

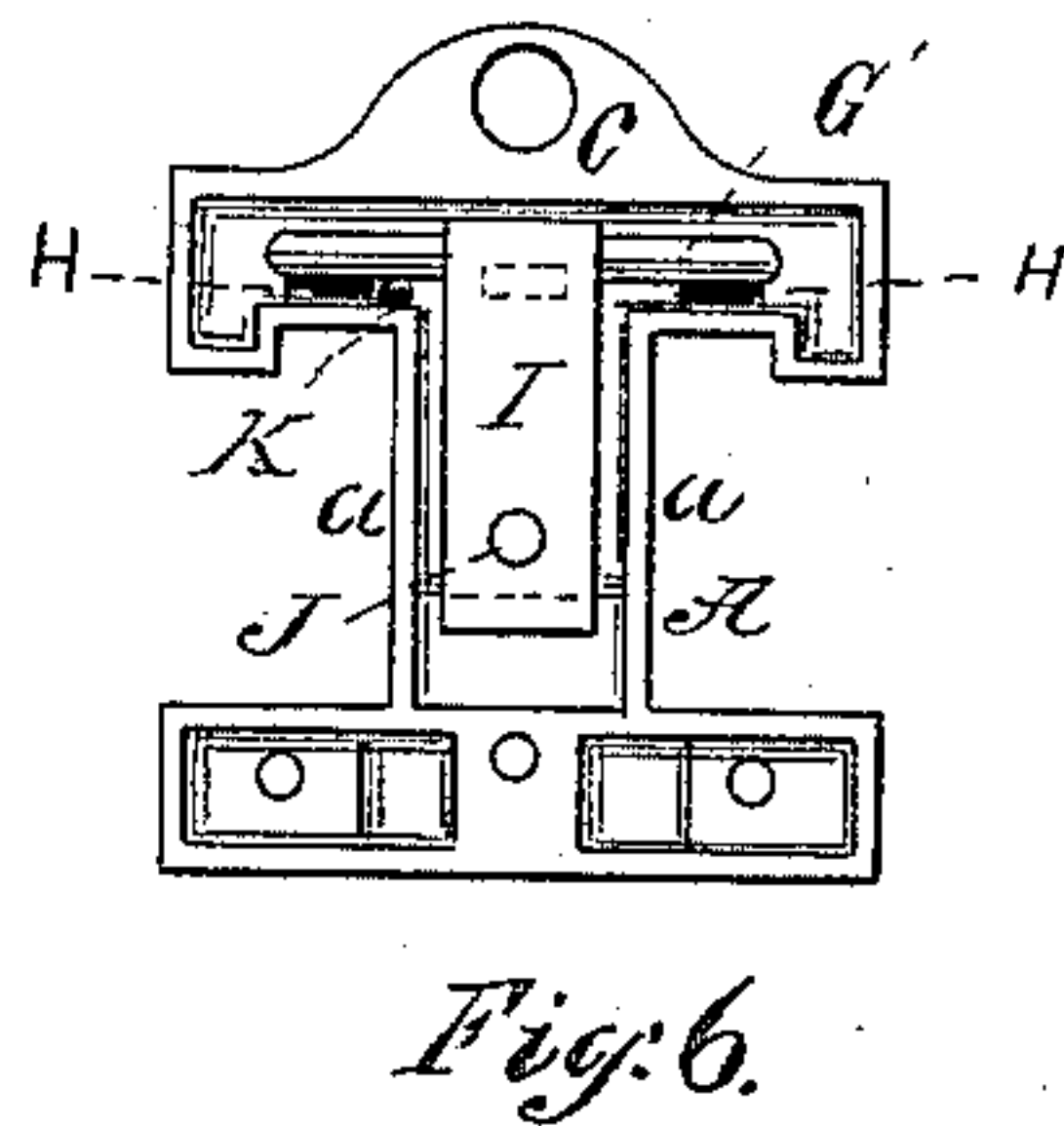
