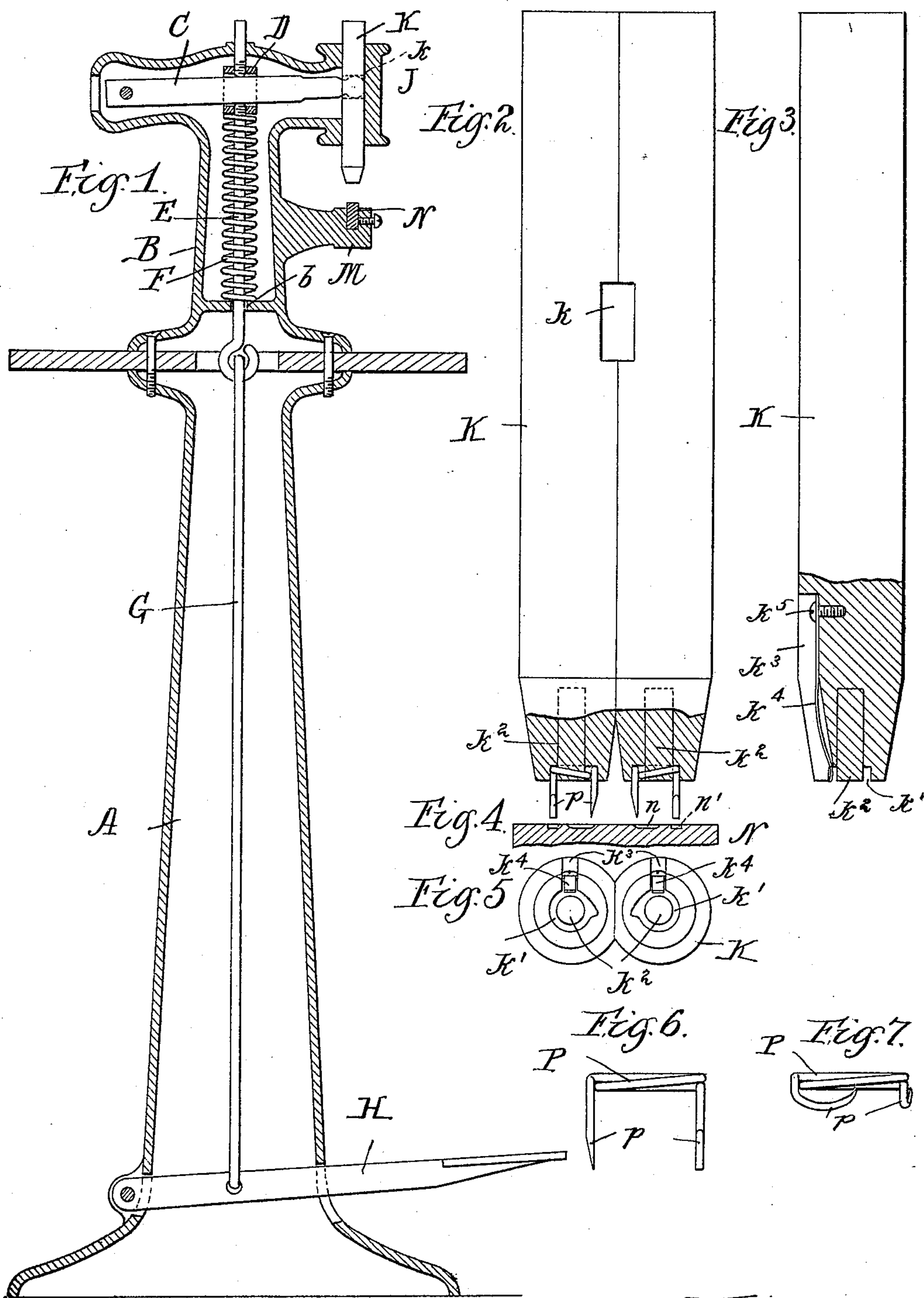


(No Model.)

R. WIRTH.
INSERTING MACHINE.

No. 582,331.

Patented May 11, 1897.



Witnesses.

Wm. M. Rhein.
Asst. M. Chamberlain

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UNITED STATES PATENT OFFICE.

RODOLPH WIRTH, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PRATT
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INSERTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 582,331, dated May 11, 1897.

Application filed December 14, 1895. Serial No. 572,160. (No model.)

To all whom it may concern:

Be it known that I, RODOLPH WIRTH, a citizen of the Republic of France, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Inserting-Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to machines for inserting and clenching lace-fasteners, and is particularly designed for use in inserting and clenching the form of lace-fastener set forth in Patent No. 559,463, issued May 5, 1896, to Charles H. Pratt.

The object of the invention is to provide a machine of simple construction and economical in manufacture which will rapidly and efficiently insert and clench the lace-fastener.

The invention, consists, substantially in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference-signs appearing thereon, Figure 1 is a view in central vertical section of an apparatus embodying my invention. Fig. 2 is a detached detail view, in front elevation, partly in vertical section, of the plunger. Fig. 3 is a view in side elevation of the construction shown in Fig. 2, partly in vertical transverse sections. Fig. 4 is a broken detached detail view, in vertical section, of the clenching-plate. Fig. 5 is a view in end plan of the lower end of the plunger shown in Fig. 2. Fig. 6 is a detached side view of the form of lace-fastener to which my invention is particularly adapted before the ends thereof are clenched. Fig. 7 is a similar view after the clenching operation.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In carrying out my invention I provide a suitable framework or stand A of sufficient size and convenient arrangement to support

the operating parts of the machine. Mounted upon the stand A is the head B, having a bearing J formed therein adapted to receive the plunger K, whereby said plunger may slide back and forth in said bearing. Any suitable or convenient means for effecting a reciprocation of the plunger K may be employed. I have shown a simple and convenient arrangement for accomplishing this result wherein I provide a pivotally-mounted lever C, having the free end thereof arranged to be received in a seat k , formed in the plunger K. The lever C is arranged to pass through a block D, carried by a rod E, said rod arranged to pass through a suitable flange or partition b . A spring F is interposed between said flange or partition b and said block D, the tendency of said spring being to normally maintain the lever C in position to hold the plunger K in one limit of its movement. The rod E is connected to a conveniently-arranged lever H, such as a foot-treadle, through a suitable connection G, whereby said lever C may be rocked against the action of said spring E to move the plunger K to the other limit of its movement.

