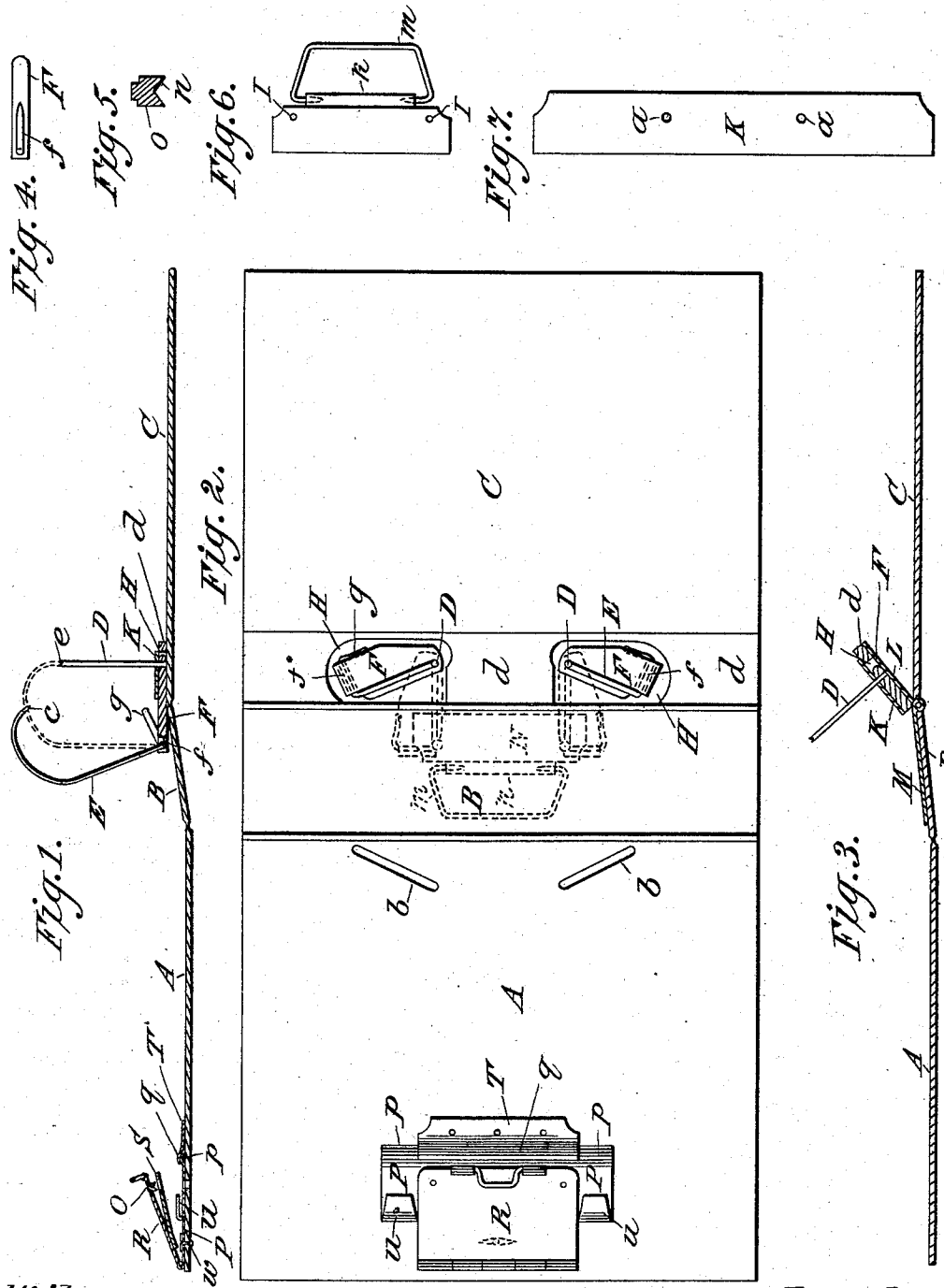
(No Model.)

