

No. 641,317.

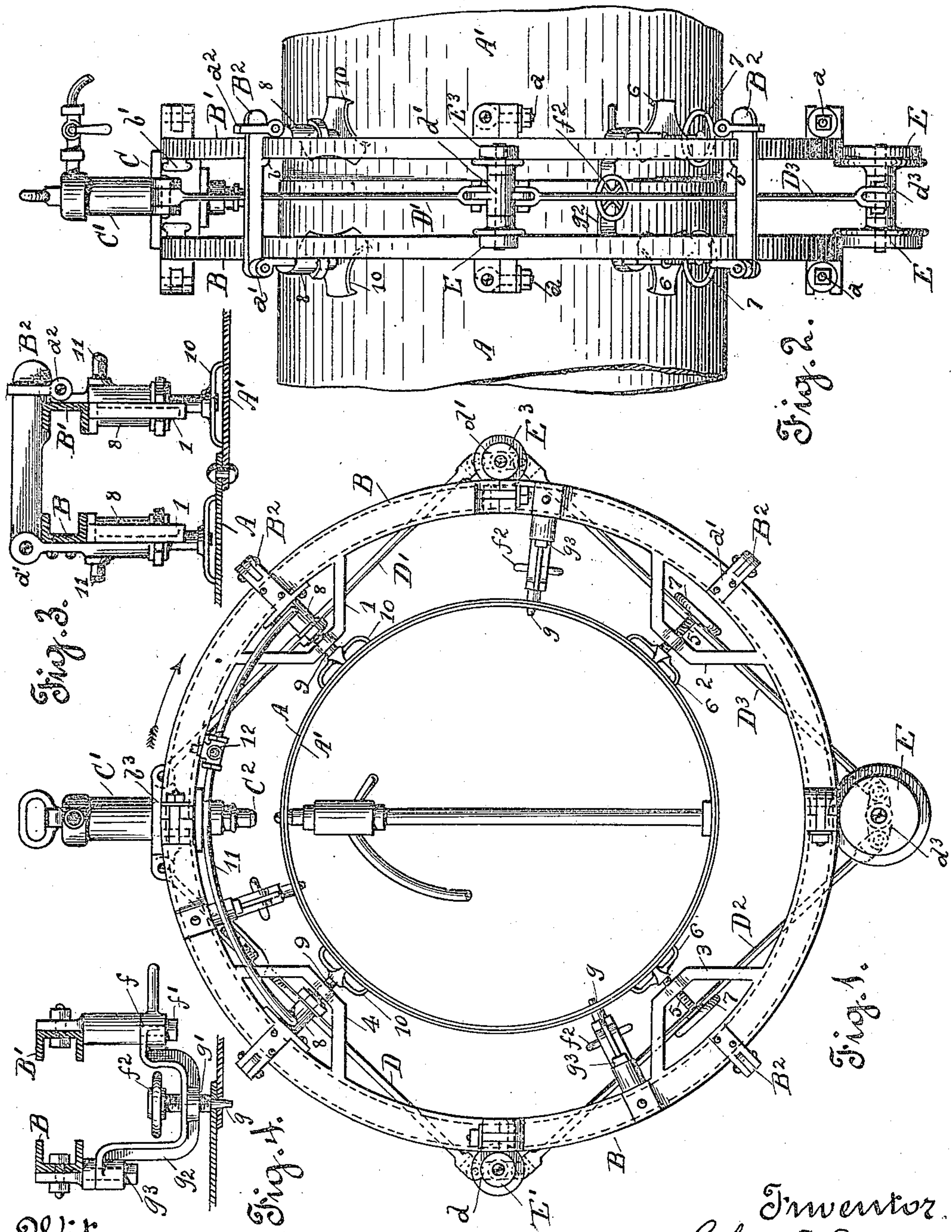
Patented Jan. 16, 1900.

R. S. MOORE.

TOOL HOLDER FOR RIVETERS.

(Application filed Oct. 31, 1898.)

(No Model.)



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## TOOL-HOLDER FOR RIVETERS.

SPECIFICATION forming part of Letters Patent No. 641,317, dated January 16, 1900.

Application filed October 31, 1898. Serial No. 695,118. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT S. MOORE, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Tool-Holders for Riveters; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 The present invention relates to certain new and useful improvements upon the alining and centering mechanism disclosed in the application, Serial No. 684,292, filed by me in the United States Patent Office on the 23d  
15 day of June, 1898, for Letters Patent upon a certain holding device for riveters; and the invention consists in the arrangement of parts and details of construction as will be hereinafter fully set forth in the drawings and described and pointed out in the specification.

20 In my aforesaid application, Serial No. 684,292, I have shown and described a series of hand-manipulated devices for alining the holding-frame to the pipe-sections and have  
25 likewise shown and described a plug working through a connecting-piece for centering the holding-frame to the work to be riveted. This manner of alining causes considerable delay in adjusting the frame to the pipe-sections and releasing the same after the riveting of the sections has been performed, while  
30 by the means described in said pending application for centering the frame to the rivet-holes the operator is required, after the holding-frame has been removed, to close the rivet-holes previously occupied by the centering-plug by hand rivet-work. This I desire to avoid by so arranging the centering  
35 feature that the centering-plug may be removed and its rivet-hole closed during the circumferential movement or travel of the riveting-tool.

