No. 767,106. PATENTED AUG. 9, 1904.

P. A. EFTOFIE.

APPARATUS FOR BINDING LOOSE LEAVES.

APPLICATION FILED FEB. 23, 1904.

NO MODEL.

Fig. 1.

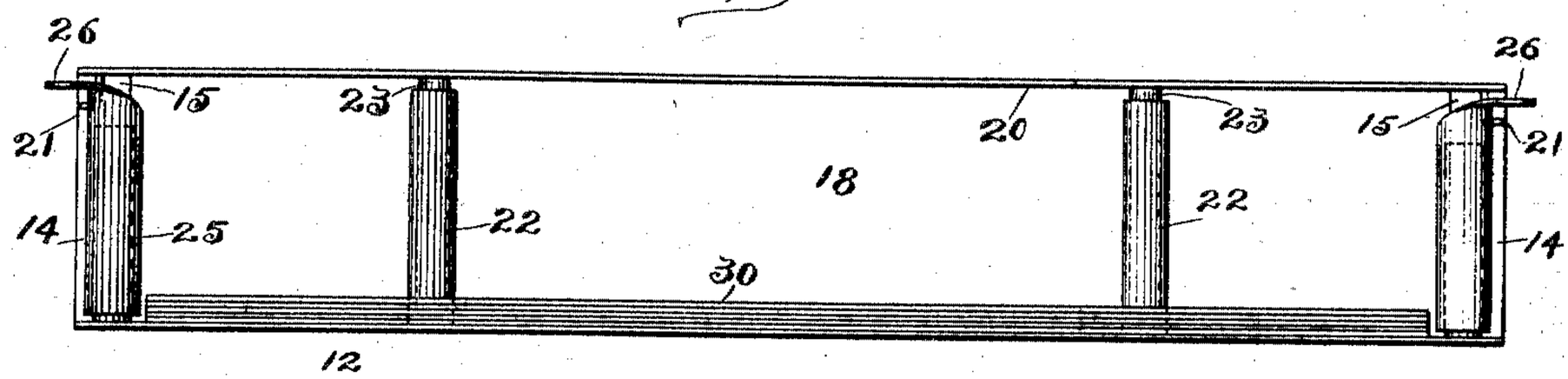


Fig. 2.

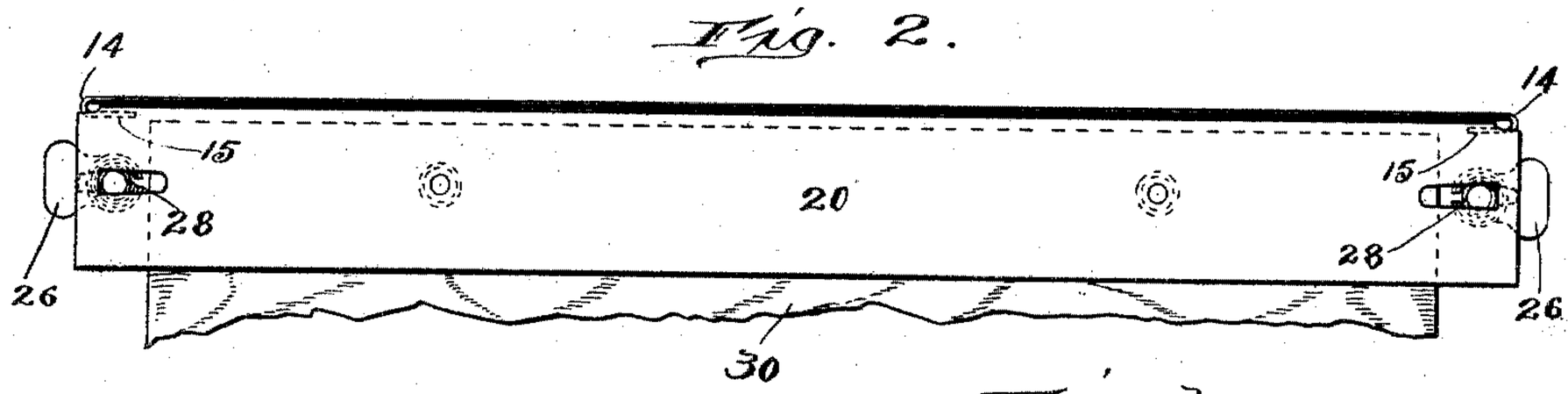
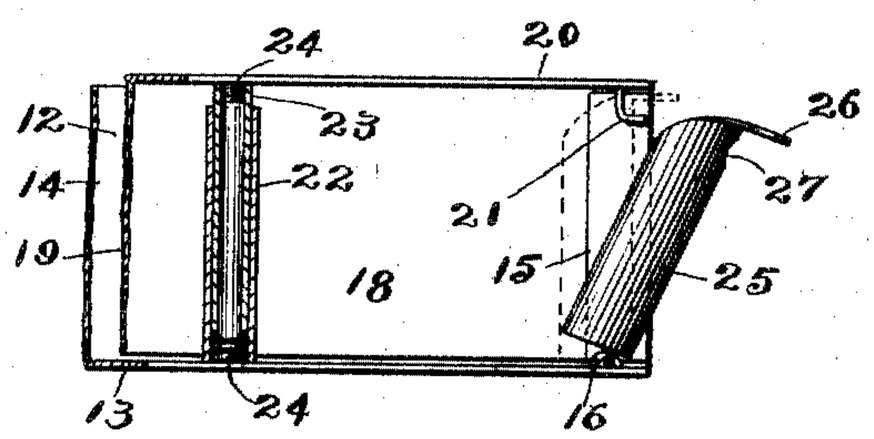


