

No. 849,836.

PATENTED APR. 9, 1907.

E. G. DOW.
TEMPORARY BINDER.
APPLICATION FILED JUNE 24, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

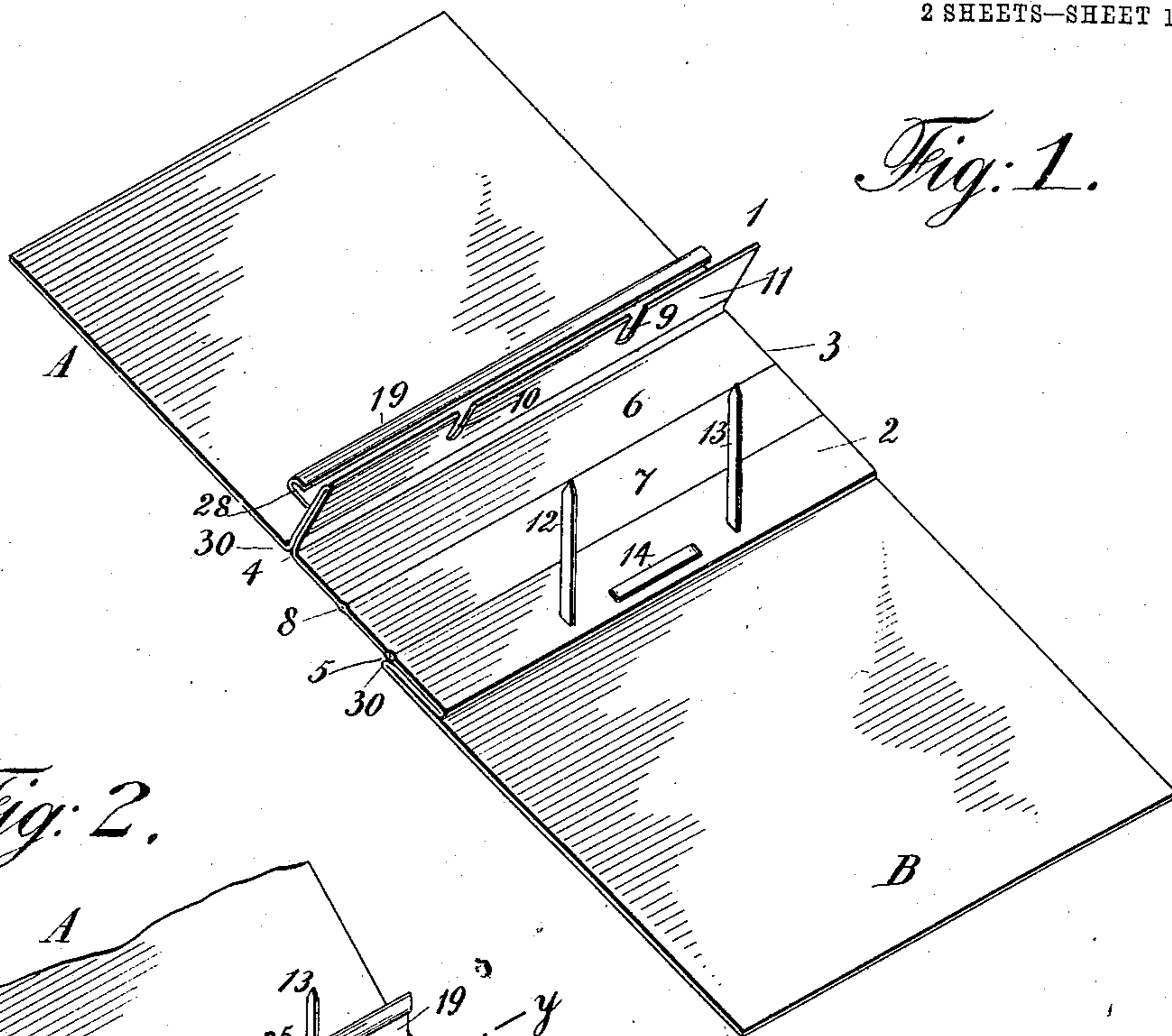


Fig. 2.

