

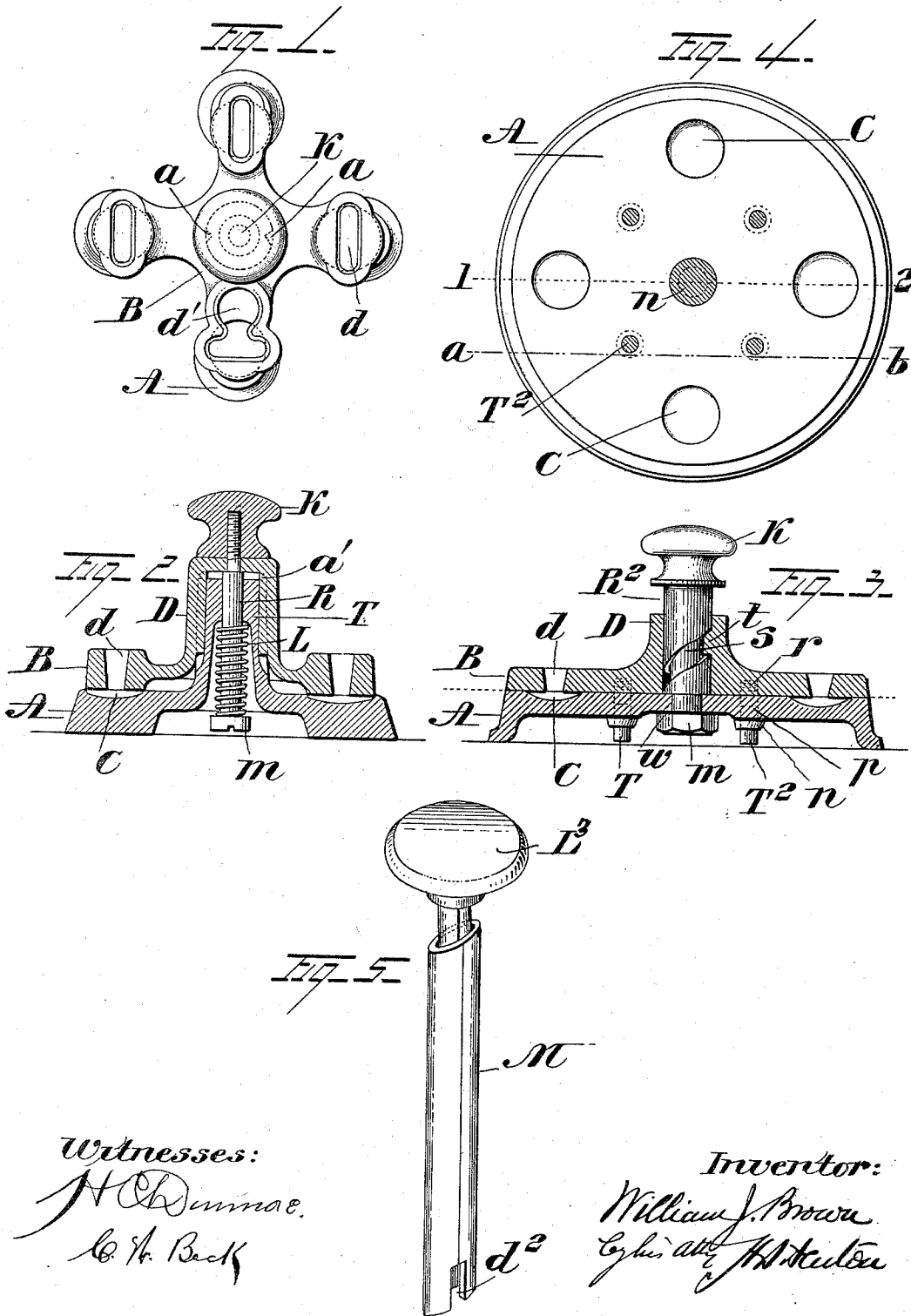
(No Model.)

