Oct. 7, 1930. J. SCHADE 1,777,328

LOOSE LEAF BOOK

Filed March 23, 1929

FIG. 1.

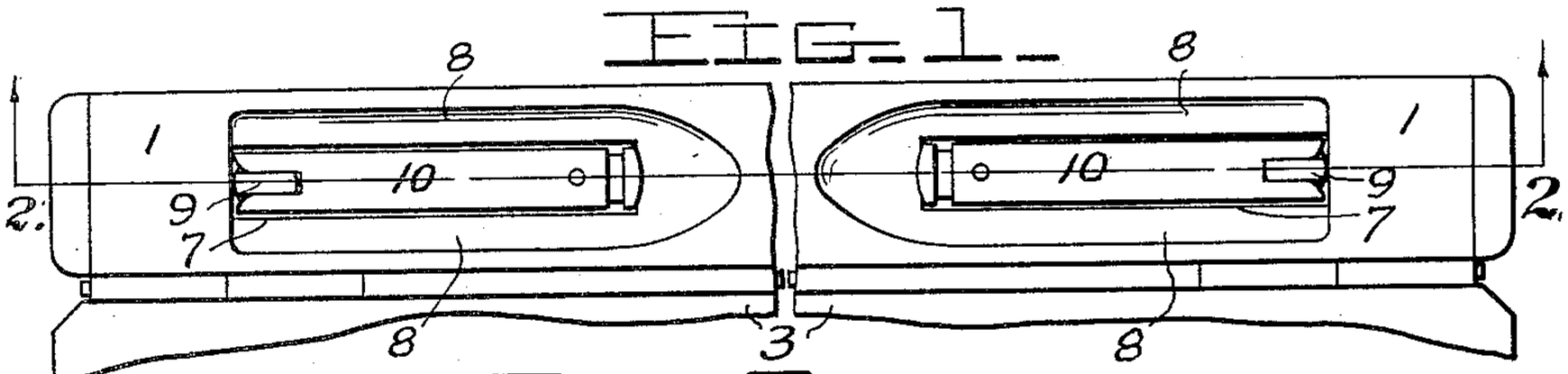


FIG. 2.