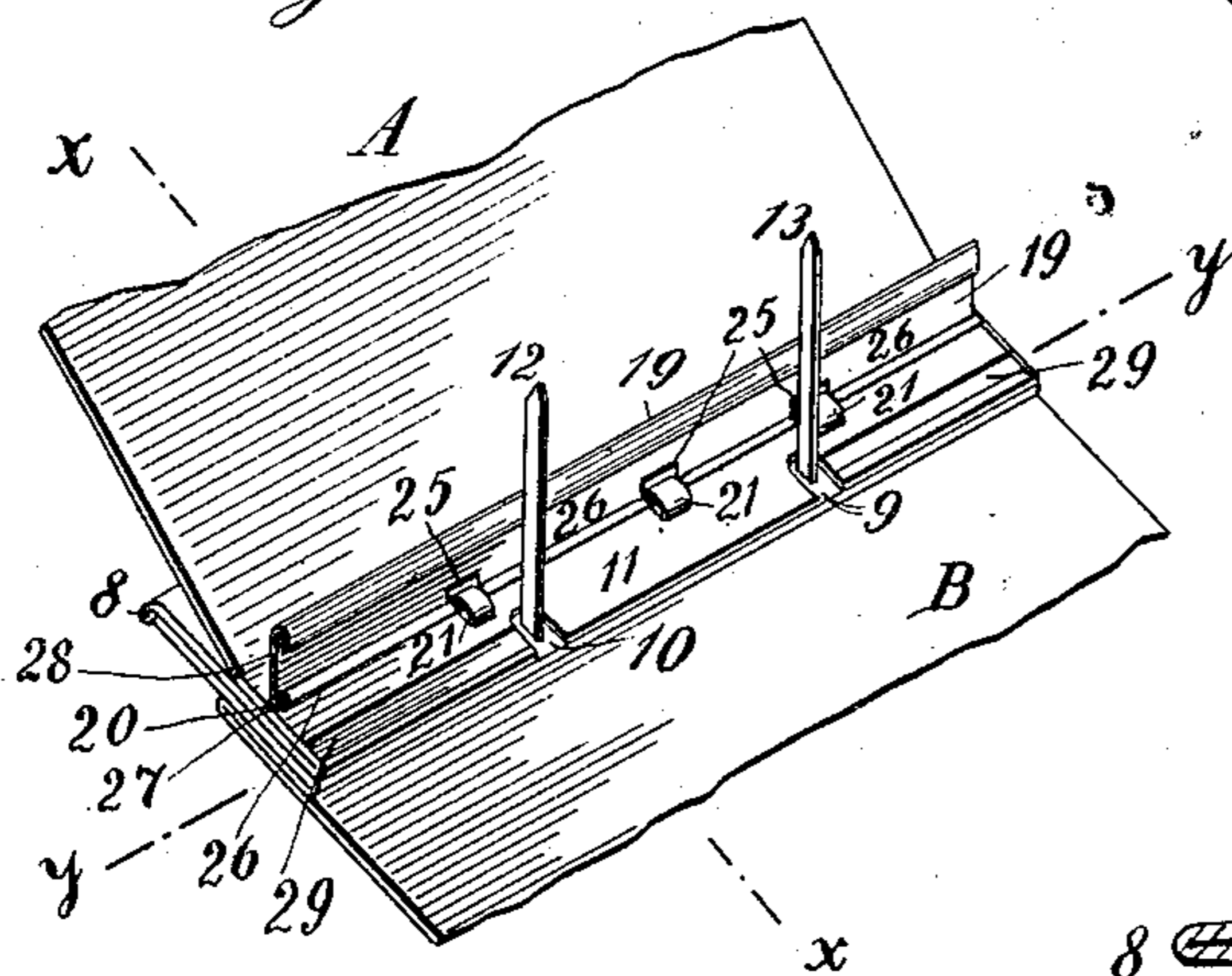


Fig. 3.