2 Sheets—Sheet 1.

W. J. BROWN.
STAPLE INSERTING DEVICE.

No. 488,308.

Patented Dec. 20, 1892.



Witnesses:
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Inventor:
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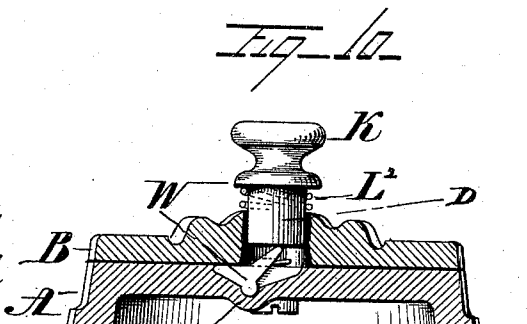
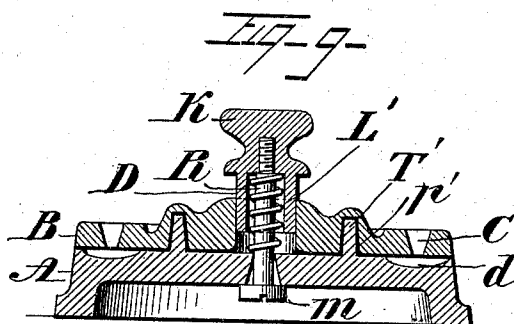
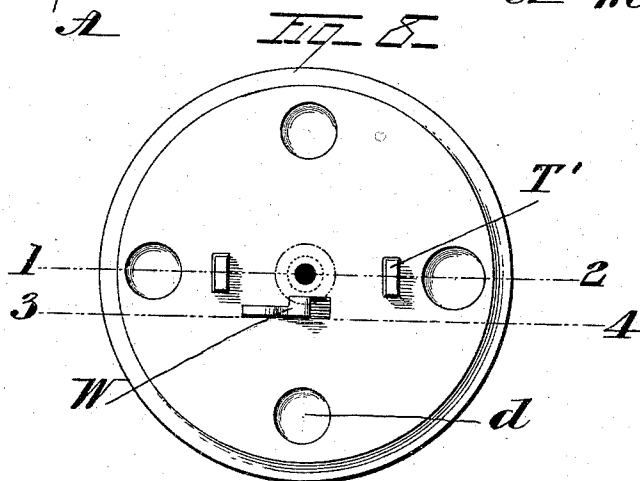
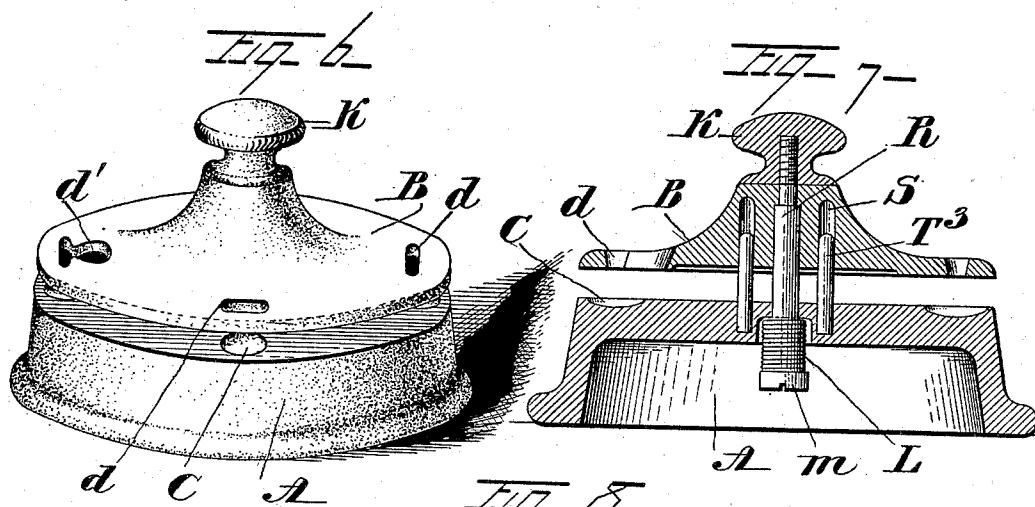
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2 Sheets—Sheet 2.

