

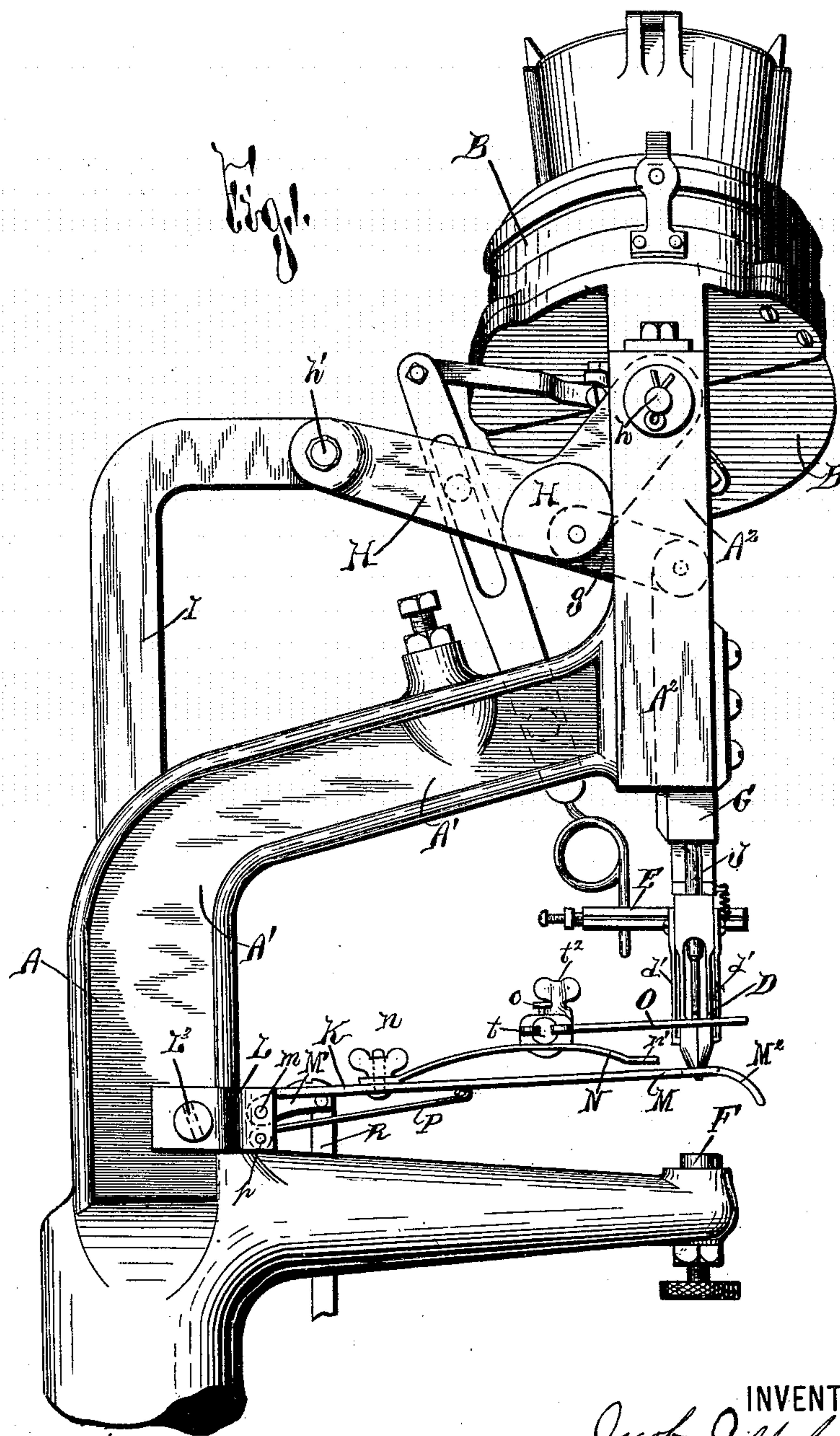
(No Model.)

2 Sheets—Sheet 1.

J. J. UNBEHEND.
RIVETING MACHINE.

No. 434,745.

Patented Aug. 19, 1890.



