(No Model.)

W. J. BROWN.

HAND NAILING IMPLEMENT.

No. 482,540. Patented Sept. 13, 1892.

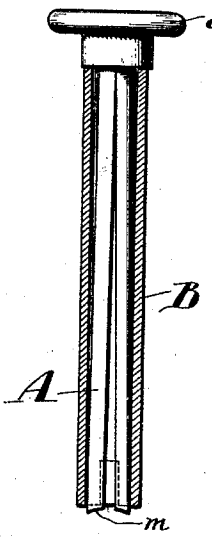

FIG. 1.

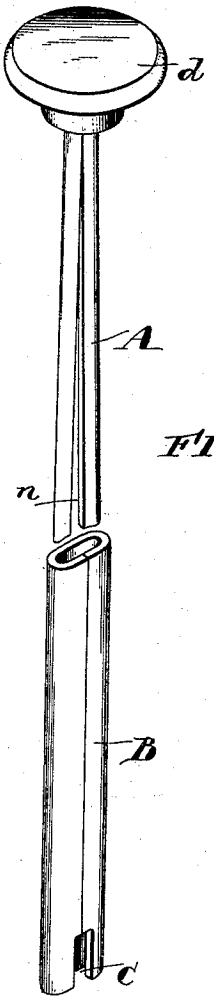

FIG. 2.

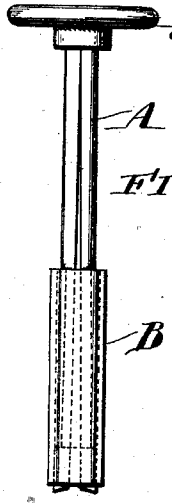

FIG. 3.

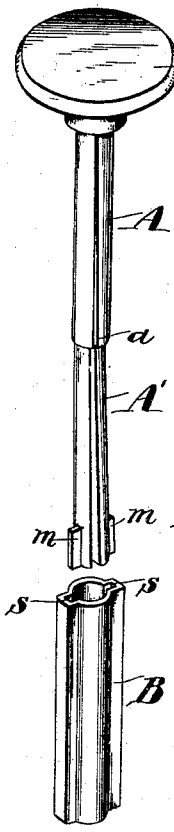

FIG. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM J. BROWN, OF PHILADELPHIA, PENNSYLVANIA.

HAND NAILING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 482,540, dated September 13, 1892.

Application filed January 12, 1892. Serial No. 417,783. (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 Staple-Drivers, 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 devices for driving metallic staples and is applicable more particularly to hand-tools of easy and cheap construction adapted to inserting small metallic staples in paper documents and other like articles requiring to be fastened together, my improved device in that form being capable of use in connection with any of the well-known clinching-tools for bending up the legs of metallic staples and clinching the same against the under side of the stapled papers, that operation being performed with such a tool simultaneous with the driving or inserting of the staple by a detached or detachable staple-driver.

The object of my invention is to simplify the construction of the staple-case and plunger-guide and of its contained plunger-blade; and to that end my invention consists, broadly, in constructing the plunger-blade of a small strip or bar of suitable metal, preferably of flat or flattened oval form, and dividing or splitting the lower end of the same longitudinally transversely to the crown of the staple, so as to give a spring-like character to the split sides, which will not only enable it to fit varying sizes of staple-case, but be retained within the staple-case by frictional contact with the interior thereof and without any fastening, and also when made flat or flattened oval form will dispense with specific guiding devices either on the plunger-blade or in the staple-case in small hand-tools constructed on this principle.

My invention also consists in combining with such a plunger-blade and an impact knob on the upper end thereof a staple-case and plunger-guide consisting of a simple tube of general interior conformation—such as flat or flattened oval—adapted to the form of the plunger-blade.

My invention finally consists, as adapted to large or more expensive tools, of a plunger-blade of round, oval, flat, or other form longitudinally divided or split at its lower extremity transversely to the crown of the staple and provided with vertical wings or flanges and a containing staple-case and plunger-guide with vertical guideways adapted to receive said wings or flanges.

In the accompanying drawings, Figure 1 is a vertical sectional view of a staple-driver illustrating my invention. Fig. 2 is an elevation thereof with the driver or plunger withdrawn from the staple-case. Fig. 3 is an elevation partly in section; and Fig. 4 is an elevation thereof with the plunger removed from the staple-case, both figures intended to show the construction of the wings or flanges on the plunger and the vertical guideways in the staple-case.

