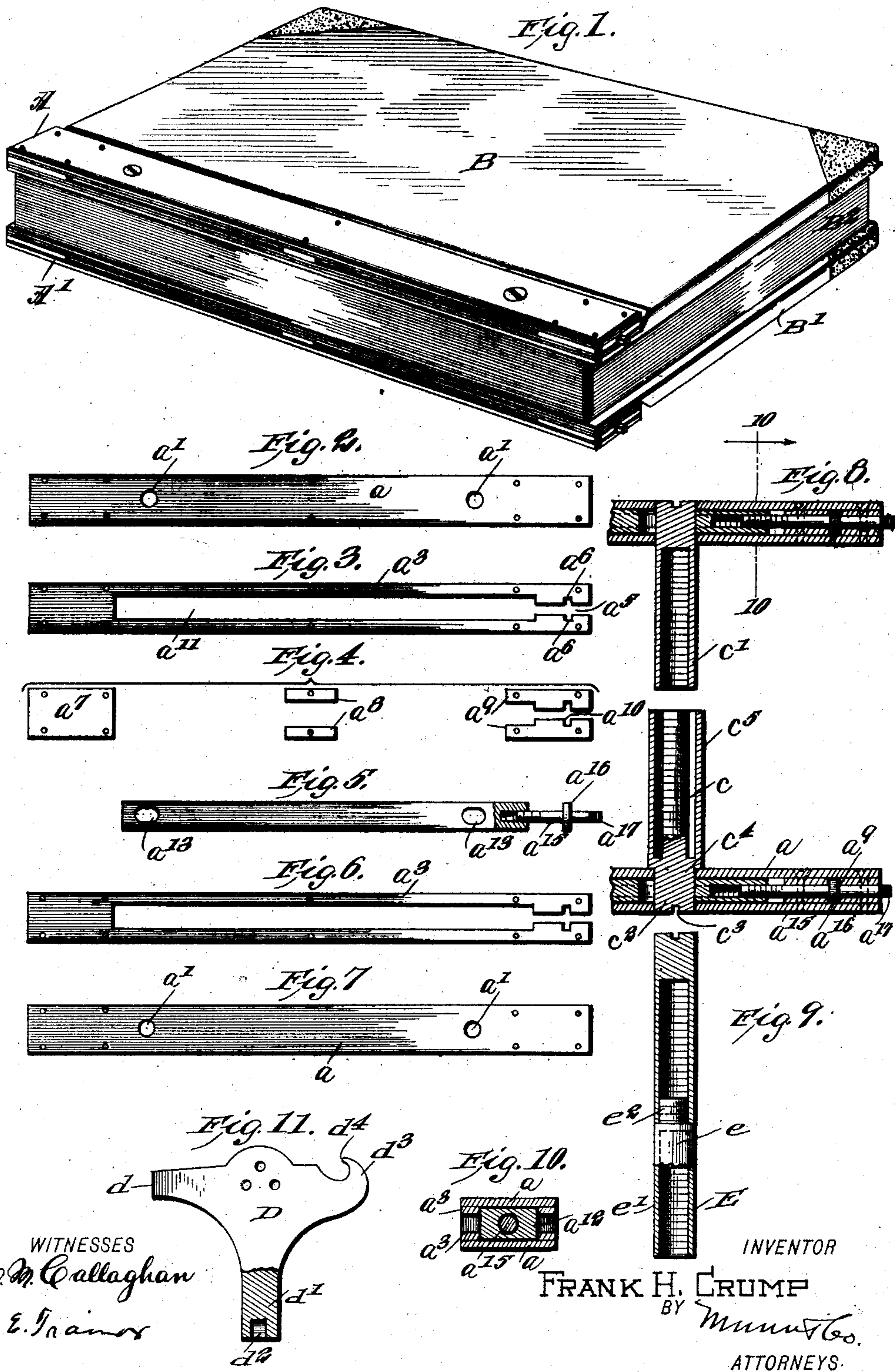


F. H. CRUMP.
 LOOSE LEAF BINDER.
 APPLICATION FILED JUNE 18, 1908.

905,663.

Patented Dec. 1, 1908.



WITNESSES
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UNITED STATES PATENT OFFICE.

FRANK H. CRUMP, OF LOS ANGELES, CALIFORNIA.

LOOSE-LEAF BINDER.

No. 905,663.

Specification of Letters Patent.

Patented Dec. 1, 1908.

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To all whom it may concern:

Be it known that I, FRANK H. CRUMP, a citizen of the United States, and a resident of Los Angeles, in the county of Los Angeles and State of California, have made certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

My invention is an improvement in loose leaf binders and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

The object of the invention is to provide means for binding loose leaves having perforations in their edges, instead of the usual slotted openings, and for holding the binders in proper spaced relation in respect to each other and for permitting the removal of either of the binders without disturbing the other, the leaves being inserted by moving longitudinally on the posts instead of perpendicularly thereto.

