

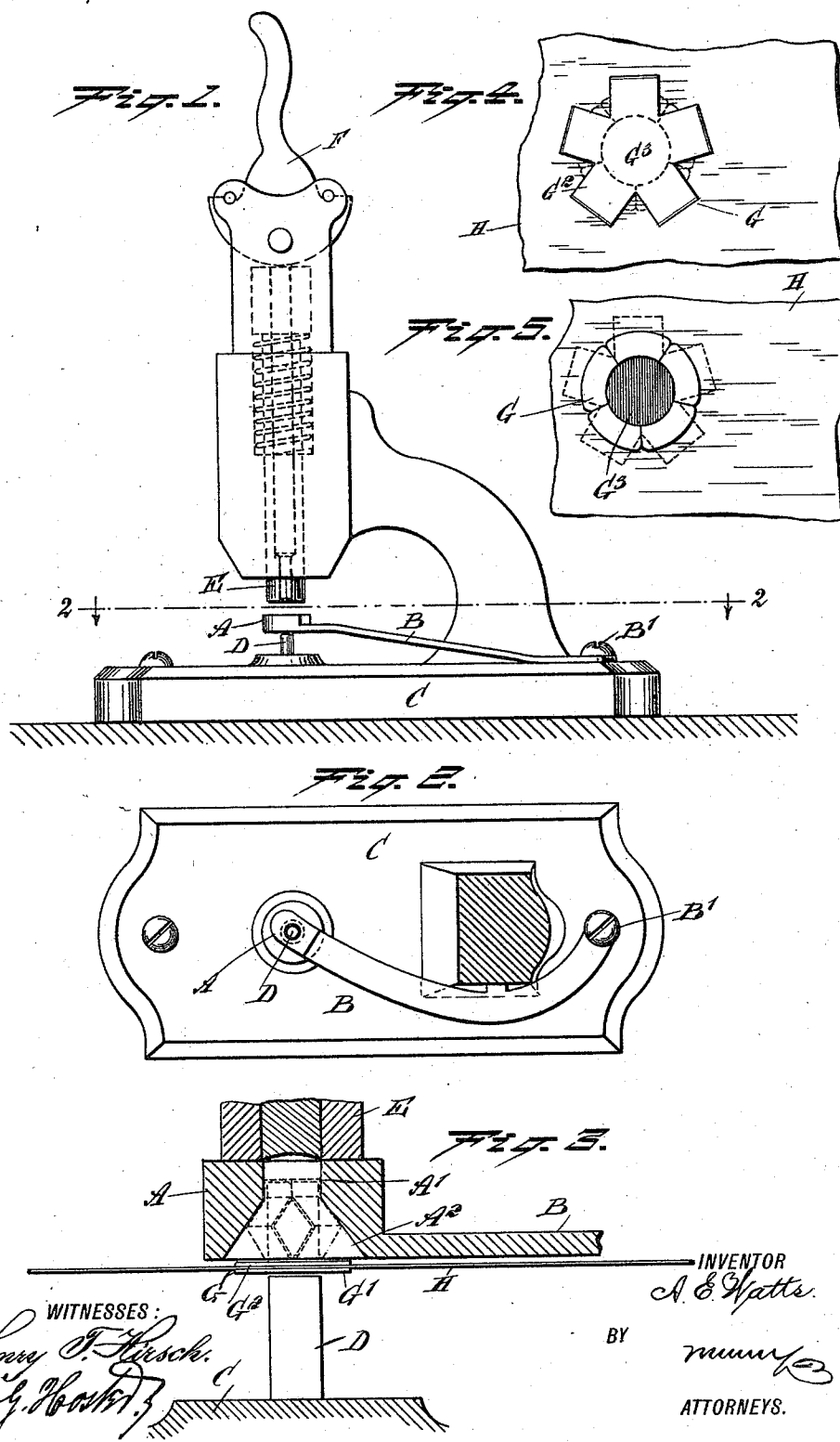
(No Model.)

A. E. WATTS.

ATTACHMENT FOR RIVETING MACHINES.

No. 585,491.

Patented June 29, 1897.



UNITED STATES PATENT OFFICE.

ALFRED E. WATTS, OF DULUTH, MINNESOTA.

