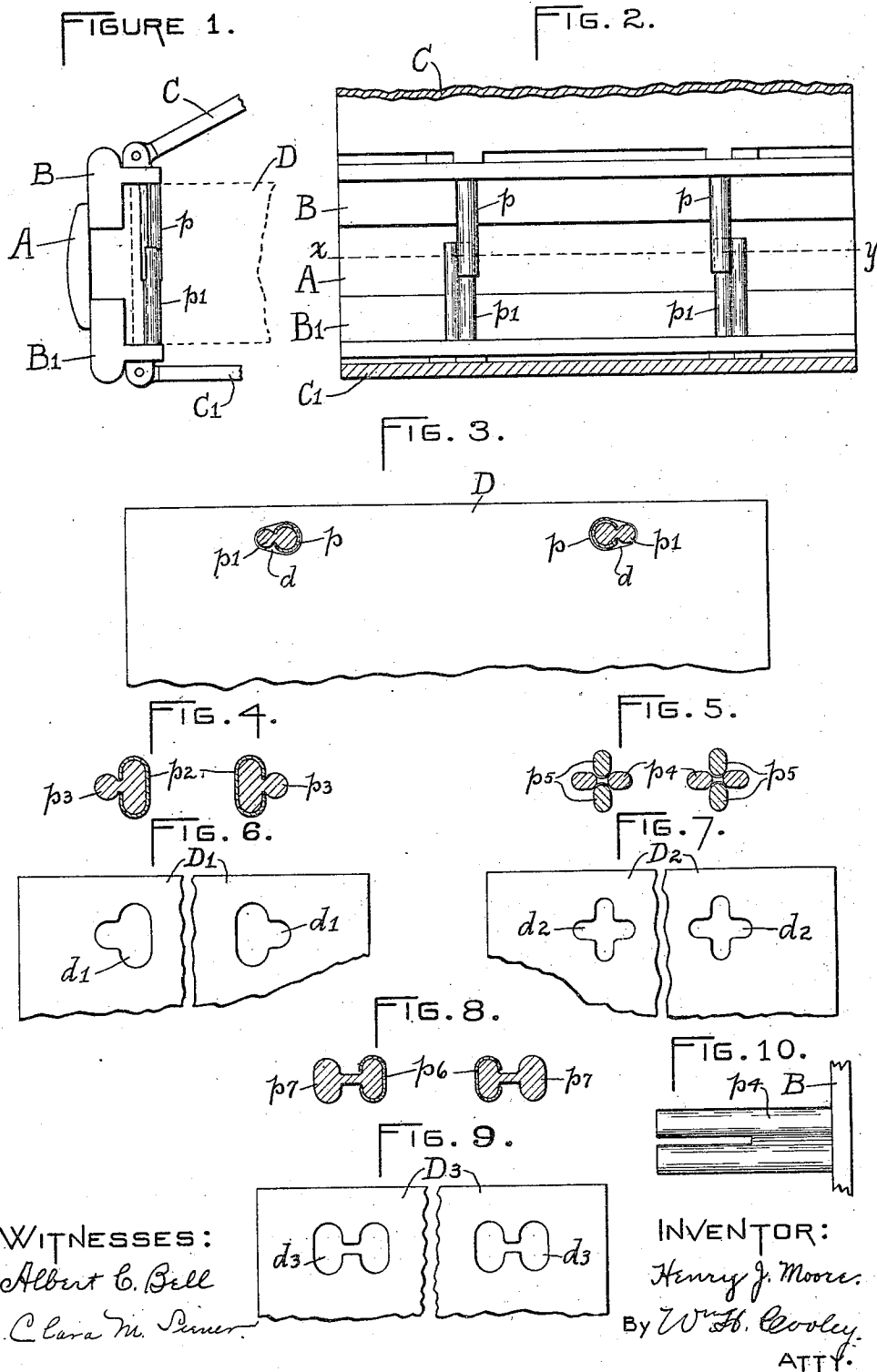


H. J. MOORE.

LOOSE LEAF BINDER FRAME AND LEAF THEREFOR.

APPLICATION FILED AUG. 28, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

Albert C. Bell

Clara M. Simer

INVENTOR:

Henry J. Moore.

By W. H. Cooley.
ATTY.

No. 816,494.

