. Replacement of the back plate 16 by sliding it into place completes the assembly.

As described above, plate 16 may have spread apart portions 19 and 20 at one or both ends. Where the spread apart portions are provided at both ends the plate may be slid into the binding element from either direction with equal facility.

It is distinctly understood that minor changes and variations in the materials, structure and/or integration of this invention may be resorted to without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A loose leaf binder formed from sheet metal and comprising a longitudinally-extending side bar provided on its inner edge with integral outwardly-extending bands, said bar also being provided on its outer edge with an integral outwardly-extending tongue, said bands being provided on their outer ends with outwardly-extending tongues, and a channeled plate engaged over said tongues.

2. A loose leaf binder comprising a binding element including spaced bands, said bands provided at their inner ends with an integral bar at only one side of said binding element, said bar being provided along its entire outer edge with an outwardly-extending tongue, said bands provided at their outer ends with outwardly-extending tongues, said tongues all having their outer edges in the same plane, and a channeled plate engaged over said tongues.

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