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SPECIFICATION forming part of Letters Patent No. 585,491, dated June 29, 1897.

Application filed December 21, 1896. Serial No. 616,475. (No model.)

To all whom it may concern:

Be it known that I, ALFRED E. WATTS, of Duluth, in the county of St. Louis and State of Minnesota, have invented a new and Improved Attachment for Riveting-Machines, of which the following is a full, clear, and exact description.

The invention relates to riveting-machines, such as shown and described in the Letters Patent of the United States, No. 358,224, granted to E. L. Sibley on February 22, 1887.

The object of my invention is to provide a new and improved attachment for riveting-machines, arranged for withdrawing rivets from the paper or other material into which they have been inserted and secured without injury to the material, the rivets being reformed to permit their reuse for fastening parts together.

The invention consists principally of a die interposed between the rivet-holder and the punch of a riveting-machine, the die being formed with an opening in alinement with the rivet-holder and terminating at its lower end in a widened mouth.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is a sectional plan view of the same on the line 2-2 of Fig. 1. Fig. 3 is an enlarged sectional side elevation of the improvement as applied. Fig. 4 is an enlarged plan view of the rivet in the material, and Fig. 5 is an inverted plan view of the same.

The attachment consists of a die A, held on the end of an arm B, fulcrumed at B' on the base C of the riveting-machine of the construction more fully set forth in the Letters Patent above referred to. The die A is adapted to be swung between the rivet-holder D and the punches E of the riveting-machine, the said punches being manipulated by a cam-lever F. The die A is provided with a central opening A', terminating at its lower end in a mouth A², the opening being in alinement

with the rivet-holder D and the punches E at the time the die is interposed between the said rivet-holder and punches.

A rivet G, secured in the paper or other material H by means of a rivet-press, can be removed therefrom by the use of the die A, and for this purpose the latter is moved in alinement with the rivet-holder and the material H with the rivet G is passed between the under side of the die and the top of the rivet-holder D, as indicated in Fig. 3, so that the rivet-holder D can pass into the central opening of the rivet formed by the sections G' of the bottom flange, the sections being connected with doubled-up arms G², extending on the top of the material H from a common top or center G³ closing the central opening.

When the punches E are brought down upon the die A, the latter is forced downward and the rivet-holder D passes through the central opening of the rivet and presses against the under side of the common top G³ to force the latter upward into the die A, and in doing so draws the arms G² into the mouth A² of the die. On a further downward movement of the die A the mouth A², with the rivet-holder D, causes a full opening of the doubled-up arms G², so that the latter finally extend into the central opening A'. The punches E are now moved back into their uppermost position and the die A moves upward, owing to the elasticity of its arm B, to open up the arms G² from the rivet G. The operator now takes hold of the bottom flange G' of the rivet and draws the same out of the paper, it being understood that the opened-up arms G² readily pass through the opening in the paper.

Thus it will be seen that by the arrangement described the rivet is opened in the material H, so as to permit of withdrawing the rivet from the material and using it again for fastening two parts together whenever desired.

By the attachment described the riveting-machine can be used both for riveting parts together and for again loosening the rivets for withdrawing the same out of the fastened parts.

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

1. The combination of a rivet-holder, a punch movable toward and from the same and a die interposed between the punch and the rivet-holder and formed with an opening terminating at the lower end in a mouth.
2. The combination with a support of a rivet-holder, a punch moving toward and from the same, an arm mounted to swing on the support and a die carried by the arm and capable of being moved between the punch and rivet-holder, the die being formed with a central opening terminating at its lower end in a mouth.
3. The combination with a support of a rivet-holder, a punch movable toward and from the rivet-holder, and a die capable of being held between the punch and rivet-holder, and of engaging the rivet to release the same.
4. The combination with a support of a rivet-holder mounted on the support, a die movable toward and from the rivet-holder and capable of engaging the rivet to release the same and an arm having the die attached, the arm supporting the die and vibrating with the same as it moves to and from the rivet-holder.
5. The combination of the members, one having movement toward and from the other and a die capable of being held between the two members and of engaging a rivet held on one member whereby to release said rivet.

ALFRED E. WATTS.

Witnesses:

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