2 Sheets—Sheet 1.

R. M. MERRILL.

TEMPORARY BINDER.

No. 181,796. Patented Sept. 5, 1876.

Fig. 1.

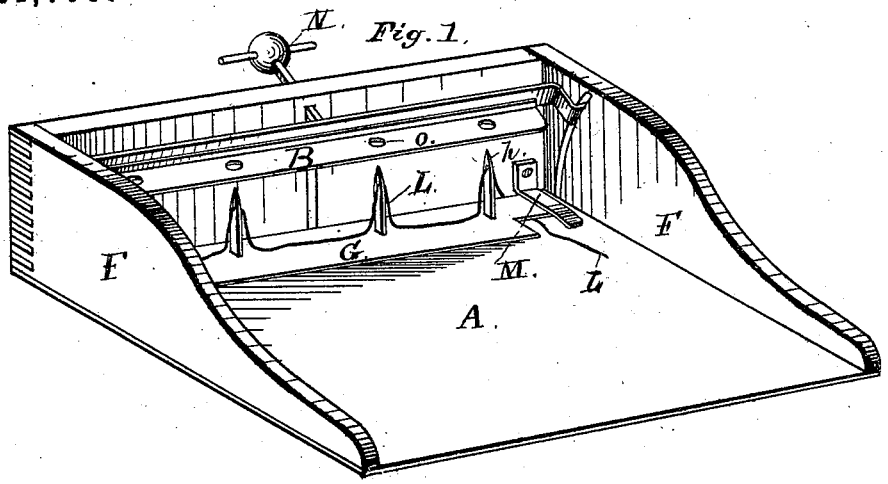


Fig. 2.

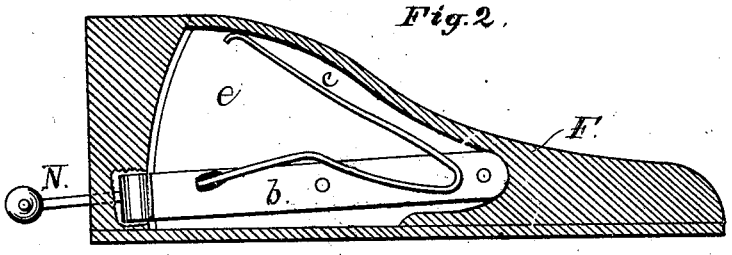


Fig. 3.

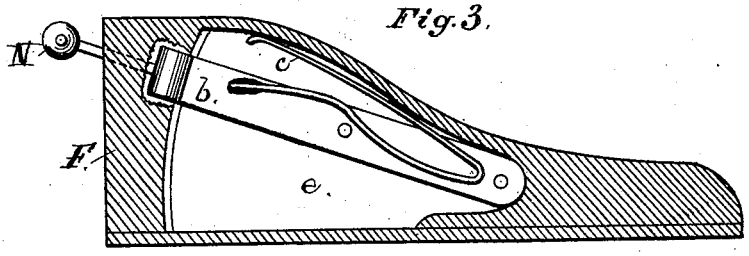
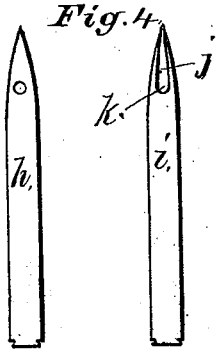


Fig. 4.



Witnesses

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2 Sheets—Sheet 2.

R. M. MERRILL.

TEMPORARY BINDER.

No. 181,796. Patented Sept. 5, 1876.

Fig. 5.

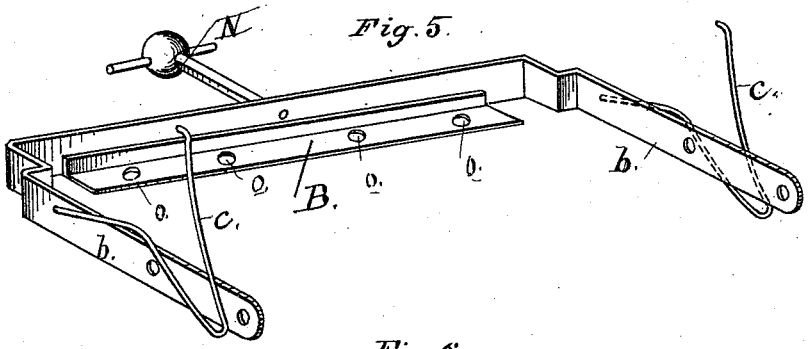


Fig. 6.