W. J. BROWN.
STAPLE INSERTING DEVICE.

No. 488,308.

Patented Dec. 20, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM J. BROWN, OF PHILADELPHIA, PENNSYLVANIA.

STAPLE-INSERTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 488,308, dated December 20, 1892.

Application filed February 27, 1892. Serial No. 422,955. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BROWN, a citizen of the United States, residing in the city of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Devices for Inserting and Clinching Metallic Staples, 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 desk tool devices for inserting and clinching metallic staples, and consists of two separable tools or devices intended to be used together, one for inserting the staple in the underlying papers, and the other for clinching the same, but each capable of being used separately in the performance of its specific function with some other appropriate tool to perform the other of the said functions respectively.

In a former application now pending, Serial No. 417783, filed January 12, 1892, I described and claimed separately therein a detached staple driving or inserting device, and my present application therefore will be confined to the staple driver guiding and staple clinching device, and to the combination thereof with an appropriate detachable staple inserting tool.

The principal part of my present invention is the production of a staple-driver guiding and staple clinching device in the form of a small hand tool of novel construction, appropriate for desk use, and which may be made of such form that it will be useful as a paper weight and paper clip, and be capable of containing more than one staple-driver guiding recess to adapt it to the reception of different sizes and styles of staple drivers and to the clinching of different sizes and forms of metallic staples.

In the accompanying drawings illustrating my present invention Figure 1 is a plan view, and Fig. 2 a vertical sectional view of my staple-driver guiding and staple clinching tool. Fig. 3 is a modification thereof, and Fig. 4 a plan view of the stationary base of Fig. 3, the top guiding cover and the operating screw being removed. Fig. 5 is an elevation intended to illustrate a form of detached staple driver adapted to be used with the

clinching devices shown in the several figures. Figs. 6 and 7 are perspective and vertical cross sectional views respectively of a further modification of the device shown in Figs. 1 and 2. Figs. 8, 9 and 10 show another modification of the same tool; Fig. 8 being a plan view of the stationary base with the top portions removed, of Figs. 9 and 10; Fig. 9 being a vertical cross section on the line 1—2 of Fig. 8, and Fig. 10 being a vertical cross section on the line 3—4 of Fig. 8, the latter showing an outside actuating spring in dotted lines.

The essential underlying principle of construction in each form shown of this device, is the combination with a stationary base plate provided with one or more clinching recesses thereon, of an overhanging plate having staple-driver guiding recesses therein, with vertically sliding sleeve-like mechanism between said parts whereby the guide plate may be reciprocated with relation to the clinching base in a perpendicular plane, and my invention consists broadly of such a combination. It also consists of the combination with said elements, of mechanism to so reciprocate said guide plate consisting of a vertical operating rod with a lifting cam screw between said base and the guide plate or with a downwardly acting or an upwardly acting spring, as the case may be substituted therefor. The lifting cam shown in Fig. 10 being the mechanical equivalent for this purpose of the cam-screw shown in Fig. 3.

My invention further consists of minor details of construction and minor combinations hereinafter more particularly described, and pointed out in the appended claims.

