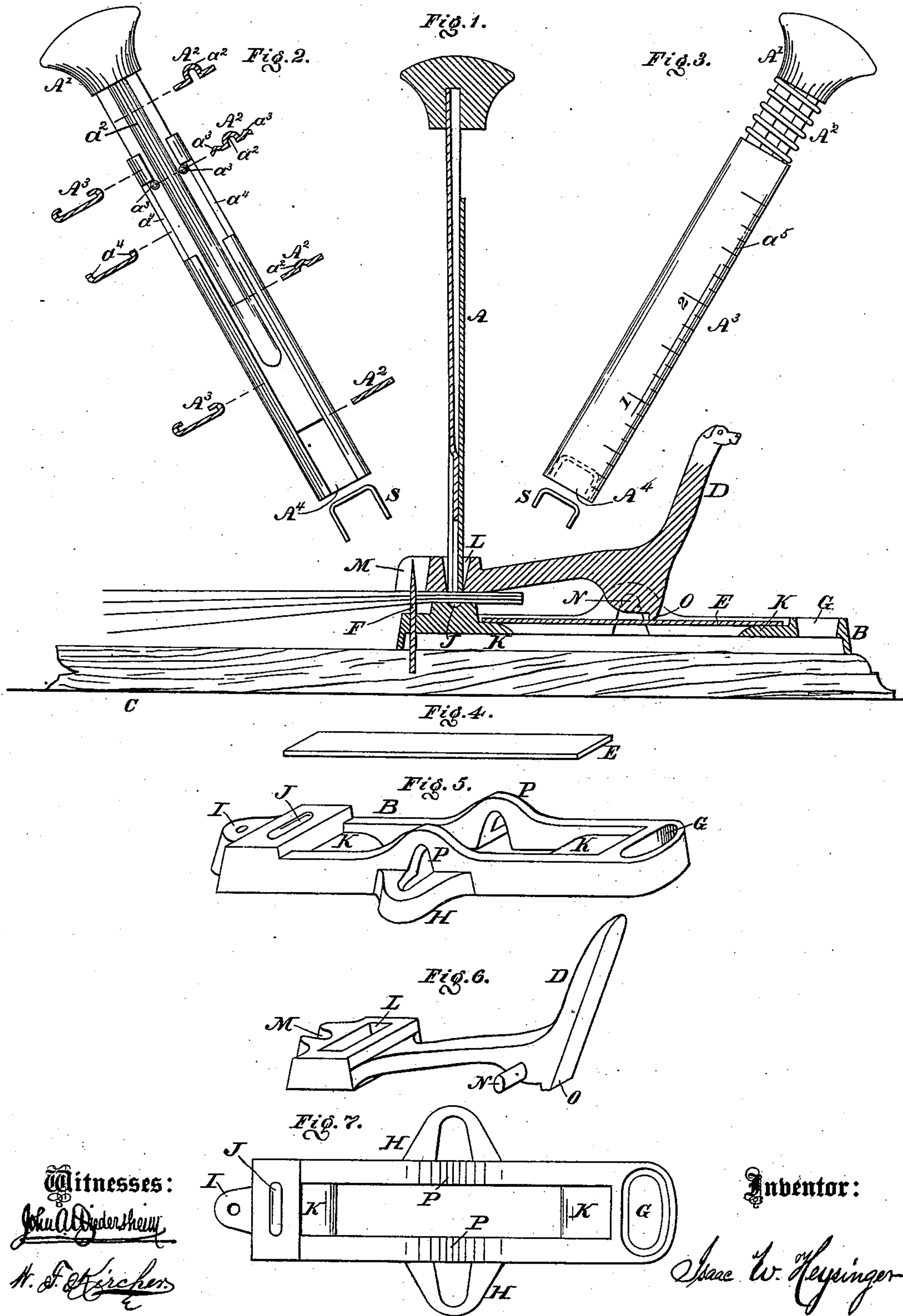


I. W. HEYSINGER.
 Device for Filing and Binding Papers.
 No. 226,402. Patented April 13, 1880.



Witnesses:
John A. Diederichsen
H. F. Fischer

Inventor:
I. W. Heysinger

UNITED STATES PATENT OFFICE.

ISAAC W. HEYSINGER, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR FILING AND BINDING PAPERS.

SPECIFICATION forming part of Letters Patent No. 226,402, dated April 13, 1880.

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To all whom it may concern:

Be it known that I, ISAAC W. HEYSINGER, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented a certain Improvement in Devices for Filing and Binding Papers, Letters, &c., of which the following is a full, clear, and exact description, reference being had to the drawings accompanying and forming part of this specification.

