(No Model.)

J. S. SHANNON.

PAPER TYING APPARATUS.

No. 344,995. Patented July 6, 1886.

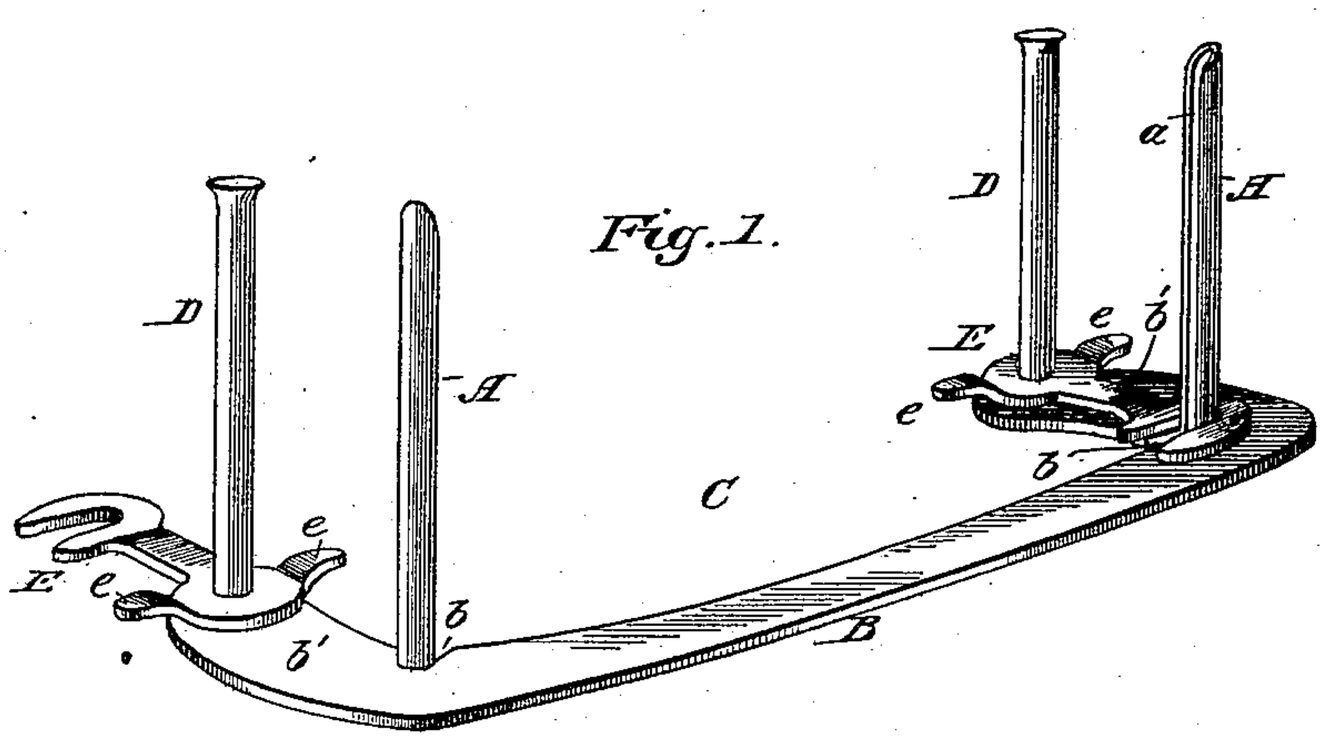


Fig. 1.

