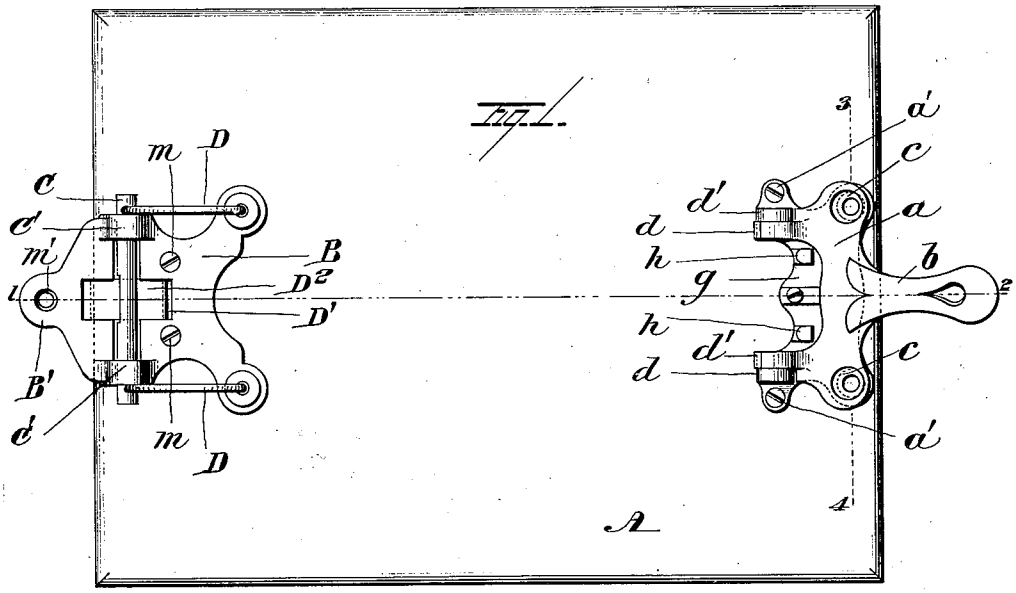
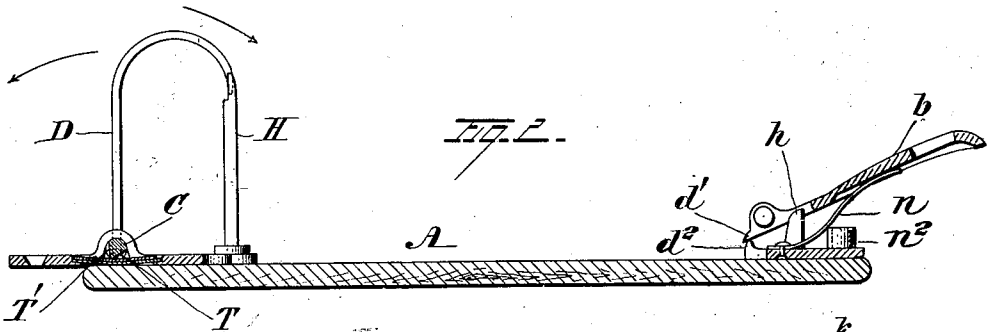
(No Model.)

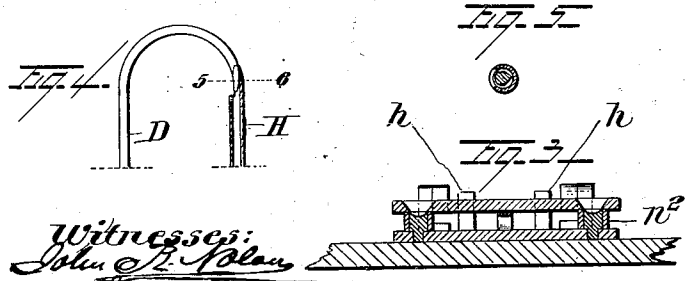
H. A. WINTERNIGHT.

PAPER FILING DEVICE.

No. 483,089. Patented Sept. 20, 1892.







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UNITED STATES PATENT OFFICE.

HENRY A. WINTERNIGHT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES M. CORNYN, OF SAME PLACE.

PAPER-FILING DEVICE.

SPECIFICATION forming part of Letters Patent No. 483,089, dated September 20, 1892.

Application filed April 9, 1892. Serial No. 428,454. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. WINTERNIGHT, a citizen of the United States, residing in the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Paper-Filing Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to paper-filing devices of that character which enables them to be used as temporary binders by having separable uniting-wires, so that papers can be filed, withdrawn, or examined on the file without withdrawal; and it also relates to means for cutting or punching the filing-holes in the papers, and of mounting said punching and filing devices upon a suitable board or frame.

My invention therefore consists of a locking device forming part of the shaft which carries the transfer filing-wires and which acts in conjunction with the supporting-base and with the puncturing filing-wire; also, in the combination therewith of a duplex spring-base; also, in the construction of the puncturing-wire tube.

My invention also consists in the construction of the cutting or punching device wherein stops are provided to limit the upward throw of the female-die plate, and wherein the male dies are provided with annular rubber cushions, and wherein, also, guides are provided, whereby the edges of the papers may be seen while being punctured.

My invention finally consists of the combination, with a base-board, of the punching and filing devices so mounted thereon as to be capable of greater utility and ease of operation than heretofore with such apparatus.