Referring to the drawings, the lettering of which in all the figures is uniform, Figure 1 is a vertical longitudinal section of the whole device mounted upon a board. Fig. 2 is a front view of the staple-driver part proper. Fig. 3 is a rear view of the same; Fig. 4, a perspective view of the spring of the clip part; Fig. 5, a like view of the base of the clip; Fig. 6, the vibrating clamping and guide arm of the same; Fig. 7, a plan of the base of the clip from above.

The object of my invention is to produce a letter or paper filing device which shall hold a pile of loose sheets in position, the same gradually accumulating and being placed in position from time to time, as in an ordinary paper or letter clip; then, when a sufficient number are in place, to allow the whole to be firmly and permanently bound together without removing the same or using cords or other devices previously placed beneath the papers, the bound sheets then being removed and laid away and the apparatus being ready for a new supply.

The device consists of two portions—one the clip or base part, which, as shown in Fig. 1, may be attached, if desired, singly or in pairs, to a base-board, the other the staple-driver, the nose of which, being inserted into a slot prepared for the purpose, admits of the driving of a staple through the mass of papers and bending up the ends thereof upon a prepared block beneath, thus, as above said, firmly binding the whole together.

The base part is shown in section in Fig. 1, and the different parts composing the same may be seen in Figs. 4, 5, 6, and 7. It consists of a metallic base, Fig. 5, so cast or formed as to admit of the reception of the clamping-arm, Fig. 6, from beneath, the pins N N upon opposite sides of said clamping-bar thus engaging in the sockets P P, Figs. 1 and 5,

which act as journal-boxes, said clamping-bar being held up to its place by the flat spring E, Figs. 1 and 4, which is afterward slipped into its seat in the manner shown in Fig. 1, the ends being supported by the shoulders K K, Figs. 1, 5, and 7, the center being free to sink beneath the heel O, Figs. 1 and 6, as the thumb-lever D is depressed. Of course a more expensive drilled mounting may be used; but this form perfectly answers the purpose, and is very economical to manufacture, as the simple castings, if well made, go together without the touch of a file or other tool.

The spring E, Figs. 1 and 4, is clipped from a sheet of light-tempered steel, and is a simple flat bar, the cost of which, beyond the price of the steel, is inconsiderable. The clamping-arm, Fig. 6, is also cast in the simplest and cheapest manner. It consists of a thumb-piece, D, clamp L, and heel O, the whole supported when in position by the pins N N.

At its forward end, L, the clamp-bar is slotted, as shown in Figs. 1 and 6. This slot is for the reception of the nose of the driver A, Figs. 1, 2, and 3, and is of such form as readily to admit the same without much lateral play, and yet not retain the same rigidly, but to allow ready insertion or removal of the said driver. I prefer making it somewhat funnel-shaped toward the top for this purpose. In front of this slot is the bifurcation M, (which may be a slot or hole.) The object of this is to embrace the sides of the pin F, Fig. 1, and force the papers which may be placed in the clamping-jaws down upon the same, so that they may be held from slipping while others are placed upon them, until a sufficient quantity may have accumulated for binding. This pin may be attached to the base at I, (see Figs. 5 and 7,) or may, as in Fig. 1, be set into the base-board and pass up through the hole I, reserved for the same. It may also, for special purposes, be dispensed with sometimes.

Beneath the slot L when in place, Fig. 1, is a raised part of the base J, Figs. 1, 5, and 7, forming a block, upon which the slotted portion L of the clamping-arm rests, and which, together with it, forms the jaws whereby the papers are firmly held together. In this elevated portion J is a depression, which I pre-

fer to form in the casting by the use of what is technically known as a "chill," whereby an excessively hard surface is secured at this particular point without additional expense and without weakening the body of the casting, the part being raised above the general surface for this purpose. I also sometimes cut this depression by a milling-wheel, or by other means well known to mechanics, some accuracy being requisite to cause the tool to work properly when put together.

The ears H H, Figs. 1, 5, and 7, are designed to give the base steadiness, and also to form lugs for attaching the same to the base-board C. I usually employ two of these clips upon one base-board, attaching them about four inches apart, Fig. 1, the board extending sufficiently far beyond to form a support for the letters or papers, a hole being made in the upper portion of the board between the two clips, for suspending the same when so desired.

The clamping-arms, Fig. 6, are so constructed that when the thumb-lever is depressed the heel O will pass sufficiently far beneath the bearing N to hold the slotted portion L raised from the base J until the end M is pressed upon, when it will close with a snap and drive the papers down upon the pin F, Fig. 1. In using two of these clips they are set open, and stand thus until the paper is laid in place, when they are successively closed; or the thumb-pieces D D may be connected by a cross-bar, so that both are actuated simultaneously.