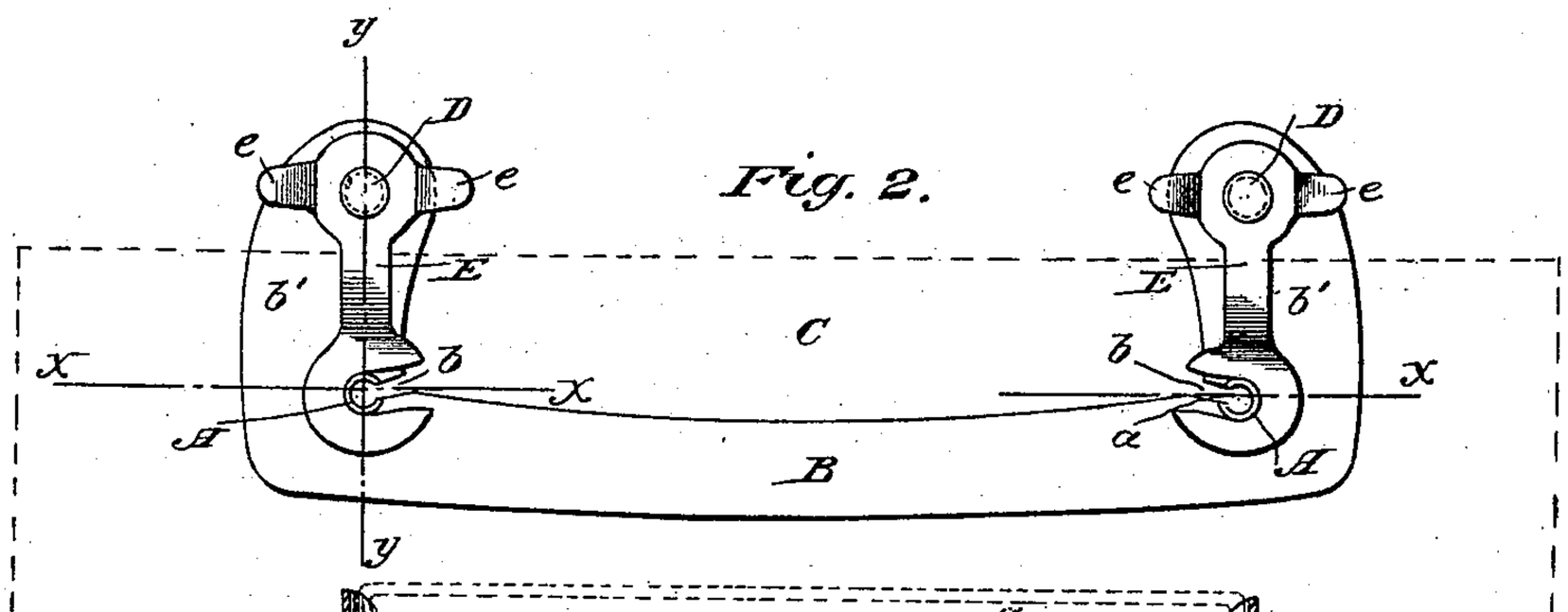


Fig. 2.