WITNESSES:

Silas J. Hogan
E. H. Parsons

INVENTOR

Jacob J. Unbehend

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George W. Hey
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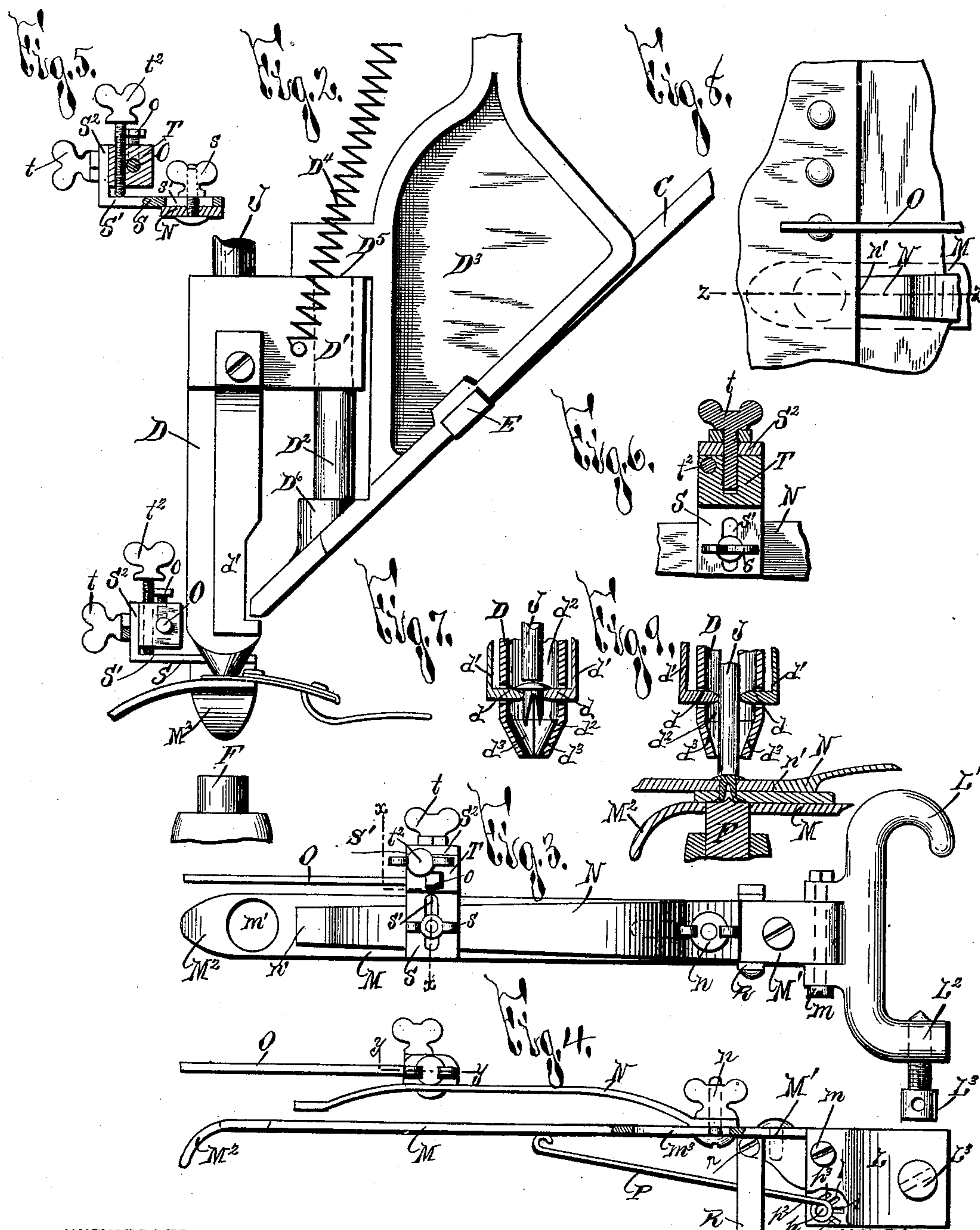
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UNITED STATES PATENT OFFICE.