Fig. 3.

Fig. 4.



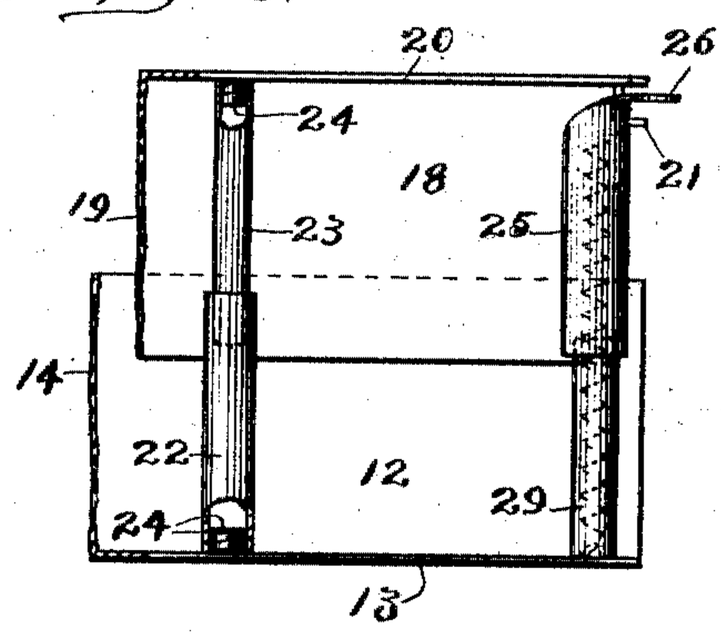


Fig. 7.

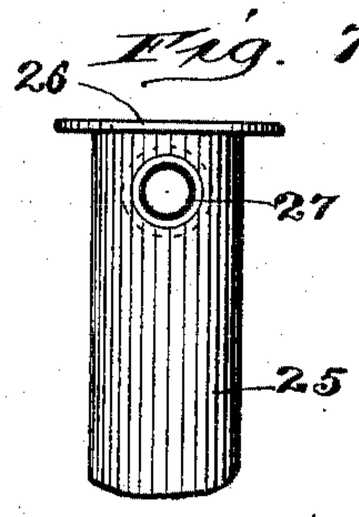


Fig. 5.