By reference to the drawings it will be seen that the plunger-blade A consists of a short bar of suitable metal, preferably of flattened oval form longitudinally, when it is desired to dispense with guide-flanges, split for nearly its entire length perpendicularly from the base upward and transversely to the crown of the staple, and provided at its top end with an impact head or hand-knob *d*.

In the practical construction of the device I prefer, instead of actually splitting the blade for a part of its length, to split or divide it the entire length and reunite the top ends in a clamping or containing head or end, first giving the lower divided ends a slight curving bend outward to make the spring-like action strong.

As my invention consists, broadly, in splitting or dividing the blade to enable the lower ends to be given an outwardly-pressing spring-like action, it is obvious that I do not wish to be confined to the precise form shown, as the blade may be made somewhat like a two-pronged fork, or may be actually divided into two split parts and mechanical means used to produce the spring-like tension.

B represents a combined staple-case and plunger-guide, which is merely a plain tube of interior conformation—such as flattened oval—to adapt it to receive the plunger-blade A. The parts are preferably so proportioned that the plunger-blade A will protrude slightly below the base of the staple-case B, and the plunger is preferably made concave at its

base and grooved thereat to embrace the crown of a staple, so that the edges of the concave will at all times bear upon the sides of the staple-crown to drive it evenly, and wear of the blade at these points is also thus provided for.

Sometimes staples are provided with side suspension-ring projections, and to adapt the driving-tool to insert such staples an opening *c* is provided on one of the flat sides of the staple-case B at the base thereof.

By reference to Fig. 4 it will be observed that for larger and more expensive tools wings or flanges *m* are provided on the sides of the plunger-blade A, which may then be round, flat, oval, or any other suitable form, and the staple-case B is provided with vertical guideways *s s*, adapted to fit these wings or flanges. This form of tool presents a more neat and durable appearance than the form shown in Fig. 2; but is not any more efficient or serviceable for desk-tool purposes.

In the operation of the device an ordinary metallic staple is inserted crown upward in the lower open end of the staple-case B, the plunger A having been previously raised to admit thereof. The driver being then placed upon the papers or other articles to be stapled, (the operator's hand holding the instrument by the casing B,) the impact head *d* of the plunger is then given a sharp blow with the other hand and the staple is thus driven through the underlying paper. Both the staple and the plunger-blade are thus guided by the staple-case B, owing to the corners produced by the flat or flattened oval form, as shown in Figs. 1 and 2, or by the guideways *s s* in the form shown in Figs. 3 and 4; but by the former I am enabled to dispense entirely with all guideways in the staple-case, and with all projections, ribs, or guiding devices on the plunger-blade, owing to the spring-like character of its divided ends. The staple after being driven through the papers or other material may have its legs bent up by hand or bent up and clinched on an iron mandrel, or if any ordinary and well-known clinching-base tool is used with this driving device, as it may well be, the staple-legs will be bent upward on the under side of the papers to be fastened and be clinched against the same. It will thus be seen that my improved staple-driver can be used advantageously with any well-known form of clinching-base.

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

1. The combination, with a containing staple-case and plunger-guide, of a movable plunger or driver-blade longitudinally split or divided at its lower extremity transversely to the crown of the staple, forming two spring members, to enable it to operate with an outwardly-pressing spring-like action within the containing-case, substantially as described.

2. The combination, with a containing staple-case and plunger-guide of flat or flattened oval form, of a plunger of similar conformation provided with an impact head at its upper end and longitudinally split or divided at its lower end transversely to the crown of the staple, forming two spring members, to enable it to operate with an outwardly-pressing spring-like action within the containing-case, substantially as described.

3. The combination, with a containing staple-case and plunger-guide provided with vertical guideways, of a plunger-blade longitudinally split or divided at its lower end transversely to the crown of the staple, forming two spring members, and provided with wings or flanges adapted to fit said vertical guideways of the containing-case, substantially as described.

4. A staple-driver consisting of a staple-case B, having a side opening *c*, a vertically split or divided plunger or driver A, forming two spring members, the latter having an impact head *d* and made concave at its base *m*, substantially as described.

In testimony whereof I have hereunto affixed my signature this 8th day of January, A. D. 1892.

WILLIAM J. BROWN.

Witnesses:
JOHN R. NOLAN,
H. T. FENTON.