JACOB J. UNBEHEND, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE JUDSON
L. THOMSON MANUFACTURING COMPANY, OF PORTLAND, MAINE.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 434,745, dated August 19, 1890.

Application filed May 23, 1889. Serial No. 311,786. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. UNBEHEND, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Riveting-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to an improved riveting-machine of the class described and claimed in my application for riveting-machines filed December 31, 1888, Serial No. 295,026, and has for its object the production of a simple and effective attachment whereby the riveting-machine may be used to greater advantage in inserting rivets; and to this end it consists, essentially, in a reciprocating support for the article to be riveted, an opening in said support centering with the rivet-inserting mechanism to allow of the insertion of the rivet, an indicator for spacing off an equal distance between the rivets, and a gage designed to be abutted by a strip of leather, fabric, or other article in which a row of rivets is inserted, in order that the rivets shall be inserted at a uniform distance from the edge of said article.

It also consists in combining this improved attachment with a reciprocating receiver and rivet-inserting mechanism; and it furthermore consists in the detail construction and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In describing my invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 represents an elevation of the upper part of my improved riveting-machine with the attachment therefor mounted in operative position. Fig. 2 is a front elevation of the receiver, rivet-inserting mechanism, and the improved attachment, illustrating a buckle as inserted between the extremity of the oscillating lever of my improved attachment and the lower extremity of the rivet-receiver. Fig. 3 is a top plan view of the detached rivet-machine attachment, illustrating the relative construction and arrangement thereof. Fig. 4 is an edge view of the device illustrated in Fig. 3, still further illustrating

its construction and arrangement. Fig. 5 is a sectional view taken on line *x x*, Fig. 3, illustrating the detail construction of my improved attachment. Fig. 6 is a sectional view taken on line *y y*, Fig. 4, further illustrating the detail construction of my improved rivet-machine attachment. Fig. 7 is a sectional view of the detached extremity of the rivet-receiver. Fig. 8 is a top plan view of the detached extremity of the improved attachment, illustrating its operation when the riveting-machine is used for securing together two separate pieces or strips of leather or other articles; and Fig. 9 is a sectional view taken on line *z z*, Fig. 8.

The frame *A'* of the riveting-machine *A* has preferably mounted thereupon a hopper *B* for feeding the rivets, a feed-passage or conveyer *C* for conveying the rivets from the hopper, a receiver or feeding-pocket *D* for receiving the rivets discharged from the conveyer *C*, a cut-off *E* for feeding the rivets one by one to said receiver, and a die *F* for clinching said rivet.

This riveting-machine, while it may be of any suitable form and construction, is preferably of the class illustrated and described in my application aforesaid, filed December 31, 1888, Serial No. 295,026, and it is unnecessary to further describe the construction and operation thereof with the exception of the receiver *D*. The receiver *D* is preferably mounted above the die *F*, and is reciprocated toward and away from said die. Guided in the head *A²* of the frame *A'* is the plunger *G*, operated up and down by a link *g*, connected to a pivoted lever *H*, pivoted at *h* to the head *A²*. Pivoted at *h'* to one extremity of the lever *H* is the connection *I*, which is operated up and down by any desirable means, thus depressing the point *h'* of the lever *H* and, by means of the connection *g*, forcing downward the plunger *G*. Formed or provided upon the plunger and depending therefrom is a plunger-rod *J*, which is actuated through the receiver *D*.

The rivets are fed shank downward into the receiver, and their heads are engaged by yielding plates or shoulders *d*. (Shown in Figs. 7 and 9.) The plunger is then brought down upon said rivet and forces apart the said yielding shoulders against the action of their actuating-springs *d'*, and then forces the rivet

