2 Sheets--Sheet 1.

N. S. OTIS.

Temporary Binder.

No. 168,179. Patented Sept. 28, 1875.

Fig 1.

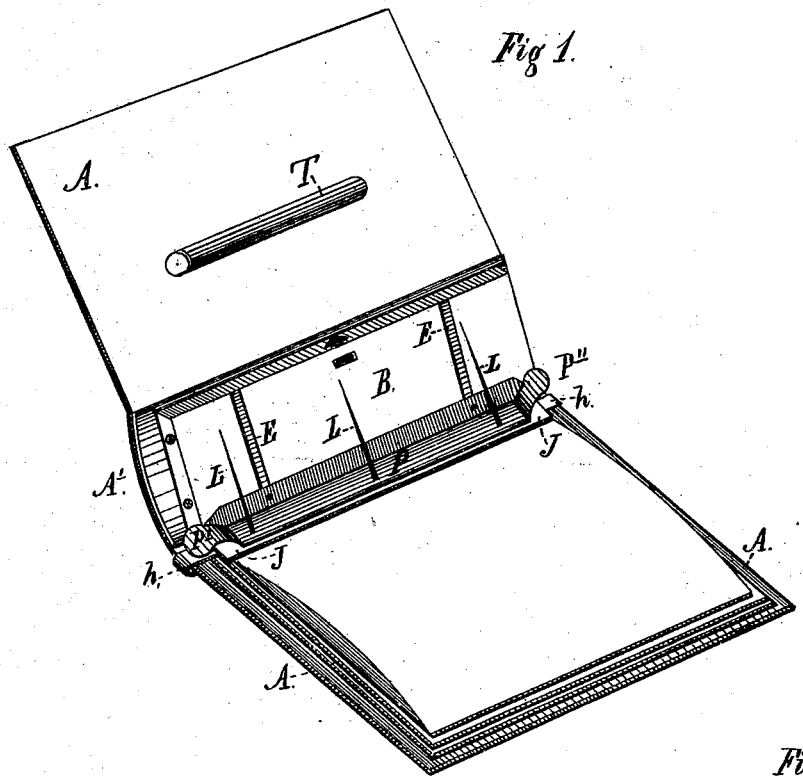


Fig 2.

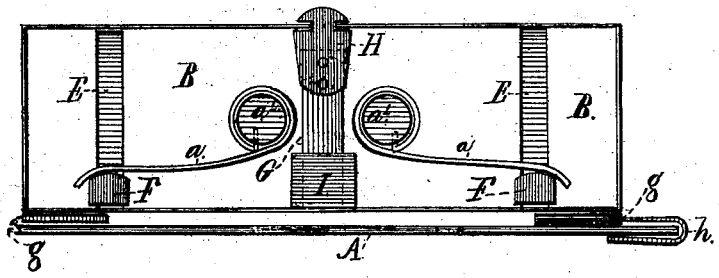
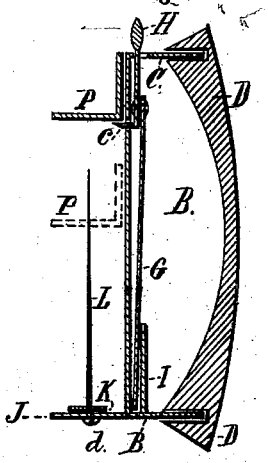


Fig 3.



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2 Sheets--Sheet 2.

N. S. OTIS.

Temporary Binder.

No. 168,179. Patented Sept. 28, 1875.

Fig 4.

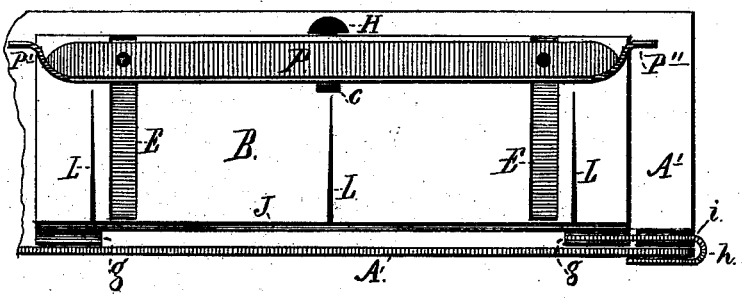


Fig 5.