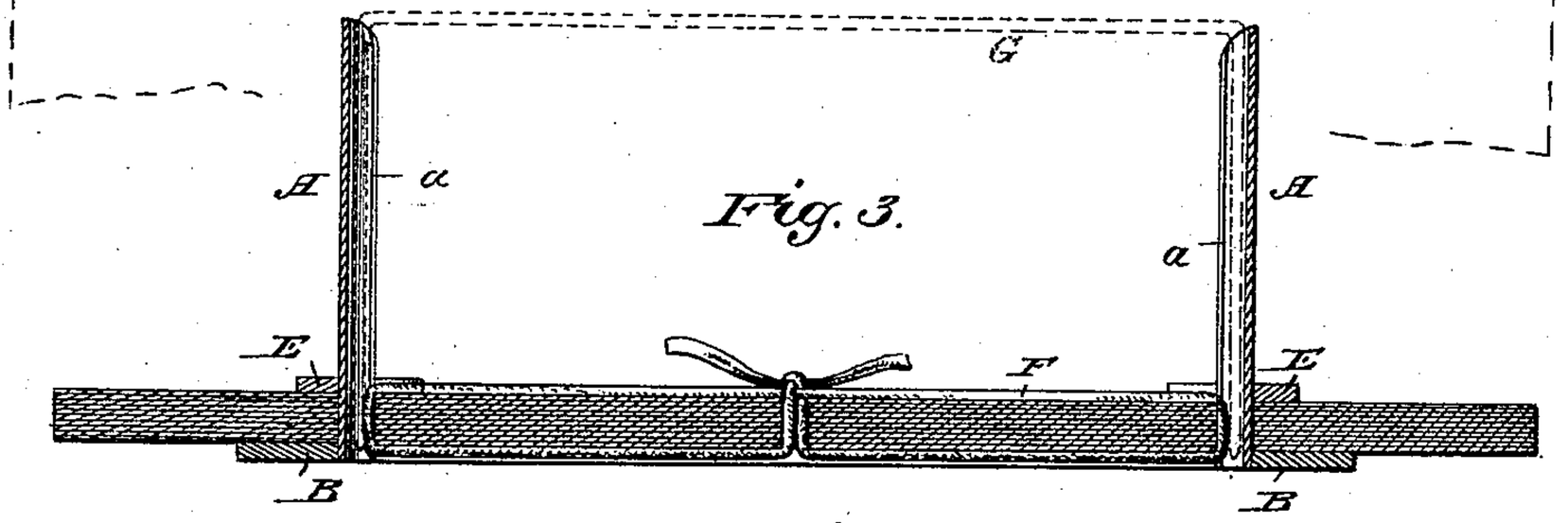
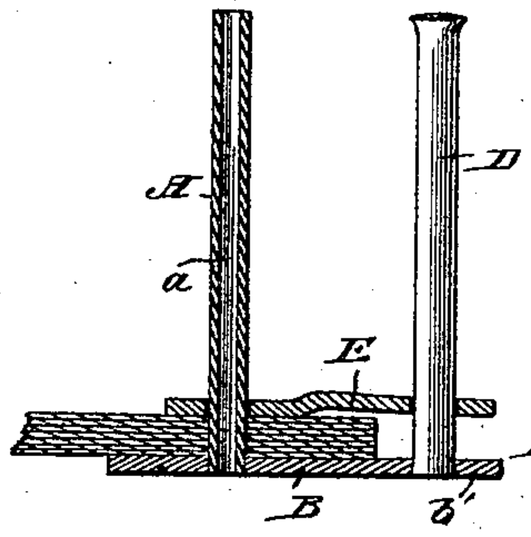


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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PAPER-TYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 344,995, dated July 6, 1886.

Application filed October 12, 1885. Serial No. 179,626. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. SHANNON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Paper-Tying Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a device designed to serve as an auxiliary to the well-known operation of securing together a number of sheets of paper by passing a tape or cord through perforations formed by puncturing through a collection of sheets along one edge thereof, and then suitably tying the tape or cord in a knot upon the top sheet.

The objects of my invention are to provide simple and convenient means for securing and holding the sheets in a compact condition during the tying operation, with the perforations of all of the sheets in register, and also to permit the ultimate number of sheets which are to be fastened together to be first punched through in separate and successive lots, and then all brought and held together with their perforations in register; also, to facilitate the operation of passing or drawing a fastening cord or tape through and across the collection of sheets and to permit the ready removal of the sheets after the same have been tied together; also, to permit, preparatory to the tying operation, of the ready removal of any intermediate sheets of the series.

In carrying out my invention I provide a base with a pair of parallel receiving-tubes or tubular receiving-wires, upon which the perforated sheets are to be temporarily filed. These tubular receiving-wires, which constitute passages for a threaded needle, are each slotted longitudinally from end to end, and the base to which they are secured is adapted to provide a space or passage intermediate of the tubular receiving-wires, and extending through the base to the slotted base ends of the said receiving-wires, so as to leave a clear space between the slots for the entire length of the same, thereby permitting the tape passed through the tubular receiving-wires to be drawn out of the latter and carried across the top and bottom sides of the collection of papers to the point where it is to be tied, and also permitting the ready removal from the tubular receiving-wires of the sheets thus tied together.