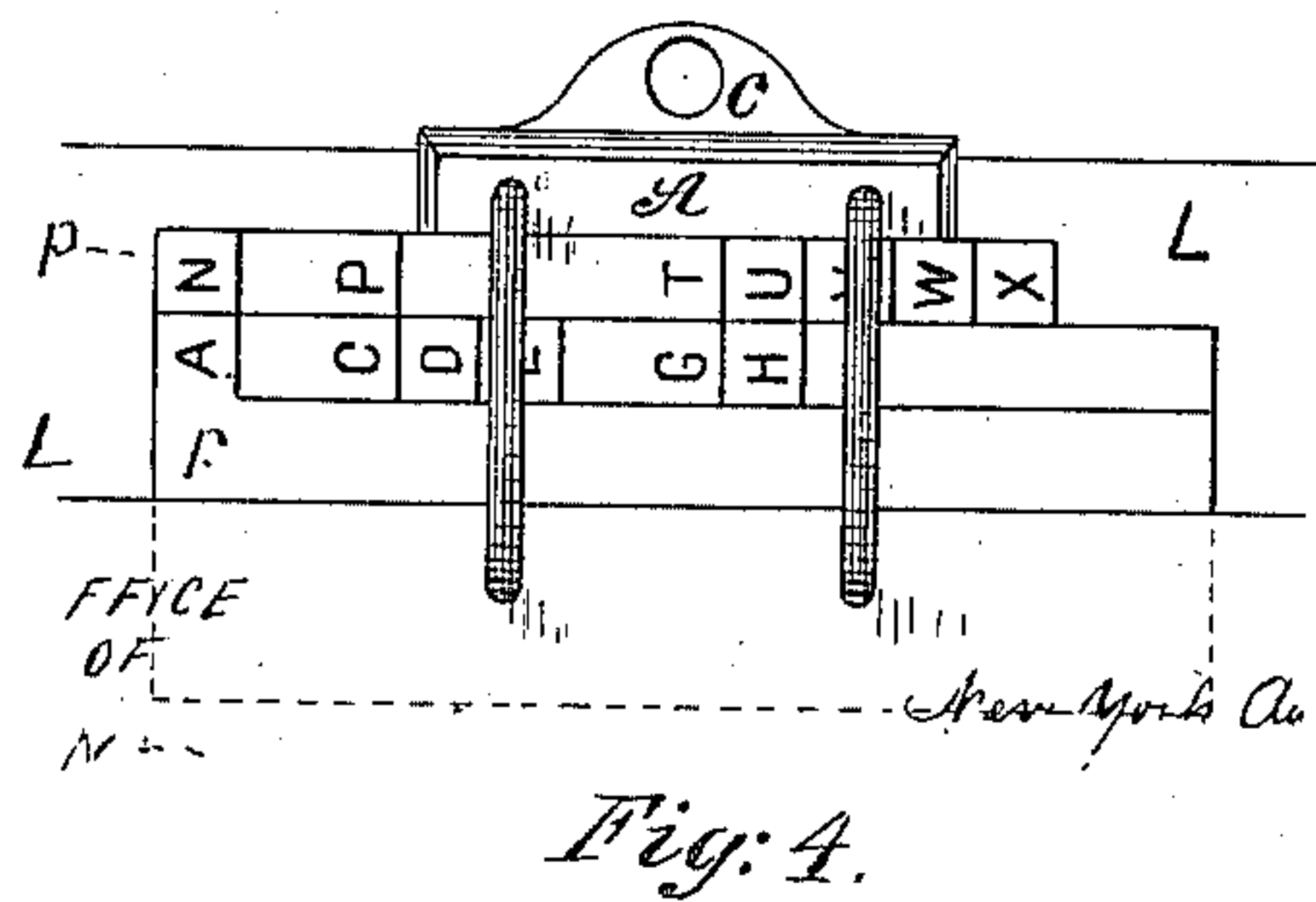