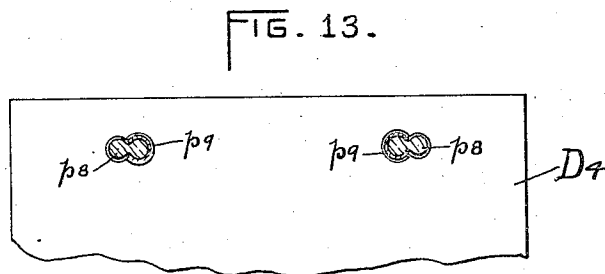
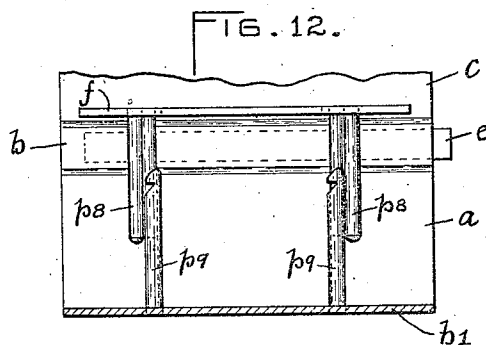
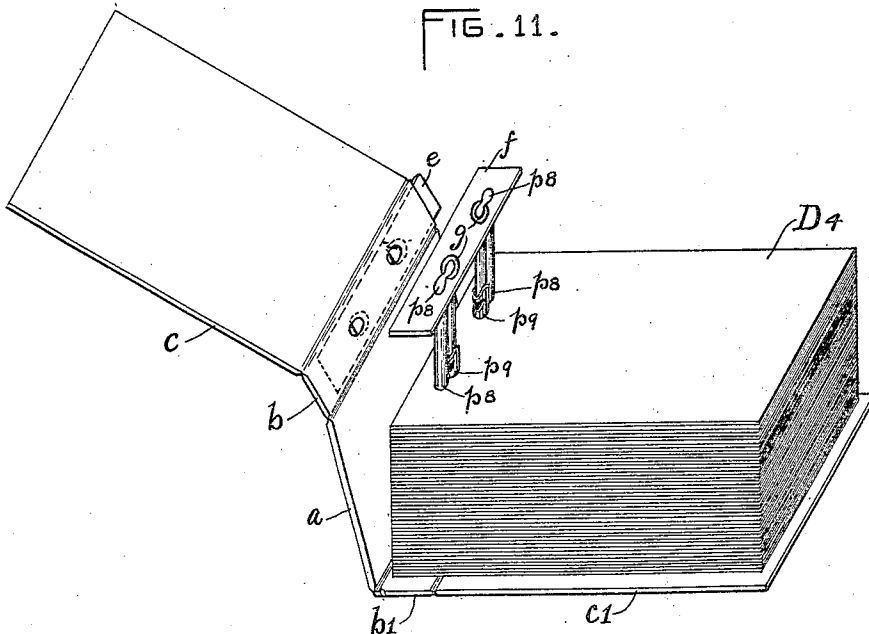
PATENTED MAR. 27, 1906.

H. J. MOORE.

· LOOSE LEAF BINDER FRAME AND LEAF THEREFOR.

APPLICATION FILED AUG. 28, 1905.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

HENRY J. MOORE, OF ROCHESTER, NEW YORK, ASSIGNOR TO JOHN C. MOORE CORPORATION, OF ROCHESTER, NEW YORK.

LOOSE-LEAF-BINDER FRAME AND LEAF THEREFOR.

No. 816,494.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed August 28, 1905. Serial No. 276,005.

To all whom it may concern:

Be it known that I, HENRY J. MOORE, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented an Improvement in Loose-Leaf-Binder Frames and Leaves Therefor, of which the following is a specification.

This invention relates to that class of loose-leaf-binder frames and leaves therefor in which the binder-frame comprises in its construction two plates which are in some way connected with the cover-leaves to the binder, such connection of course being flexible in character. It is immaterial whether these plates be arranged to be moved to and from each other by means of any suitable mechanism or one of them fixed to the binder-frame and the other entirely removable therefrom when desired.

My present invention therefore is adapted to use, first, in that class of binder-frames and leaves therefor in which cover-plates are used having the cover-leaves flexibly connected thereto and such cover-plates arranged by means of any suitable mechanism to be moved to and from each other, whether upon a common back-plate or not, and it is also adapted to use, second, in that class of binder-frames and leaves therefor in which one plate carrying an impaling-post or impaling-posts is permanently secured to the binder-frame, while the other plate carrying an impaling-post or impaling-posts is removable from the binder-frame, so as to permit the insertion and withdrawal of any desired leaf by the removal of any desired quantity or number of the leaves with the removable plate.

My present invention relates more especially to the conformation, arrangement, and cooperation of the impaling-posts secured to the plate in question.

