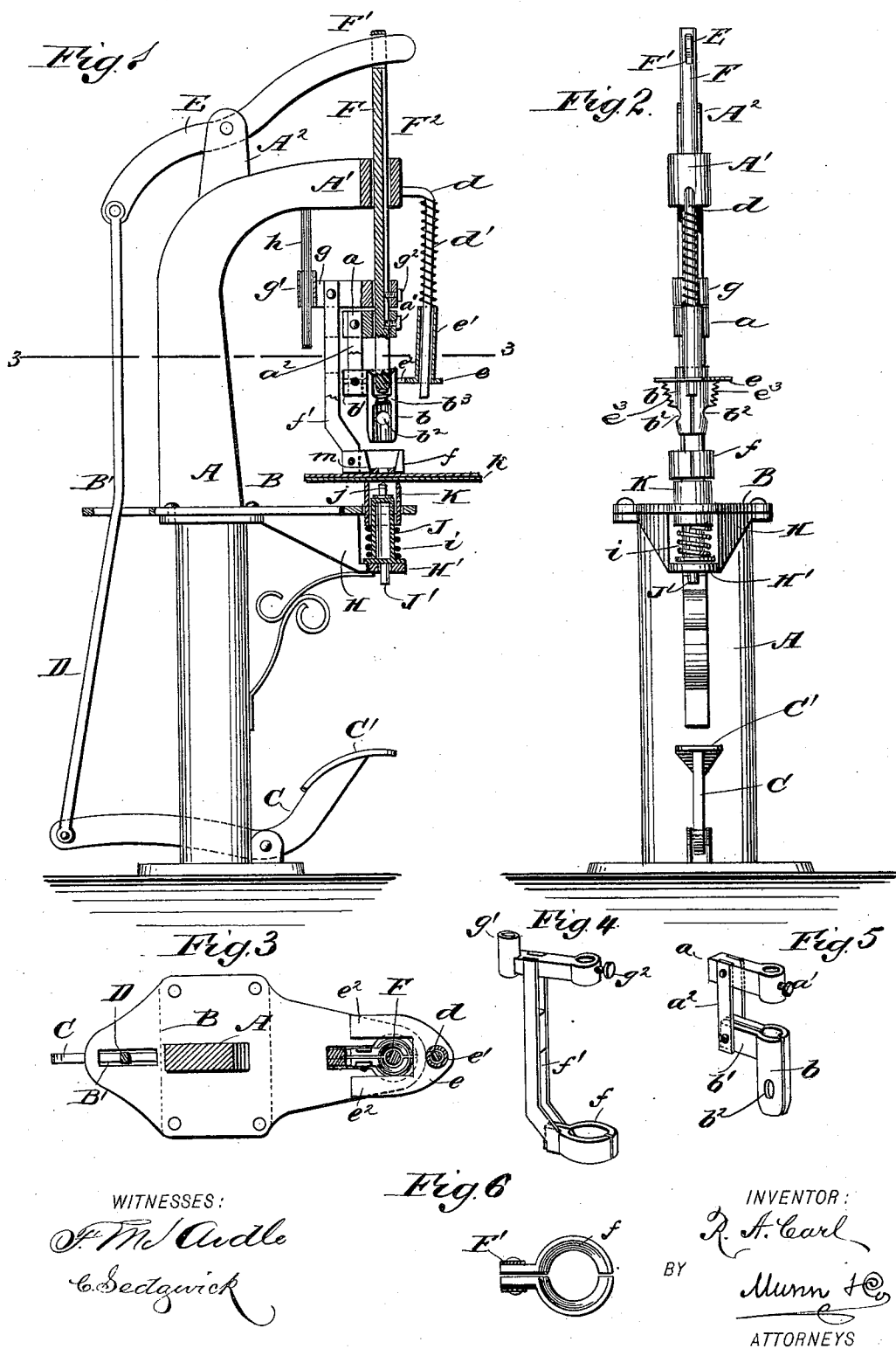


(No Model.)

R. A. CARL.
RIVETING MACHINE.

No. 433,761.

Patented Aug. 5, 1890.



UNITED STATES PATENT OFFICE.

REINHOLD A. CARL, OF HEARNE, TEXAS, ASSIGNOR OF TWO-THIRDS TO
H. K. DAVIS AND W. P. FERGUSON, BOTH OF SAME PLACE.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,761, dated August 5, 1890.

Application filed May 9, 1890. Serial No. 351,108. (No model.)

To all whom it may concern:

Be it known that I, REINHOLD A. CARL, of Hearne, in the county of Robertson and State of Texas, have invented a new and Improved Riveting-Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in riveting-machines; and the object of my invention is to produce a machine by means of which metal rivets may be rapidly driven through any desired material and by which the rivets may be headed at the same operation.

The machine is particularly intended to be used in riveting light sheet metal and other light materials.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter fully described, and pointed out in the claims.

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

Figure 1 is a side elevation of the device with the driving and heading mechanism in vertical section. Fig. 2 is a front view of the machine. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a detailed perspective view of the rivet-burr holder and its supporting-arms. Fig. 5 is a detailed perspective view of the burr-set and the supporting mechanism for the same, and Fig. 6 is a plan of the burr-holder with its supporting-arms in section.