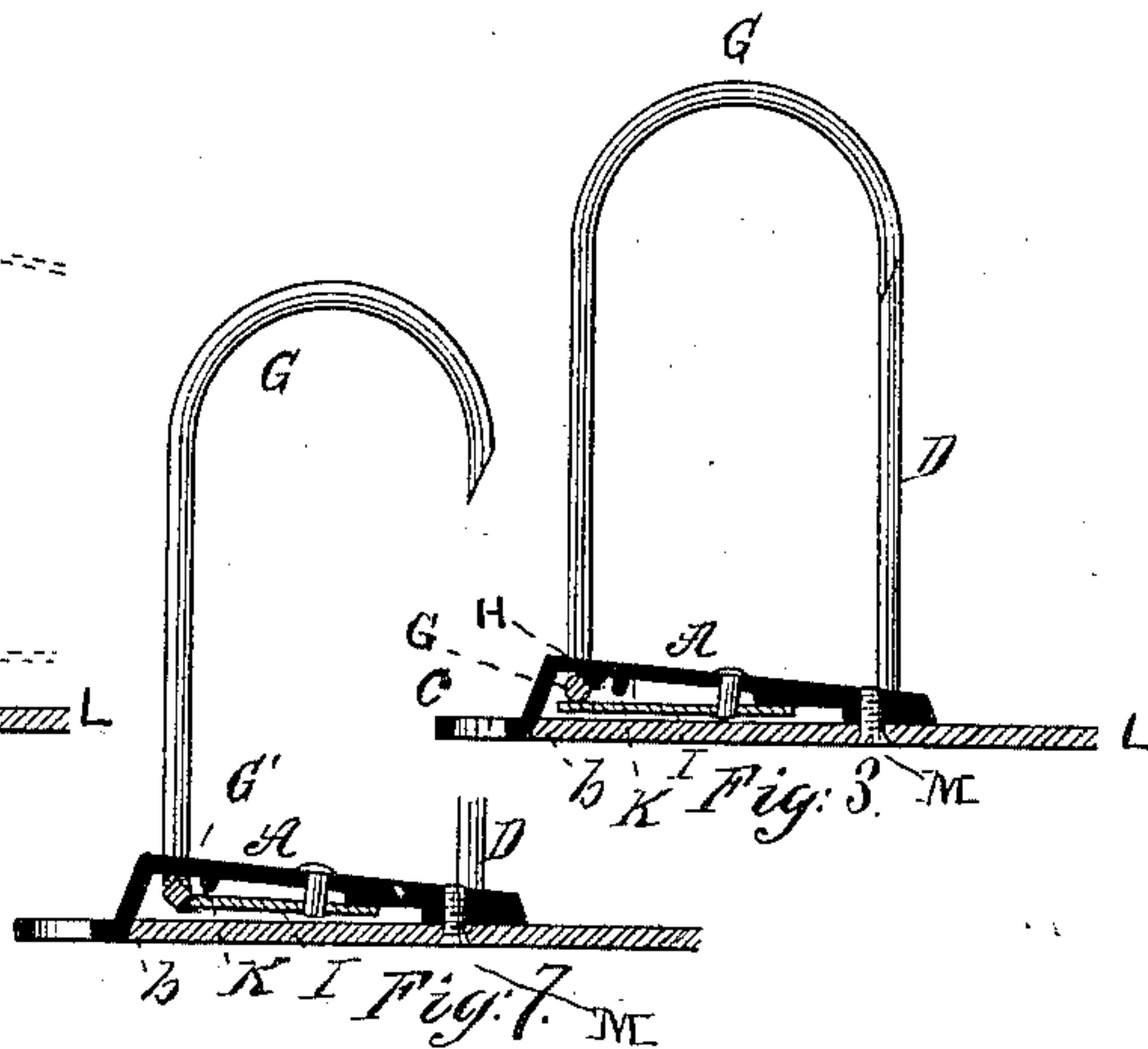