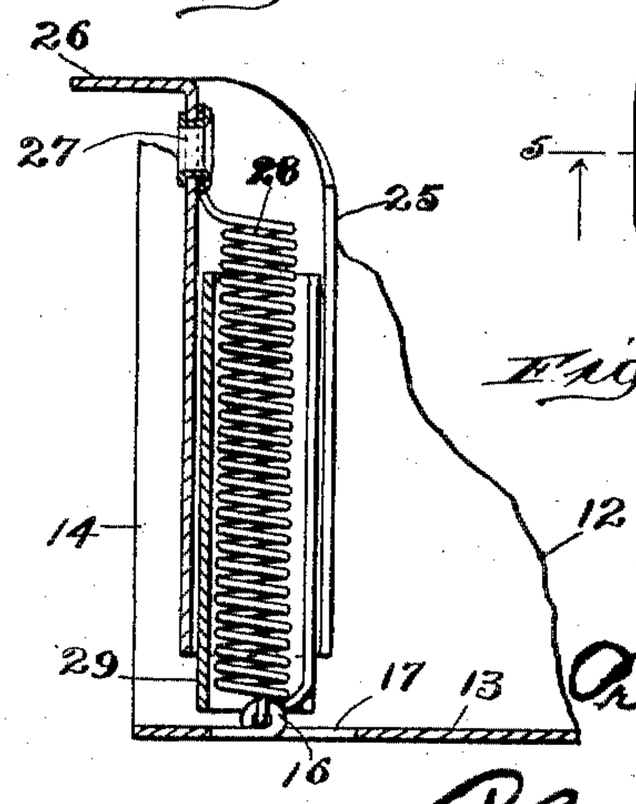


Fig. 6.

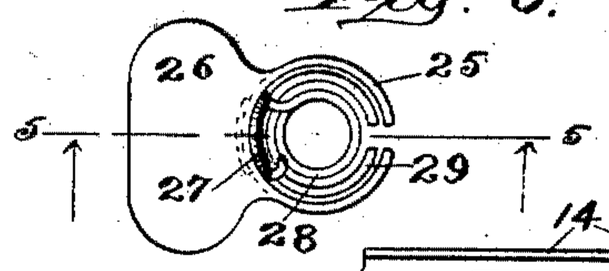
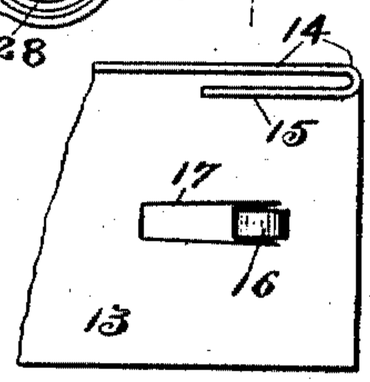


Fig. 8.



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No. 767,106. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

PREDA A. EFTOFIE, OF CHICAGO, ILLINOIS.

APPARATUS FOR BINDING LOOSE LEAVES.

SPECIFICATION forming part of Letters Patent No. 767,106, dated August 9, 1904.

Application filed February 23, 1904. Serial No. 194,734. (No model.)

To all whom it may concern:

Be it known that I, PREDA A. EFTOFIE, a subject of the King of Roumania, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Binding Loose Leaves, of which the following is a specification.

This invention relates to improvements in that class of devices employed for binding together a number of sheets or leaves so that they may be kept in a compact form convenient for reference or use, and while it is more especially intended to be used as a loose-leaf binder in which the leaves may be easily secured or readily removed therefrom, yet it is adapted for use in binding sheets of music, papers, journals, periodicals, and the like; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide an apparatus of the above-named character which shall be simple and inexpensive in construction, strong, durable, and efficient in operation, and made in such a manner as to be expansible, thus adapting it for binding a large number of leaves or a smaller amount without changing any of the parts or without the addition thereto of supplemental pieces.

Another object of the invention is to so construct the device that the binding plates or strips thereof may be quickly secured together or readily detached to permit of the insertion or removal of the leaves or sheets.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a front view in elevation of a binder embodying my invention, showing the parts in position ready for use and illustrating a number of leaves secured therein. Fig. 2 is a plan view of the device, showing a portion of one of the leaves held therein. Fig. 3 is a front view, in side elevation, of a portion of the binder, showing its parts expanded. Fig. 4 is a similar view, partly in section, of like parts, but showing the binding-plates in their normal positions and illustrating by dotted lines one of the locking members for said plates in the position for securing them together and by full lines the same in the position it will assume when it is desired to separate said plates. Fig. 5 is an enlarged sectional view taken on line 5 5 of Fig. 6 of one of the locking members and a part of one of the binding-plates. Fig. 6 is a top plan view of the locking member detached. Fig. 7 is an enlarged view in elevation of a portion of one of the locking members, and Fig. 8 is a fragmental plan view of one of the binding-plates.

Like numerals of reference refer to corresponding parts throughout the different views of the drawings.