As a means for holding the sheets compactly during the tying operation, a pair of clips or latches, adapted to be brought into engagement with the tubular receiving-wires or to be disengaged therefrom and swung out of the way, are arranged to both turn about and slide longitudinally along pivots rising from the base in planes parallel with the tubular receiving-wires, under an arrangement by which the resistance or expansive action of a collection of sheets against the free ends of the clips, after the latter have been pressed down upon the sheets, so as to press the same together, shall, in tending to lift the clips at their free ends, cause the clips at their opposite ends to bite on their pivots and thereby be locked against any sliding movement along their pivots until intentionally released.

In the annexed drawings, Figure 1 is a perspective view of a device constructed in accordance with my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a section taken on a vertical plane indicated by line *x x*, Fig. 2. Fig. 4 is a section taken on a vertical plane indicated by line *y y*, Fig. 2.

In the last two figures I have illustrated a series of sheets held by my said device.

The device herein illustrated comprises a pair of parallel tubular receiving-wires, A, which are slotted longitudinally from end to end and secured to a base, B, adapted to serve as a permanent and rigid connection between the two receiving-wires at their lower or base ends. The paper sheets to be filed will be punched along one edge by any punch suitable for forming through each sheet a pair of perforations situated apart from one another at a distance corresponding to the space between the tubular receiving-wires, whereby perforations in the paper can be brought into register with the tubular receiving-wires when it is desired to temporarily file the papers upon the receiving-wires for the purpose of permitting the sheets to be fastened together by a cord or tape. The slots *a* of the receiving-wires are situated directly opposite each other, and provision is made for a clear uninterrupted space

or passage through the base and from and between the lower ends of these two opposing slots, so that after a binding cord or tape has been passed through the receiving-wires and drawn from one to the other against the top and bottom sides of a series of sheets filed upon the receiving-wires, as in Fig. 3, the sheets, after having been fastened together by the tape or cord, can be lifted from the receiving-wires. To such end the base A is composed of a flat oblong plate cut away from one of its longer edges to form an oblong and approximately rectangular notch or space, C, at or near the inner corners or angles of which notch or space the receiving-wires are secured to the plate in position to admit of their slots either opening directly into said space thus formed between the receiving-wires or communicating therewith through the medium of short slots *b*, which constitute passages leading from the inner edge of the plate to the lower ends of the receiving-wires. In this connection it may be observed that a base-plate supporting the hollow and slotted receiving wires or tubes, and provided with a slot extending from one tube or wire to the other, would subserve the same purpose as the plate cut away from one side edge, as herein shown, although I prefer the latter construction on account of its lightness and economy in material; but it will be seen that in either case the slots are in a plane substantially perpendicular to the base, and that while there is a clear space between the slots above the base there is also a passage through the base situated in the plane occupied by the slots and extending to and between the lower ends of the slots, thus providing a clear space between the slots for their entire length. The plate thus formed consists, in effect, of a long narrow middle portion extending from one receiving-wire to the other, and provided with lateral and rearwardly-extending end portions, *b'*, to which latter are secured the pivots D, for a pair of swinging and adjustable clips or latches, E, employed as a means for holding down the papers which are upon the receiving-wires. The pivots rise from the base and are arranged parallel with the tubular receiving-wires, and the clips or latches each consists, practically, of a flat hook hung at one end upon one of the pivots D, so as to be susceptible of both turning about and sliding along its allotted pivot. The bent catch end of each one of these hook-shaped clips or latches is adapted to engage the nearest tubular receiving-wire, and the pivoted shank end portions of the hooks are long enough to admit of the hooks being swung around to engage the receiving-wires, as illustrated in Fig. 2.