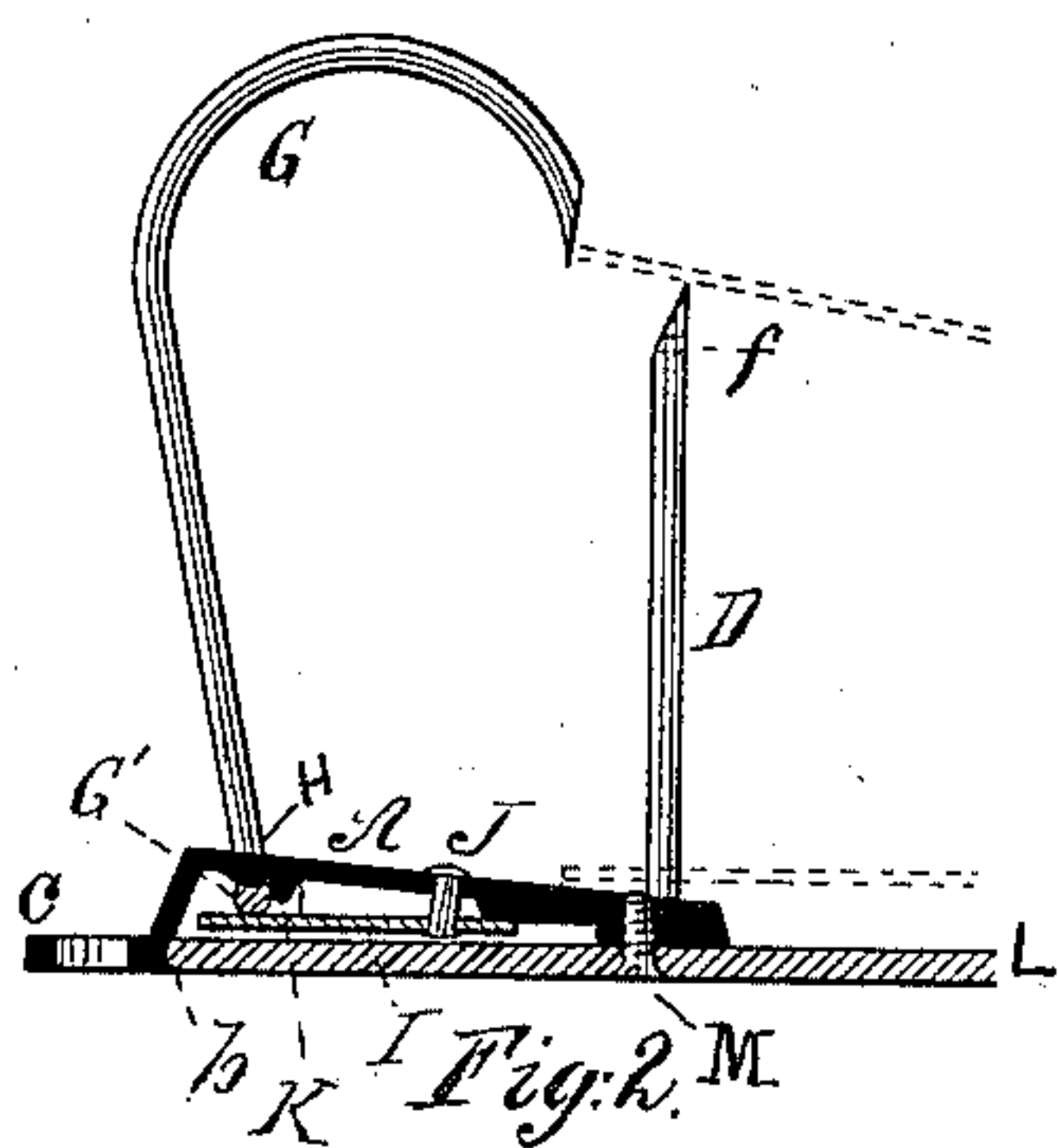
