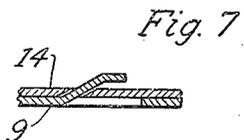
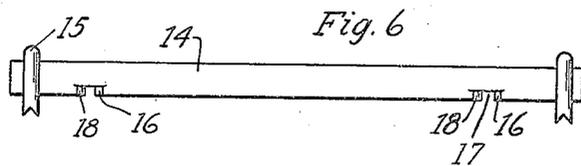
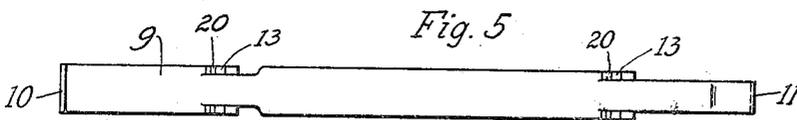
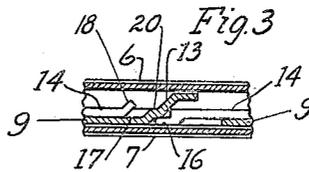
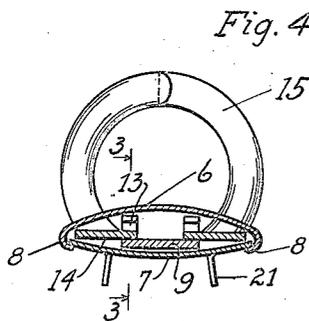
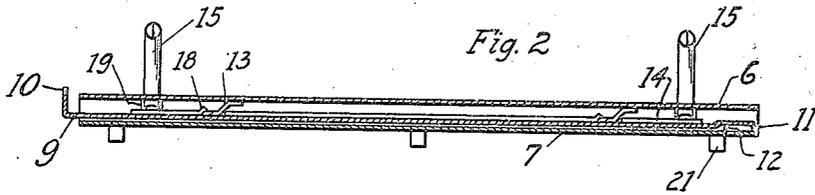
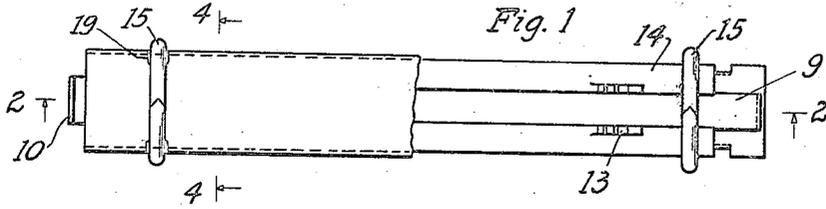


Jan. 2, 1923.

1,440,394

E. L. KRAG.
BINDER.
FILED JUNE 1, 1920.



Inventor:

Erik L. Krag

By Andrew Lundell
Atty's

UNITED STATES PATENT OFFICE.

ERIK L. KRAG, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO FRANZ K. KRAG,
OF CHICAGO, ILLINOIS.

BINDER.

Application filed June 1, 1920. Serial No. 385,408.

To all whom it may concern:

Be it known that I, ERIK L. KRAG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Binders, of which the following is a specification.

This invention relates to binders for binding together sheets of paper, in books or otherwise, as may be desired, so that the sheets when opened up will lie flat and so that they can be readily removed from the binder if desired. One object of the invention is to provide a very simple, compact and effective binder for this purpose, which has no springs, and otherwise is so arranged as to be easily operated, but so as to be dependable and durable. Other objects of the invention will be apparent from a consideration of the accompanying drawings and the description thereof.

Of the drawings Fig. 1 is a plan view of the binder with a portion of the outer wall broken away; Fig. 2 is a central longitudinal section of the binder along the line 2—2 of Fig. 1; Fig. 3 is an enlarged detail view of a portion of Fig. 2; Fig. 4 is an enlarged transverse sectional view along the line 4—4 of Fig. 1; Figs. 5 and 6 are plan views of certain elements of the binder; and Fig. 7 is a modification of the details shown in Fig. 3.