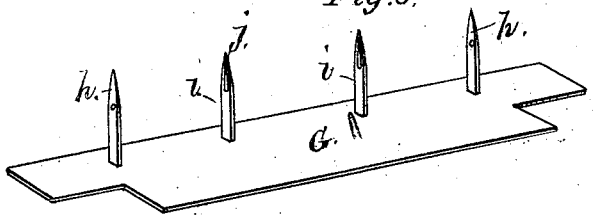


Fig. 7.

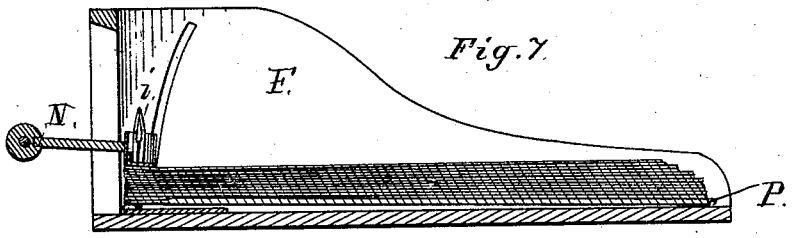


Fig. 9.

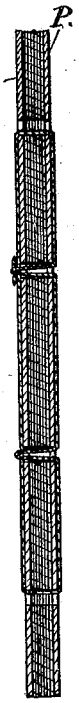
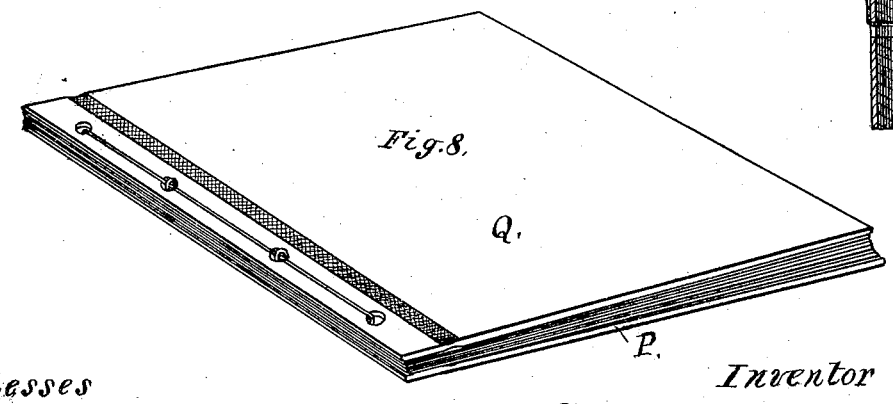


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

RUFUS M. MERRILL, OF ENGLEWOOD, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM A. AMBERG, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN TEMPORARY BINDERS.

Specification forming part of Letters Patent No. **181,796**, dated September 5, 1876; application filed July 20, 1876.

To all whom it may concern:

Be it known that I, RUFUS M. MERRILL, of Englewood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Letter and Paper Files and Binders; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of rerference marked thereon, which form a part of this specification.

My improvements consist in the employment of a binding cord or thread, combined with needles, on which the letters or papers are impaled, and a presser-bar, operating to press the letter or paper upon such threaded needles; in the employment of needles having slits at their puncturing ends reaching from the point to the eye; in combining the needles and the binding-cord with a removable needle-plate and holder; in a peculiar construction of the presser-bar with lever-arms, which, with their reacting-springs, are concealed in cavities cut out in the end pieces of the frame; and in other details hereinafter named.

In the drawings, Figure 1 is a perspective of one form of a letter-file embodying my improvements; Fig. 2, one of the sides or end pieces of the same, showing the cavity for the reception and movements of the arm of the presser and of the spring, the presser being down; Fig. 3, the same view, the presser being up and spring spread or uncompressed; Fig. 4, an enlarged view, in elevation, of one of the eye-slitted needles, and also of one of the non-slitted ones; Fig. 5, a perspective of the presser attached; Fig. 6, a perspective of the needle-holder detached; Fig. 7, a cross-section through a file-holder and its contents before applying the second cover and securing the book and covers together; Fig. 8, a perspective of the book as filed and bound, and Fig. 9 a cross-section through the needle-punctures and binding-thread.