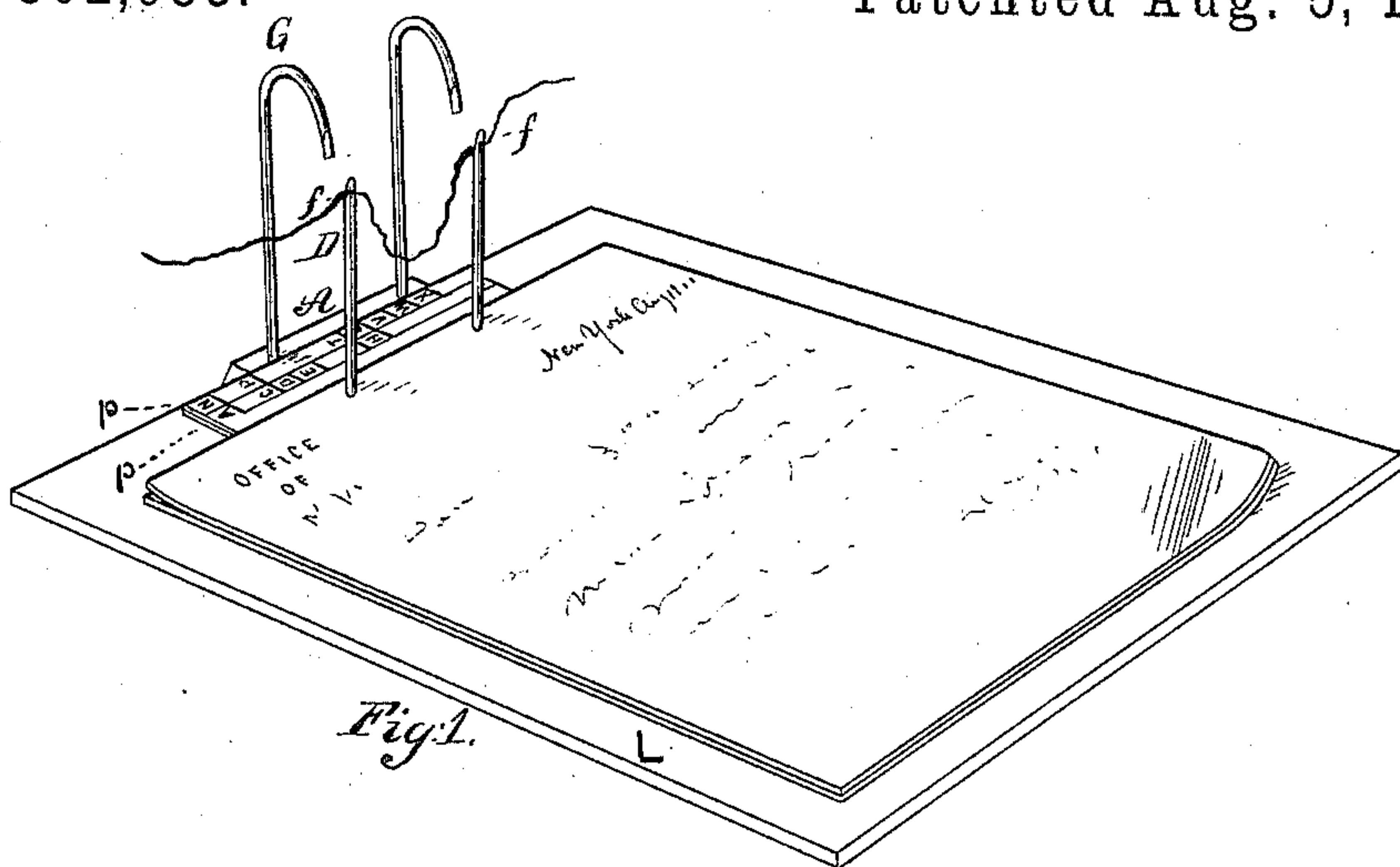
(Model.)

