

W. P. PITT.
LOOSE LEAF BINDER.
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1,017,797.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 2.

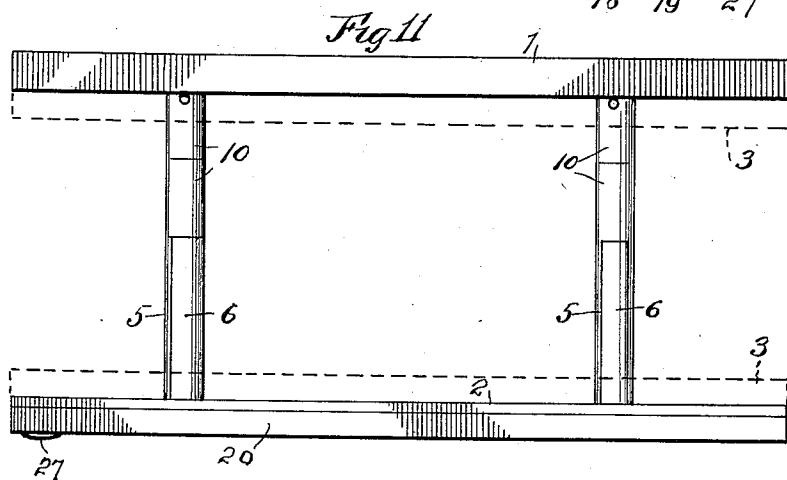
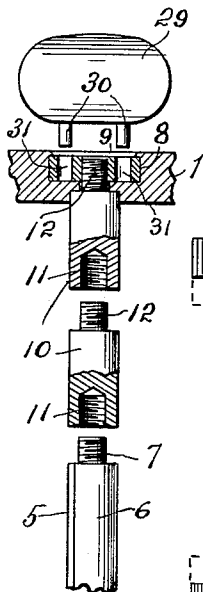
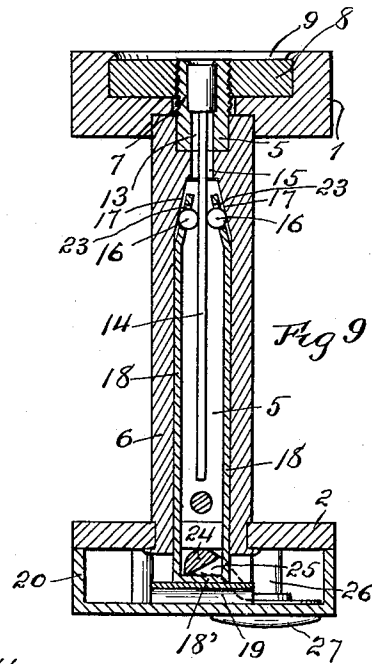
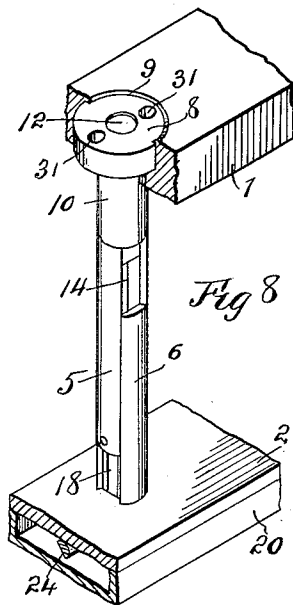
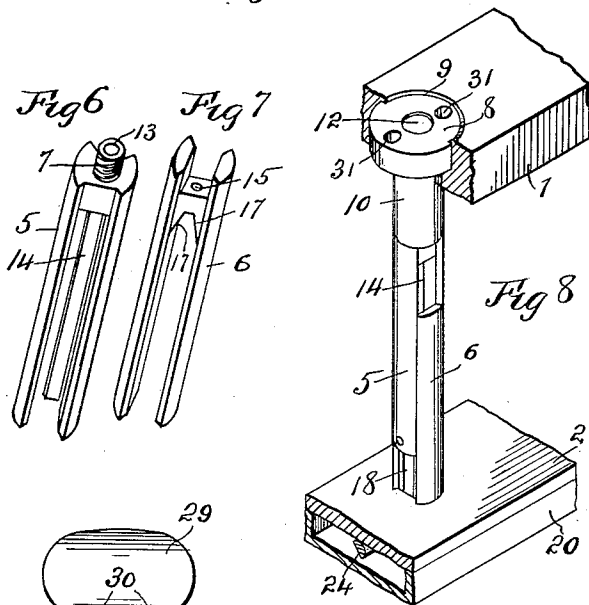
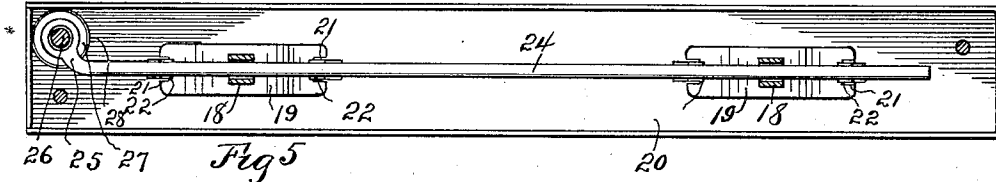


Fig 10

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LOOSE-LEAF BINDER.