A is the frame or case of the file; B, the presser-bar; *b b*, its swinging or pivoted lever-arms; *c c*, its springs; *e*, the cavity in the ends F, in which the lever and spring work; G, the removable needle-holder; *h h*, the end needles, with eyes near their points; *i i*, the remaining needles, each having a slit, *j*, leading from its point to its eye *k*, all the needles being permanently secured to the holder G. L is a string or cord for binding the books, and which is shown in Fig. 1 in the loose condition, ready for impaling a letter or paper upon the needles; M, springs or clamps, one at each end, under which the needle-holder may be slipped and held to place; N, a handle, which may be of any appropriate kind, on the presser-bar, and by which the same may be lifted, when desired, against the action of the springs *c c*, which serve to restore it to place to press upon the letters placed in the file. *o o o* are holes in the presser-bar to allow it to be pressed down and over the needles. P is a loose cover, which may be bound with the letters, the same being impaled upon the threaded needles before the letters are filed therein, and Q is another cover, which may be impaled on the needles when enough letters to complete a volume shall have been filed, thus affording a cover for each side of the book.

In using this file and self-binder, the needles are first threaded with the binding thread or cord, as shown in Fig. 1, and which is left loose enough between the needles to permit the presser-bar B to come down upon the needle-holder G and over the threaded needles, thus leaving the thread free to lie on both sides of each needle, from its eye downward. Upon now lifting the presser-bar above the needles, in order to file a paper, the latter is placed in position in the file with its edge against the back of the frame, and then upon relaxing the hold upon the handle of the lifted presser-bar, the latter forces down the paper and impales it on the needles, and clamps it upon the holder G, the doubles of the thread extending up through the paper to the needle-eyes. This being repeated, as each several paper is filed, until enough have been accumulated together to form a book, the remaining loose cover may now be impaled in the same manner to complete the covering. In this condition the eyes of the needles project beyond the filed material, and the loose ends of the

thread (which, if desired, may previously have been held by passing them severally under the ends of the needle-holder,) now need only to be tied together. For this purpose the needle-holder, with the file thereon, may be slipped away from the springs M M, and the ends of the thread or cord drawn through the eyes of the non-slitted end needles. The cord is then drawn upward through the slits of the slitted needles, which may be of any desired number, and the ends are passed through the loops thus formed, and after being next drawn tight, they are tied together, as shown, the whole thus forming a bound volume. The needles may now be withdrawn, as they are no longer connected, positively, with the thread. This leaves the book complete, and entirely free from the needle-bar and its needles, upon replacing which in the frame the file is again ready for the filing and binding of another set of papers.

It will be observed that the needles form no part of the completed book, but perform the same functions, above described, for all books filed in the binders.

Instead of the springs M, any appropriate or equivalent device may be used which will hold down the needle-holder and admit of its ready removal.

Instead of the handle N projecting through the back of the frame, a handle may be placed directly upon the top of the presser-bar, as in the Amberg files, patented July 6, 1869.

By dispensing with the side pieces or ends F, the device may be converted into a letter or paper clip, the presser-bar in such case being made to work by means of a spring above the back.

I claim—

1. The combination, with a letter or paper file and binder, of a needle or needles having a slit extending from its point to its eye, substantially as and for the purpose set forth.

2. In a letter file and binder, the combination of a single binding-cord with a set of eye-pointed needles, one or more of which is slitted from its puncturing end to its eye, and with a presser-bar or its mechanical equivalent, the combination operating substantially as and for the purpose set forth.

3. A removable plate or needle holder, provided with needles having eyes, as described, and near their points, the same being adapted to receive a binding-cord, to carry it through the filed papers, and then to be withdrawn from the papers, leaving the binding-cord therein, substantially as set forth.

4. The combination, with the side pieces F, of the pivoted and swinging presser-bar B, provided with lever-arms *b* and springs *c c*, and operating substantially as and for the purpose described.

5. The described combination of the file-case, lever presser-bar, needle-holder and needles, and single binding-cord, the combination operating substantially as set forth.

RUFUS M. MERRILL.

Witnesses:

CHAS. B. SNOW,

J. C. CUSHMAN.