P. W. PECKHAM & S. D. COOPER.

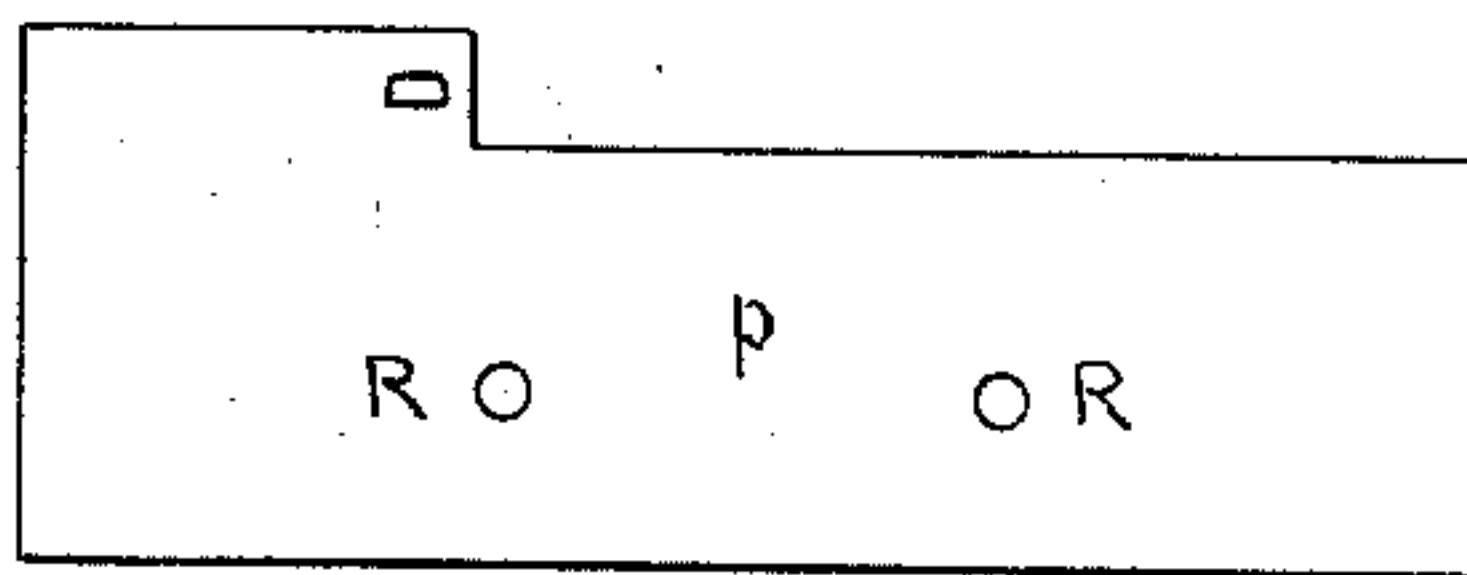
BILL FILE.

No. 302,933.

Patented Aug. 5, 1884.



Witnesses:
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UNITED STATES PATENT OFFICE.

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BILL-FILE.

SPECIFICATION forming part of Letters Patent No. 302,933, dated August 5, 1884.

Application filed October 15, 1881. Renewed December 22, 1883. (Model.)

To all whom it may concern:

Be it known that we, PETER W. PECKHAM and SAMUEL D. COOPER, both of the city, county, and State of New York, have invented certain new and useful Improvements in Bill-Files; 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, making a part of this specification.

Our invention relates to that class of bill-files constructed with a base-plate carrying fixed receiving-wires, and provided with connected hinged or vibrating transfer-wires closing against the fixed wires, to form therewith a pair of loops.

The object of our improvements is to so construct a bill-file that the ends of the transfer-wires will be firmly held against the ends of the fixed needles by means of offset bearings or projections on the under side of the base-plate, forming a seat, and a flat tension-spring so organized that whenever the transfer-wires are thrown back from the needles the leverage obtained by the contact of the transfer-wires with the edges of the apertures in the base-plate, through which the latter pass, serves to cause the connecting-arm thereof to force out the spring and ride upon the offset bearing, and rest beyond the center thereof, in which condition the transfer-wires are retained in an open position for access to the needles.

Another object of our improvements is to construct a base-plate of a bill-file with a shouldered flange to fit against the upper edge of the tablet, and fasten the same to the tablet by a single screw.

Another object of our improvements is to produce a simple and cheap, as well as durable, bill-file for the trade.

With these objects and others in view our improvements consist in the novel construction and combination of parts, as will be hereinafter more fully described.

