

No. 680,026.

Patented Aug. 6, 1901.

F. E. DE LONG.
PAPER FASTENER.

(Application filed Mar. 14, 1901.)

(No Model.)

FIG. 1.

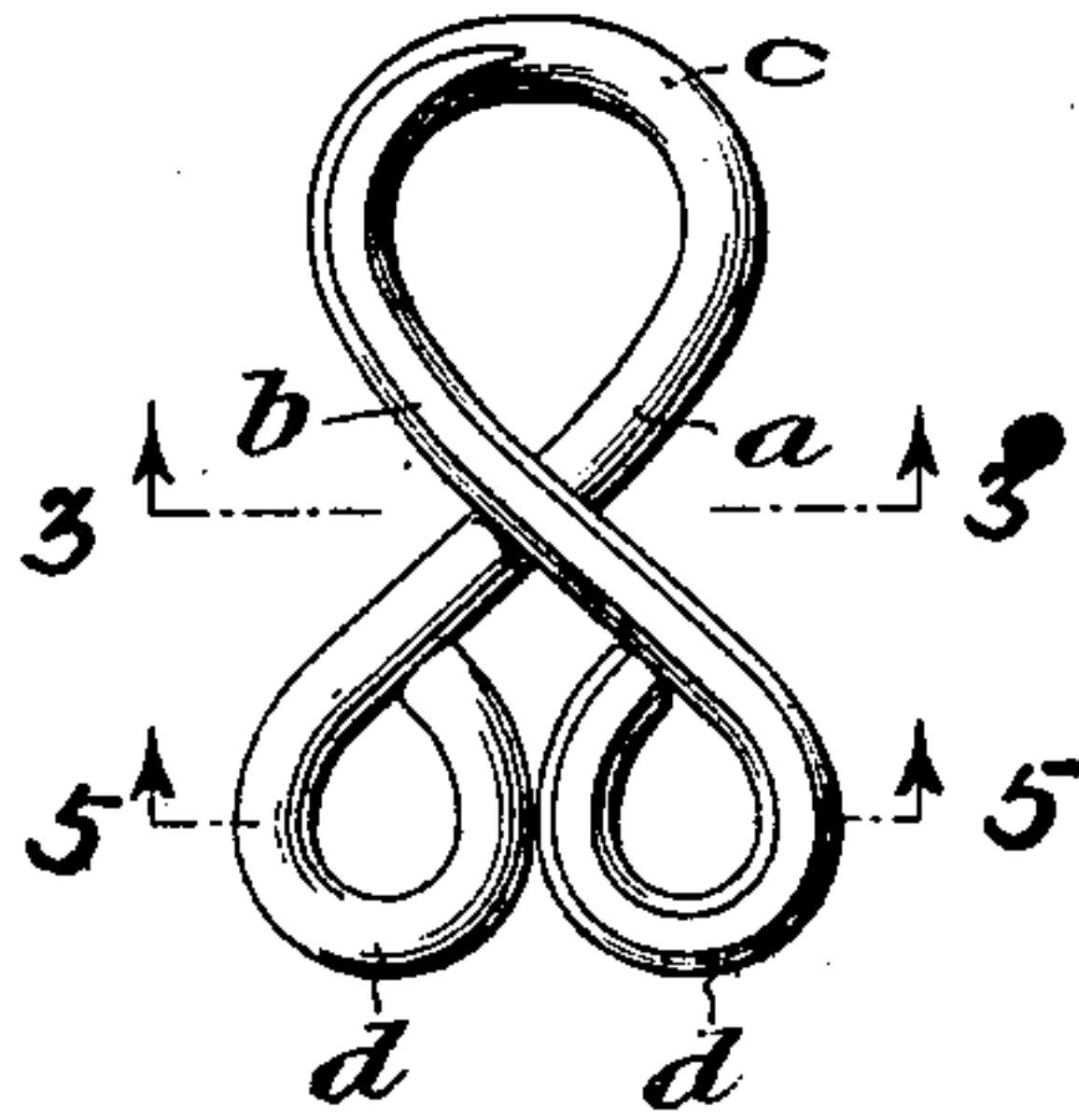


FIG. 2.

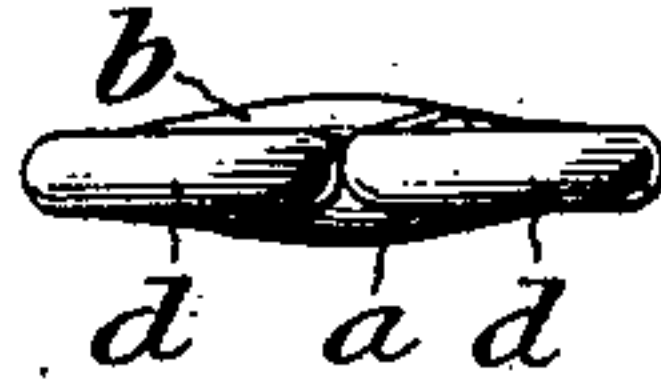


FIG. 3.