40 Practical operation or use of the holding-frame described in my aforesaid application has demonstrated the fact that inasmuch as the sections to be riveted are of approximate diameter it is not necessary to adjust or align that portion of the holding-frame which surrounds or embraces the lower half of the  
45 pipe-sections nor to disturb said adjustments during the removal of the holding-frame from section to section of the work to be riveted.

In order to comprehend the invention, reference must be had to the accompanying sheet of drawings, forming a part of this application, wherein—

Figure 1 is a cross-sectional view of the pipe in front elevation, showing the holding-frame in position and the arrangement of the alining and the centering devices for the frame. 60  
Fig. 2 is a side view in elevation of a portion of the pipe-line or pipe-sections, disclosing the application of the holding-frame thereto. Fig. 3 is a detail cross-sectional view of the holding-frame to better illustrate the alining 65 mechanism, said view showing a portion of the pipe-sections; and Fig. 4 is a view similar to Fig. 3, illustrating the centering device.

In the drawings the letters A A' are used to designate the pipe-sections to be riveted or joined together, and B B' circular plates or rings which encompass the pipe-sections and constitute the holding-frame, said frame being composed of distinct sections which are united or joined together by means of bolts a, 70  
Fig. 1. By preference the annular or holding frame is formed of channel-iron, and between the rings or plates composing the frame is fitted to move the slide-tool-holding block C, which block is formed with side grooves b', 80 so that the side edges thereof embrace the upper and lower faces of the rings or plates B B', Fig. 2. This slide-block is provided with a vertical central opening b<sup>2</sup>, within which is fitted the cylinder C', carrying the pneumatic 85 hammer or riveter C<sup>2</sup>. In order to permit free circumferential movement of the slide-block carrying the riveter, the same is connected by tie-rods D D' to the sleeves d d', which sleeves in turn are connected to sleeve 90 d<sup>2</sup> by tie-rods D<sup>2</sup> D<sup>3</sup>. These sleeves carry, respectively, the rollers E' E<sup>3</sup> and larger rolls E, which larger rolls serve as a counterpoise or counterweight for the riveter.

The arrangement of the foregoing parts and the operation of each being fully set forth in my aforesaid application, Serial No. 684,292, to which reference is hereby made, calls for no specific description in the present application. 100

Each section of the holding-frame, as described in my aforesaid application, when the frame is adjusted to the pipe-sections is fastened or held together by means of the lock



or cross-bars  $B^2$ , which bars are connected by hinged joint  $a'$  to one ring of the frame and secured to the other ring of the frame, when thrown over, by means of the clip  $a^2$ , hinged to said ring, which clip fits over the free end of the cross-bar  $B^2$ , Fig. 2. Each cross-bar is formed with a depending lug  $b$ , which engages the inner face of one of the rings of the annular frame, so as to hold the frame-rings a given distance apart.

To secure proper alinement or adjust the holding-frame to the uneven or broken surface of the pipe-sections, each section of the holding-frame is formed with a downwardly-extending bracket or support 1 2 3 4. Through the lower two brackets or supports 2 3 work the screw-threaded bolts 5, which carry at their lower end a foot 6. This foot rests upon the pipe-section of the respective ring, and either ring is raised or lowered to secure proper adjustment by turning the hand-wheel 7, attached to the upper end of the screw-bolts 5. Inasmuch as the pipe-sections to be riveted are approximately of uniform diameter the adjustment given to the lower half or portion of the holding-frame embracing or encompassing the under portion of the pipe-sections need not be varied materially throughout the line of work. For this reason I prefer to employ hand-manipulated adjusting devices for this portion of the holding-frame, which adjusting means is the same as that set forth in my application Serial No. 634,292, before referred to. Inasmuch as the holding-frame has to be removed from the pipe-sections and advanced longitudinally as the work of line-riveting progresses it is obvious that the upper portion of the holding-frame must be released from the pipe-sections to permit such movement, and when the adjoining section of pipe to be riveted is reached the same must be again united to the lower section so as to embrace the pipe-sections and the alining devices for the upper sections of the holding-frame readjusted to properly aline the frame. To release the parts, it is only necessary to remove the connecting-bolts  $a$  and release the lock-bars  $B^2$ .

To facilitate the work of alining the upper sections of the holding-frame, I dispense with the hand adjusting devices and in lieu thereof attach to each ring of the holding-frame the air-cylinders 8, within which work the pistons 9. These pistons 9 work through the brackets 1 to 4 and at their lower ends carry the foot 10, which bears upon the pipe-sections of the respective rings of the holding-frame. The cylinders 8 are connected by the air-pipe 11, which receives air from an air-supply pipe leading from an air-compressor (not shown) through the ordinary four-way cock 12. As this cock is turned to open the air-supply the air rushes through the pipe 11 into the air-cylinders 8 and moves the pistons 9 outward to force the foot 10 against the pipe-sections, so as to adjust or properly aline the rings of the holding-frame. When it is desired to re-

lease the adjusting or alining devices for the holding-frame, it is only necessary that the operator turn the cock so as to cut off the inlet or admission of air from the compressor, the cutting off of which supply opens the outlet of the four-way cock and permits the escape of air from within the air-cylinders in order to release the adjusting or alining devices.