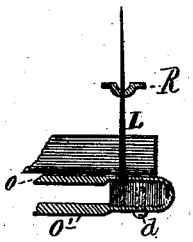
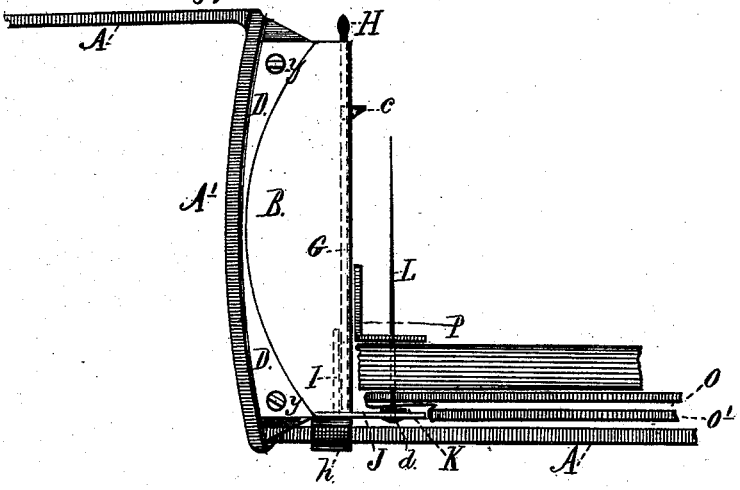


Fig 6.

Fig 7.



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UNITED STATES PATENT OFFICE.

NEWTON S. OTIS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM S. GRAY, OF SAME PLACE.

IMPROVEMENT IN TEMPORARY BINDERS.

Specification forming part of Letters Patent No. **168,179**, dated September 28, 1875; application filed September 6, 1875.

To all whom it may concern:

Be it known that I, NEWTON S. OTIS, of the city, county, and State of New York, have invented certain new and useful Improvements in Temporary Binders, of which the following is a specification:

My invention relates to that class of devices designed and arranged to file, bind, and preserve, in a permanent and compact form, letters, circulars, sheets of legal and other documents, and all papers of that nature that it is desirable to preserve either in the order of their reception or otherwise. It consists, mainly, in a series of improvements on the old form of the "French file and binder," in use for many years, which is shown complete in all the details in the Letters Patent of the United States granted to Thomas J. Gaffney and Albert P. Williams on December 3, 1872, and numbered 133,580. Said invention therein described consists, first, in combination with the ordinary covers of a metallic slotted back, which is provided on one side with a detachable flange or strap armed with needles, to penetrate the papers to be filed, and on the other side with a spring-clamp, through which the needles pass, the clamp serving to press the papers tightly together; second, in connection with the ordinary outside covers, of supplemental or additional covers, which are detachably connected to the metallic back of the outside cover, and fitted with the needles, the latter being perforated near their points for attachment to a permanent binding-strip, these additional covers being designed, with the aid of the needles and extra binding-strip, to permanently bind together the papers filed therein, and removed from and leaving the outer covers and case, with its metallic back and spring-clamp, in condition to receive another set of needles and a new additional cover.

The improvements I have made on the same, and which form the subject of this application for Letters Patent, consist of a new form of spring-clamp, so shaped for operation and manipulation that it will permit the filing beneath it of papers of any width, without demanding an extra-sized back for all varied sizes of papers; also, in a new arrangement for permanently binding the papers in the permanent or additional covers, by means of which the perforated needles are dispensed with, and the binding permitted at any time without regard to the quantity of papers filed. It further consists in an adjustable arrangement for connecting the metallic back to the lower cover of the binder, so that the binding-machine will always retain an upright position; also, in other changes in the details of construction, all of which will be fully pointed out and described.