As shown in the several figures of the drawings, the staple driver guiding and staple clinching tool consists of the base plate A which is intended to rest solid upon the desk or other flat surface, and which may be made comparatively heavy to serve as a paper weight, and be of annular form, for the purpose of ornamentation, as shown in perspective in Fig. 6, but may be in the form of a central body with arms proceeding therefrom as shown in Fig. 1. Said base plate is provided with clinching recesses C of any well known form. Above this base plate is provided an

over-hanging guide plate B of peripheral conformation to cover the clinching recesses in the face of the base plate A, and preferably to cover the whole of the face of the base plate. Said over-hanging plate B is provided with slots or openings d immediately over the clinching recesses in the base plate A. For ordinary purposes, these slots or recesses may be made in the form of an ordinary slot as at d , Figs. 1 and 6, or to adapt them to suspension ring staples they may be in the form shown at d' , Fig. 1. Rising from the center of the base plate A is a vertical pillar or shaft T (see Fig. 2) vertically grooved on its exterior at a' . The over-hanging guide plate B is provided with a central hollow sleeve D adapted to slide vertically upon the pillar or shaft T of the base plate A, and said sleeve is provided with splines or feathers a moving in the vertical grooves a' to prevent rotation of the sleeve D upon the shaft T. It is obvious, however, that the same result may be obtained by making the sliding sleeve and shaft square or polygonal in form. A knob K is screwed upon or otherwise fitted to the hollow shaft D. A rod R is inserted through a vertical recess in the shaft T and is fastened to the sleeve D by passing upward into the knob K. A spiral spring L is placed upon the rod R between the lower end of the recess in the shaft T and the nut m on the end of said rod. By this construction it will be observed that on lifting the guide plate B by means of the knob K, its hollow sleeve will slide in a perpendicular plane upon the upright shaft T, and by means of the guiding devices a, a' , the driver guiding recesses d will always be kept in register with the clinching recesses C. The form of detachable staple driver adapted to be used with this form of clinching tool is shown in Fig. 5. Several other well known forms of staple-drivers may be used instead thereof, but I prefer the form shown.

The mouth or the extreme lower end of the staple driver is provided with the ordinary staple, the plunger of the driver being first withdrawn, and the mouth or end of the driver is then inserted through the recess d upon the underlying papers which have been placed in the clinching tool. A blow upon the impact head L^3 will then drive the staple through the papers, when it will be clinched, or its legs bent inward by contact with the grooved sides of the clinching recess C. The driving tool is used by holding the outer case M in the hand, while the operation of driving the staple is performed. The lower end on one side of the staple case M may be grooved as at d^2 to enable a suspension ring staple to be inserted therein and driven through the suspension ring recess d' in the clinching tool. (See Fig. 1.)

A modification of the clinching tool of Fig. 2 is shown in Fig. 3, in which latter a cam screw is used to reciprocate the overhanging guide plate B. In Fig. 3 the guides, consist-

ing of the vertical grooves a and splines or feathers a' of Fig. 2, are supplied by their equivalents, which in this construction are guide pins T^2 screwed into recesses at r in the overhanging guide plate B, which guide pins pass downward through recesses p and through a boss n in the base plate A. In said Fig. 3 the rod R^2 combines in itself the shaft T and the rod R of Fig. 2; and the hollow sleeve D slides in a perpendicular plane and upon its rod R^2 of Fig. 3 precisely as it does upon the shaft T of Fig. 2.

In lieu of the pull spring in Fig. 2 to retract the guide plate B, I provide in the machine shown in Fig. 3, a spiral screw thread s , and supply a screw cam projection t on the interior face of the sleeve D to fit said screw thread. The lower end of the rod or shaft R^2 which passes through the base plate A is prevented from rising out of the recess w therein by means of a nut m fastened thereto. Instead of pulling up the base plate B by means of the knob K and permitting it to retract by means of a pull spring as shown in Fig. 2, I give a slight turn to the knob K of Fig. 3, which causes the rod or shaft R^2 to rotate and the cam t to move upward in the screw thread s and hence raises the guide plate B. A reverse movement of the rod or shaft R^2 by means of the knob K causes the plate B to descend upon the underlying papers placed upon the base plate A. If desired, the screw thread may be transferred from the upper part of the shaft R^2 and from the sleeve D of the guide plate to the lower end of the shaft R^2 and to the recess w in the base plate, so that the shaft R^2 will then pass downward through the latter and keep the rim of the knob K always flush with the top of the sleeve D, the guide plate being carried by the shaft R^2 which is retained by suitable means from passing through the sleeve D though free to rotate therein. In both of these cases it will be observed that the pull spring as well as the cam screw, impart the function of a paper clip to the tool.