The opening G, Figs. 1, 5, and 7, is for suspending the clip when using it singly without the base-board C. The staple-driver A, Figs. 1, 2, and 3, is likewise formed as economically as possible to give accurate work, and is made with perfect accuracy of fit in the following manner: A properly-shaped blank is struck out of hard sheet metal in a die, the edges of the same being then formed up, as shown in Fig. 2 at $A^3 A^3$. This leaves an open groove, $a^4 a^4$, down the front, Fig. 2, and an enlargement in the upper middle portion of the said groove for the reception of the stop-motion of the sliding bar, $a^3 a^3$. In this grooved case fits accurately the longitudinally-moving bar A^2 , which should be of tempered steel. This also is struck from the sheet, and corrugated or provided with a longitudinal stiffening-rib, as shown in Fig. 2 at $A^2 A^2 A^2$, with a gradually-decreasing depth of corrugation until at its lower part it becomes a flat bar, as at A^{2*} . This corrugated portion plays in the open groove of the outer case, and gives the greatest stiffness with the least weight of metal and cost of manufacture.

At $a^3 a^3$ are seen two raised points or stops upon the sliding bar A^2 , which engage against the top of the enlarged portion of the groove of the outer case, Fig. 2, and arrest the motion of the sliding bar, so as to prevent its escape from the said case A^3 . This open groove also allows the operator to see at a

glance what length of staple, if any, may be contained in the staple-channel, the transverse portion of the staple extending across the same.

As different lengths of staples are used to correspond with various thicknesses of material to be bound, it is important to use staples of suitable lengths to clinch properly.

At Fig. 3 the sliding bar is shown automatically extended by means of a coiled spring; but I do not commonly use this, and only exhibit the same as a possible modification where it is desired to have the bar automatic in its action. It is found in practice no disadvantage to withdraw the bar mechanically, and that compactness is secured, the bar remaining closed up.

In the original form of portable staple-driver, upon which this is an improvement, (A. C. Betts, August 7, 1866,) the bar is raised mechanically, and has been found preferable to one working automatically.

At A' is seen the head, cast onto the bar, which may be of a somewhat hard white metal, this portion receiving the stroke of the hand whereby the staple is driven through the pile of papers.

Upon the back portion of the outer case, a^5 , Fig. 3, is a three-inch graduated rule, for the purpose of gaging the distance from the edge of the papers at which it is desired to drive the staple, and for other purposes.

The method of using this device is briefly as follows: The papers, as shown in Fig. 1, are placed within the jaws of the clip. As soon as a sufficient number have been accumulated the nose of the staple-driver is placed in the slot L, a wire staple of suitable size and length having first been inserted in the open end of the grooved case A^3 , Figs. 1, 2, and 3, as shown at A^4 , where S represents the staple ready for insertion into the case, Figs. 2 and 3.

When the nose of the staple-driver is placed in the slot L, being held perpendicularly, a blow is struck with the open hand upon the head A' , and the legs of the staple are driven through the mass of the papers. As the legs engage with the sides of the recessed surface J beneath, the points are turned over and clinched together upon the under side of the papers. The same process is repeated with the opposite clip, if two are used, and then, the thumb-levers being depressed, the papers are removed, and the apparatus is again ready for use.

These staples are made in various lengths and sizes, commonly of tinned steel wire flattened by the rollers during the process of manufacture into staples.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A paper-filing clip, B D, having the recessed clinching-block J and guide-slot L, or its equivalent, substantially as and for the purpose herein described.

2. A staple-driving device, A, having the flat tubular external case, A³, longitudinally grooved at one side thereof, in combination with the driving-bar A², provided with the stiffening-rib a² a² a², arranged to occupy the said longitudinal groove, substantially as described.

3. In combination with the detachable staple-driver A, the slotted clamping-arm D L, together with the base B, having the recessed block J, the whole constructed to operate substantially as and for the purpose herein set forth.

4. In combination with the base B and spring

E, the clamping-arm D L, having slot M and heel O, substantially as described.

5. A means for filing and binding papers, consisting of a base-board, C, upon which are mounted one or more paper clips, B D, having clinching-blocks J and slots L, with or without the pins F, together with the staple-driver A, the whole constructed to operate substantially as herein shown and described.

ISAAC W. HEYSINGER.

Witnesses:

C. H. HERSHEY,
W. H. RICHARDS.