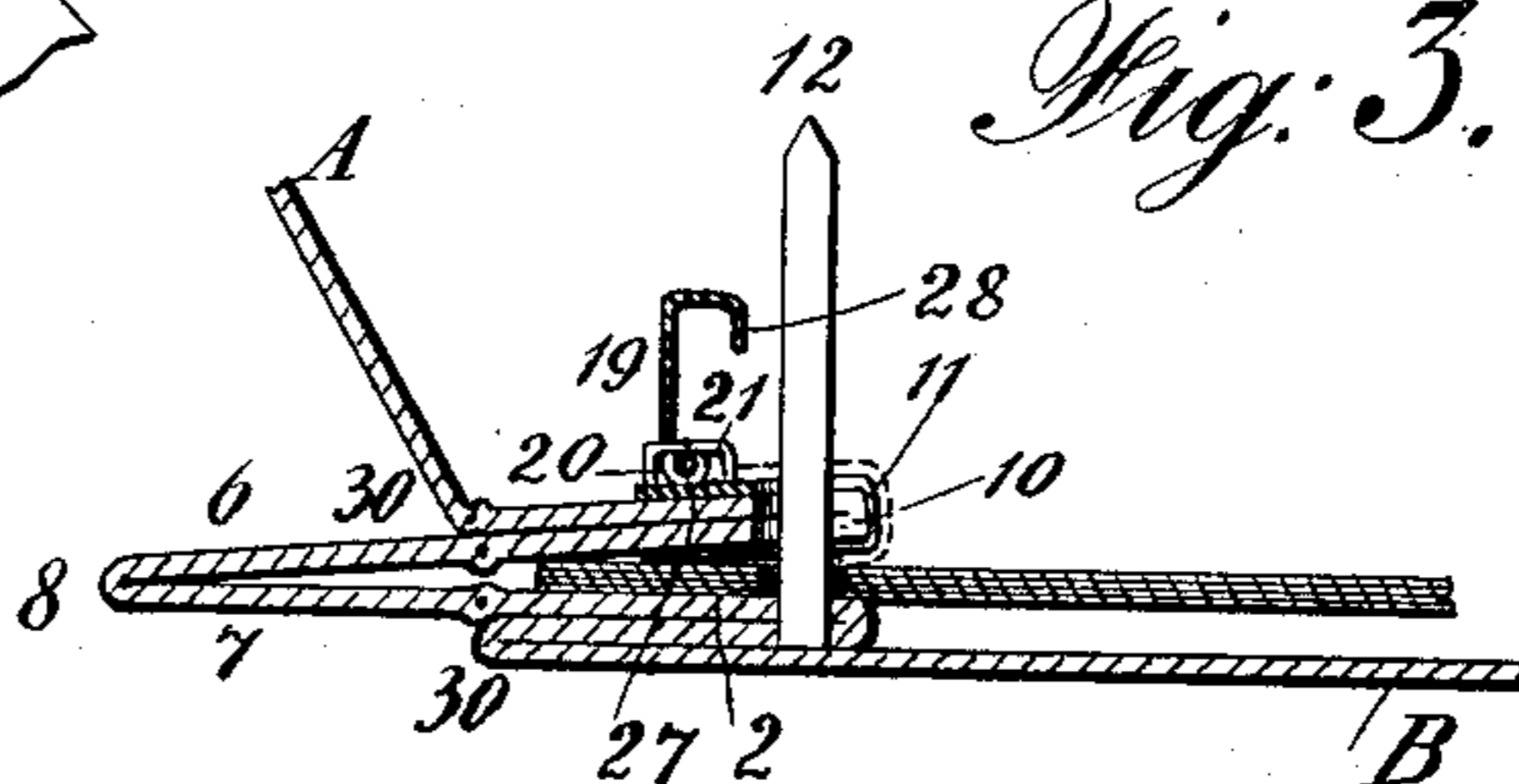


Fig. 4.

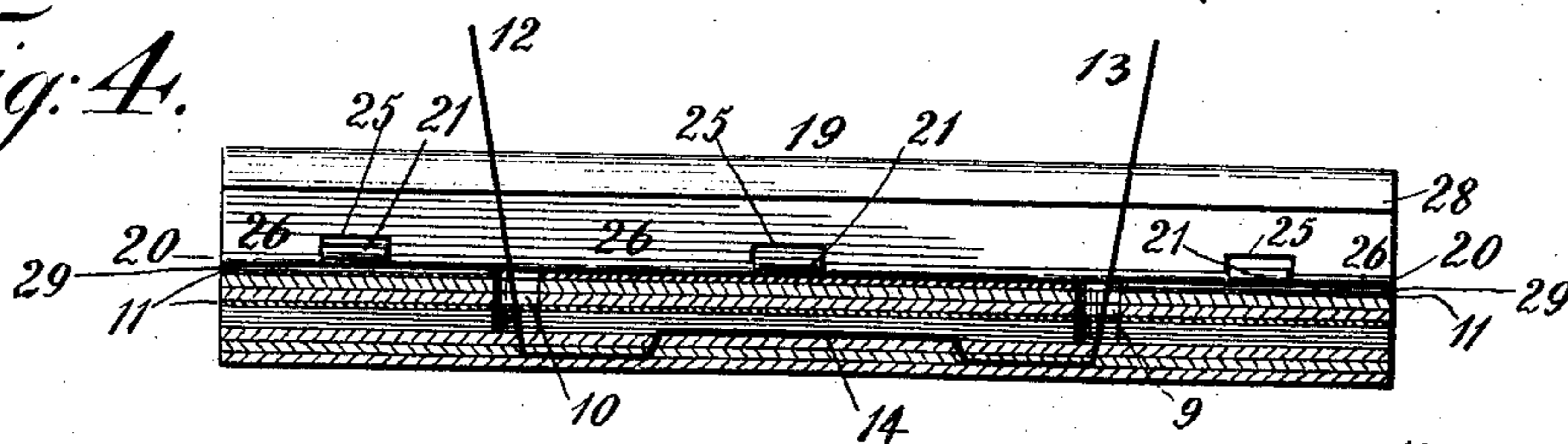


Fig. 4^a.