In the drawings illustrating my invention, Figure 1 is a plan view of the base-board and of the filing and punching devices mounted thereon. Fig. 2 is a longitudinal vertical section thereof through the line 1 2 of Fig. 1. Fig. 3 is a vertical section through the line 3 4 of Fig. 1; Fig. 4, a detached side view, partly in section, of the filing-wires; Fig. 5, a section through the line 5 6 of Fig. 4; and Fig. 6 is an elevation of the puncturing-wire of the filing device.

A represents the base-board, upon which the puncturing and filing devices are mounted—that is to say, at one end thereof the puncturing device is mounted upon said board in such manner as to leave the overhanging lifting-handle *b* extending beyond the line of the board. This lifting-handle *b* is integrally a part of the puncturing-plate *a*, which is provided with journals *d*, supported by means of a bolt or rivet in the base-plate *g*. The puncturing-plate has at its extremity beyond the journal *d* a projection *d'*, which is arranged relatively to a stop d^2, whereby the upward limit or movement of the puncturing-plate is regulated. The base-plate is secured to the base-board by screws *a'*. Said base-plate is provided with pillars or posts *h*, parallel to each other and to the cutting-dies, and the upper puncturing-plate is cut away, so as to expose these posts *h*, and by this means papers inserted over the male dies may be seen while being punctured and may be guided in the line of punctures by means of said guiding-posts. I make the female dies *c* beveled outward to the top, so as to more easily discharge cut-out portions of the papers, and the male dies below them are made cup-shaped, in order to present a sharp cutting-edge. Difficulty has heretofore been experienced in discharging the cut-out portions of the papers after being punctured, and for this purpose and for the additional purpose of throwing up the top cover after it has performed its function I place around the male die an annular rubber cushion in the form of a section of rubber tube n^2. A spring *n* is provided to retract the handle *b* after the puncturing is performed. The principal part of my invention, however, is in the filing device. It consists of a base-plate B, secured to the base-board by screws *m m* in such manner that the end B' may extend beyond the line of the board, the latter having a recess *m'* in it, in order that the whole structure may be hung up on a nail. The base-plate B is provided with trunnions C' and is centrally recessed at D'. A shaft C passes through both trunnions C' and across the recess D', and to this shaft C is fastened two curved fine wires D. It is essential that the limit of rotation of the shaft C should be appropri-

ately regulated, and for this purpose I provide a very simple and efficient mechanical means by cutting away that portion of the shaft C which extends over the recess D′ in such manner as to bring the lower portion of the shaft at that point to a straight edge, as shown at T T′, Fig. 2, the operation being that when the shaft is rotated so that the flat side T′ will rest upon the flat spring in the recess of the base-board the straight portion of the filing-wire D will be on a line parallel with the base-board, and when the shaft C is rotated in the opposite direction the tendency will be to force the filing-wire forward until stopped by the point of the puncturing-tube H. In this connection it will be observed that the angle of the flat portion T of the shaft is so made as to accomplish this object effectually and always secure a continuous and unbroken connection between the points of the filing-wire D and the puncturing-tube H, the want of which is a great defect in present paper-filing devices of this character.

In the recess D′ of the base-plate B, I provide a spring to actuate the shaft C. Heretofore said springs have been fixed permanently in the base-plate, and in consequence frictional contact of the same with the shaft wears the parts very quickly, so that they become useless. I avoid this difficulty by making the spring in the form of two flat spring-plates, the lower one of which is full size in the recess D′, and therefore fixed and immovable therein, while the top one D^2 is slightly shorter than the lower one and reciprocates in the recess by contact with it of the sharp edge of the shaft C. By this means I greatly avoid wear and friction, and at the same time provide an exceedingly-strong spring of very light weight, cheap in construction, and efficient in operation.

The puncturing-wire H is constructed in the form of a tube, and at its top is beveled by cutting away the material toward the point, (see Fig. 6,) so as to present thereby a sharp cutting-edge *k*, and said tube is slotted for a part of its length, as at *h*, in order to admit in the slot the thin edge of the point of the filing-wire D.

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

1. In a paper-filing device, the combination, with a base-plate provided with a base-spring and a pair of journal-bearings, of a shaft partially rotating therein and carrying curved filing-wires, said shaft being cut away in two coinciding arcs of a circle, substantially as described.

2. In a paper-filing device, the combination, with a base-plate provided with journal-bearings and a shaft partially rotating therein and carrying filing-wires, of a pair of flat springs of unequal length, one permanently fixed in said recess and the other resting loosely thereon and beneath the said shaft, substantially as described.

3. A paper-punching device provided with a pair of parallel upright guide-posts *h h*, in combination with a base-plate *a*, on which the same are fixed, and a hinged cutting-plate open at the top to expose the guide-posts and the edge of the paper to be punctured, substantially as described.

4. In a paper-punching device consisting of a part carrying a cup-shaped male die and a part carrying a countersunk female die, an annular spring-cushion surrounding the male die and operating to discharge from the face thereof and through the countersunk opening of the female die the cut-out pieces of paper, substantially as described.

In testimony whereof I have hereunto affixed my signature this 25th day of March, A. D. 1892.

HENRY A. WINTERNIGHT.

Witnesses:
JOHN R. NOLAN,
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