S. M. SCHEEN.

LETTER FILE AND BINDER COMBINED WITH PERFORATING DEVICE.

No. 406,596. Patented July 9, 1889.



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UNITED STATES PATENT OFFICE.

SOPHUS MATHIAS SCHEEN, OF CHRISTIANIA, NORWAY.

LETTER FILE AND BINDER COMBINED WITH PERFORATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 406,596, dated July 9, 1889.

Application filed April 19, 1888. Serial No. 270,190. (No model.) Patented in Norway March 14, 1888, No. 698.

To all whom it may concern:

Be it known that I, SOPHUS MATHIAS SCHEEN, a citizen of Norway, residing at 26 B Prindsens Gade, Christiania, Norway, have invented an Improved Letter File and Binder Combined with Perforating Device, (for which I have obtained a patent in Norway, No. 698, bearing date March 14, 1888,) of which the following is a specification.

My invention relates to improvements in transfer letter-files, and then especially that class of these in which the papers are filed upon one or two fixed needles projecting upward from a suitable base, and against whose upper ends the ends of curved transfer-wires, which usually are pivoted to the base, are made to close, so as to permit the filed papers to be thrown back from the needles, the needle with corresponding transfer-wire, when attached to a smaller base-plate, forming a file or clip, which usually is perfected by being affixed to a larger tablet or board; and the objects of my improvements are, first, to produce a file which, constructed with a binding-case corresponding to that of a book, holds and incloses the papers filed therein—such as letters, invoices, price-lists, and drawings—in a desirable compact form, and which, having such a form, may also, when filled, serve as a permanent binder to the papers; second, to produce simple and secure clips specially adapted to this form of the file when attached to the binding-case of same in the manner as afterward described; third, to afford extra facilities for a mere survey or inspection of the filed papers; fourth, to provide simple and efficient means by which clean apertures may be cut in the papers before inserting them on the needles, so as to gather the papers compactly on the needles and to facilitate an inspection of the papers, and the use therewith of alphabetical index-strips, and by which this perforating and the required gaging of the papers for the exact carrying out of same may most easily and conveniently be performed, and, fifth, to provide a keeper which, inserted on the needles on top of the papers, shall form the suitable means by which the papers are kept compactly together when the file is closed. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the letter-file opened out, displaying two clips attached to a binding-case, the clips being shown in the position which they occupy when papers are being passed to and fro over needles and transfer-wires, and these latter in the closed position by dotted lines and in the open position by full lines, while the perforating device is shown farthest to the left. Fig. 2 is a plan view of the file opened out. The two clips are here shown in the position parallel with each other, which they occupy when papers are transferred from needles to transfer-wires, by dotted lines, and in the position which they occupy in two recesses cut out in the bottom board of the binding-case—as when the file is closed—by full lines. Fig. 3 is a vertical section of the binding-case, provided with a flap at the junction of the back piece and bottom board of same to carry the needles in the most complete form of the file. Fig. 4 is a detailed side view of one of the base-plates of the clips. Fig. 5 is an enlarged sectional view of a short needle or stud, with a notched point, employed in the perforating device of the file; and Fig. 6 is a plan view of a keeper, which, inserted on the needles on top of the papers, serves to keep these compactly together when the file is closed. Fig. 7 is a plan view of plate K.

Similar letters refer to similar parts throughout the several views.

The invention, as shown in Figs. 1 and 2, consists, primarily, in constructing the letter-file with a binding-case A B C and with one or more (but preferably two) transfer-clips, which, instead of being rigidly fastened to the binding-case to attain the desired compact form of the file, have been attached to the binding-case in the manner as afterward described. The two transfer-clips, the leading feature of which is the needle and its corresponding transfer-wire, which may be thus employed and for that purpose, may differ as to construction and mechanism and be attached to the binding-case in more than one way. The needle may thus be straight or more or less curved, a solid pin, or a hollow tube. The transfer-wire may by its controlling