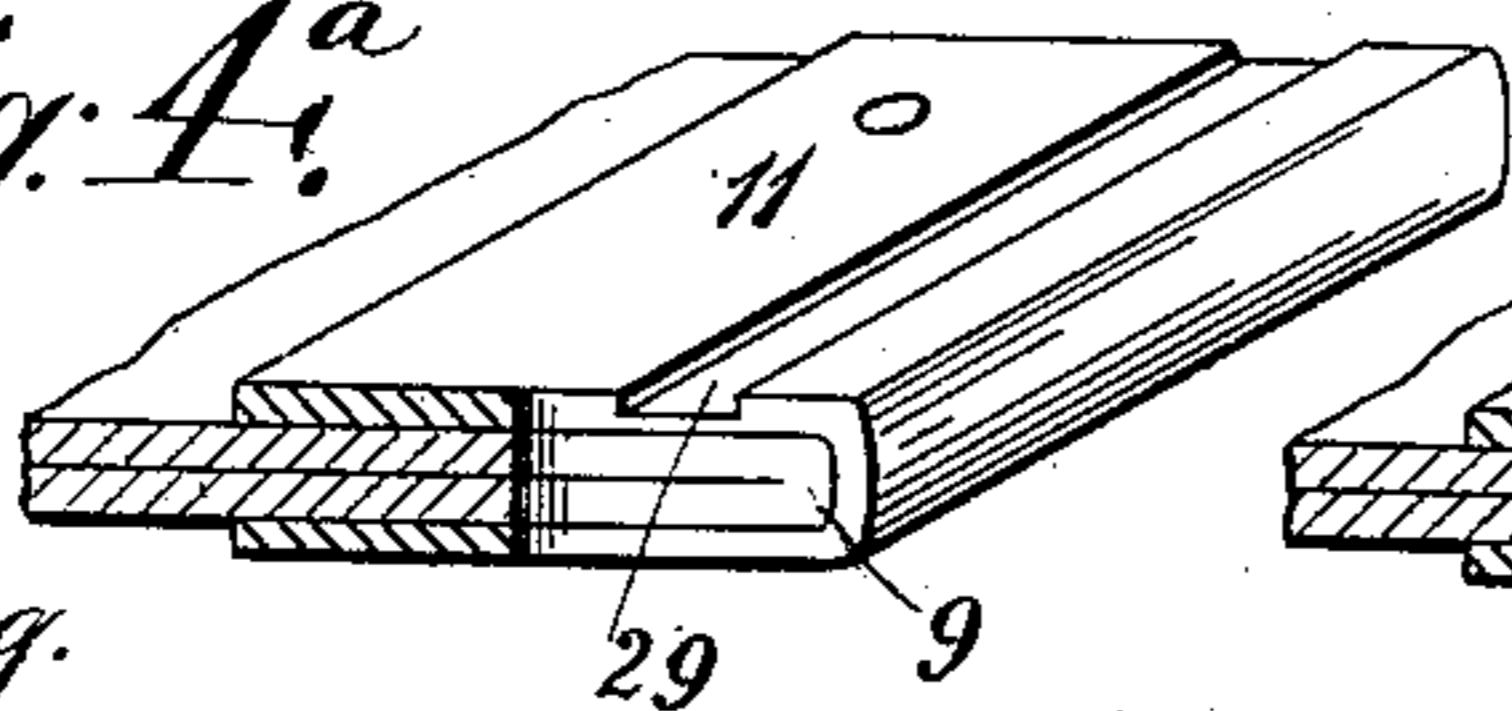
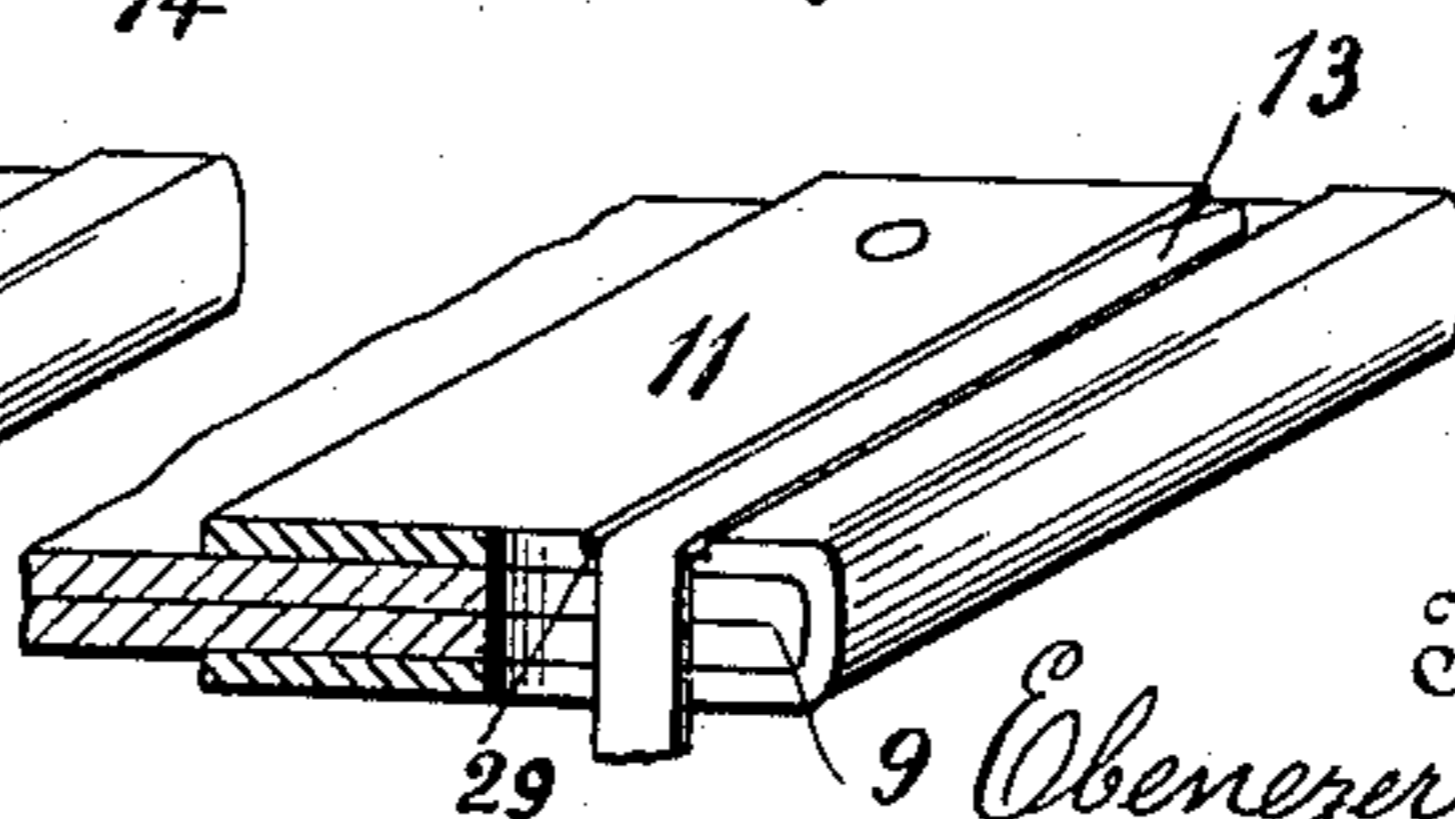