The reference-numeral 12 represents one of the binding-plates, which in the present instance I will designate as the "lower" plate and which comprises a horizontal or base portion 13 and an upright part 14 at right angles to each other. Each end of the upright portion 14 of the plate 12 is formed or provided with an inwardly-extending flange 15, which lies parallel with the portion 14, but a slight distance therefrom, as is clearly shown in Fig. 8 of the drawings. The base 13 of the lower binding-plate is provided near each of its ends with an upturned hook 16 to engage the lower ends of securing-springs, as will be presently explained. These hooks are preferably formed integral with the base 13 by punching them out of the same, and thus leaving openings 17, as is clearly seen in Figs. 5 and 8 of the drawings. The upper binding-plate 18 comprises an angular piece having a vertical portion 19 and a horizontal portion 20, which is in parallelism with the base 13 when the parts are in operative position. The end portions of the upper plate 18 fit between the flanges 15 and the portion 14 of the lower plate, which flanges will act as guides for the upper plate in its vertical movements. Each

end of the horizontal portion 20 of the upper plate is provided on its lower surface with a depending hook 21 to engage the upper ends of the locking members for the binding-plates. The binding-plate 12 is provided on the upper surface of its base or horizontal portion 13 with a number of tubular projections 22 to receive a corresponding number of pins or projections 23, secured to the lower surface of the horizontal portion 20 of the upper binding-plate. The projections 22 and 23 are preferably detachably secured to their respective plates by means of screw-threaded bosses 24, located on their adjacent surfaces, as is clearly shown in Figs. 3 and 4 of the drawings. Located at each end of the binding-plates is a locking member therefor, which comprises a main tube 25, having at its upper end a laterally-projecting thumb-piece 26, and below the same an eye or opening 27 to receive and engage the upper end of a spiral spring 28, which is located in said tube and is surrounded by an auxiliary tube 29, which telescopes in the tube 25, as will be readily understood by reference to Figs. 3 and 5 of the drawings. The lower end of the spring 28, which comprises a part of each of the locking members for the binding-plates, is connected to the hook 16 on the lower one of said plates, while its upper end is secured in the opening 27, which opening is also employed to receive the hook 21 on the upper binding-plate.

The operation is simple and as follows: The springs 28 of the locking members are connected at their lower ends to the hooks 16 at each end of the lower plate, when by reason of the tension of the springs the tubes 25 will be held with their lower ends near the base of said plate, while the inner tubes 29 of each of the locking members by reason of their gravity will be held with their lower ends resting on or near the base of the lower plate. By inserting the ends of the upper plate 18 between the flanges 15 and the portion 14 of the lower plate it is apparent that the hooks 21 on the portion 20 of the upper plate may be caused to engage the openings 27 in the tubes 25 of the locking members, thus yieldingly but securely connecting the binding-plates together. In this operation it is evident that the rods or pins 23 will fit in the tubular projections 22 and will telescope therewith.

The leaves or sheets 30, which it is desired to bind together, are provided near one of their edges with openings suitably spaced to receive the tubular projections 22, over which they are placed so that the leaves will lie flatly on the base portion 12 of the lower binding-plate, as is clearly shown in Fig. 1 of the drawings. It is evident that by employing the yielding or spring-actuated locking members for the binding-plates 12 and 18 that said plates may be separated from one another, so as to hold a greater or less number of leaves.

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

1. The combination with a lower binding-plate having a base portion and another part at an angle thereto provided at each of its ends with an inturned flange, of an angular upper plate having portions located in said flanged parts of the lower plate and another portion in a parallel plane with the said base, inwardly-extending projections on said plates, to telescope with one another, yielding connecting members loosely connected at one end to the ends of the base of the lower plate, and each having means at its other end to detachably connect it to one end of the upper plate, substantially as described.

2. The combination with two binding-plates each of which is angular in cross-section and has a horizontal portion and a vertical portion, the vertical portion of one plate having at its ends inturned flanges to engage the ends of the vertical portion of the other plate, inwardly-extending projections on each of the horizontal parts of said plates to telescope with one another, a locking member located at each end of said plates, each of said locking members comprising a main tubular portion having at one of its ends a thumb-piece and below the same an opening, a spiral spring located in said tubular piece and secured at one of its ends in said opening and at its other end to the horizontal portion of one of the plates, and an inner tube located around the spring within the main tube, and means on the horizontal portion of the other plate to engage the opening in the main tube, substantially as described.

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