L. E. BALTZLEY.

PAPER BINDING CLIP.

APPLICATION FILED JULY 2, 1910.

1,139,627. Patented May 18, 1915.

Fig. 1.

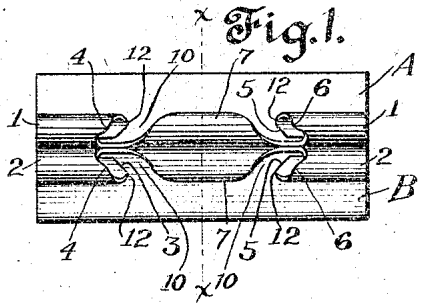


Fig. 2.

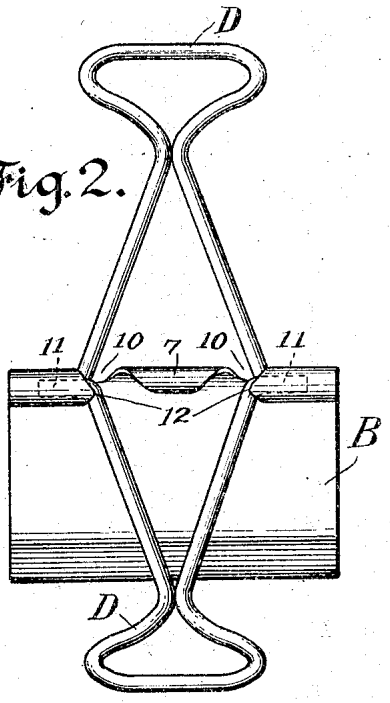


Fig. 4.

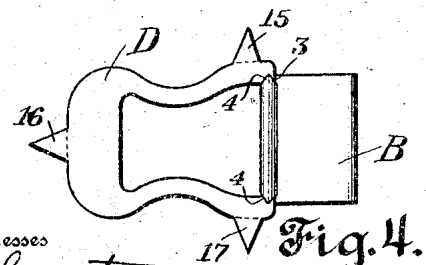


Fig. 5.

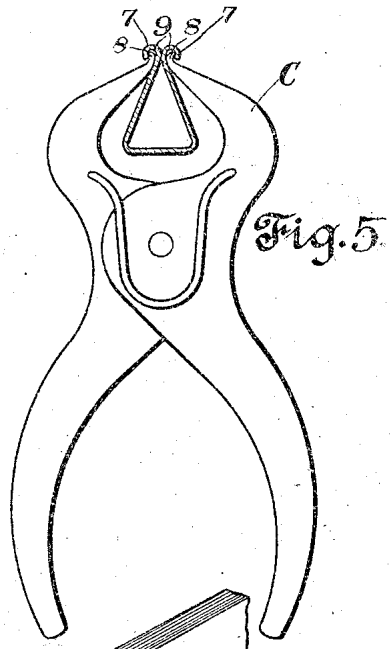
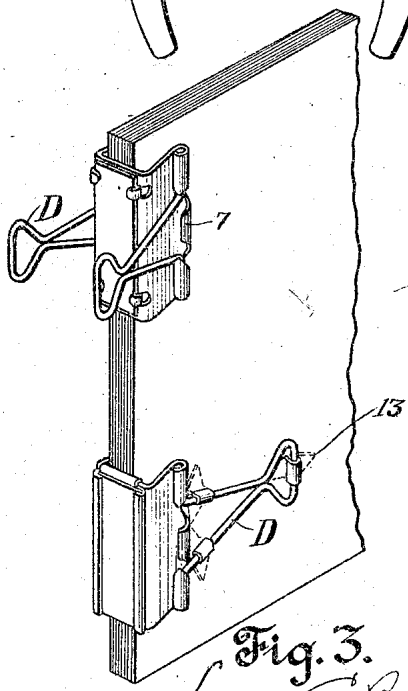


Fig. 3.



Witnesses

H. L. Goldenstein.

G. M. Cochenhaver.

Inventor

Louis E. Baltzley

By Edwin Baltzley

Attorney

UNITED STATES PATENT OFFICE.

LOUIS E. BALTZLEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

PAPER-BINDING CLIP.