Fig. 4^b.



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2 SHEETS—SHEET 2.

Fig. 5.

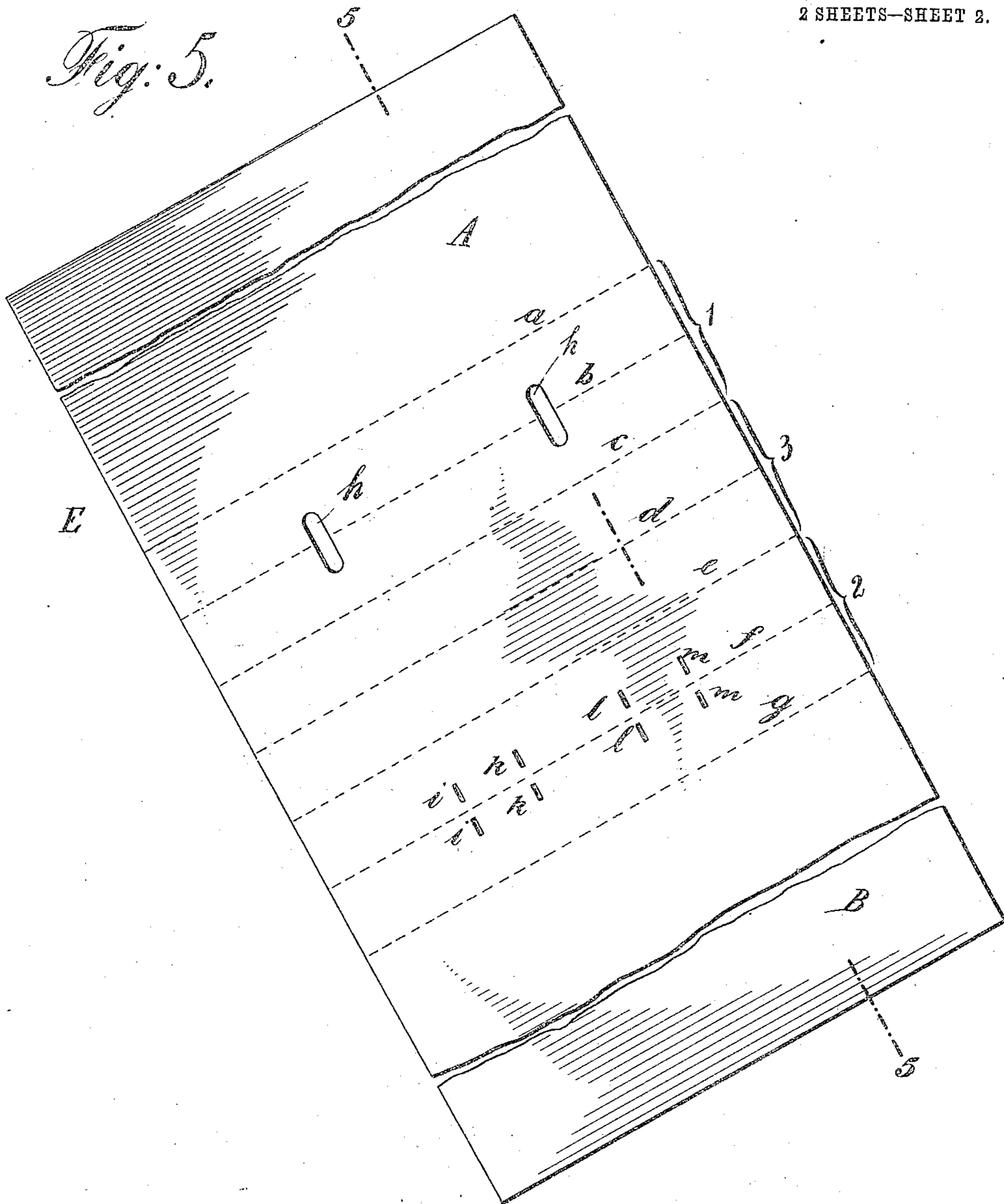
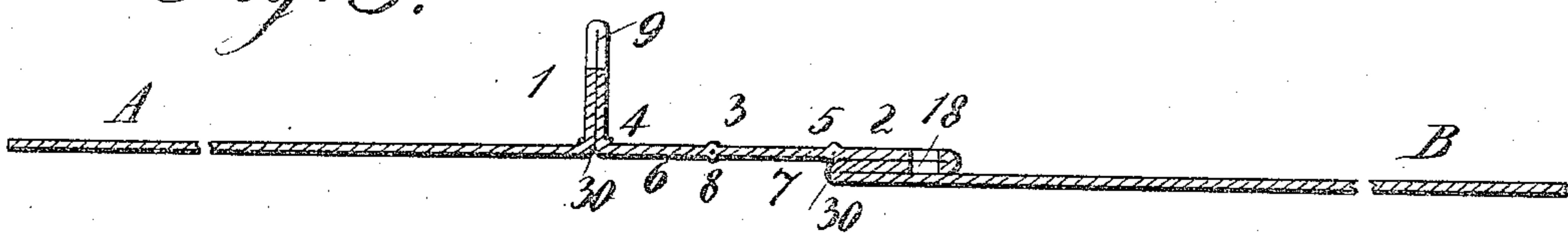