In the drawings, which form an essential part of this specification, Figure 1 is a perspective view of a letter file and binder, in which is fully embodied my invention. Fig. 2 is a rear elevation of the metallic back or binding-machine, showing the arrangement of springs, slides, &c. Fig. 3 is an enlarged cross-section of the binding-machine, with its backing of wood, by means of which it is attached to the covers. Fig. 4 is a front view of the binding-machine, showing the form and construction of the clamping-bar and the binding-needles. Fig. 5 is a view of the permanent binding-covers, showing the binding-needles and a section of the binding bar or strip. Fig. 6 is a perspective view of the binding bar or strip, and Fig. 7 is an end view of a file and binder complete.

Similar letters of reference in the various drawings will indicate corresponding parts.

In the practical use of the French file and binder, as above detailed, many serious defects have been found which impaired its usefulness. It limited the width and size of the papers that each file would accommodate, thus necessitating the purchase of many different sizes of binding-machines and covers. The use of the binding-needles perforated at the top, and the mode of binding, was such that the papers to be bound in must necessarily rise to the entire height of the binding-needles before the binding-strip could be attached and fastened by the cross-wire.

The binder in use was clumsy to handle, and was difficult of manipulation, for the reason that no arrangement was provided for holding the binding-machine in an upright position; consequently when raising the clamp-

ing-bar (which requires some little exertion, owing on the stiff springs) the tendency was almost invariably to slip from the hands and to fall flat on the table or desk. An upright position is an absolute necessity, and papers can only be filed when the binding-machine is in that position. These defects I have, by my present improvements, fully overcome. In my improved file and binder papers of any width or size can be inserted, and but one width of binding-machine and outside covers is actually needed, as the additional or permanent binding-covers can be inserted of any desired width. It is advisable, however, to provide two or three sizes of machines for the better manipulation of the extra-wide papers of corporations, like railroad and insurance companies; still one size of my binding-machine can be made to take the place of the quantity of sizes now produced.

By my new method of permanently binding the papers after they are removed from the machine, I am enabled to bind them at any time without regard to the quantity of papers, and without waiting until the needles are full to their top. This is an important point, inasmuch as it is frequently desired to bind up the papers at short intervals, instead of waiting until the file is full. The use of the old binder was limited for this reason.

The manipulation of the binding-machine is also rendered perfect; and by my method of construction it is always held in an upright position, and it is absolutely impossible for it to fall flat, or to slip from the hands of the operator when raising the clamping-bar for the insertion of papers.

A designates the outer covers, and A′ the leather flexible back, to which they are attached. B is the binding-machine, which is also attached to the leather back A′ between the covers A, as will presently be more fully described. This binding-machine is constructed in two parts—the face or shell C of sheet metal, and the back D of wood, which partially enters the shell C, also covering a portion of the top and bottom of the same. This arrangement is shown best in Fig. 3. The face or metal shell C is firmly attached to the wood back D by means of two or more screws, *y y*, at each end. This permits the ready removal of the shell C, and gives easy access to the working parts in the interior of the binding-machine B. The shape of the wood back is made to conform to that of the leather back A′, the material of which and the covers A is lapped over the wood, thus connecting the covers, leather backs, and binding-machine firmly together. E E are two slots cut into the face of the metal shell C of the binding-machine, and are provided for the entry of two pins, which are riveted to two slides, F F, on the interior of the shell. *a a* are two springs fastened to and encircling the stands or shoulders *a′ a′* projecting on the interior of the shell. The arms of these springs are extended over the top of the slides F F, pressing and keeping them firmly at the bottom of the slots E E. G represents a vertical spring on the interior of the binding-machine, to which is attached an extension-piece, H, which reaches through the top of the shell C, forming a handle, by means of which it is operated. On the face of this extension is a small catch, *c*, which projects through an opening in the face of and outwardly beyond the shell C. The base of this spring is inserted in a socket, I, at the base of the binding-machine. This socket obviates riveting, and permits the instant removal of and the insertion of a new spring, when desired, while, if riveted to the shell, much labor and trouble would be involved in removing them. To the base and outside of the binding-machine, and projecting beyond its face, is attached a flange, J. This projecting flange forms the base, to which is attached the binding-needles L, the latter being first attached to a separate strip, K. This strip K rests upon and is fastened to the flange J by means of screws *d* inserted from beneath the flange J. Between the strip K and the flange J the back of the additional or permanent binding-covers are secured while the papers are temporarily filed, one cover, O, being adjusted on the needles before the strip K is secured in place on the flange J by the screws *d*.