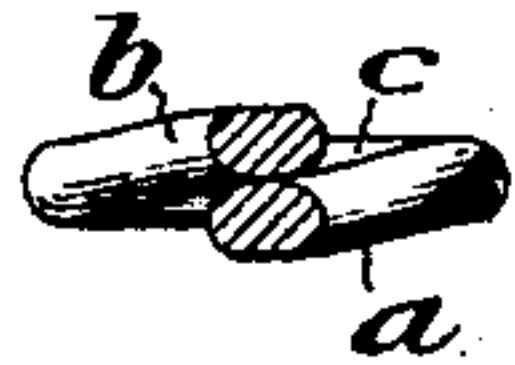


FIG. 5.

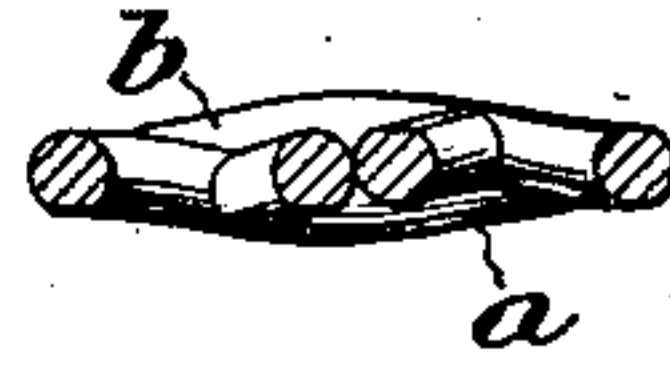
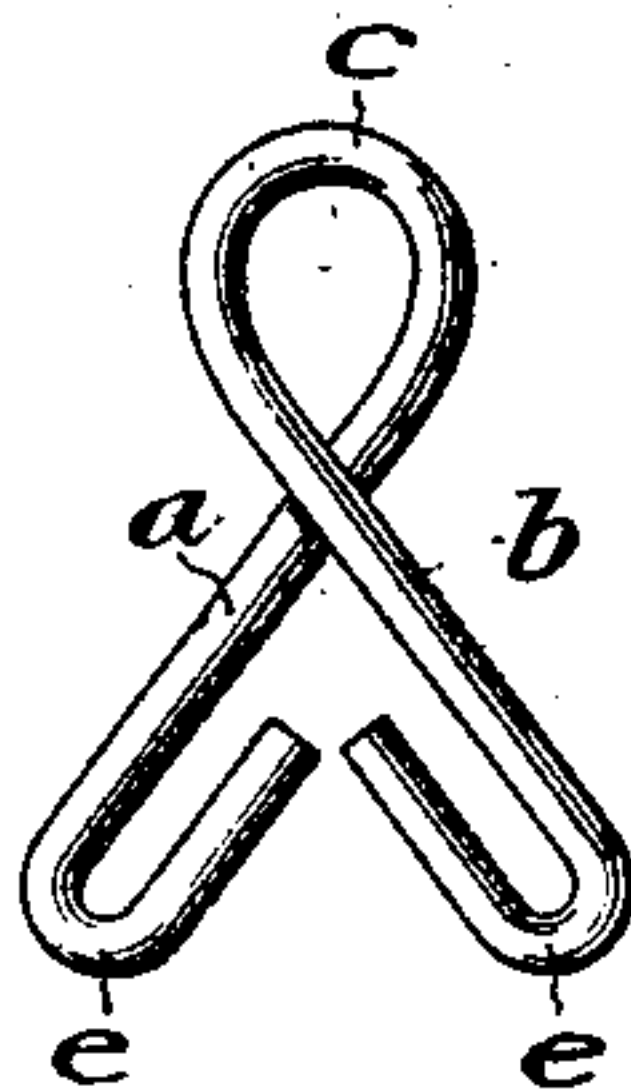


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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PAPER-FASTENER.

SPECIFICATION forming part of Letters Patent No. 680,026, dated August 6, 1901.

Application filed March 14, 1901. Serial No. 51,042. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. DE LONG, a citizen of the United States, residing in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Fasteners, of which the following is a specification.

My invention relates to a class of fasteners formed of wire, and adapted to secure together a number of assembled sheets; and especially relates to the particular type of fasteners arranged to engage with the sheets by clasping the edges of said sheets between a pair of arms, as opposed to the type which engage the sheets by extending through punctures therein.

It is the object of my invention to provide paper fasteners of the type referred to which, while adapted to very firmly secure together the papers to which they are applied, shall be more easy of application and removal than devices of this class as heretofore constructed, and shall, moreover, possess further advantages as hereinafter specified.

In the accompanying drawings I show, and herein I describe, good forms of convenient embodiments of my invention, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the accompanying drawings,

Figure 1 is a view in front elevation of a fastener embodying my invention.

Figure 2 is a view in end elevation of the fastener shown in Figure 1.