mechanism be made to open from the needle by pushing backward or by swinging to the side. The needle may be fixed immediately in the bottom board of the binding-case and the transfer-wire in a base-plate of its own. A simple clip may even consist of the needle, which is a hollow tube immediately fixed in the bottom board of the binding-case, and in its upper end the outer curved end of a transfer-wire may be inserted and lifted out at pleasure, while its other end is left to hang free without being attached to any base-plate, only bent over sufficiently to prevent the papers from slipping off; but, preferably, each of the clips consists of the needle D, projecting upward from a base-plate F, and of transfer-wire E, also with its lower or inner end attached to the same base-plate F, and which are attached to the bottom board C of the binding-case, in the following manner: Employed in the usual way, the two clips would then be rigidly fixed on the inner side of the bottom board C of the binding-case, and the outer or back ends of the base-plates F and the back ends of the transfer-wires E would then be situated right out at the inner edge of the bottom board C, where it is joined to the back piece B of the binding-case, and a paper inserted on the needles D in the usual way would with its inner edge lie some distance in from the joint, and when the file was closed there would then be a considerable empty space between the inner side of the back piece B and the inner ends of the papers, and a bad form imparted to the whole structure. The two clips are therefore to bring about the compact form of the file aimed at, in which the inner edge of a paper inserted on the needles lies flush with or close to the joint of back piece B and bottom board C, shifted farther back to the left, their base-plates F (see Fig. 1) now projecting over the inner edge of the bottom board C, and when the binding-case A B C is opened out flat resting partly on the bottom board C and partly on the back piece B of same. If rigidly fastened in this position, they would, however, prevent the closing of the file. The clips are therefore attached to the binding-case in such a manner that the outer parts of the two clips may be swung off the back piece B and entirely in on the bottom board C, the transfer-wires E hereby moving close up to the inner edge of the bottom board C and the papers resting on same, while the clip base-plates F slip in under the papers. This feature of the letter-file, provided with movable clips, is in one form carried out by fastening to the bottom board C at its inner edge (which is, say, of only moderate thickness) a strip or plate *d*, of suitable material and of the same thickness as the clip base-plates F. In this (see Figs. 1 and 2) inner thick part C*d* of the bottom board are cut out the two recesses H, of a size and depth equal to the thickness of the base-plates F. The two clips deposited in these two recesses H are (see Fig. 1) kept in the desired position by a plate K, in which are, as shown in Fig. 2, the two apertures *a*, to correspond with the needles D, being slipped over these and onto the before-mentioned inner thick part C*d* of the bottom board and there fastened down, thus covering over the two recesses H, the bottom of which is formed by the bottom board C in its original state. The clips, with the needles D turning in the apertures *a* of the covering-plate K, may now be swung in and out of the recesses H, the transfer-wires E when the file is closed only intervening between the inner side of the back piece B and the papers inserted on the needles.

In closing the file (see Fig. 2) two slits *b* in the top board A of the binding-case are penetrated by the upper curved parts of the transfer-wires, which appear on the outer side of the top board A just sufficiently to keep the binding-case A B C in position, whereby the file may be conveniently handled without the binding-case slipping.

When the different parts of the binding-case A B C are constructed and joined together, as described and shown, Fig. 1, the two clips are placed where the back piece B is joined to the bottom board C at the lower edge of the inner thick part C*d* of same, and preferably kept altogether inside the binding-case; but the back piece B may also be joined to the bottom board at the upper edge of the inner thick part C*d* of same. As thus constructed when the file is opened out the back piece B would be resting on the outer parts of the clip base-plates F, two parallel slits in the top board A and back piece B of the binding-case allowing the transfer-wires E to pass through, and not before the file was closed would the clips be free to swing to the side.

As shown in Figs. 1 and 2, the clip base-plates would disappear beneath the papers; but the transfer-wires, instead of being inside the binding-case, would now fold up against the outer side of the back piece B, the inner side of which would be in immediate contact with the papers.