1,017,797.

Specification of Letters Patent.

Patented Feb. 20, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM P. PITT, a citizen of the United States, residing at Independence, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

My invention relates to improvements in loose leaf binders.

The object of my invention is to provide a loose leaf binder which may be readily expanded for the insertion or removal of loose leaves, and which after the removal or insertion of leaves, may be quickly adjusted to clamp the leaves.

A further object of my invention is to provide a binder which may be quickly changed as to its leaf holding capacity.

A further object of my invention is to provide a loose binder, of the type provided with leaf supporting posts, in which the leaf supporting posts do not project beyond the planes of the outsides of the clamping members, thus eliminating projecting posts and enabling the storing of the binders in compact form.

Still another object of my invention is to provide an extensible leaf supporting post which in the extended or contracted position is of uniform diameter throughout the portion which supports the loose leaves, thereby affording a structure in which the loose leaves will have their edges properly registering with each other.

Another object of my invention is to provide an extensible leaf supporting post with novel releasable locking means by which the post may be securely locked against extension from any position to which it may be adjusted.

Other novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings which illustrate the preferred form of my invention, Figure 1 is a perspective view of my invention with the supplemental leaf supporting post members detached. Fig. 2 is a central vertical longitudinal view of my improved binder mechanism, showing one set of supplemental leaf supporting post members in their operative positions. Fig. 3 is a vertical section on the line *a-b* of Fig. 2. Fig. 4 is a cross section, enlarged, on the line *c-d* of Fig. 2. In this view leaves are

shown clamped between covers. Fig. 5 is a horizontal section on the line *e-f* of Fig. 2. Fig. 6 and Fig. 7 are perspective views of the two longitudinally slidable post members. Fig. 8 is an enlarged perspective view of one of the extensible posts, partly extended, and having connected thereto the two clamping members, shown broken away, and having a detachable supplemental post member mounted in operative position. Fig. 9 is an enlarged vertical cross section, showing the clamping members and one of the posts, the detachable supplemental member being removed. Fig. 10 is an enlarged fragmental view partly in elevation and partly in section, showing part of one of the extensible posts provided with two supplemental post members detached from each other, one being shown secured to one of the clamping members. In this view is shown a device employed to turn the nut. Fig. 11 is a side elevation showing the two clamping members and two posts having two sets of supplemental post members, the binder being shown in the contracted position.

Similar reference characters denote similar parts.

1 and 2 designate respectively the clamping members, which are preferably flat metal plates, to the inner sides of which may be respectively secured binder covers 3, of any ordinary type, between which are adapted to be clamped loose leaves, as shown in Fig. 3. The clamping members 1 and 2 may be respectively secured to the ends of one or more extensible posts, by the extension of which the clamping members may be moved apart to permit the insertion and removal of loose leaves. In the drawings I have illustrated a structure having two extensible posts, which are adapted to support loose leaves. In construction the extensible posts are alike, so that a description of one will answer for both. In the form of my invention illustrated in the drawing, each post is provided with two members longitudinally movable relative to each other, one member being secured to one clamping member and the other member being provided with means for being detachably secured to the other clamping member, or to one end of a supplemental leaf supporting post member, which may be employed to lengthen the extensible post.

The two longitudinally movable members

of each extensible post, preferably comprise two U-shaped bars 5 and 6. The parallel arms of the member 5 are slidably fitted between the arms of the member 6, and when so fitted form a hollow cylinder, as is shown in Fig. 4. The longitudinal edges of said arms are preferably disposed radially relative to the axis of the cylinder, and each arm is preferably in the form of a quarter section of a hollow cylinder having a square bore. By reason of this construction loose leaves provided with holes of the same diameter as the diameters of the extensible posts, will be held by said posts with their edges in proper register with each other when the members 5 and 6 are in the contracted position shown in Fig. 1 or in the extended position, as shown in Fig. 8. The arms of the member 6 extend through and are rigidly secured to the clamping member 2. The upper end of the member 5, as viewed in the drawings, is provided with an externally screw threaded, cylindrical portion 7, which, as shown in Figs. 1 and 9, is adapted to be fitted in a nut 8, which is preferably rotatively mounted in a cylindrical recess 9, provided in the upper or outer side of the clamping member 1.