The binder comprises an enclosing casing consisting of two elongated segmental cylindrical walls 6 and 7, one of the walls having flanges 8, so that one strip may be slid in the flanges of the other, thus holding the two strips snugly together, and properly enclosing the interior mechanism. This mechanism comprises an operating and locking member 9, which is slidably mounted in the casing, and has an operating handle 10, by means of which the member may be slid in the casing a limited amount. The handle 10 limits the distance that the member can be slipped inwardly, and if desired a lug 11 may be formed on the inner end of the member which, by coming in contact with the stop 12 formed on the wall 7 of the casing, prevents the member from being pulled out from the casing farther than is necessary to properly operate the device. The operating member 9 has fingers 13 fixed on its edges adjacent its ends; and these fingers are arranged to rotate slightly two strips 14,

which are mounted for limited rotary movement longitudinally in the casing. Fixed to each of the strips 14 are prongs or segments of rings 15, each of which is so placed with reference to the respective prongs of the other strip as to operate in pairs; and said prongs are suitably arranged to open and close as the strips 14 are rotated somewhat by means of the member 9, and thus to hold the sheets of paper properly in place or to allow them to be released when desired by opening the rings. When the member 9 is forced inwardly the strips 14 will be rotated so as to close the prongs by the fingers 13 pushing downwardly on the adjacent portions 16 which form the lips of the openings 17 in the strips 14 through which the fingers 13 pass. And when the member 9 is pulled outwardly the fingers 13 operating on the adjacent lips 18 of the strips, will force the prongs open; it being understood that the prongs 15 are firmly fixed to the respective strips 14 and pass out from the casing through suitable holes 19 in the member 6 of the casing.

When the prongs are open or closed the member 9 locks them in position. When the prongs are closed the offset portions 20 of the fingers rest on the lips 16, and thus hold the prongs closed; and when the prongs are open the offset portions 20 lie under the members 14 and thus hold the prongs open.

Although I have set forth the details of the binder which I prefer, yet modifications may be desired in case of similar binders for various purposes such as for large or small books, and such modifications may be made by those skilled in the art without departing from the spirit of my invention. In certain cases I have preferred to omit the offset portion 20 of the fingers 13, and form that portion of the fingers straight, as indicated in Fig. 7. Also it is sometimes desirable to omit the lips 16 and 18, of the opening 17, and form the edges of the opening 17 as indicated in Fig. 7, the lips being merely the edges of a slot cut in the edge of the member 14. Also the lug 11 and the stop 12 may be omitted if desired, as the fingers 13 prevent withdrawal of the operating member 9 from the casing, even when the lug and stop are omitted.

In order to fasten the binder to the back of the binder covers I provide lugs 21 on the casing member 7. The interior mecha-

nism is all positioned snugly together and enclosed in the casing in such a manner that none of the parts can become misplaced and so that the operating member 9 works sufficiently snugly to give a suitable snapping effect to the rings as they pass into their closed or open position. Hence the segments will not ordinarily stop partly closed or open, but will snap into the limiting positions, thus obviating the annoyance resultant from the segments being improperly placed when the sheets are to be removed or opened. And as this is accomplished without any resilient means the disadvantages of such means are eliminated.

I claim as my invention:

1. In a binder a rotary prong holder, a pair of lips fixed to said holder, a member mounted for movement parallel with the axis of rotation of said holder, and a finger fixed to said member and extending at an angle to said axis between said lips, said fin-

ger having a portion substantially parallel with said axis arranged to rest on one of said lips when said member is in one position, thereby locking the holder in its corresponding position.

2. In a binder a casing, a pair of prong holders mounted in said casing for movement around their longitudinal axes, a non-resilient operating and locking member mounted for longitudinal movement in said casing substantially parallel with and adjacent said holders, a pair of lips fixed to each of said holders, and a finger projecting angularly from said member and passing between each of said pairs of lips, whereby when said member is moved horizontally said holders are rotated and are locked in the positions assumed.

In testimony whereof, I hereunto set my hand.

ERIK L. KRAG.