Figure 3 is a sectional view of the fastener, section being supposed on the dotted line 3-3 of Figure 1.

Figure 4 is a view in front elevation of a fastener embodying a modified form of my invention.

Figure 5 is a sectional view of the fastener shown in Figure 1, section being supposed on the dotted line 5-5 of said Figure 1.

Similar letters of reference indicate corresponding parts.

Generally stated, my invention comprehends the provision of a paper fastener formed of wire, and consisting of a pair of crossed arms, the inner ends of which merge into a base continuous thereof, and the outer ends of which are formed into eyes or loops,

which latter preferably exist in close proximity to each other, and preferably also in approximately the same plane.

In the accompanying drawings, *a b* are the crossed arms of the paper fastener, and *c* is the base into which said arms merge.

The bends at the free ends of the arms of the fastener shown in Figure 1 are designated *d*, and they are in the formation of the device developed by bending the wire end portions of the arms inward and toward each other, the extremities of the wire being carried in close against the inner sides of the respective arms, forming closed eyes.

I prefer in all embodiments of my invention, and whether the bends be completely closed as in Figure 1, or partly closed as in Figure 4, to form the bends by turning the wire ends inward and toward each other, for the reason that the cut ends of the wire, when the device is thus constructed, are located between the crossed arms, and are, so to speak, protected by the respective arms.

I prefer to slightly curve one or both of the arms *a, b*, so that the bends at their extremities will lie approximately in a common plane, with the result that when the device is engaged upon the papers a very tight clasping action of the device thereon through the arms and bends will be secured.

The loops or eyes constitute substantial bodies upon which the finger and thumb of the user may, in the application and removal of the device, take firm hold, and, furthermore, when said eyes or loops are, as is preferable, arranged close together side by side, the thumb and finger of the user when closed upon the respective arms of the device make contact with both said eyes or loops,—that is to say, the aggregate breadth or spread of the two bend equipped ends is so small, that when the thumb and finger close upon one of said bends they will also close upon the other, and the ease of application and removal is thus enhanced.

This feature of close adjacency of the two eyes or loops, so that the thumb and finger closing upon one will also close upon the other, is especially desirable in the removal of the device from acting position on the edge of papers, in which position one arm only is, of course, uppermost, the other being be-

neath the papers,—as it will be understood that when the thumb is placed upon the uppermost or visible eye, a finger placed beneath the papers and closing up against the thumb will rest directly upon the lowermost eye, and the device may then be very quickly and conveniently withdrawn from the papers, said eyes or loops, furthermore, as above referred to, constituting, apart from this feature, devices through which a strong hold may be taken upon the fastener.

I prefer that the eyes or loops at the ends of the arms should be opposite the base, that is to say, be so arranged that the distance between their axes should exceed but little, if any, the breadth of the base at its broadest portion.

To this end I prefer when I form the device in the shape shown in the Figure 1 that the eyes shall be in contact with each other.

It is desirable to have the arms take strong frictional hold upon the papers, and desirable also to have the arms as short as possible so as not to extend over matter printed or written on the sheets or interfere with the rolling of the sheets,—and these desiderata are effected in my improved fastener, for, as will be understood, by the provision of the eyes or loops the arms are given an additional frictional surface, and at the same time their length remains small in proportion to their total frictional surface in contact with the papers.

I prefer to make the device of spring wire, and may also as shown in Figures 1 and 3 slightly flatten the wire arms to diminish the thickness of the device and cause the arms to present as little projection above the surface of the papers as possible.

In the form of my invention illustrated in Figure 4, the inwardly turned wire ends are arranged in parallelism with their respective arms, thus forming what may be termed loops designated *e*, as distinguished from completely closed eyes.

In its broadest aspect my invention comprehends a wire fastener having the crossed arms with the inwardly turned ends whether the bends so formed are completely closed eyes as in Figure 1, or the open loops as in Figure 4.

Having thus described my invention, I claim—

1. A paper fastener consisting of a pair of crossed wire arms adapted to rest as to their entire length respectively upon and in contact with the opposite sides of the papers to be secured, said arms merging at their inner ends into a transversely extending base continuous of both and at their outer ends respectively formed with inwardly turned bends, substantially as set forth.

2. A paper fastener consisting of a pair of crossed wire arms adapted to rest as to their entire length respectively upon and in contact with the opposite sides of the papers to be secured, said arms merging at their inner ends into a transversely extending base continuous of both and at their outer ends respectively formed with eyes, said eyes being in a substantially common plane, substantially as set forth.

3. A paper fastener consisting of a pair of crossed wire arms adapted to rest as to their entire length respectively upon and in contact with the opposite sides of the papers to be secured, said arms merging at their inner ends into a transversely extending base continuous of both, and at their outer ends respectively formed with eyes, the axes of said eyes being separated a distance approximately equal to the breadth of the base, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 6th day of March, A. D. 1901.

FRANK E. DE LONG.

In presence of—

S. SALOME BROOKE,
THOMAS K. LANCASTER.