As already mentioned, the two transfer-clips, which may be employed and so attached to the binding-case of the file that the transfer-wires swing up to the papers, may vary as to construction and mechanism; but the invention, as relating to this part of the letter-file, consists in constructing two such clips, which are easily worked, are secure, and have the advantage of a thin base-plate, adding little to the bulk of the bottom board, thus specially adapted for their purpose, as shown in Figs. 1 and 2, each with the needle D projecting upward from a suitable base-plate F, and a transfer-wire E, the outer curved end of which preferably ends in a wedge-shaped point *c* and closes in a corresponding notch or double point *e* in the upper end of the needle D, but the inner end of which is carried down to the outer or back end of the

base-plate F, where it is bent sharp over and from one side vertically on a plane passing through the needle D and transfer-wire E and carried through an aperture or slot *p*. Emerging from this aperture on the other side of the base-plate F it is again bent sharp over in a forward direction into an arm *g*, and so shaped (see Fig. 2) that when the transfer-wire E is thrown back from the needle D and then again pushed forward, as at the closing of the clip, this arm *g* then slightly impinges on the upper edge of the base-plate F, and simultaneously with the closing of the clip springs in under the upper edge of the base-plate F and into a shallow groove *h*, cut out, as shown in Fig. 4, in the side of the clip base-plate, locking the clip sufficiently firm to allow papers to pass to and fro over the needle and transfer-wire, while a slight push against the upper end of the transfer-wire easily disengages the arm *g* from the groove *h* and opens the clip. When two of these clips are attached to the bottom board C, as described, and each swung into its recess, this arm *g*, which in each of the clips lies on that side of the base-plate F which first disappears in the recess by the covering-plate K, which covers the recesses, as before mentioned, is prevented from rising out of the groove *h*, and the clip is completely locked and the accidental escape of papers from the needles thus prevented.

Though the letter-file provided with the two movable clips immediately attached to the bottom board C of the file, as described, is, as far as the fastening of the clips to the binding-case goes, in its simplest form complete, still, with the object of facilitating a mere inspection or reference to the papers filed, the binding-case A B C is, in the most complete form of the file, as shown in Fig. 3, provided on the inner side, where back piece B and bottom board C meet, with a flap L, on which are built up the two recesses in the same manner as described, and shown in Figs. 1 and 2. This flap L may be formed by a strip of cloth; but it is preferably a metal plate, which by its inner edge is hinged onto another metal plate M, fastened on the inner side of the back piece B of the binding-case. This metal hinge L M forms then also a suitable floor on which the clips move, protecting underlying parts from wear.

At a mere inspection of the papers the clips remain in the recesses carried by the flap L. When this latter is occupying a vertical position, the needles are thrown into a horizontal position and allow the papers to fall over to either side. The bottom board C of the binding-case, provided with a joint outside the inner thick part C*d* of same, would also allow the needles to be thrown into this horizontal position to facilitate a reference to the papers; but to avoid the looseness of structure occasioned hereby and to preserve the stiffness and strength which a bottom board all in one piece affords, the letter-file is preferably and in its most complete form constructed with the flap L, as shown in Fig. 3, and this feature, with the flap L carrying the clips, forms also part of the invention.

The invention consists, furthermore, in constructing a suitable punch or perforator adapted to cut clean holes through sheets of paper (see Fig. 1) with two short needles or studs O, the tops of which, instead of being flat, are, as shown in Fig. 5, by a notch formed into a double point *n*. The two studs O might have been fixed (see Fig. 1) in the front part of the bottom plate P of the punch or immediately in the top board A itself; but preferably they are at its outer free end and on the under side fixed in the top plate R of the perforator, which by its opposite or inner edge is hinged onto the back end of the bottom plate P, and thus forms a flap, which may be lifted and depressed at pleasure.