In order that each extensible post may be lengthened so as to afford increased capacity, I provide as a part of each extensible post, one or more detachable leaf supporting post members 10, each of which at one end is provided with a screw threaded hole 11, fitted to the threaded portion 7 of the member 5. The other end of each detachable member 10 is provided with a reduced, cylindrical, screw threaded portion 12, fitted to the nut 8 and also to the threaded holes 11 of the other detachable members 10.

As shown in Figs. 2, 3 and 8, the extensible posts may be increased in holding capacity by securing to each threaded portion 7 of the member 5, one detachable member 10, which extends through a hole provided in the clamping member 1 and has its screw threaded portion 12 engaged with the nut 8.

If desired, each extensible post may be increased as to its holding capacity by inserting in each post, as shown in Figs. 10 and 11, two detachable members 10, the upper one of which has its threaded portion 12 engaged with the adjacent nut 8, and its threaded portion 11 engaged with the threaded portion 12 of the adjacent member 10, the threaded portion 11 of which is engaged with the threaded portion 7 of the member 5.

In order that the slidable members 5 and 6 may be releasably locked against extension from any position to which they may be adjusted, any suitable means may be employed. For releasably locking the members 5 and 6 from being extended from any position to which they may be adjusted, while permitting, the contracting movement of said mem-

bers, I preferably provide the following described mechanism:—Each member 5 and projecting portion 7 thereof is provided with a central longitudinal hole 13, in which is rigidly secured the upper end of a bar 14, which is preferably rectangular in cross section and which forms an extension of the member 5, and is located between the two arms of said member. While I have shown the bar 14 as a separate part, it is obvious that it may be an integral portion of the member 5, to which it is secured. The member 6 is provided with a central hole 15, through which the bar 14 is freely longitudinally movable. Between the arms of the member 6 and at opposite sides of the bar 14, are respectively mounted two wedges, preferably rollers 16, which, for locking the members 5 and 6 against relative extension, are adapted to bear against opposite sides of the bar 14 and against two cam faces 17, shown in Figs. 3, 7 and 9, and which are provided on the inner sides of the arms of the member 6, and which incline upwardly toward the bar 14. It will be understood that as the rolling wedges 16 normally bear against the bar 14 and the inclined cam surfaces 17, as shown in Fig. 9, any upward movement of the member 5 will draw with it the bar 14, thereby causing the rolling wedges 16 to be tightly clamped against the bar 14, thereby holding said bar, and through it the member 5 and clamping plate 1, from extensible movement. For normally holding the rolling wedges 16 in the locking position, and for instantly releasing them from the locking position when it is desired to extensibly move the member 5, any suitable means may be employed. For this purpose I preferably employ the following described mechanism:—Between the arms of each member 6 are longitudinally slidably mounted the two upwardly extending arms of a U-shaped member 18, the horizontal transverse portion of which is denoted by the numeral 18', and which has bearing against its under side a spring 19 the ends of which are supported upon the upper side of the bottom of a box like casing 20, which is secured to the under side of the clamping member 2. As shown in Fig. 5, each spring 19 has its ends provided with notches 21 in which are mounted flanges 22, formed from the casing 20, and which extend over the top of the springs 19. The arms of the U-shaped member 18 are respectively provided with slots 23, in which are respectively mounted, the rolling wedges 16, as shown in Fig. 9. The springs 19 normally force the U-shaped members 18 upwardly, thereby normally holding the rolling wedges 16 in the locking positions. For drawing the members 18 downwardly so as to withdraw the rolling wedges 16 from the locking positions, such means may be provided as may be desired. For effecting this

function I have shown in the drawings a horizontal rock bar 24, preferably semicircular in cross section, as shown in Figs. 3 and 9, and which is mounted in the casing 20 and extends between the vertical arms of the members 18 and is provided, as shown in Figs. 2, 5 and 9, with a crank arm 25, which is secured to a vertical pin 26, slidably mounted in a vertical hole provided therefor, in the clamping member 2, said pin being provided at its lower end with a button 27, which projects through a vertical hole 28 provided in the bottom of the casing 20. The rock bar 24 has a bearing against the under side of the clamping member 2, and is adapted to have its flat side resting against the upper side of the portion 18' of the U-shaped member 18. When the button 27 is forced upwardly by pressure applied thereto with the thumb or finger, it will rock the bar 24, through the intermediacy of the crank 25, thereby depressing the U-shaped members 18 and withdrawing the rolling wedges 16 from their locking positions. The clamping members 1 and 2 may then be moved away from each other. Upon releasing the pressure against the button 27 the springs 19 will at once force the members 18 upwardly, thereby forcing the rolling wedges 16 to the locking positions against the cam surfaces 17.