In the modification of the tool shown in Figs. 6, and 7, it will be observed as seen in Fig. 6, that the tool is capable of being made ornamental as to serve as a paper weight, as well as a paper clip. In Fig. 7 the equivalent of the hollow sleeve D is supplied by the annular series of vertical recesses S and which are thus practically a skeleton sleeve; and the upright shaft T is supplied by the annular series of vertical posts T^3 adapted to fit these recesses S; said posts being the equivalent of the post or shaft T, and being practically a skeleton shaft. The advantage of making this shaft in skeleton form and the sliding sleeve in skeleton form as described, is that the grooves and splines a, a' , or the guide pins T^2 may be dispensed with, as they are then combined in the one element.

In the modification shown in Figs. 8, 9 and 10, a reverse action of the spring of Fig. 2 is provided; that is to say, instead of lifting up

the knob K to raise the guide plate B, the relation of the hollow sleeve and its shaft is reversed so that by pressing down the knob K, the said guide plate B is raised. This action is effected by the following means; viz: the spring L' has its lower end, instead of its top end, bearing against the base plate A, so that its effect is to bring the guide plate B into contact with the base plate A, in both cases.

The normal relative position of the base plate A and guide plate B, is closed, in every form shown, of the device. In Fig. 9 is shown the spring L' within the sliding sleeve and shaft, and in Fig. 10 the same spring marked L² is placed outside of the shaft R, but the latter may be used in addition to the former, if desired. In this form of the device, shown in Figs. 8, 9 and 10, the vertical guiding pins T' arise from the face of the base plate A, and pass up into recesses p' on the under side of the guide plate B, as in the form shown in Fig. 7; but in lieu of the form of cam screw shown in Fig. 3, I provide a loose cam W resting in a socket V in the base plate A, one prong of the cam being acted on by the end of shaft D when depressed, causing the other prong of the cam to move the guide plate B in an upward direction, the spring L' or L² depressing it in turn when the knob K is released by the hand.

Guides for the proper location of the staples in the papers to be stapled are provided in and by means of the guide pins p', T² and T³, respectively, which thus perform a double function.

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

1. In a tool for clinching metallic staples by means of a detachable staple driver, the combination with a stationary base plate provided with one or more clinching recesses thereon,

of an overhanging guide plate having staple driver-guiding recesses therein; and vertically sliding sleeve-like mechanism between said parts whereby the guide plate may be reciprocated with relation to the clinching base in a perpendicular plane; substantially as described.

2. A staple driver-guiding and staple clinching device, consisting of the combination with a stationary base plate provided with one or more clinching recesses, an overhanging guide plate suitably recessed to register with said clinching recesses and receive and guide the open end of the staple driver; vertically sliding sleeve-like mechanism between said base and guide plate whereby the latter may be reciprocated with relation to the clinching base in a perpendicular plane; and means to return said guide plate to its normal position when a staple is to be driven, substantially as described.

3. A staple driver-guiding and staple clinching device, consisting of the combination with a stationary base plate provided with one or more clinching recesses, an overhanging guide plate suitably recessed to register with said clinching recesses and receive and guide the open end of the staple driver; a vertically sliding sleeve like mechanism between said base and guide plate whereby the latter may be reciprocated with relation to the clinching base in a perpendicular plane; and guiding devices to prevent rotation of said guide plate during its reciprocation; substantially as described.

In testimony whereof I have hereunto affixed my signature this 17th day of February, A. D. 1892.

WILLIAM J. BROWN.

Witnesses:

JOHN R. NOLAN,
H. T. FENTON.