downward through the guide-passage d^2 of the receiver until the rivet is contacted by the jaws d^3 at the discharge of said receiver. The receiver D is provided with an arm D' , guided upon a rod D^2 , mounted on the bracket D^3 , of suitable form and construction, secured to the head A^2 . By means of a suitable spring D^4 , attached thereto in any desirable manner, the receiver is drawn upward, with the top face of its extending arm D' contacted with a shoulder D^6 , formed upon the bracket D^3 . When the plunger-rod J has forced the rivet downward, so that the same is engaged by the jaws d^3 of the receiver D, the spring of said jaws is greater than the force of the spring D^4 , and consequently as the plunger-rod continues its downward movement the receiver is forced downward toward the die F. This downward movement of the receiver continues until the lower face of the extending arm D' is contacted with a shoulder D^6 , provided upon the bracket D^3 , and immediately upon the said contact the plunger-rod forces the rivet still farther downward, spreading apart the jaws d^3 . It will be seen that the die F is so arranged in relation to the movement of the receiver D that when a suitable article is placed upon the said die the jaws d^3 will not be forced apart until the receiver D has fed the rivet directly to the article to be riveted, thus preventing any turning over of the rivet after its escapement from the jaws.

The attachment K is preferably composed of a supporting-bracket L, a support M, pivoted to said bracket, a gage N, adjustably mounted upon said support M, and an indicator O, adjustably mounted upon the gage N. The support L is of suitable form to be detachably attached to the frame A' of the riveting-machine. By reference to Figs. 1 and 3 it will be seen that this frame A' is preferably of an angular or T shape. The attachment-support L is provided with two laterally-extending arms L^1 and L^2 , one of which L^1 is preferably hooked to fit around the edge of one arm of the T-shaped frame. Provided in the opposite arm L^2 of the support L is a set-screw L^3 , the point of which bears against the opposite arm of the T-shaped frame A' . By screwing inward this screw L^3 the curved arm L^1 will be tightly drawn against the adjacent surface of the bracket A' , and the support L will thus be firmly secured to the frame A' .

The support for the article to be riveted preferably consists of a lever M, one extremity M' of which is pivoted at m to the supporting-bracket L. The opposite extremity M^2 of said lever is provided with an opening m' of suitable size to cap over the lower extremity of the receiver D and allow the jaws thereof to spring apart in said opening when the rivet is inserted. A spring P is attached to a pin p , secured in the support L, and is preferably formed with one extremity p^2 coiled around said pin to increase the spring and the other extremity bearing against the un-

der side of the lever M. As shown in Fig. 4, the stock of the support L, immediately surrounding the pin p , is formed with cut-outs l , arranged radially with said pin. The end of the spring is coiled around the pin p , is formed with the projecting end p^3 , and is engaged with one of the cut-outs l . When desired to change the tension of said spring, the end p^3 is withdrawn from the cut-out in which it is mounted and is engaged with another. It will be seen that the said spring P forces upward the lever M and causes its opening m' to cap over the receiver D. In order to allow of the ready forcing of a buckle, take-up plate, or other articles between said receiver and the extremity of the lever M, the forward extremity of said lever is preferably curved downward.

This device, as described, is very efficient for centering a buckle when it is desired to force a rivet through an opening provided in said buckle and thus secure the same to an article, since when the buckle is forced between the rivet-receiver and the extremity M^2 of said lever the lower extremity of the rivet-receiver will immediately enter for a short distance the rivet-opening in the buckle. Thus when the lever is depressed toward the die F the buckle will be carried to the desired point without the necessity of attention on the part of the operator, the entrance of the rivet into the proper opening in the buckle is positively insured, and buckles or other articles can thus be secured with great rapidity.

The downward movement of the lever M may be accomplished either by the downward movement of the receiver D or by the operator's hand. If desired, however, a connection R may be secured to said lever M at any desirable point, as r , and the same connected to a foot-treadle in the usual manner, and in this case the lever M may be depressed by the operator's foot. When the forward extremity of the lever M, together with the buckle or other article, is depressed to the die F, it will be observed that by means of the opening m' in said lever the same will be depressed below the plane of the top of the die and will not obstruct the riveting of the buckle.

