

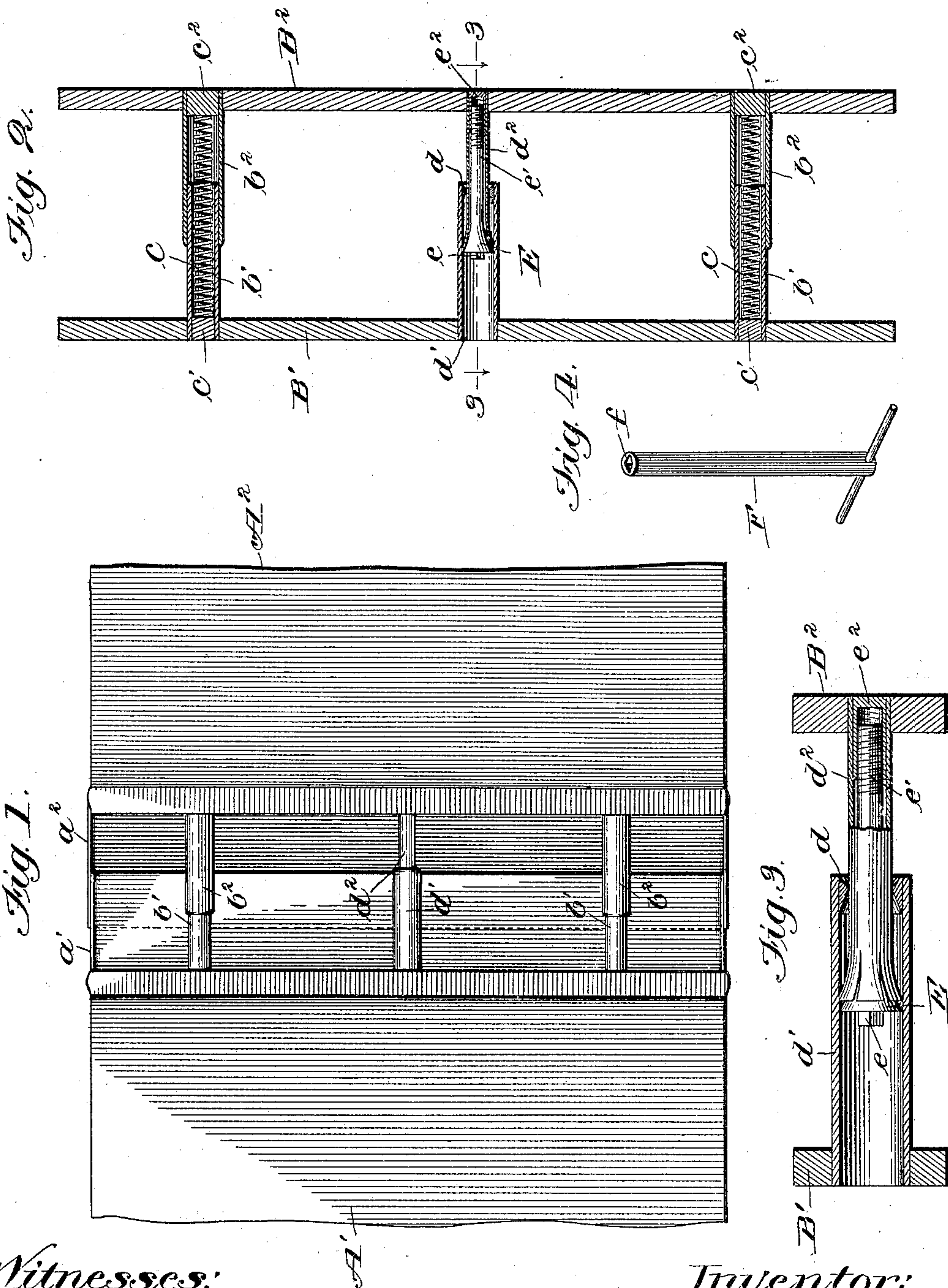
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F. N. VOLKERT.
PAPER BINDER.