On the under side of the top plate R, a suitable distance behind the studs O, is by its inner end fixed a third plate S, whose outer free end projects in front of the studs O, which thus are situated between this latter intermediate plate S and the top plate R. In the intermediate plate S, as well as in the bottom plate P, are apertures to register with the studs O when the flap R is pressed down. This bottom plate P (see Figs. 1 and 2) is at its outer end, in front of the above-mentioned two apertures and parallel with a line between these, turned up into a beveled ridge *p*, and it is fastened to the top board A of the binding-case by being slipped from the side in under a plate T, fixed on the inner side of the top board A, and it is kept in position by the above-mentioned ridge *p* engaging with a corresponding hollow way or furrow *q* in the plate T. For further fastening, a split button *w* is introduced from the outside of the top board A and pushed through a corresponding aperture in the bottom plate P, and is bent over on the inner side of said plate. The punch or perforator fastened to the top board A, as described, may readily be detached from one file and again attached to another, if desired. When in perforating a paper this is deposited on the top board A and the flap R is depressed, the intermediate plate S is the first to come in contact with the paper and keeps it pressed against the top board A, while the studs O, entering the corresponding apertures in this plate S and in the bottom plate P, pierce the paper, and, lastly, enter similar apertures *t* in the top board A itself. When the flap R is lifted up, the plate S springs out and pushes the paper off the studs. For the convenient and accurate gaging of the papers in perforating, the perforating device is provided with lugs *u*, against which the papers are laid. These are most easily formed from two narrow strips of the bottom plate itself bent over, as shown in Figs. 1 and 2, at a point a suitable distance behind the apertures *t*. In other directions the very outlines of the top board A itself, on which the papers are laid, afford a

guidance to place these, so that when inserted on the needles D they shall occupy the desired position in the file. With the notched studs in a simple perforating device as this, several papers may be perforated at once.

The punch constructed as described, and in conjunction with the top board A of the binding-case, thus constitutes the suitable means for gaging and perforating the papers.

With the object of keeping the papers compactly together on the needles when the file is closed, the file is provided with a keeper, which is inserted on the needles on top of the papers. This, as shown in Fig. 6, consists of a suitable plate N, in which are the two apertures *i*, through which it is inserted on the needles D. This plate N is provided with a tube *k*, and a bent wire *m*, as shown in Fig. 6, has both ends inserted in the openings of the tube *k*. In its inner part, near the tube and in a line parallel with the tube, this wire *m* from one side to another is somewhat broader across than the distance between the needles, but tapering, as shown in Fig. 6, toward its outer free end. This may be swung in between the needles, and when it is pressed down on the plate N, both ends of the wire *m* are forced farther into the tube *k*, and it acts as a spring to both sides, pressing sufficiently hard against the needles to keep the plate N in the required position on top of the papers; and this keeper thus constructed forms also part of the invention.

In one form the improved combined letter file and binder and combined perforating device is constructed with a binding-case of card-board of uniform thickness, whose parts, joined together in the usual manner, form (see Figs. 1, 2, and 3) the top board A, back piece B, and bottom board C. To the inner side of the back piece B, as shown in Fig. 3, is riveted a tin plate M, at the lower edge of which, where back piece B and bottom board C meet, is hinged another tin plate, which forms the flap L, which is of the same length as the back piece B. On the upper side of this flap are, as shown in Figs. 1 and 2, built up the two recesses H. A wooden strip *d*, (see Figs. 1 and 2,) which is of the same thickness as the base-plates F, and which has been sawed out for the two recesses and is there glued immediately to the bottom board C, is, in Fig. 3, instead, nailed onto the flap L. In the two recesses thus carried by the flap L are deposited the two transfer-clips, which are kept in the required position by a tin plate K, such as shown in Figs. 1 and 2, slipped onto the needles of the clips and screwed down over the recesses. The clips (see Figs. 1 and 2) are each constructed of two wires D and E and an iron base-plate F. The wire D, constituting the needle, is riveted at its lower end to the base-plate F. The other wire E, forming the transfer-wire, is attached to the base-plate F by (as described) being carried in and out of an aperture *f* bored in the base-plate F, and then bent into the arm *g*, which, shaped as described, locks in a groove *h* in the side of the base-plate when the file is closed.