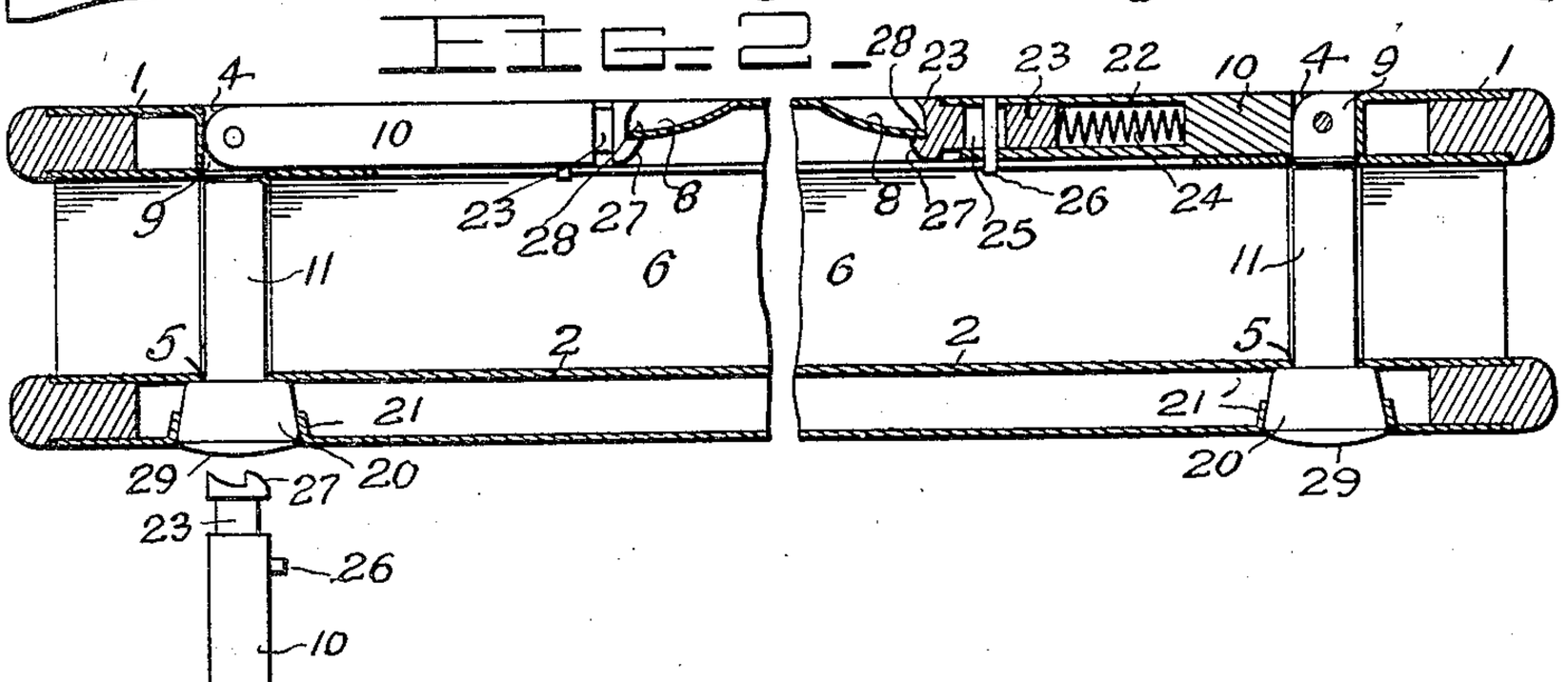


FIG. 3.

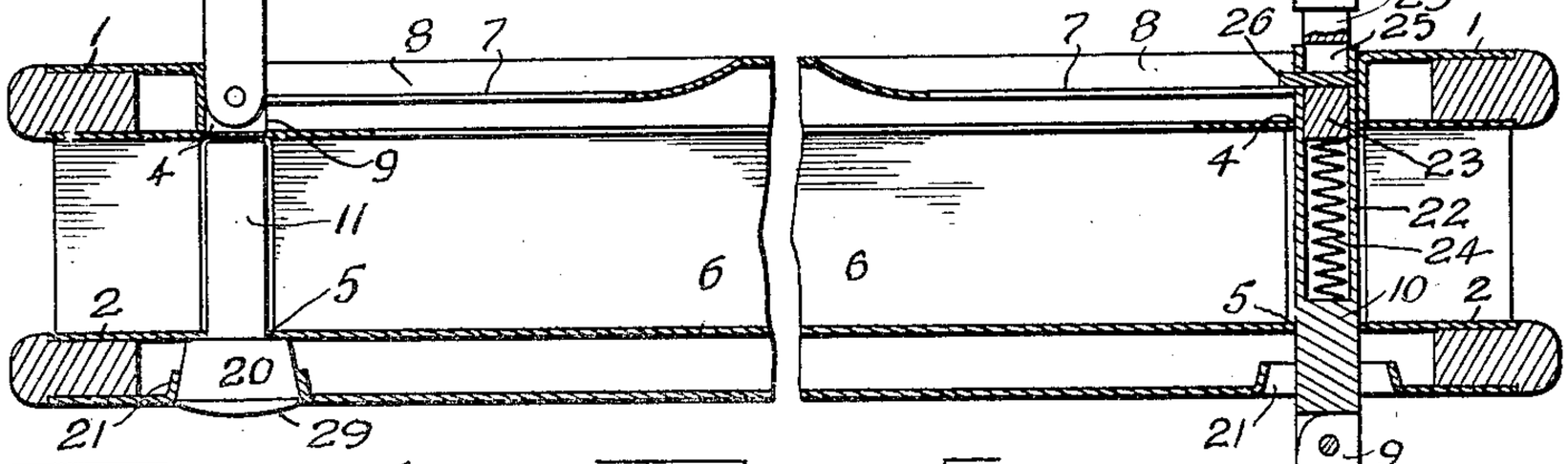


FIG. 4.

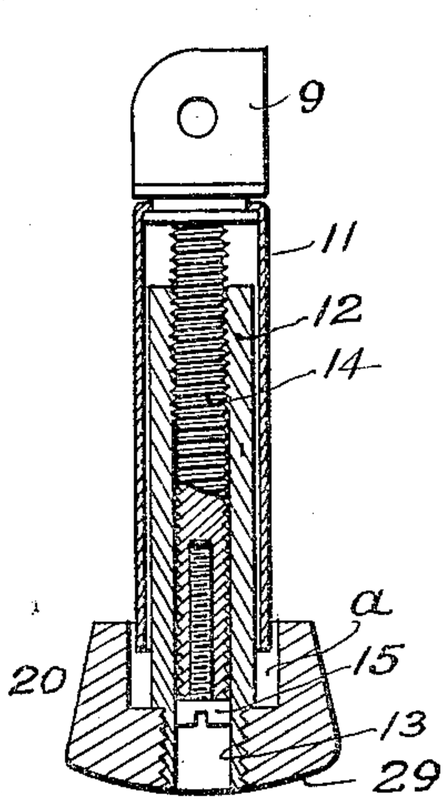
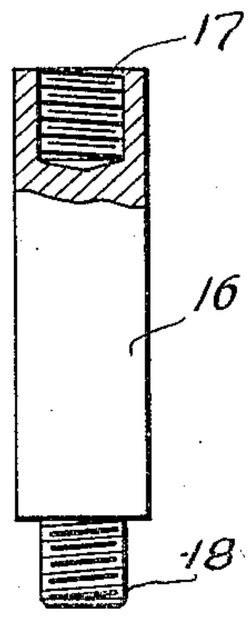


FIG. 5.