Mounted upon the lever M by a screw n is the gage N, the forward end of which is extended to a point on the inside of the opening m' . This gage, while it may be used for other purposes, is especially useful for securing together two strips of leather or other material by means of rivets when one strip is lapped upon the other. The lower face of the extremity of the gage is preferably slightly elevated above the top face of the lever M, and, as shown in Fig. 8, one strip of material may be forced underneath said gage, and the edge of the top strip may abut against the edge of said gage. By thus forcing the edge of the top piece of leather or other material against the edge n' of the gage it will be seen that the rivets will be forced into the leather in a

line parallel with its edge, and thus present a very neat appearance. It will, however, be understood that in all cases of riveting together two pieces the edge of one does not extend beyond the edge of the other, as shown in Fig. 8. When the edges of the two strips riveted together are in the same line, both edges may be contacted with the gage N. The screw *n*, which screws the gage N to the pivoted lever M, is preferably mounted in a slot *m*³, provided in said lever, and by this means the forward extremity *n'* of said gage N may be adjusted to any desired distance from the opening *m'* in the forward extremity of the lever M. It will thus be seen that by operating the screw *n* the gage N can be adjusted so that rivets may be forced in articles at any desired distance from the edge thereof, which is a feature of great advantage.

Mounted upon the extremity of the gage N is the bracket S, secured to said gage by a screw *s*, which works in the slot *s'* in said bracket S. This bracket S extends laterally from the gage N, and its forward extremity S' is moved toward and away from the adjacent edge of the gage by means of the screw *s*.

Provided upon the bracket S is the upturned end or shoulder S², and abutting thereagainst and above the top face of said bracket is a block or plate T, which is secured to said shoulder S² by means of a screw *t*, engaging the block T and passing through the shoulder S². Extending in a line preferably parallel with the lever M is the indicator O, mounted in said block or plate T and secured therein by the screw *o*. By means of this screw the forward extremity of the indicator O can be adjusted to any desired position. The indicator is designed for inserting the rivets at an equal distance from each other, since the operator has only to align the center of the last-inserted rivet with said indicator, and by this means the rivets will be inserted the same distance apart.

As shown in Fig. 5, a slight space intervenes between the lower face of the block T and the upper face of the bracket S. Extending through the block or plate T is a screw *t*², which bears upon the upper face of the bracket S, and when said screw is turned downward the block or plate T is rocked on the screw *t* as a pivot, and thus the forward extremity of the indicator O is elevated to the desired height.

The operation of my attachment will be readily understood from the foregoing, and it will be understood that while I have described the same in connection with my particular riveting-machine the same can be used upon other riveting-machines, and therefore I do not restrict myself to the particular rivet-inserting mechanism upon which it shall be used.

It will also be understood that considerable

change may be made in the detail construction and arrangement of the parts without departing from the spirit of my invention; hence I do not limit myself to its precise form and construction.

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

1. In a rivet-setting machine, the combination of a receiver D, through which the rivets are fed, a projecting extremity upon said receiver, a support M for the article to be riveted; an opening *m*, provided in one extremity of said support and normally encircling said projecting extremity of the rivet-receiver D, a spring for tensioning said support and engaging the same with the projecting extremity of the rivet-receiver, and a die for clinching the rivets, all operating substantially as and for the purpose set forth.

2. The combination of a die F for clinching the rivets, a rivet-receiver D, movable toward said die, for feeding the rivets, a projecting extremity formed upon said receiver, a support M, having an opening *m'* of greater diameter than said extremity of the rivet-receiver, a spring forcing said support toward the rivet-receiver and registering the opening therein and encircling its extremity with the opening in said support, and a gage N, mounted on said support M, for regulating the position of the rivets, substantially as described.

3. The combination, with a riveting-machine, of a yielding support for the article to be riveted, a gage mounted upon said support for governing the distance of the rivets from the edge of the material, and an indicator, also mounted upon said support for governing the distance between the rivets, substantially as set forth.

4. The combination, with a riveting-machine, of a yielding support for the article to be riveted, a gage N, mounted upon said support, for governing the alignment of the rivets, and an indicator adjustably mounted upon said gage for governing the distance between the rivets, substantially as described.

5. The combination, with a riveting-machine, of a yielding lever M, an indicator N for governing the alignment of the rivets, a supporting-block S, mounted upon said gage, an indicator pivoted to said block S, and a screw for raising or lowering said indicator, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 15th day of May, 1889.

JACOB J. UNBEHEND.

Witnesses:

CLARK H. NORTON,
A. E. PARSONS.