P is the clamping-bar. It is formed from sheet metal bent at right angles, the one angle coinciding in width with that of the flange J, which projects from the base of the binding-machine, and upon which it rests. The other angle rests against the face of the binding-machine, and is permanently connected with the slides F F by means of the pins passing through the slots E E. This clamping-bar is provided with apertures, through which the needles L pass as the bar is raised or lowered. It is also provided at each end with curved and raised handles P′ P″, which are always above the base of the clamping-bar, and any papers beneath it, sufficiently to admit the entrance of the thumb or fingers when it is desired to raise the bar in order to insert papers. As the clamping-bar is raised to its extreme height it clears the top of the needles L, and is retained in such position by means of the spring-catch *c*, which will project under it until it is released by pressing back the handle H. The needles L are simply tapering wires of ordinary spring-wire slightly tempered, so that they can be readily bent without breaking them. They are permanently attached to a binding-strip, and are so furnished ready for insertion in the binder. R is the final or finishing binding-bar or strip. It is struck out of sheet metal, and is provided at its center longitudinally with a groove or channel of depth enough to receive the needles when they are bent down into it. It is provided with perforations, through which the needles pass. The view or cross-section in Fig. 5 plainly illustrates its construction and application.

To the base of the binding-machine B, and at each end of the same, I form or attach two sockets, *g g*, which may be of such length as may be desired. I also provide a metal clasp, *h*, which fits into the same, and extends outwardly and around the edge and beneath the cover A. This clasp slides out and in at will, and when in place will hold the binding-machine B snugly to the cover *a*, and always keep it in an upright position, as shown in Fig. 1.

In the case of using wide covers with a narrow binding-machine, or for the purpose of gaining additional strength, or to enable the use of a straight slide, not bending beneath the cover, as stated, an additional socket, *i*, may be attached directly to the cover *a*, and on a line with the socket *g* at the base of the binding-machine. This arrangement is shown plainly in Fig. 4. When sufficient papers or letters are filed, and it is desired to remove and permanently bind them, the screws *d d* are removed, and the binding-covers *o* and *o'* are taken out of the binder with the papers filed on the needles L. The loose cover O' is then folded over the papers and perforated by the needles projecting through it. The binding-strip R is then applied over the needles, and pressed down on the outside of the cover O'. Each needle is then bent over laterally and down into the channel in the binding-bar R, the channel being deep enough to conceal the bent portion of the needles.

It will be seen that by this arrangement the papers can be permanently bound at any time, be they more or less in number. This was an impossibility in the old form of binding with perforated needles.

It is obvious that extra sets of permanent binding-covers O O', needles L, and binding-strips K and R can at once be inserted in the file for the reception of a new lot of papers and letters. The final binding-strip R belonging to the set in the binder, is retained until needed in a socket, T, on the inside of the upper cover A.

It is important to note the following facts: That in the French file and binder, and the Gaffney and Williams binder, (both being the same,) the clamping-bar handles lie flat upon the projecting base-flange, or upon the papers in the file. For this reason it has been almost impossible to raise the clamping-bar when papers were filed that extended outside of the handles. Hence, its capacity for use is limited to papers that will not so extend. This fault calls for a large number of sizes, making the manufacture and production costly.

In my improved form of clamping-bar the handles are raised, and permit papers of any width to be inserted, and there is always room for inserting the thumbs by which to lift the bar. The capacity of the apparatus is thus vastly increased.

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

1. In combination with the covers O and O' and binding-strip K, to which are attached the needles L, the grooved or channeled binding-bar R operating to permanently bind letters or papers, substantially as and in the manner herein shown and set forth.

2. In combination, the sockets *g* and *i*, attached, respectively, to the base of the binding-machine B and the lower cover A, and the sliding metal clasp *h*, arranged, applied, and operating to retain the binding-machine in an upright position, substantially as and for the purposes as herein shown and set forth.

In testimony whereof, I have hereunto set my hand this 17th day of August, A. D. 1875.

NEWTON S. OTIS.

In presence of—
A. L. MUNSON,
E. S. WARD.