It will be noted that with the locking mechanism, which I have just described, the clamping members 1 and 2 may be readily forced toward each other from an extended position without hindrance from the rolling wedges 16, as said wedges, upon contractible movement of the sliding members 5 and 6, are rolled by the bar 14 out of clamping contact with the cam surfaces 17, and therefore are not held by said cam surfaces in clamped engagement with the bar 14.

The nuts 8 are preferably located in recesses 9 in the clamping member 1 so that no parts may lie above the plane of the upper side of the said clamping member.

It will be noted that with my improved construction the leaf supporting posts do not project beyond the outer surface of either of the clamping members 1 and 2. By reason of this construction the improved binders may be stored in compact form.

For conveniently turning the nuts 8 a spanner 29 may be provided, as shown in Fig. 10, which has two parallel projections 30, adapted to enter two vertical holes 31, which are provided in each of the nuts 8.

When inserting one of the supplemental post members 10, the nut 8 is turned so as to become detached from the threaded portion 7 of the adjacent slidable member 5. The supplemental member 10 is then screwed upon the threaded portion 7 and is then extended into the vertical hole provided therefor in the clamping member 1, after which the nut 8 is turned so as to screw onto the

threaded portion 12 of the member 10, thereby tightly clamping the member 10 against the clamping member 1. In like manner additional supplemental members 10 may be inserted and secured whenever it is desired to increase the holding capacity of the binder.

I do not limit my invention to the structure described and shown, as I am aware that many modifications of my invention may be made, within the scope of the appended claims, without departing from its spirit.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, a wedge, spring actuated means for moving the wedge to a position in which the wedge will lock the members against relative movement in one direction, and a lever for operating the spring actuated means to withdraw the wedge from the locking position.

2. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, a rolling wedge, means for forcing the wedge to a position in which the wedge will lock the members against relative movement in one direction, and a lever for operating said means to withdraw the wedge from the locking position.

3. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, a rolling wedge, spring actuated means for forcing the wedge to a position in which it will lock the members against relative movement in one direction, and a lever for operating the spring actuated means to withdraw the wedge from the locking position.

4. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, one member having two oppositely inclined portions, the other member having an extension disposed between said inclined portions, and two wedges adapted to bear respectively against opposite sides of said extension and against said inclined portions for locking the members against movement in one direction.

5. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, one member having an inclined portion, the other member having a wedge bearing, a wedge, spring actuated means for forcing the wedge into locked engagement with the said bearing and inclined portion, and a lever for operating the spring actuated

means to release the wedge from said locked engagement.

6. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, one member having two oppositely inclined portions, the other member having an extension disposed between said inclined portions, two wedges, and spring actuated means for forcing said wedges against opposite sides of said extension and against said two inclined portions respectively for locking the members from relative movement in one direction.

7. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, two wedges disposed at opposite sides of one of said members and adapted to clamp the same and to bear against the other member for locking the members against movement in one direction, and means for normally forcing said wedges into the clamping position.

8. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, one member having two oppositely inclined portions, the other member having an extension located between said portions, two wedges disposed at opposite sides of said extension, spring actuated means for forcing the wedges against said extension and against said two inclined portions respectively for locking the members from relative movement in one direction, and means for operating the spring actuated means to withdraw the wedges from the locking positions.

9. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, one member having two inclined portions, the other member having an extension between said portions, two wedges at opposite sides of said extension, spring actuated means for forcing said wedges against said extension and against said two inclined por-

tions respectively for locking the members against relative movement in one direction, and a lever for operating the spring actuated means to withdraw the wedges from the locking positions.

10. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, two wedges disposed at opposite sides of one of said members and adapted to clamp the same and to bear against the other member for locking the members from relative movement in one direction, and releasable spring actuated means for forcing the wedges into the clamping position.

11. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, two wedges disposed at opposite sides of and adapted to clamp against one of said members and to bear against the other member for locking the members against relative movement in one direction, spring actuated means for forcing the wedges into the clamping positions, and means for operating the spring actuated means to withdraw the wedges from the clamping positions.

12. In a loose leaf binder, an extensible leaf supporting post having two members longitudinally movable relatively to each other, two wedges disposed at opposite sides of and adapted to clamp one member and to bear against the other member for locking the members from relative movement in one direction, spring actuated means for forcing the wedges into the clamping positions, and a lever for operating the spring actuated means to withdraw the wedges from the clamping positions.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

WILLIAM P. PITT.

Witnesses:

CHAS. DORN,
B. C. SPENCER.