Preparatory to placing the sheets on the receiving-wires, the hook-shaped clips or latches can be disengaged from the receiving-wires and swung around to the rear out of the way, as in Fig. 1, in which one of the clips or latches is shown thus swung back. After the papers have been filed upon the receiving-wires, these hook-shaped clips can be swung round over the sheets in position to engage the receiving-wires. The clips or latches can then be pushed down by hand upon and against the collection of sheets, so as to compact the same, in which compressed condition the clips or latches will be maintained by reason of the tendency on the part of the body of sheets confined between the base-plate and the clips or latches to expand and lift the latter at their free ends, and thereby cause the said clips or latches at their opposite pivoted ends to bite against their respective pivots. In this way, as soon as the clips or latches have been pressed down upon the collection of sheets and the down-pressure on the clips or latches removed, the said devices will be instantly and automatically locked. The clips or latches can be readily unlocked or loosened by a simple pressure exerted against their free ends, after which they can be slightly lifted at their opposite pivoted ends and then turned about their pivots, so as to disengage them from the receiving-wires and swing them back out of the way.

To bind the sheets with a cord or tape, the cord or tape threaded through a suitable needle can be drawn through the receiving tubes or wires and across the collection of sheets—as, for example, in Fig. 3, in which a cord, F, is shown drawn through the sheets at the points where the tubes pass through the latter—and also drawn through a perforation punched through the collection of sheets at a point intermediate of the perforations prepared for the receiving tubes or wires, at which said middle point the cord can be tied, as is usual in binding together a number of sheets by a cord or tape.

To facilitate the manipulation of the clips or latches, each one is preferably provided with a pair of wings or ears, *e*, formed at that end which is hung upon its alloted pivot. The hollow and slotted receiving wires or tubes are preferably beveled or sharpened at their top ends to permit the papers to be readily filed thereon, and the pivots D are provided at their top ends with heads, conveniently formed by slightly upsetting the pivots at such ends, so as to prevent the clips or latches from becoming accidentally detached from their pivots.

When desired, any one or more intermediate sheets of the series temporarily held on the tubular receiving-wires can be readily removed before the sheets have been fastened together. This is accomplished by the aid of a transfer-wire, G. (Illustrated in dotted lines in Fig. 3.) This transfer-wire is adapted to extend from one receiving tube or wire to the other, and is provided with a pair of legs adapted to be introduced into the receiving tube or wire, as illustrated in said figure, so that to take out, for example, the middle sheet of the series, the sheets above the middle sheet can be slipped up and onto the legs of the transfer-wires, thus permitting the middle sheet to be readily removed from the tubular receiving-wires, after which the legs of the transfer-wires can be

again introduced into the tubular receiving-wires, and the sheets on the transfer-wires slipped back upon the receiving-wires. To effect such transfer of a portion of the sheets, the transfer-wire will of course be raised so as to draw its legs out from the receiving-wires to the proper extent. It will also be observed that where the number of sheets to be held together is so great as to render punching through the entire number of sheets at one and the same operation a difficult matter, the sheets can be punched in lots, and each lot placed upon the tubular receiving-wires as soon as it has been punched, in which way the sheets can all be brought together with their perforations in register.

I claim as my invention—

1. A paper-binder consisting of a pair of longitudinally-slotted parallel tubular receiving-wires secured to a base; which is formed to provide a clear space between the slots of the tubular receiving-wires, substantially as described.

2. A paper-binder consisting of a pair of longitudinally-slotted parallel tubular receiving-wires arranged upon a base with their slots in a plane perpendicular to the base, which latter is provided with an opening extending from slot to slot and formed substantially in the plane in which the said two slots are located, substantially as and for the purpose described.

3. The combination, in a paper-binder, of a base provided with a pair of longitudinally-slotted tubular receiving-wires with a pair of swinging clips adapted at their free ends to engage the receiving-wires, and at their pivoted ends fitted to turn about and slide along pivots which rise from the said base, substantially as described.

4. The combination, in a paper-binder, of a pair of parallel longitudinally-slotted tubular receiving-wires, A, rising from the base B, and a pair of clips, E, disposed to slide along and turn about pivots D, rising from said base, substantially as and for the purpose described.

5. In a paper-file, a base-plate, B, cut away from one side edge to form an oblong opening and provided at each one of the inner corners of said opening with a longitudinally-slotted tubular receiving-wire having its slots communicating with the opening in the base-plate, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES S. SHANNON.

Witnesses:
M. E. DAYTON,
H. N. HIBBARD.