Fig. 6.



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TEMPORARY BINDER.

No. 849,836.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed June 24, 1904. Serial No. 213,959.

To all whom it may concern:

Be it known that I, EBENEZER GREIG DOW, a subject of the King of Great Britain, residing at Fairbank, Orleans Road, Hornsey Rise, in the county of London, England, have invented certain new and useful Improvements in Temporary Binders or Files for Papers and the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to paper binders or files for letters, invoices, statements, accounts, receipts, legal or other documents, and papers of similar character and for pamphlets and like articles; and it has particular reference to that class of binders or files in which the papers or pamphlets are impaled or threaded on needles and their bound edges are held between guards, to one of which the needles are fastened, while the other is adapted to be moved over on top of the edges of the papers to hold them on the needles and to be moved off the same when papers are to be placed on or removed from the needles. In this class of files or binders the guards are connected by means of a section, (which may be termed a "back," as it has the same relation to the bound edges of the papers or pamphlets as the back of a book has to the edges of the leaves,) and this section may further be connected with sides that form a cover for the binder. Heretofore as a rule the sides of the cover have been made of stiff material—as, for example, board covered with cloth or other material—and to these sides the guards have been hinged, so as to turn or swing independently of the sides to a position parallel to one another and at right angles to the needles of the guards. To do this, the guards are moved into position and held parallel to one another in order to get the slots into position for the needles to enter them, and the side guards had to be carefully adjusted and held by one hand while the needles were guided and the devices for locking the needles in engagement with the slotted or perforated guard were secured. Furthermore, these articles when made up as stated are necessarily expensive, as the cost of material and manufacturing are considerable owing to the cover, back, and guards having to be made up as separate pieces and put together entirely by hand.

From the above it will be understood that the elements referred to—viz., the guards, needles, and back—are known to the art and that this invention relates to improvements which have for their object to produce a more practical and economical binder or file of the kind referred to and to adapt the needles to enter the slots in the guards mechanically while the guard is being moved to its position over and on top of the edges of the papers on the needles and to make it unnecessary to hold the guard in position to receive the needles or to guide the needles in entering the slots.

The invention will first be described in connection with the drawings and then particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of the paper binder or file open with the locking mechanism and other accessories connected therewith. Fig. 2 represents the same closed and with the needles entered in the slots and in position to be bent down to fasten the guard on top of the papers on the needles, the locking mechanism being shown open. Fig. 3 is a transverse section of the binder or file, taken on line *xx* of Fig. 2. Fig. 4 is a longitudinal section of the same, taken on line *yy* of Fig. 2. Fig. 4^a represents, on a larger scale, a sectional perspective view of the upper guard, showing clearly one of the grooves therein to receive the bent needles. Fig. 4^b represents a similar view of the guard with a needle in the groove. Fig. 5 represents the blank from which the guards, back, and cover of the binder or file are made; and Fig. 6 is a section on line 5 5, Fig. 5.

Referring to the drawings, the non-metallic parts of the binder or file comprise the guards 1 2, the former for convenience being hereafter called the "upper" guard and the latter the "under" guard, and a stiff connecting back 3, to which the said guards are connected by means of hinge-joints. Preferably the guards and back are integral parts of one another, being made in a single piece from card or book board, and the hinge-joints are in that case formed by creasing the material on the lines 4 5 between the guards and the back. The back is also divided into two parts 6 7 by a hinge-joint 8, (which may also be formed by creasing the material,) parallel to the hinge-joints 4 5 to adapt the part 6 to be turned or folded over the part 7 parallel or at any angle thereto.