Figure 1 of the drawings is a view in perspective of our improved bill-file and tablet, showing bills or letters and a number of index-strips filed thereon, with a cord in place

ready for binding the same. Fig. 2 is a central transverse section of the bill-file secured upon a tablet, the transfer-wires being thrown back. Fig. 3 is a similar view with the transfer-wires closed. Fig. 4 is a plan view of the bill-file and upper end of the tablet, illustrating the combination therewith of its index-strips; Fig. 5, a view illustrating one of the strips detached; Fig. 6, a plan view of the under side of the base-plate of the bill-file detached from the tablet, and Fig. 7 a view illustrating a modification in mode of confining the vibrating transfer-hooks.

In the annexed drawings, forming a part of this specification, the letter A is a metallic base-plate, made by preference in the form of the letter T. The under side of the plate is recessed, leaving side edges, *a a*, Fig. 6, projecting therefrom, which widen gradually from its inner to its outer end, so that when the bottom of the plate rests upon a plane surface the top of the plate is inclined, as shown in Figs. 2, 3, and 7. The upper deeper edge of the base is wider than the side edges, so as to project beyond them (see at *b*, Figs. 2 and 3) as far as the thickness of the tablet to be used with the file. From this projecting edge a flange, *c*, projects outwardly to furnish an eye, by which the file may be hung up.

D D are receiving wires or needles, firmly riveted at their lower ends to the inner or lower cross-bar of the base A. The upper ends of these fixed wires or needles are beveled off from their inner side outwardly, to form cutting or piercing ends, and eyes *f f* are formed through said beveled ends in a direction parallel with the length of the base A.

G G are vibrating transfer-wires passing through apertures in the upper cross-bar of the base A, and connected on the under side of the same by an arm, *G'*, formed in one piece therewith. The wires G G are the same distance apart as the fixed wires D D, and they each curve over to form an arch which shall close down upon the opposite fixed wire. (See Fig. 3.) The end of each vibrating transfer-wire is beveled off to present a counterpart to the beveled end of the opposite fixed wire or needle, so that when the two meet and close a continuous wire loop or ring is formed there-

by. (See Fig. 3.) The beveled faces of the vibrating transfer-wires serve, also, when the wires are thrown back, as a gage to determine the distance at which the needles shall pierce the paper to be filed. (See dotted lines, Fig. 2.) As the movement of the transfer-wire is always the same, the gage is invariable for all papers, and they are made to drop upon the needles uniformly with their upper edges all in line. The gage thus provided by the ends of the transfer-wires avoids the necessity of intermediate standards for the purpose between the needles and transfer-wires. The transfer-wires G G pass loosely through the apertures in the base A. Their connecting-arm G' rests against the under side of said base, which is somewhat thickened at this point, and offsets H H are cast to project from said under side immediately in front of the connecting-arm, so that when the wires G G are closed upon the needles D the connecting-arm shall bear against said offsets. A flat spring, I, is placed with one end resting upon the connecting-arm G' and its other end upon the edge of a shoulder in the central portion of the base. Its intermediate length is thus left wholly unsupported, and it is confined in this position and made to bear upon the arm G' by means of a rivet, J, inserted through the spring and the base at a point somewhat removed from the shoulder supporting the rivet end of the spring. The wires G G, when thrown back from the needles D D, swing upon the edges of the apertures in the base-plate as upon pivots, and their connecting-arm G' is forced thereby forward and made to ride up upon the offsets H H. (See Fig. 2.) To facilitate this movement the faces of the offsets are inclined or rounded off. As the arm rides up upon the offsets the spring I is forced out. The offsets are so adjusted in height as that when the vibrating transfer-wires are thrown back to the proper gage the connecting-arm will rest upon the top of the offsets, as shown in Fig. 2, and their further movement is then arrested either by the restricted diameter of the apertures through which the wires pass or by means of a stop, K, projecting from the under side of the base.