The lower end of the plunger K is provided with central sockets adapted to receive the removable parts k^2 , of a size adapted to receive thereon the fasteners to be inserted. The plunger K is provided with a counter-sunk seat k' in the end thereof surrounding the posts k^2 and of a shape and depth adapted to receive therein the coils or convolutions forming the body P of the fastener. At a point adjacent to the seats k' the wall of the plunger k is cut away, as clearly shown at k^3 in the drawings, and a spring k^4 is held in such cut-away portion, as by means of a screw k^5 , and having its end arranged to project slightly into the seat k' , whereby the fastener P, when once placed in position in the seat k' and surrounding the pin or post k^2 , is held in place and is prevented from falling out.

The head or portion B of the framework is provided with a projection M, and removably mounted in a seat formed in said projection and in the line of movement of the plunger K is what I shall term the "anvil" N, arranged to cooperate with the plunger K to effect a clenching of the fasteners after inserting

the same in the material or article to which the fastener is to be applied.

By reference to Figs. 6 and 7 of the drawings, and also to the patent above mentioned, it will be seen that the fastener is formed of a single strand of wire bent into convolutions to form the body part P thereof and having the ends *p* bent into preferably right-angular relation with respect to the plane of the convolutions. It will also be seen that the said ends *p* are respectively beveled in different planes in order to facilitate the insertion of the said ends through the article or material to which the fastener is to be applied, and also to enable the said ends to be bent into angular relation with respect to each other on the inner side of the article, as clearly indicated in Fig. 7. In order to effect the bending of the said ends in the manner and direction indicated, I provide in the anvil N a pair of depressed seats *n n'*, adapted to respectively receive the ends of the fastener. The said seats or depressions present a curved or concaved surface to the ends of the fastener and are arranged to bend the ends *p* in the desired relative directions, as clearly indicated in Figs. 2, 4, and 7. The post *k*² accomplishes the important function of clenching or slightly upsetting the extreme points of the ends *p* of the fastener, thereby preventing said ends from being forced back through the material or article to form an obstruction to the lace while being secured in or released from the fastener, and this is a material and beneficial feature of my invention.

It will be observed that the plunger K is shown double—that is, as provided with two clenching-posts *k*² and two seats *k'* and holding-springs *k*⁴. It will also be seen by particular reference to Figs. 2, 4, and 5 that the two portions of the plungers are respectively arranged for “right” and “left” fasteners, for it will be understood that a right fastener is required on one side of the material or article and a left on the other side, and therefore a right and a left may be applied to the material or article simultaneously upon a single operation of the machine. It will be distinctly understood, however, that I do not limit or confine myself to such specific construction and arrangement, as many variations and alterations therefrom would readily suggest themselves to persons skilled in the art and still fall within the spirit and scope of my invention.

The operation of the machine will be readily understood from the foregoing description.

Having now set forth the nature and object of my invention and a form of apparatus embodying the same and having explained the construction and mode of operation of such apparatus, what I claim as new and useful

and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. In a machine for inserting and setting lace-fasteners, a plunger provided with a seat in the end thereof adapted to receive a fastener therein, means for retaining the fastener in said seat, a clenching-post arranged in said seat, an anvil arranged in the line of movement of said plunger and adapted to be engaged by and to bend the ends of the fastener upon the under side of the article to which the fastener is to be applied, whereby the parts of said fastener are clenched upon said clenching-post, and means for reciprocating said plunger; as and for the purpose set forth.

2. In a machine for inserting and setting lace-fasteners a plunger provided with a seat in the end thereof, adapted to receive a fastener therein, and having a clenching-post arranged in said seat, said plunger being cut away adjacent to said seat, a spring mounted in said cut-away part and having its end arranged to project into said seat to hold the fastener therein, an anvil arranged in the line of movement of said plunger and provided with concaved depressions arranged relatively to each other to engage and bend the ends of the fastener into angular relation with respect to each other; as and for the purpose set forth.

3. In a machine for inserting and setting lace-fasteners, a plunger provided with a seat in the end thereof, adapted to receive a fastener therein, a clenching-post inserted in the end of said plunger and having its end arranged to project into said seat, means for retaining a fastener in said seat, a removable anvil arranged in the line of movement of said plunger and provided with angularly-arranged concave depressions, and means for reciprocating said plunger; as and for the purpose set forth.

4. In a machine for inserting and setting lace-fasteners, a plunger provided with a seat adapted to receive a fastener therein, an anvil arranged in the line of movement of said plunger and adapted to be engaged by and to bend the ends of the fastener upon the under side of the article to which the fastener is to be applied, a clenching-post arranged to upset the points of the bent ends of the fastener, whereby said bent ends are prevented from being forced back through the article, and means for reciprocating said plunger; as and for the purpose set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

RODOLPH WIRTH.

Witnesses:

W. R. SWARTWOUT,
DE WITT W. CHAMBERLIN.