The upper guard 1 has its free edge provided with rectangular openings cut in from the free edge and forming slots 9 10, the outer ends of which are open. This guard is stiffened and protected by means of a metal plate 11, having slots in its edge corresponding to the slots 9 10 in position and form. This plate is preferably of U form in cross-section, so that it embraces both sides and the free edge of the guard and protects the same and also the edges of the slots against injury to the same, as well as stiffening the guard, so that it will not become soft or pliable and lose its shape, and the slots will be retained in their proper positions relative to the hinge-joint 8 and also to the needles hereafter described. The upper guard 1 being by preference made of cardboard, it is evident that it would soon lose its stiffness and become pliable and misshapen if it were unprotected, owing to the fact that the wear and tear of opening the binder to insert or remove papers falls almost entirely upon this upper guard, and, furthermore, the needles on which the papers are impaled or threaded engage this guard by entering the slots and are secured by being bent down or clenched against it to hold it against the papers on the needles. The metal plate is also required to cooperate with the device by which the needles are held in the slots, which will be described farther on in this specification.

The under guard 2 carries the filing, threading, or impaling needles 12 13, which are preferably integral parts of one another, being made from a flat strip of flexible metal 14, which is threaded through incisions 15 16 17 18, the ends protruding through the incisions and forming the needles, which are pointed to facilitate threading the papers on them. The distance between the incisions 15 18 is exactly the same as the distance between the slots 9 10, (measuring from the centers of the slots,) so that the needles are directly opposite the slots or in transverse alinement thereto, so that they will enter the same readily while in their upright position, as will appear more fully when the operation of the binder or file is described.

When the needles have been bent down after entering the slots, it is requisite to the practical utility of the device that means for holding them down against the guard should be provided. It is evident that many mechanical contrivances can be used for the purpose that will readily coact with the elements of the binder or file which have heretofore been described; but there is shown in connection with the upper guard 1 a lock or device for the purpose which is simple, cheap, and effective. This contrivance consists of a metal plate 19 of substantially the same length as the stiffening and protecting plate 11, which has its rear edge 20 connected with the plate 11 by hinges of any suitable

kind. In this instance parts of the hinges on the plate consist of loops 21 21 21, formed by making a number of short parallel incisions at proper intervals from one another in the plate 11 and driving up the metal between. In the rear edge of the plate 19 there are slots 25 to receive the loops, and in the edges of the same plate between the slots there are sheaths 26, formed by turning the edge of the plate under between the slots, and through this sheath and the loops 21 21 a pin or pintle 27 is passed, and thus the hinge connection between the clamping-plate and the stiffening-plate is formed. The loops 21 are made long enough for the pin or pintle to be moved back and forth under them for a purpose which will be referred to presently. The free edge of the plate 19 is bent under to form a lip 28, so that when the plate is turned down parallel to the stiffening-plate 11 and moved forward the lip drops down below the edge of plate 11 and when pushed back passes under the edge, and thereby fastens the plate 19 in its locking or clamping position on the plate 11.

In the surface of plate 11 there are grooves 29 29, extending from the slots toward the ends of the plate. These grooves are about the same depth as the thickness of the needles 12 13, so that when in these grooves they are about flush with the surface of the stiffening-plate. The edges of the needles bear against the sides of the grooves, and they are thus prevented from slipping out of the slots, and when the file is held in such a position that the papers hang from the needles it is evident that the sides of the grooves prevent the needles from pulling out of the slots, while the locking-plate holds the bent ends in the grooves.

The above description covers the essential features or elements of the paper binder or file; but it is evident that many of the parts can be differently constructed without departing from the principle of the invention. Thus the stiffening-plate 11 may be applied to but one side of the upper guard 1 instead of covering both sides, as shown and described. The plate 19 may be connected with the plate 11 by another kind of hinge, and it may be arranged to engage the plate when closed down by other means than the lip. The needles instead of being integral parts of one another may be made separate and connected with the guard 2 in any convenient way.

The parts 6 7 of the back 3 of the file are stiff or rigid and cannot be moved longitudinally, and the hinge-joint 8 between the parts is also inflexible longitudinally. The distance from the hinge-joint 8 of the back to the guard 1 is such that when the back is folded by turning the parts 6 over part 7 the upper guard 1 is carried over on the under guard 2 or on top of the papers on the

needles and the needles enter the slots simultaneously and as inseparable parts of one another without being guided or manipulated in any way. This is brought about by the hinge-joint 8 being parallel to a line joining the needles, so that the upper guard is held in a parallel position to the needles as it moves toward them and the needles enter the slots while in their upright position. Owing to the longitudinal rigidity of the back, the slots cannot diverge from the transverse lines leading to the needles and the latter must enter the slots as the upper guard moves to its position on top of the papers.

As the papers accumulate and the upper guard when moved over on top of them is at an increasing distance from the under guard, the back expands; but the hinge-joint 8 controls the upper guard and guides and limits its movement toward the needles, which enter the slots simultaneously as one member without bending or being guided to bring them in line with the slots. By the stiffness and rigidity of the back-section longitudinally and the restriction on the movement of the upper guard 1 toward the needles by the part 6 of the back, which moves only from the hinge-joint 8, the entrance of the needles into the slots is effected automatically or by merely turning the part 6 toward the needles, which carries the guard 1 to its position over the member 2 and on top of the papers on the needles.