In the first form of binder-frame above mentioned each of the cover-plates is arranged to carry two or more impaling pins or posts, with the post in one cover-plate arranged to either telescope with or otherwise engage or overlap the corresponding post in the opposite cover-plate and occupy or enter therewith a common opening therefor in the leaves. It has been customary in the use of such binder-frames to provide at least three or four cooperating pairs of male and female impaling-posts, with the male and female posts of each cover-plate alternating with

each other in order that each of the leaves shall have two of its notches or openings engaged by two of the female posts, as such posts, being larger and fitting closely the holes in the leaves, serve to maintain the alinement of the leaves. Loose-leaf-binder frames of the first class above described are adapted to use with leaves varying quite largely in quantity while holding all the leaves firmly clamped together. In the other or second class of loose-leaf binders—that is, those binders in which the one plate is preferably fixed in the binder-frame and the other is removable therefrom with any desired number of the leaves held by the impaling-posts in such plate—there are usually arranged two posts in each of such plates, with each post in each of the plates arranged to enter and engage a separate and independent hole or opening therefor in the leaves.

In either one of the above-mentioned classes of loose-leaf binders it is oftentimes very desirable to provide a style of leaf and a binder-frame therefor of such a size as to prohibit the use of more than two pair of cooperating and engaging or overlapping impaling-posts while still retaining for such binder-frame all the advantages of elasticity in respect to the number of leaves held thereby of the style of loose-leaf binder just above described. In such a loose-leaf-binder frame then with only two pair of such cooperating impaling-posts of the usual construction there can be provided no means for maintaining the perfect alinement of the leaves when engaged by only one of the female posts if the male and female posts are used one on each plate or by the two male posts if such two male posts are used upon the same plate. To overcome this difficulty just mentioned and to maintain the perfect alinement of the leaves at all times, I have devised a style of impaling-post in which each member of each post serves with another similar one attached to the same plate to maintain the alinement of the leaves perfectly when engaging the holes therein independently of the engagement of such leaves by the other members of such posts secured in the other plate. In this way I am enabled to maintain perfect alinement of the leaves at all times in a two-post telescopic loose-leaf-binder frame. The many uses to which such binder-frames are adapted where very short but wide leaves are required are too obvious and manifold

to call for any extended mention herein—such, for instance, as way-bills, receipts, invoices, &c.

In the accompanying drawings I have shown only such parts of loose-leaf-binder frames as are essential to illustrate my present invention, and as the operating mechanism for moving the cover-plates carrying the impaling-posts to and from each other in the first-named class of binder-frames constitutes no part of my present invention such features are omitted from the drawings. So, also, the mechanism for locking the removable plate with its post in the binder-frame of the second class is omitted as constituting no part of my present invention.

The accompanying drawings illustrating my invention are as follows: In Figures 1 to 10 my invention is shown in connection with a binder-frame of the first class, while in Figs. 11, 12, and 13 it is shown in connection with a binder-frame of the second class. Only one modification of the impaling-posts in accordance with my present invention is shown in Figs. 11 and 12 in connection with a binder-frame of the second class. It will, however, be understood that any one of the several styles of impaling-posts shown in Figs. 1 to 8, inclusive, may be used in connection with this second class of binder-frame instead of those shown in Figs. 11 and 13.

Fig. 1 is an end view, and Fig. 2 a plan view, of a loose-leaf-binder frame having impaling-posts therein embodying my invention. Fig. 3 shows in an enlarged view a portion of one of the leaves adapted to use in such binder-frame, and this figure also shows in section taken along the line $x y$ of Fig. 2 the impaling-posts, such as indicated in Figs. 1 and 2, as located within the openings therefor in such leaf. Fig. 4 shows in section a modified form of my impaling-post, while Fig. 6 shows a portion of a leaf having openings therein adapted to such impaling-posts. Figs. 5 and 7 are views corresponding to Figs. 4 and 6 of a modified form of my impaling-post and a leaf having openings therein adapted thereto. Figs. 8 and 9 are views similar to Figs. 4 and 6 of a still further modification of my invention. Fig. 10 shows in side view one of the members p^4 of either of the pair of impaling-posts seen in Fig. 5. In Figs. 4, 5, and 8 the impaling-posts are shown as located much more nearly together than they would be in practice and in sectional views. Figs. 11, 12, and 13 show my invention as embodied in a loose-leaf binder of the second class, as will be explained.

Similar letters refer to similar parts throughout the several views.

Referring to Figs. 1 and 2, B and B' constitute the cover-plates carrying the impaling-pins p and p' , respectively, and to which cover-plates respectively there are hinged,

as seen, the cover-leaves C and C'. The cover-plates B and B' are suitably guided and operated upon the back-plate A by means of mechanism not shown, as constituting no part of my present invention. Leaves are represented in dotted lines at D.