It is obvious that the lower adjusting or alining devices may, if so desired, be constructed and operated in the same manner as the upper ones, although I do not deem it so necessary, as practical working has proven that the holding-frame may be quickly and easily adjusted in the manner set forth, and illustrated in the drawings.

The holding-frame as adjusted to the work to be riveted is centered thereto by means of screw-plugs  $g$ , which plugs have their lower ends tapered, so as to fit within the rivet-holes of the sections to be riveted, thus acting as blank-rivets. In the drawings I have illustrated three of such centering-plugs, although a greater number may be employed, if so desired. Each centering-plug works through a screw-threaded central opening  $g'$ , formed in the swinging tie-plates  $g^2$ . These tie-plates are pivoted at one end to the studs or pins  $g^3$ , attached to and depending from one of the rings of the holding-frame—say  $B$ —and the opposite end of each tie-plate is provided with a semicircular opening or cut-away portion  $f$ , which when the tie-plate is swung over embraces or fits over the stud or pin  $f'$ , attached to and depending from the ring  $B'$  of the holding-frame, Fig. 4. The screw-threaded centering-plug is raised and lowered by turning of the hand-wheel  $f^2$ , secured to the upper end thereof.

As during the operation of riveting the riveter or tool-holder approaches either of the centering-plugs the operator turns the hand-wheel so as to raise the said plug from within the rivet-holes of the pipe-sections and then releases the tie-plate from the pin or stud  $f'$  and throws the same outward or away from the ring  $B'$  in order to give clearance for free circumferential movement of the riveting-tool, which as carried around drives or heads a rivet in the holes previously occupied by the centering-plug. The tie-plate may then be swung over into position and locked with the pin or stud  $f'$  in order to unite and give rigidity to the rings composing the holding-frame and to prevent spreading thereof. These swinging plates not only answer as a support for the centering-plugs, but likewise as tie-plates for the rings of the tool-holding frame.

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

1. In a tool-holder for riveters, the combination with the securing-frame, of a plurality of power-operated devices for adjusting or alining the frame to the work to be riveted,



and a single means for controlling said alining devices.

2. In a tool-holder for riveters, the combination with a securing-frame and a movable riveter-support thereon, of a swinging plate and a centering-plug carried thereby and adapted to be swung into and out of the path of a riveter carried by said support.

3. In a tool-holder for riveters, the combination with a two-part securing-frame, and a riveter-carriage mounted to travel thereon and support a riveter between said frame parts, of swinging tie-plates, and centering-plugs carried by said tie-plates.

4. In a tool-holder for riveters, the combination with the securing-frame, of the power-operated alining devices, a single means for controlling said alining devices and of means for centering the frame to the work to be riveted.

5. In a tool-holder for riveters, the combination with the securing-frame composed of two circular plates or rings, of air-cylinders secured to and carried by each plate or ring, connection between said cylinders and a source of air-supply, and of a piston working in each cylinder and actuated by the pressure of air therein, said piston terminating in a foot or enlargement which bears against the pipe-sections as the piston is forced outward.

6. In a tool-holder for riveters, the combination with the securing-frame, of a series of pneumatic-actuated devices for adjusting or alining the frame to the work to be riveted, and a single means for controlling said alining devices.

7. In a tool-holder for riveters, the combination with the two-part securing-frame, and a riveter-carriage mounted to travel thereon and support a riveter between said frame parts, of a series of pneumatic-actuated devices for adjusting or alining the frame, a series of swinging tie-plates, and of the ver-

tically-adjustable centering devices carried by the swinging tie-plates.

8. In a tool-holder for riveters, the combination with the securing-frame, of a series of hand-actuated adjusting or alining devices carried thereby, and of a series of power-operated adjusting or alining devices likewise secured to and carried by the frame, and a single means for controlling said power-operated alining devices.

9. In a tool-holder for riveters, the combination with the securing-frame, of a series of vertically-movable alining devices for the frame, air-actuated mechanism connected with and for operating certain of said alining devices, a single means for controlling said air-actuated mechanism and of means for centering the frame to the work to be riveted.

10. In a tool-holder for riveters, the combination with the securing-frame composed of two circular plates or rings, and a riveter-carriage mounted to travel thereon and support a riveter between said plates, of a series of tie-plates hinged or pivoted to one of the plates or rings and adapted to lock with the opposite plate or ring of the frame, and of a centering device carried by each tie-plate.

11. In a tool-holder for riveters, the combination with a securing-frame adapted to surround the work and a normally-fixed alining device or devices thereon, of a plurality of pneumatically-operated alining devices opposed to the latter, a supply-pipe therefor, and a single device for controlling all said pneumatic alining devices, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 25th day of October, 1898.

ROBERT S. MOORE.

Witnesses:

N. A. ACKER,  
LEE D. CRAIG.