An upright frame A is provided at the top with a forwardly-extending portion A' and with vertical ears A², and fixed to the central portions of the frame is a horizontal plate B, having a slot B' in the rear portion thereof, for the passage of the connecting-rod D. Pivoted in the base of the frame is a curved lever C', which extends rearwardly through a slot in the frame A, which is provided at its forward end with a suitable treadle C', and which is pivoted at its rear end to the connecting-rod D, which extends upwardly through the slot B' of the plate B and is pivoted to the rear end of the lever E, said lever being centrally pivoted between the ears A² of the

frame A. The forward end of the lever E projects through a vertical slot F' in the driving-rod F, said rod being vertically movable through a guide on the forward end of the portion A' of the frame A and being supported in position by the lever E. The driving-rod F is provided with a groove F², which extends nearly the entire length of the rod, and held to slide on the rod near the lower end thereof by a set-screw a' is an arm a, from which depend parallel spring-arms a², said arms being parallel with the driving-rod F, and being attached at their lower ends to the rearwardly-extending lugs b' of the burr-set b, which is composed of two vertically-separable members, which inclose the lower end of the driving-rod F, said members being held together by the pressure of the spring members a².

The burr-set b is provided near the lower end with holes b², which extend laterally through the same, and which permit any material which may accumulate in the burr-set to escape. The burr-set b is also provided with an annular internal rib b³, which engages the lower end of the driving-rod F, and the downward movement of said rod, acting upon the rib, will cause the members of the burr-set b to spread and permit the driving-rod to descend through the same, as will be hereinafter described.

Attached to the front part of the forwardly-extending portion A' of the frame A is a rod d, which is bent to extend downwardly parallel with the driving-rod F, and mounted upon the lower end of the rod is a clamp-plate e, having rearwardly-extending members e² to inclose the burr-set b and hold the members thereof together until said burr-set has been forced below the clamp. The clamp e is provided with an upwardly-extending sleeve e', which moves vertically upon the rod d, and the sleeve and clamp are supported upon the rod by the spiral spring d', the lower end of which is fixed to the sleeve e' and the upper end to the rod d. The members of the clamp e are connected to the burr-set b by the fine spiral springs e³, and when the burr-set is forced downward it draws the clamp with it until it nears the lower end of its stroke,

when the clamp slips off and the spring d' raises the clamp when the burr-set is raised.

A rivet-burr holder f , composed of two similar members, is supported directly beneath the burr-set b and the driving-rod F , and in vertical alignment with the same by the spring-arms f' , which are attached to rearwardly-extending lugs of the holder f , and which at their upper ends are attached to the arm g , said arm having a sleeve g' at its rear end, which moves vertically upon the guide-rod h , which is attached to the portion A' of the frame A . The forward end of the arm g is loosely attached to the driving-rod F by a set-screw g^2 , which projects through the apertured front portion of the arm g and into the groove F^2 of the driving-rod.

Depending from the lower side of the plate B is a brace H , having at its outer extremity a horizontal shelf H' , upon which rests the upright or anvil J , said upright being closed at its upper end, and having upon its lower end a depending spindle J' , which projects through the shelf H . The upright J projects through a slot in the forward portion of the plate B , and the upper end of said upright is inclosed by a sleeve K , which projects above the top of the upright and forms a pocket for the rivet j , said sleeve being supported by a spiral spring i , which encircles the upright J below the sleeve.

To operate the machine a rivet j is placed upon the upper portion of the upright J and a rivet-burr m is placed in the rivet-holder f , which has a conical interior, as shown, that it may suitably support various-sized rivet-burrs. The material k to be riveted is then placed between the upper end of the sleeve K and the rivet-burr holder f . The operator then steps upon the treadle C' , which depresses the forward end of the lever C and raises the rear end, thus moving the rod D , raising the rear end of the lever E , depressing the forward end of the same, and forcing downward the driving-rod F . As the driving-rod descends, the burr-set b will strike upon the upper surface of the burr m , and the pressure will cause the rivet j to project through the material k and through the perforation of the burr m . The burr-set b will then be below the clamp e and the driving-rod F will force the members of the burr-set apart, thus permitting the lower end of the driving-rod to strike upon the point of the rivet and head the same.

In order that the riveting may be neatly done, the lower end of the rod F should be slightly concaved, like the ordinary rivet-set, thus insuring a smooth head to the rivet.

The machine with the burr-holder f removed is capable of use for riveting tin and light sheet metal.

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

1. A riveting-machine consisting, essentially, of an upright frame having a vertically-movable driving-rod therein, a vertically-separable set loosely mounted upon the lower end of the driving-rod, and a stationary upright removably mounted in the frame beneath the driving-rod and set, said upright having a spring-actuated sleeve extending above the upper end thereof, substantially as described.

2. A riveting-machine consisting, essentially, of an upright frame having a vertically-movable driving-rod therein, a vertically-separable rivet-burr set loosely mounted upon the lower end of the driving-rod, a vertically-separable rivet-burr holder supported beneath the burr-set and in alignment with the burr-set and driving-rod, and an upright mounted in the frame beneath the driving-rod, burr-set, and burr-holder, said upright having a spring-actuated sleeve extending above the upper end thereof to form a pocket for the rivet, substantially as described.

3. A riveting-machine consisting, essentially, of a frame, a vertically-movable driving-rod mounted in the frame, a spring-actuated vertically-separable burr-set mounted upon the lower end of the rod, a clamp fixed to the front portion of the frame and adapted to inclose said burr-set, a separable burr-holder beneath the driving-rod and burr-set supported by spring-arms attached to an arm vertically movable upon the driving-rod, and an upright mounted in the frame to vertically align with the driving-rod, burr-set, and burr-holder, said upright having a spring-actuated sleeve mounted thereon and projecting above the same to form a pocket for the rivet, substantially as described.

REINHOLD A. CARL.

Witnesses:

W. P. FERGUSON,
H. K. DAVIS.