Each impaling-post is, as shown in Figs. 1, 2, and 3, comprised of tubiform members p , cooperating with the larger cylindrical part of the correspondingly and oppositely located members p' . The members p are, as noted, tubiform and have openings or slits on the sides thereof toward the end of the binder-frame, and within these slits there pass those portions of the members p' serving to connect the parts thereof entering the members p , with those parts arranged to extend outside of and parallel with such members p . In Fig. 3 there is shown in an enlarged view a portion of a leaf having openings d therein adapted to be engaged by the style of impaling-posts shown in Figs. 1 and 2 and also indicated in Fig. 3 in section, such openings d being somewhat oblong and terminating in nearly half-circles at their opposite ends, the openings being larger or bounded by larger half-circles toward the center of the leaf. It will at once be seen that the conformation of the members p and p' is such that the leaves are securely held in alinement by either the members p or p' when engaged thereby and independently too of the cooperation with the member carried by either cover-plate of those members carried by the other cover-plate.

Referring to Figs. 4 and 6, p^2 comprises modified forms of members which may be used in place of the members p , (shown in Figs. 1, 2, and 3,) and in connection therewith there may be used the members p^3 , secured to the other cover-plate, in which case leaves D', having openings d' therein, such as indicated in Fig. 6, are used. In a similar way members p^6 , such as shown in Fig. 8, may be used in one cover-plate and cooperating therewith members, such as p^7 , in the other cover-plate, in which case leaves D³, having openings d^3 therein, such as indicated in Fig. 9, are used. Again, members such as shown at p^4 in Figs. 5 and 10 may be used in one cover-plate arranged to cooperate with members, such as p^5 , secured in the other cover-plate, and in connection therewith also leaves D², having openings d^2 , such as indicated in Fig. 7, will be used. Attention is called to the fact that the impaling-posts on the members p^4 are exactly like or interchangeable with the members p^6 , the only difference being as to their angular disposition in the cover-plates to which they are attached, and each of such members is centrally slotted or bifurcated to practically its center longitudinally, so as to permit the cooperating members of each pair to overlap each other and enter the same opening d^2 ,

such as indicated in Fig. 7, while by being bifurcated over only one-half of their length they are not materially weakened.

Refer now to Figs. 11 and 12, which show my invention as adapted to a loose-leaf binder of the second class, Fig. 11 showing such a binder and leaves therein in perspective with the removable plate and its posts shown as partly withdrawn from the binder, while Fig. 12 shows such a binder-frame in a section taken just to the right of the impaling-posts p^s and p^o , and as viewed from the right, with the leaves removed and showing also only a portion of the cover c , Fig. 13 shows a part of a leaf D^4 adapted to use in such a binder. In this modification of my invention the binder-frame comprises the back a , to which there are flexibly connected the connecting-pieces b and b' . In the plate b' there are rigidly secured the tubular impaling-posts p^o , each of which has a longitudinal slit or opening throughout its length, so that it may engage, and thus be guided by, the corresponding opposite impaling-post p^s , the centrally-located thinner portion of each of such impaling-posts p^s arranged to engage the longitudinal slit or opening in an impaling-post p^o . The upper ends of the impaling-posts p^o are notched in order that when the plate f is inserted in place the upper ends of the impaling-posts p^s , extending through the openings g therefor in the plate f , may be engaged by the locking-plate e , seen as secured in the connecting-piece b . In this plate f the clearance-holes g are provided to receive the upper ends of the impaling-posts p^s . In this modification of my invention leaves D^4 are used having openings therein, as indicated, of such a character as to fit each pair of cooperating impaling-posts and hold such leaves in alinement thereon. In the form of binder-frame shown in Figs. 11 and 12 any one of the several styles or forms of cooperating impaling-posts, such as shown in Figs. 1 to 10, inclusive, may be used, and the leaves will be held thereby in alinement in practically the same way as already described in reference to such figures.

I desire to call attention to the fact that in the case of each of the styles of impaling-post and correspondingly-notched leaves therefor when used as above mentioned each leaf is held in perfect alinement by the two impaling members secured to either of such cover-plates independently of any coöperation therewith of the oppositely-located engaging and cooperating members secured in the other cover-plate.

What I claim is—

1. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts

each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member, leaves in such binder having openings therein to receive such impaling-posts, such tubular impaling-posts conformed to engage those portions of such openings in the leaves therefor and hold them in alinement independently of the posts on such first plate, and such prismatic members on such first plate arranged to lie outside of and parallel with the tubular posts on the second plate conformed to engage the portions of the openings therefor in such leaves and hold the same in alinement independently of the tubular posts carried by the second plate.

2. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member, leaves in such binder having openings therein to receive such impaling-posts, such tubular impaling-posts conformed to engage those portions of such openings in the leaves therefor and hold them in alinement in all directions independently of the posts on such first plate, and such prismatic members on such first plate arranged to lie outside of and parallel with the tubular posts on the second plate conformed to engage the portions of the openings therefor in such leaves and hold the same in alinement in all directions independently of the tubular posts carried by the second plate.

3. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member.

HENRY J. MOORE.

Witnesses:

ALBERT C. BELL,
WM. H. COOLEY.