Referring to the drawings forming a part hereof—Figure 1 is a perspective view of the improvement, Fig. 2 is a plan view of the upper lamina of a binding plate, Fig. 3 is a similar view of one of the inner laminae, Fig. 4 is a similar view of the spacing blocks, Fig. 5 is a similar view of the locking slide, Fig. 6 is a similar view of the other inner lamina, and Fig. 7 is a similar view of the bottom lamina, Fig. 8 is a section through the binder posts and the end of the binding plates, Fig. 9 is a sectional view of a portion of the post and the extension member, Fig. 10 is a section on the line 10—10 of Fig. 8, and Fig. 11 is a plan view of the key.

The present embodiment of the invention comprises a top binding plate A, and a bottom binding plate A', the plates being similar in construction and connected with backs B, B' between which and the binding plates are received the loose leaves B'. Each of the binding plates consists of an outer and an inner lamina *a* provided near each end with a circular opening *a'*, and inner laminae *a*³ having a central rectangular cut away portion *a*¹¹ which portion is connected with one of the ends of the lamina by a slot *a*⁵, the slot having lateral extensions *a*⁶ at approximately its center. The inner laminae are spaced apart by blocks *a*⁷, *a*⁸, *a*⁹, the block *a*⁷ being rectangular in form and extending from the end of the cut away portion to the end of the lamina, and the blocks *a*⁷, *a*⁸ are also rectangular in form and are arranged between the

inner laminae on each side of the cut away portion.

The blocks *a*⁹ are arranged on each side of the slot *a*⁵, and are provided with lateral recesses *a*¹⁰ corresponding to the recesses *a*⁶. The laminae and the plates are provided with registering openings, through which extend rivets or screws for securing the laminae together.

The slide locking bar *a*¹² is adapted to move within the cut away portion of the laminae *a*³, and is provided near each end with elliptical openings *a*¹³ which register with the openings *a'* of the outer lamina and one end of the bar is provided with a threaded longitudinal opening *a*¹⁴, in which is threaded a pin *a*¹⁵, provided with a rigid collar *a*¹⁶ and a square head *a*¹⁷.

The laminae and the blocks and the slide bars are assembled in the order shown in Figs. 2 to 7 inclusive, the slide bar moving in the cut out portions *a*¹¹ of the inner laminae and being limited in its movements by the ends and sides of the cut away portion and the blocks *a*⁷, *a*⁸, *a*⁹. The collar *a*¹⁶ is arranged in the recesses *a*⁶ and *a*¹¹, thus preventing longitudinal movement of the pin *a*¹⁵ with respect to the binder plates.

The extension posts comprise an inner externally threaded member *c* and an outer internally threaded member *c'* each of the sections or members being provided with a head *c*² kerfed as at *c*³ to permit engagement by the driving blade *d* of the tool D to be presently described. The member or section *c*, is provided with a flange *c*⁴, having integral therewith a jacket or sleeve *c*⁵ which slips over the outer member *c'* as indicated in Fig. 8.

The tool D before mentioned, consists of the driving blade *d* referred to and a portion *d*¹ provided with a square socket *d*² for engaging the square head *a*¹⁷ of the pin, and the tool is also provided with a curved arm *d*³ having a point *d*⁴ which is adapted to engage one of a series of openings *e* of an extension E for the extension post, the said extension comprising a hollow internally threaded portion *e'* of the same diameter as the portion *c'*, and a solid externally threaded reduced portion *e*² adapted to engage in the portion *c'* as shown in Fig. 9. The portion *c* is adapted to engage in the portion *e'* of the extension.

In operation to insert or remove leaves from the binder, the pin *a*¹⁵ of either the top

or bottom binder plate is turned by the key, it being understood that the two binders are precisely the same, which moves the edges of the elliptical openings of the locking bar
5 out of engagement with the heads of the extension posts, thus permitting the binder to be slipped off the posts, which meanwhile are held by the other binder. The leaves may then be slipped on or off the posts after
10 which the binder which has been removed is replaced, and the locking bar moved the other way until the ends of the elliptical openings engage the said posts.

I claim:

15 1. A loose leaf binder, comprising a pair of binding plates provided at each end with an opening, extension posts having heads engaging the openings, the heads being provided with transverse grooves on their outer
20 ends, a locking bar slidable in each of the binding plates, said bar being provided with elliptical openings registering with the openings of the binder plates, said extension posts comprising each a plurality of sections,
25 one screwing into the other, the innermost section being provided with a sleeve moving over the outermost section for the purpose set forth.

2. A loose leaf binder comprising binding

plates, each having a longitudinal central 30 recess, and transverse openings near the ends of the recess, a locking bar slidable in the longitudinal recess and provided with elliptical openings registering with the transverse openings, a pin threaded into the end 35 of the locking bar and engaging outside of the plate, means for preventing longitudinal movement of the pin with respect to the plate, said pin having a square head for the purpose set forth and extension posts 40 connecting the plates and engaging the transverse openings.

3. In a loose leaf binder, extension posts comprising inner and outer sections, the outer section being internally screw threaded 45 and the inner section being externally screw-threaded and provided with a sleeve extending over the outer section when screwed into it and an extension member provided with a reduced externally screw threaded portion 50 for engaging the outer member and an internally screw threaded portion for engaging the inner member.

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Witnesses:

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