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UNITED STATES PATENT OFFICE

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LOOSE-LEAF BOOK

Application filed March 23, 1929. Serial No. 349,329.

This invention relates to loose leaf books but more particularly has reference to that class of these books that have heavy side clamp pieces with covers attached and extension posts passing through the clamp pieces and the filler sheets therebetween.

The invention specifically attaches to the manner in which the extension posts are formed and operated.

In the accompanying drawing which shows an approved form of the invention:

Figure 1 is a plan view of the book as it appears in normal condition with the hinged members of the posts folded downwardly and latched within countersunk portions in one of the clamp pieces to which the side covers proper are hinged, said covers and clamp pieces being broken—

Figure 2 is a section at the line 2—2 of Figure 1—

Figure 3 is a view similar to Figure 2 but showing the hinged member of one of the posts unlatched and upstanding, the other post being shown as having been dropped through the book—

Figure 4 is a detail sectional view of the lower or main body member of the extension post, and

Figure 5 is a detail broken sectional view of one of the detachable sections such as may be added from time to time to the post.

Similar numerals of reference denote like parts in the several figures of the drawing.

1, 2, are the usual metal clamp pieces which form the back portions of the sides of the book, to which clamp pieces the side covers such as shown at 3 in Figure 1 are hinged in the usual manner.

The particular clamp piece which forms the front cover portion of the book is shown at Figure 1, and through both clamp pieces extend perforations 4, 5, shown in Figure 2 so that the extension posts may be inserted therethrough as well as through the perforations in the filler sheets 6 between the covers.

The clamp piece 1 has elongated slots 7 and these slots are bounded by countersunk recesses 8, and the object of this construction is to permit the hinged portions of the posts to be folded within the clamp piece so as to be out of the way when the book is not in use, all of which will be hereinafter more fully explained.

Each of the posts is the same in construction and detail description will therefore be confined to one of them only.

The post as a whole comprises a main body portion 9 and a foldable member 10 that is hinged to the upper end of such portion, and to this main body portion is secured a sleeve 11, within which telescopes a tubular extension post 12 which is threaded at its lower end as seen at 13.

Depending from the part 9 is an elongated shank 14 which has a diameter considerably less than that of the body 9, and this shank has a threaded connection through the upper end of the extension post 12 so that it will be clear that when either the member 9 or the extension post are revolved in the proper direction these parts 9 and 12 will be contracted or spread apart as the case may be, thus varying the length of the post as a whole.

In order that the threaded connection between the shank 14 and the upper portion of the post 12 may not be disturbed by the extension of the sleeve 11 and post 12, a small screw 15 is driven on the end of the shank 14, the head of which screw cannot, of course, pass the threaded portion of the upper end of the post 12, and therefore determines the limit to which the extension of the parts 11 and 12 can be effected, thus insuring the permanent threaded connection between the shank 14 and the extension post 12, and serving as a warning when the limit of extension has been reached. The threaded connections between the shank and the post and between the screw 15 and the shank are different in nature, one being right-hand and the other being left, so that the operation of the post section 12 and the main body portion 9 will not cause the screw 15 to back from the shank.

The post may then be lengthened still further by attaching to the lower threaded end 13 of the post 12 a section 16 such as is shown at Figure 5 which has at its upper end a threaded socket 18 for attachment to said part 13 and depending from its lower end

a threaded end 19, and other sections can be added in like manner.

When the post is in position within the book a conical nut 20 is driven on the part 13 and is housed within a conical recess 21 in the bottom clamp member 2, and said nut is recessed as shown at *a* so that the extension sleeve 11 may extend freely within said recess, thereby increasing the operative range of said sleeve.

This increase in the operative range of the sleeve 11 means a greater limit both of expansion and contraction of the post without the necessity of adding sections. In the drawing at Figure 4, it will be noticed that the parts have not reached the limit of their contraction, and the movement of the sleeve 11 within the nut will therefore effect the clamping of a minimum bulk of filler sheets, and will also operate to increase the ratio of the maximum bulk of sheets.

The outer end of the hinge member 10 is tubular as shown at 22, and fitting snugly within this tubular portion so as to be capable of free movement therein is a latch member 23 which is backed by a coil spring 24 tending to force the latch member outwardly, and extending through this member is an elongated slot 25 through which passes a pin 26 that is driven through the tubular portion 22, so that it will be clear that the latch is thereby suitably confined and is capable of the outward and inward movements common to a spring latch.