1,139,627. Specification of Letters Patent. Patented May 18, 1915.

Application filed July 2, 1910. Serial No. 570,201.

To all whom it may concern:

Be it known that I, LOUIS E. BALTZLEY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Paper-Binding Clips, of which the following is a specification.

This invention relates to paper binding clips for use in temporarily and securely fastening several sheets of loose paper and the like together and it comprises a substantially triangular, preferably sheet-metal, resilient clip of convenient size having a back portion and two sides converging therefrom to a common line, together with operating handles secured to the sides to operate in connection with the back or the edges joining the back and the sides to spread the sides at the point where they converge against the tension of the metal of which the clips are made.

More specifically, my invention consists of the clips above described provided with jaws for the reception of handles of spring metal comprising two arms having a tendency to spread laterally. The means for holding the handles operate in connection with such handles to cause them to be secured yieldingly in an open position resting with portions of their length along the sides and extending past the back or yielding in a closed position adapted to bear against papers clamped between the two converging sides and in this latter position to thus assist in holding the papers flat. The handles are preferably made removable and of one piece of resilient metal, coöperating effectually with the jaws on the sides of the clip, whereby through minimum effort the sides may be opened against the tension of the metal when such handles are in the open position above described and when they are operating as levers with the back or the edges between the back and the sides as fulcrums.

The objects of my invention are the production of a very inexpensive binding clip adapted to be readily applied or removed to bind loose papers together or to remove one or more papers from a bundle temporarily bound, the production of a binding clip adapted to thoroughly and efficiently perform its functions, exerting considerable pressure upon the loose leaves which it is intended to bind together but easily removable when desired, and the production of a binding clip having removable handles adapted to be securely fastened in place through the resiliency of the metal from which the handles themselves are made.

A still further object of my invention is the production of an article of the class described in which when the handles are used considerable leverage may be had, while the ends of the handles which are to be pressed together to spread the extremities of the sides of the clip are separated a convenient distance to be readily gripped with the fingers when such handles are in open position.

In the accompanying drawings showing several forms of a specific embodiment of my invention, Figure 1 is a front view of the clip, showing the jaws and illustrating the peculiar cam formation for yieldingly holding the handles in opened or closed position; Fig. 2 is a side elevation, showing one spring lever in open position and the other in closed position; Fig. 3 is a perspective view, showing two clips clamped to a number of papers forming a book, the upper clip in such figure illustrating the handles in the position in which they are used to open the clip and the lower clip in such figure showing the handles in the position in which they are to be used to assist the clip in holding the loose leaves flat. Fig. 4 is a modification of the invention, showing the handle having means for fastening the same to papers to make a permanent binder; Fig. 5 illustrates a tool which may advantageously be used to operate the clips.

Referring to the drawings, A represents one side of the binding clip and B the other side preferably integral with the back, and the whole formed of spring steel, here shown as triangular in cross-section when in closed position, with the back constituting the base. The extremities of the sides are rolled into tubular form to provide jaws 1 and 2 which are provided with the cam surfaces 3 and 4 on the left and 5 and 6 on the right for coöperation with the opening handles or levers, as more fully hereinafter explained. Between these two sets of cam surfaces I may provide hooked portions 7 formed by cutting away a portion of the rolled ends

and spaced a sufficient distance from the sides to permit the insertion of hooked ends of the pliers C, as shown in Fig. 5.

The operating tool C is provided with hooked ends 8 adapted to pass into the opening 9 under the hooked portions 7 of the clip or, if desired, the hooked ends 8 of the pliers may be passed under the hooked portions 7 of the clip along the line x—x shown in Fig. 1. This may be done by slipping the hooked ends 8 in from the sides through the openings or spaces designated by the numeral 10. These openings or spaces 10 between the ends of the hooked portions 7 and the tubular jaws 1 and 2 are of sufficient size to permit the journaled ends 11 of the handles or levers D, shown in dotted lines in Fig. 2, to be inserted in the jaws 1 and 2 through pinching the arms of the handles together, inserting them under the hooked portions 7 and allowing them to spread into the jaws 1 and 2. The hooked portions 7 thus serve as guards to prevent the handles being removed except when they are in open or rearward position. In operation, when the spring levers are in the position last indicated, the back of the clip or the edges between the back and the sides A and B become the fulcrum for the levers to open the jaws of the clip.