(Application filed Mar. 17, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

FERDINAND N. VOLKERT, OF CHICAGO, ILLINOIS.

PAPER-BINDER.

SPECIFICATION forming part of Letters Patent No. 707,037, dated August 12, 1902.

Application filed March 17, 1902. Serial No. 98,511. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND N. VOLKERT, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have
5 invented a certain new and useful Improvement in Paper-Binders; and I declare the following to be a full, clear, and exact description of the invention, such as will enable
15 others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates generally to devices for binding together in book form sheets of
15 paper, such as letters or the separable leaves of a book, and more particularly to means for locking the binder in the adjusted position necessary to securely hold the desired number of sheets of paper.

20 It is essential that a binder for uniting the leaves of a book should be readily adjustable to accommodate any number of leaves within predetermined limits and capable of being
25 securely locked in any adjusted position, so as to retain the leaves in the desired order.

The principal object of my invention is to provide a binder possessing the above-mentioned characteristics which will be simple
30 in construction, inexpensive in manufacture, and efficient in use.

My invention, briefly described, consists in a pair of clamping-bars between which the
35 sheets of paper are inserted, telescopic post-sections attached at their outer ends to the clamping-bars, and means for frictionally locking together the telescopic sections of the post in any desired position.

My invention will be more fully described hereinafter with reference to the accompanying
40 drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is an elevational view of my improved binder, portions of the covers being
45 broken away; Fig. 2, a vertical section of my invention without the back and covers shown in Fig. 1; Fig. 3, a cross-sectional view on line 3-3, Fig. 2; and Fig. 4 a perspective
50 view of a key for operating the locking device.

Similar reference characters are used to indicate similar parts in the several views of the drawings.

Letters A' and A² designate the covers, which are adjustably united and which are
55 designed to inclose a number of sheets of paper—such, for instance, as leaves or separable pages of a book.

a' and a² indicate the sections secured to the side covers A' and A² and which overlap
60 to form a back. The extent which the sections a' and a² of the back overlap varies with the number of leaves or pages inserted between the side covers.

A pair of clamping-bars B' and B² are secured between the covers A' and A² and the
65 sections a' and a², respectively, of the book. These clamping-bars are preferably surrounded by the leather or other material, which is secured to the outer surfaces of the side covers
70 and extends around the sections of the back.

The sheets of paper which are to be bound together are inserted between the clamping-bars B' and B² and there retained by relatively
75 adjusting the clamping-bars so as to bind the sheets of paper securely together. The clamping-bars are connected together by a plurality of posts composed of telescopic sections the outer ends of which are attached
80 to the bars and the inner ends of which are in sliding engagement.

Reference characters b' b' indicate the sections of two telescopic posts secured to the
85 clamping-bar B', while reference characters b² b² indicate the other sections of the telescopic posts, which are secured at their outer ends to the clamping-bar B². The sections
90 b' b' of each post are preferably tubular in form, the former being of an exterior diameter slightly less than the interior diameter of the latter, thereby permitting a sliding engagement between the two members of the post. The members of the post may be attached within openings in the clamping-bars
95 B' and B² by expanding the outer ends of the post members into contact with the walls of the openings in the clamping-bars. Coil-springs c c are preferably located within the
100 tubular sections of the posts and are retained

therein by closing the outer ends of the post-sections by means of plugs c' and c^2 , with which the outer ends of the springs engage.

In order that the coil-springs may be retained under compression and the space between the clamping-bars regulated to securely clamp the sheets of paper between the same, it is necessary to provide a locking device. The means which I have invented for locking the clamping-bars in the desired relative positions operate to force into frictional engagement the members of a telescopic post.

d' indicates a tubular member of a telescopic post, which is secured within an opening formed in the clamping member B' . The other tubular member d^2 of the telescopic post is secured within an opening in the other clamping-bar B^2 . The exterior diameter of the member d^2 is such as to permit the same to slide within the tubular member d' . The inner end of the member d^2 is split, so as to permit the same to be expanded outwardly into frictional engagement with the interior surface of the larger member d' of the telescopic post.