Sides A B are connected by hinge-joints 30 30 with the back 3, and they form the cover of the binder. The cover and the guards are preferably made in a single piece from a rectangular sheet of card or book board E, which is creased transversely on the lines *a b c d e f g* and provided with rectangular slots *h h*, which extend across the creased line *b* at right angles thereto, the creased line crossing them midway of their length, and with incisions *i i, k k, l l, m m*. Thus creased, slotted, and incised the guard 1 is formed by bending the parts of the guard between the creased lines *a b* and *b c* upward, whereby these two parts are brought together and glued, thus forming the guard 1 of two thicknesses of the cardboard. As the slots *h h* cross the creased line *b*, when the parts between *a b* and *b c* are bent up the edges of the slots are doubled and the closed slots are converted into the open slots 9 10 of the guard. The lower guard 2 is formed by bending the part between the creased lines *e f* over the top of the part between the creased lines *f g* and gluing these parts together. The incisions *i i, k k, l l*, and *m m* are thus brought together and form the incisions 15 16 17 18 of the guard 2, through which the strip of metal forming the needles is threaded to fasten the needles to the guard, as heretofore described. The creased

lines *a c e g* form the hinge-joints 30 4 5 30 of the file, and the creased line *d* forms the hinge-joint 8, on which the back 3 is transversely foldable, as heretofore described. Fig. 6 shows the cover, guards, and back formed from the rectangular piece of cardboard in the manner heretofore described.

In using this binder or file the papers are perforated by a suitable perforating device near one edge and placed upon the needles by threading the needles through the perforations. Part 6 of the back-section is then turned over toward part 7, and thereby the guard 1 is moved over toward the needles in straight lines, and the needles automatically enter the slots simultaneously as the guard moves to its position on top of the papers. The needles are then bent down into the grooves in plate 11, and the locking-plate 19 is then turned down on top of the needles, moved forward until the lip drops below the edge of the plate 11, and then pushed back to force the lip under the plate 11 between it and the papers on the needles. The locking-plate holds the needles down in the grooves, the sides of which bear against the edges of the needles and prevent them from being pulled out of the slots. To open the binder, the locking-plate is moved forward to withdraw the lip from under the edge of the plate 11 to release it and then turned back off the needles. The bent ends of the needles are then lifted to an upright position, whereupon the guard 1 is released and detaches itself automatically from the needles by turning backward from the same. In the above description only two needles have been mentioned; but it is evident that any number of needles may be used if the guard 1 is supplied with a corresponding number of slots. In some instances only one needle may be used, in which case the guard would have but one slot. The guard 2 may be dispensed with entirely and the needles fixed to a rigid plate or board, if desired, and this board may or may not be made in one piece with the side A.

I claim—

1. In binders or files the combination of a transversely-foldable back-section, guards flexibly connected with opposite edges of the back, one of the said guards having flexible needles fastened to it and the other having slots in its edge to receive the needles when the guard is moved to its position on top of the papers, and a locking-plate slidably hinged to the slotted guard and having a lip on its free edge which when the plate is swung down on the guard and moved forward drops below the edge of the guard and when pushed back passes between the guard and the papers and holds the ends of the needles bent down on the guard, substantially as specified.

2. In binders or files a cover folded on

itself to form upper and lower guards the upper guard having open slots in its free edge and the under guard having needles to receive the papers, a U-shaped plate placed
5 over the upper guard to strengthen and reinforce the same and having slots therein coincident with the slots in the guard, substantially as specified.

3. In paper-binders the combination of a
10 back, guards hinged thereto one of said guards having flexible needles fastened thereto and the other having slots in its edge opposite and in line with the needles to receive the needles when the said guard is moved to
15 its position on top of the papers on the needles, a slotted stiffening-plate fastened to the slotted guard having longitudinal grooves in it extending from the slots which receive the ends of the needles when bent down on
20 the guard and means connected with the said stiffening-plate for holding the needles down in the grooves, substantially as specified.

4. In binders or files a cover folded on
25 itself to form guards and a hinged back, one of said guards being provided with two or more slots cut in the edge thereof and the other guard being provided with impaling-needles adapted to pass into said slots, a locking-plate hinged to one of said guards

and provided with a lip, said hinge being
30 parallel with the hinged back and said locking-plate being adapted to be moved so as to grip the edge of the said guard and hold the impaling-needles securely in their bent-down
35 position, substantially as specified.

5. In binders or files a cover folded on
itself so as to form two guards, a longitudinal
hinge on each side of each guard and a longitudinal hinge in the back between the guards,
40 one of said guards being provided with two or more slots cut in the edge thereof and the other guard being provided with impaling-needles adapted to pass into said slots, a
locking-plate hinged to first-mentioned
45 guard and provided with a lip, said hinge being disposed lengthwise with the fold of the cover and said locking-plate being adapted to be moved so as to grip the edge of said
50 guard and to hold the impaling-needles securely in their bent-down position, substantially as specified.

In testimony that I claim the invention
above set forth I affix my signature in presence of two witnesses.

EBENEZER GREIG DOW.

Witnesses:

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ROBERT MILTON SPEARPOINT.