In order that the journals of the handles may be yieldingly retained in the jaws 1 and 2, such handles are preferably formed of spring wire, as above pointed out, so that when they spread apart or are under spring stress they tend to bear firmly against the edges of the jaws 1 and 2; or, as shown in Fig. 4, when they tend to converge they bear against the outer edges of the turned-over portions forming the jaws of the clip.

I utilize the inherent spring action of the handles to cause them to spring automatically into either open or closed position and to yieldingly remain in such positions through coöperation with the cam surfaces 3—4, 5—6, on which they ride when moved from one position to another. The junctions of the surfaces 3 and 4 and of the surfaces 5 and 6 form apices 12. When the levers pass these apices, for instance, from the surfaces 4 and 6, they snap readily into open position because of the resiliency of the arms of the handles and they are then ready for use. When they pass from the surfaces 3 and 5 they snap to closed position, as shown in the lower clip in Fig. 3.

It is advantageous to allow the handles to be acted upon in passing to the closed position for a relatively longer period of time than when they are operated upon in passing to the open position and therefore to accomplish this purpose I make the cam surfaces 4 and 6 longer than the cam surfaces 3 and 5. This results in relatively more resistance to the handles when riding to closed position, and they therefore spring with less force toward such position than they do toward open position. The handles thus in closed position are held flat against papers bound between the jaws 1 and 2 under action of the cam surfaces 4 and 6, and likewise when opened the handles or levers are held in such position under tension by the action of the cam surfaces 3 and 5 upon the lever arms. Of course, the exact arrangement of the arms and cam surfaces is not to be construed as defining my invention exclusive of equivalents, for it is obvious that the particular arrangement of cam surfaces shown in the exact construction of the handles may be materially modified and still remain within the spirit of my invention as claimed. The handles may be made as shown in Fig. 4, wherein tangs are provided for securing them to the outer leaves or sheets of paper, and they may be made as shown in this figure, where the cam surfaces are upon the extremities of the jaws. In this instance the spring arms of the handles tend to bear toward one another.

To make a permanent binder of the clip, I employ staples, which are forced through the cover of the book over the lever and clenched on the opposite side, as shown at 12, 13 and 14, Fig. 3. The same thing is accomplished by the modification shown in Fig. 4, in which the folding lever is made of stamped sheet metal, and the binding points 15, 16 and 17, the equivalent of the staples, are made integral therewith.

The removable spring lever D is designed principally for use during the period in which a book or file is in the process of formation, when it is often necessary to add leaves to or take them from it. When completed and ready for filing, or permanent use, the spring levers can be quickly removed and thereafter, if occasion should arise to remove any of the papers, or add to them, the pliers C can be used by inserting its hooked jaws under the middle hook portion 7 of the clip, when pressure on the handles of the pliers will open the clip. But ordinarily I prefer to use the clip, leaving the handles in place, as they serve to hold the papers flat and are very inexpensive parts of the device.

It is important to provide an index or title card for each binder clip. I do this by making a separate cardholder and clenching it to the clip, as shown in the lower clip, Fig. 3. But my preferable form is to stamp up the card-holding fingers from the metal of the clip, as shown in the upper clip of Fig. 3. By cutting the index cards slightly wider than the distance between adjacent fingers, sufficient retaining grip is secured to hold the card firmly in position without further device.

While this clip is designed primarily as a

binding clip for books and files, it may as readily be used for the ordinary purposes of a paper clip, or the unusual ones for binding manuscripts, loose-leaf ledgers, scrapbooks, or books and papers for any other purposes. In letter filing it is designed to form a book of the letters of each correspondent and label them on the index card, and to do the same in document and all other filing.

What I claim is:—

1. A spring clip having converging sides, handle holding means formed from the sides, and removable resilient handles having spring arms the extremities of which are journaled in said handle holding means and confined therein under spring stress due to said resiliency, said handle holding means being provided with edges operating against said arms to prevent free swinging movement of the handles.