The outer end of this latch member is beveled as shown at 27 so that when the hinge member 10 is in the position shown at the left of Figure 3 it may be folded downwardly, the beveled portion 27 engaging the end wall of the slot 7 at the part denoted by the numeral 28, thereby forcing the latch rearwardly until the beveled portion has passed below the part 28 whereupon the latch will spring forward and will engage beneath said portion, thus securing the hinge member 10 in this position.

By passing the end of the finger beneath the end of the latch and exerting a slight pressure the latch may be released and the member 10 elevated, so that it will be clear that the latches of both hinge members 10 may be released and said members raised to elevated position in line with the main body portion 9, by a simple movement of each hand of the operator.

Referring to this latch construction just described, it will be clear that it is quite ordinary and may be varied in several respects, so long as the automatic engagement at or about the point 28 is maintained, in order that the latch may be readily released in the manner hereinbefore set forth. The great advantage of this latch construction resides in the fact that it is carried bodily within the end of the hinged member, and that there is nothing outside of this member that performs any active function in this latching or unlatching.

While it is greatly preferred to use this automatic latching member, it will, of course, be clear that the spring 24 may be omitted and the latch moved by hand beneath the wall 28, and the invention is not limited in this respect.

The pin 26 extends beyond the outer face of the tubular portion 22, so that, when the members 9 and 10 are straightened out, as shown at the left of Figure 3, and the post when allowed to drop bodily through the cover members and the filler, this pin will strike against the bottom of the clamp piece 1, as shown at the right of Figure 3, and thereby prevent the post structure from dropping free of the book.

If it is discovered that the covers do not bind tightly enough against the filler, owing possibly to the extraction of sheets, this is remedied by merely revolving the hinge member 10 so as to cause the proper adjustment between the tubular post 12 and member 9 whereby that portion of the post elements extending through the filler may be shorted. If sheets are added to the filler the post elements engaging through these sheets are then lengthened in the manner hereinbefore described.

The elements comprising the post as a whole may be very conveniently manipulated by dropping the post to the position shown at the right of Figure 3, and more or less lengthening or shortening of the filler-engaging portion of the post may be effected by the adjustment of this nut alone as will be clear, and in restoring the parts to normal condition, the post elements are merely thrust upwardly through the filler, the conical nut 20 readily finding its seat within the conical countersink 21 and centering all parts properly. The operation of adding post sections may also be performed without disturbing the sheets or even opening the book.

Another important object of the conical nut is to prevent its turning when it is necessary by the turning of the part 10 to vary the length of the extension post, and it will be observed that the outer face 29 of the nut extends beyond the bottom of the clamp piece 2, and therefore, when resting on a desk or table, the pressure against the nut 20 tends to drive it into the tapered seat, thereby imparting sufficient friction to hold it in affixed position so that it will not turn when adjusting the extension post.

Should it be ascertained that there is difficulty in forcing the hinge member downwardly into latching position, this means that that part of the post engaging the filler is not quite long enough, and by merely turning the post slightly it will thereby be suffi-

ciently extended so that the hinge member may be readily forced in latching position.

What is claimed is:—

1. A loose leaf book comprising metal clamp pieces perforated to accommodate posts, the top clamp piece having elongated slots cut through the upper wall adjacent the perforations and bounded by countersunk portions, posts extended through said perforations and also through perforations in the filler of the book, said posts comprising main body portions and hinged portions, the latter adapted to be folded through said slots and within said countersunk portions, and spring latches carried by the ends of the hinged portions and automatically engaging the walls of said slots when the hinged portions are forced downwardly.

2. In a loose leaf binder, upper and lower clamp pieces having perforations, and extension posts passing freely through said perforations, said posts each comprising a main body member and a foldable member hinged thereto, an extension sleeve carried by said body member, a tubular extension post telescoping within said sleeve, and an elongated shank of reduced diameter extending downwardly from said body member and having a threaded connection through the upper end of said extension post whereby the latter may be adjusted to vary the length of the post as a whole.

3. A construction as in claim 1, in which the latches are formed with finger lifts whereby they may be released and the hinged portions elevated.

4. A construction as in claim 2 in which the tubular extension post terminates at its lower end in a threaded portion and a conical nut is driven on said threaded portion and is housed within a conical countersunk recess in the lower clamp piece.

5. A construction as in claim 2 with the addition that the tubular extension post terminates at its lower end in a threaded portion and a conical nut is driven on said threaded portion within a conical recess in the bottom of the lower clamp piece, said nut having a recess in its inner face within which the lower end of the extension sleeve passes freely.

6. A loose leaf binder comprising side clamp pieces with perforations therein and slots in one of same, posts passing freely through the perforations in both clamp pieces, said posts each having a body portion capable of being extended or contracted and a hinge portion adapted to be folded at an angle to the body portion and within the said slots, and latching means housed within the end of each hinge portion and engageable beneath walls of said slots for locking said portions within said slots.

In testimony whereof I affix my signature hereto.

JOHN SCHADE.