L is a tablet, made of a thin sheet of wood shaved off from the log in the direction of the grain, and re-enforced and strengthened by means of layers of paper or cloth glued or cemented thereto on both sides thereof, and varnished so as to make it water-proof and durable. The combination of the layers of paper or cloth with the opposite faces of the thin sheet of wood, in connection with the film of glue, produces a very light, strong, and cheap tablet, which may be rendered useful as a writing-surface by coating it with slate or liquid silica. The base-plate A, holding the needles and transfer-wires, is attached to the tablet by means of a single screw, M, passing through the board into a threaded seat in the lower end of the base, the upper end of the

base being immovably secured by its projecting flange or edge b, which bears against and engages the upper edge of the tablet. The base A is placed upon the convex side of the tablet, so that the tendency of the board to curve is checked and ultimately overcome.

P P are index-strips, of a length equal to or exceeding the width of the base A, and upon which are imprinted, severally, the letters of the alphabet, one upon the margin of each strip, at such point as that when the margin of the strip below the letter is cut away and the several strips are brought into register in due order the letters shall all appear in order on the one side thereof. Preferably two series of strips are employed for the one alphabet, one series being narrower than the other, as shown in the drawings, so that the entire alphabet is condensed in two rows of letters, instead of being extended in a single row. Apertures R R (see Fig. 5) are pierced (or the proper position thereof indicated by marks) near the outer margins of the strips, to register exactly with the needles D D, so that, although the strips are placed upon the needles separately at different times, the strips so filed will, if inserted as indicated by said apertures or register-marks R R, fall into proper position, as shown in the drawings, Figs. 1 and 4.

In the use of the apparatus such only of the index-strips are used as may be required in connection with the papers filed. Hence if no papers be filed calling for any one letter of the index, that letter is not used, and the process of finding papers on the file is greatly simplified by this omission of all unnecessary letters from the index.

The combination of the index-strips P P, bearing the register-marks R R, with the needles D D, and with the gage produced by the ends of the transfer-wires when thrown back and stopped, as described, obviates the necessity of separate standards for securing the index, as heretofore employed.

Instead of causing the connecting-arm G' of the transfer-wires G G to ride up upon offsets H H when thrown back, an equivalent device may be substituted by forming the connecting-arm with an angular cross-section adapted to engage an inclined surface on the seat of the spring, as illustrated in Fig. 7, so that when the arm G is thrown forward by the vibration of the transfer-wires the angle of the arm will operate to force the spring outward.

When the needles are filled with papers, the papers and index-slips are readily bound together by passing the opposite ends of a cord through the eyes of the needles (see Fig. 1) and drawing the papers off of the needles. In so doing the cord will be carried through the apertures formed in the papers by the needles, leaving the ends remaining in the eyes to be then drawn out and tied together on the opposite sides of the file of papers, binding them neatly in their order.

What we claim as our invention is—

1. In a bill-file, the combination, with the recessed base-plate A, formed with a support near the end, carrying the fixed needles and
5 vibrating transfer-wires, of the flat spring I, bearing at one end upon the support of the base-plate, and the other end resting upon the connecting-arm of the vibrating transfer-wires, with a rivet, J, compressing and con-
10 fining the said spring at a point removed from its end bearings, substantially as shown and set forth.

2. A base-plate for a bill-file, constructed on its under surface with the offset bearings
15 or projections H, in combination with the vibrating transfer-wires G and their connecting-arm G', working on the under side of and in contact with the bearings of the base-plate and the flat tension-spring I, substantially as and
20 for the purpose set forth.

3. In a bill-file, the combination, with the vibrating transfer-wires G G and their connecting-arm G', a flat tension-spring, I, and

the offset-bearings H on the base-plate, of the stops K, arranged in front of the bearings H, 25 for limiting the backward movement of the transfer-wires, substantially as set forth.

4. The improved article of manufacture comprising a bill-file and a tablet, consisting of the tablet, the recessed base-plate A, formed 30 with the shoulder-flange to fit against the upper edge of the tablet, and the projections H and K, the fixed needles D, the connected vibrating transfer-wires, the flat tension-spring I, with the intermediate arranged rivet J, and 35 a single fastening-screw, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

PETER W. PECKHAM.
SAMUEL D. COOPER.

Witnesses:

J. F. ACKER, Jr.,
FULLER WALKER.