2. A spring clip having its extremities provided with spaced hollow members for handles, turned over portions of the extremities located between said spaced members and spaced away from the sides of the clip, the edges thereof forming guards for handles, handles journaled in said members and arranged to be removed only when turned rearwardly so that portions of them may pass beneath said turned over portions.

3. A binder clip for loose papers comprising a section of sheet metal having converging sides, each side provided with spaced handle receiving and retaining means located thereon, and a spring handle for each side having oppositely disposed ends journaled in said means.

4. A spring clip having converging sides, handle receiving and retaining means formed from the extremities of said sides, the means of each side comprising spaced jaws, and handles each having oppositely disposed ends journaled in the spaced jaws, the ends of each of said handles being of a combined length less than the space between the jaws of one side, whereby the handles may be removed.

5. A sheet metal resilient binder clip for loose papers comprising a back and integral sides, said sides provided with integral, oppositely disposed jaws having cam surfaces, and spring handles journaled in said jaws having portions thereof in contact with said cam surfaces, whereby the handles are maintained in any one of a plurality of positions through their resiliency.

6. In a binder clip oppositely disposed handle receiving means having cam surfaces and resilient handles journaled therein having portions thereof operating upon said cam surfaces to yieldingly hold the handles in forward or rearward position.

7. A binder clip comprising a section of sheet metal having converging sides, handle receiving means formed from the sides and extending outwardly therefrom in opposite directions, and spring handles having members journaled in said receiving means and maintained under spring stress therein, a portion of said spring handles operating against the means to yieldingly hold the handles in place.

8. A binder clip for loose papers comprising a section of resilient metal of substantially triangular shape in cross-section, the sides being separable at the apex and having formed thereon handle receiving and retaining means, and resilient handles carried by said receiving and retaining means on the outside of said sides, the said receiving and retaining means being provided with edges against which portions of said handles operate, and the said handles provided with offset ends journaled in said means, the resiliency of the handles serving to cause portions of them adjacent said offset ends to bear against said edges, whereby the handles are prevented from free swinging movement.

9. A sheet metal binder clip having extremities maintained in juxtaposition by the resiliency of the metal, handle receiving and operating jaws formed at said extremities and comprising separated, oppositely disposed, duplex cam surfaces and handles having opposite ends journaled in said jaws and operating against said cam surfaces.

10. A sheet metal binder clip having extremities maintained in juxtaposition by the resiliency of the metal, handle receiving and operating jaws formed at said extremities and comprising separated, oppositely disposed, duplex cam surfaces and handles having opposite ends journaled in said jaws and operating against said cam surfaces, one set of said cam surfaces being longer than the other.

11. A spring clip having hollow handle receiving means formed on opposite sides, and spring handles having members held under spring stress journaled in said means to coöperate by reason of said spring stress with said means to hold the handles in place.

12. The combination with a spring clip having converging sides and handle receiving means thereon, of a handle for each side, each handle having separated portions maintained under spring stress and ends shaped to be journaled in said handle receiving means, said handle receiving means being shaped to coöperate with the separated portions of the handles to hold the latter by reason of their spring stress where they are positioned.

13. A metallic binder clip comprising a resilient body portion, handle retaining means associated with each side of said body portion, an inherently resilient handle pivotally mounted in each of said means for

swinging movement to either of two extreme positions, said handle retaining means co-operating with the inherent resiliency of the handles to normally retain the handles in either of said extreme positions.

14. A binder clip comprising a section of sheet metal having converging sides, each side provided with two spaced integral handle receiving means extending outwardly therefrom, the handle receiving means of each side spaced apart, and a resilient handle for each side having oppositely disposed ends tending to spread a greater distance apart than said spaced handle receiving means and journaled in said spaced means whereby said spaced handle receiving means confine said ends under spring stress and prevent free swinging movement of the handle.

In testimony whereof I have affixed my signature, in presence of two subscribing witnesses.

LOUIS E. BALTZLEY.

Witnesses:
JOHN H. SIGGERS,
EDITH L. BROWN.