The perforating device is constructed of four small pieces of sheet-tin T, P, S, and R and the two notched steel studs O. The two tin plates P and R, of which the first forms the bottom plate and is the largest of the two, and the other the top plate, are hinged together so that a strip of the bottom plate P on each side is projecting beyond the top plate R. At the free end of this top plate R are inserted and riveted the two steel studs O, and behind these soldered on the intermediate plate S. At the free end of this plate S, projecting beyond the studs O, as well as in the bottom plate P and the top board A of the binding-case, are bored holes to register with the studs O. The free end of the bottom plate P is turned up into a beveled ridge *p*, as described, and from the side slid in under the small tin plate T, riveted to the top board A, and on the under side of which is a raised hollow way or groove *q*, to correspond with the ridge *p*. For further fastening of the bottom plate P to the top board A is a split button from outside pushed through the top board A and a corresponding hole in the bottom plate P, and on the inner side of this bent over. Two cuts have been made in the before-mentioned projecting parts of the bottom plate P. The two narrow strips *u* thus produced have been cut off to a suitable length and bent over in a forward direction to form the lugs, against which the papers are laid when perforating the same.

The keeper is constructed from a small strip of sheet-tin N, which has been bent over to form the tube *k*, in which an iron wire shaped as described and shown in Fig. 6 has been inserted. When the clips are to be opened for the filing of a paper the keeper is, as shown in Fig. 2, first transferred to the transfer-wires.

The file is, in its most complete form, constructed with a binding-case A B C; but a mere tablet or board may be substituted for this to form the suitable base against which the filed papers rest. Such tablet or board, being of the same size as the bottom board C and back piece B together, would be provided with the flap L, hinged onto the plate M, fastened at the upper part of the board. The flap L would carry the clips capable of the sidewise movement, as in the foregoing description. The clip transfer-wires being swung to the side close up to the papers, the flap L might then be raised up into a vertical position, thereby throwing the needles backward into a horizontal position. The papers inserted on the needles will then open out to both sides, and facilities for inspection are afforded which otherwise could only be attained by having recourse to the transfer of the papers to the transfer-wires of the file.

Having now particularly described and ascertained the nature of my invention and in

what manner the same is to be performed, I declare that what I claim is—

1. In a file for letters, papers, invoices, &c., the combination of a binding-case, impaling needle or needles, and arched transfer wire or wires, which latter, with their forward curved ends closing on or interlocking with the needles, are susceptible of a sidewise motion, by which the back ends of the said transfer-wires swing off the back piece of the binding-case and close up to the inner edge of the bottom board of same and to the papers resting on it, substantially as and for the purposes specified.

2. In a file for letters, papers, invoices, &c., the combination of a binding-case, impaling needle or needles, and arched transfer wire or wires, which latter, with their forward curved ends closing on or interlocking with the needles, are susceptible of a sidewise motion, and by the base-plates F connected with the binding-case A B C of the letter-file, arranged substantially as and for the purposes specified.

3. The combination, with a base-plate F, of a transfer-wire E, whose inner end, carried through an aperture *f* in the base-plate, is provided with an arm *g*, substantially as and for the purposes specified.

4. A binding-case A B C, in combination with a flap L to allow the needles D to be thrown into a horizontal position, as and for the purposes specified.

5. In a file for letters, invoices, and papers, in which a mere tablet or board is substituted for the binding-case A B C to form a suitable base against which the filed papers rest, the combination of such board or tablet, needle or needles D, transfer wire or wires E, and flap L, the transfer-wires E being capable of a sidewise movement, by which their back parts swing close up to the inner edge of the papers, and the flap L allowing the needles to be thrown back into a horizontal position, all arranged substantially as and for the purposes specified.

6. The combination, with the studs O, fixed in the plate R, of the plate S, by its inner end fastened to the plate R and in its outer free end having apertures registering with the studs O, substantially as shown.

7. The combination, with the top board A of the binding-case, of a plate T, having a groove *q*, which, together with a split button *w*, serves to fasten the paper-punch to the binding-case, substantially as shown.

8. The combination, with the needles D, of a wire *m*, which, with both ends carried into the openings of the tube *k* of a plate N, swings in between the needles D, substantially as and for the purpose specified.

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Witnesses:
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