The means which I have provided for expanding the split end of the inner member of the telescopic post consists in a wedge E, preferably of conical form, which may be moved longitudinally with respect to the member d^2 of the post to force the split end of the latter into engagement with the other member of the post d' in order to lock the clamping-bars in a fixed position and to permit the split end of the interior member of the telescopic post to contract out of frictional contact with the other member of the post, thereby permitting the clamping-bars to be relatively moved to a new position.

The means which I have shown for longitudinally moving the conical wedge E consist in a screw-threaded rod e' , formed integrally with the conical wedge and engaging an interior screw-threaded socket e^2 , fixed within the outer end of the inner member d^2 of the post. The conical wedge is provided with an angular head e , which may be engaged by a complementary head f , formed in the end of a key F. The inner end of the tubular member d' is restricted in diameter by means of a flange or ring d , the opening through which is of a diameter less than that of the conical wedge, thereby preventing the two members of the post from being disconnected.

The operation of my invention, which will be clearly understood from the foregoing description, is as follows: The key F is inserted in the tubular member d' and the recess f in the end thereof engaged with the head e on the wedge E. The key is then turned to the left, thereby rotating the screw-threaded rod e' within the socket e^2 , which causes the wedge to move away from the split end of the interior member d^2 of the post, thereby disengaging the two members of the post and permitting the springs c c to expand. The

sheets of paper or pages of the book are then inserted between the clamping-bars B' and B^2 and the bars then pressed closely together, so as to bind the sheets securely together. The key F is then engaged with the wedge, so as to rotate the latter, and thereby force the split end of the member d^2 outwardly into frictional contact with the outer member d' of the telescopic post, which locks the clamping members in their adjusted position and firmly holds the interposed sheets of paper or pages in the desired order.

In order that the sheets of paper may be inserted between the clamping-bars, they are preferably provided with openings corresponding in position to the location of the several adjustable posts which connect the clamping members. Slits lead from the openings in the sheets of paper to the adjacent edges thereof, thereby permitting the openings to be placed around the adjustable posts.

From the foregoing description it will be observed that I have devised a locking device for a paper-binder, consisting in means for frictionally engaging the two sections of an adjustable post the outer ends of which are attached to the clamping-bars between which the sheets of paper are held.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents, as circumstances may suggest or render expedient, without departing from the spirit of my invention.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a binder for sheets of paper, the combination with clamping-bars, of a hollow post composed of telescopic sections attached at their outer ends to said bars and in sliding engagement at their inner ends, the inner section of said post being split at its end, a rod located within said inner section and in screw-threaded engagement therewith, a conical wedge integrally secured to the end of said rod and located within the split end of the inner section, and means for rotating said rod whereby said wedge expands the split end of the inner section into frictional contact with the interior surface of the outer section of said post.

2. In a binder for sheets of paper, the combination with clamping-bars, of a hollow post composed of telescopic sections attached at their outer ends to said bars and in sliding engagement at their inner ends, the inner section of said post being split at its end, a rod located within said inner section and longitudinally movable therein, a conical wedge integral with the end of said rod and located within the split end of the inner section, and means for moving said rod longitudinally within the inner section whereby said wedge

expands the split end of the inner section into frictional contact with the interior surface of the outer section of said post.

3. In a binder for sheets of paper, the combination with clamping-bars, of a hollow post composed of telescopic sections attached at their outer ends to said bars and in sliding engagement at their inner ends, the inner section of said post being split at its end, a rod extending through said inner section and in screw-threaded engagement with the portion thereof adjacent to the clamping-bar to which

it is connected, a conical wedge on the end of said rod adapted to expand said split end of the inner section into frictional contact with the interior surface of the outer section of said post, and means for rotating said rod. 15

In testimony whereof I sign this specification in the presence of two witnesses.

F. N. VOLKERT.

Witnesses:

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