

A. M. MORRISON.
BOILER RIVETING HAMMER.
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969,553.

Patented Sept. 6, 1910.

Fig. 1.

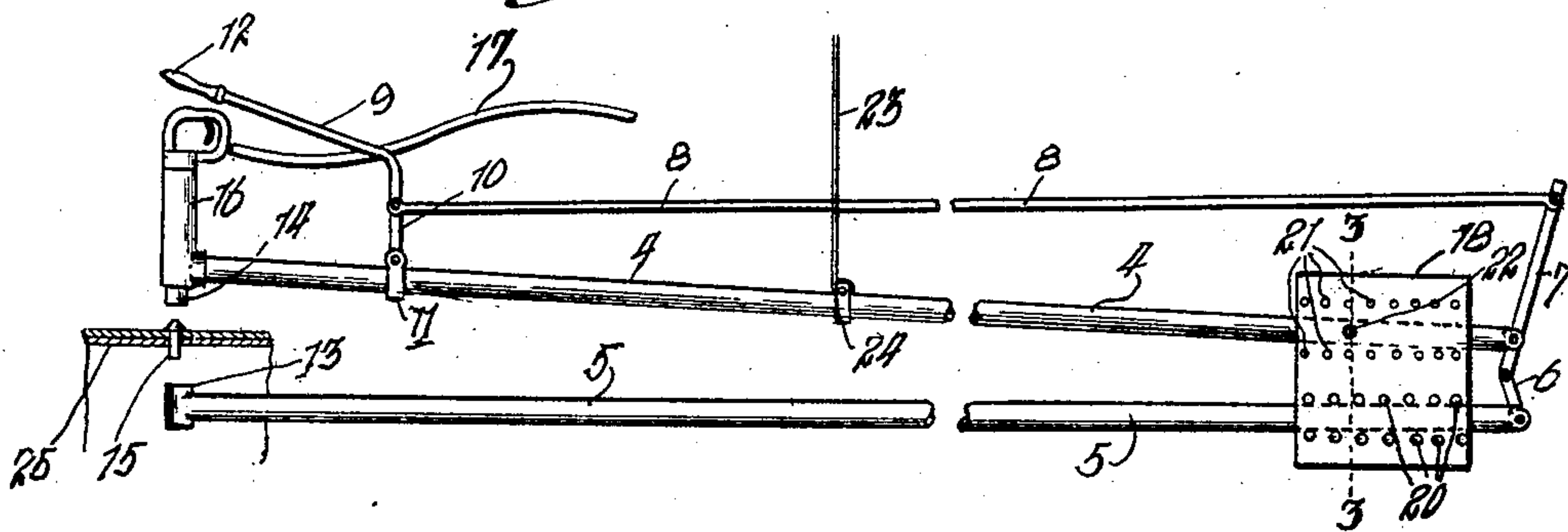


Fig. 2.

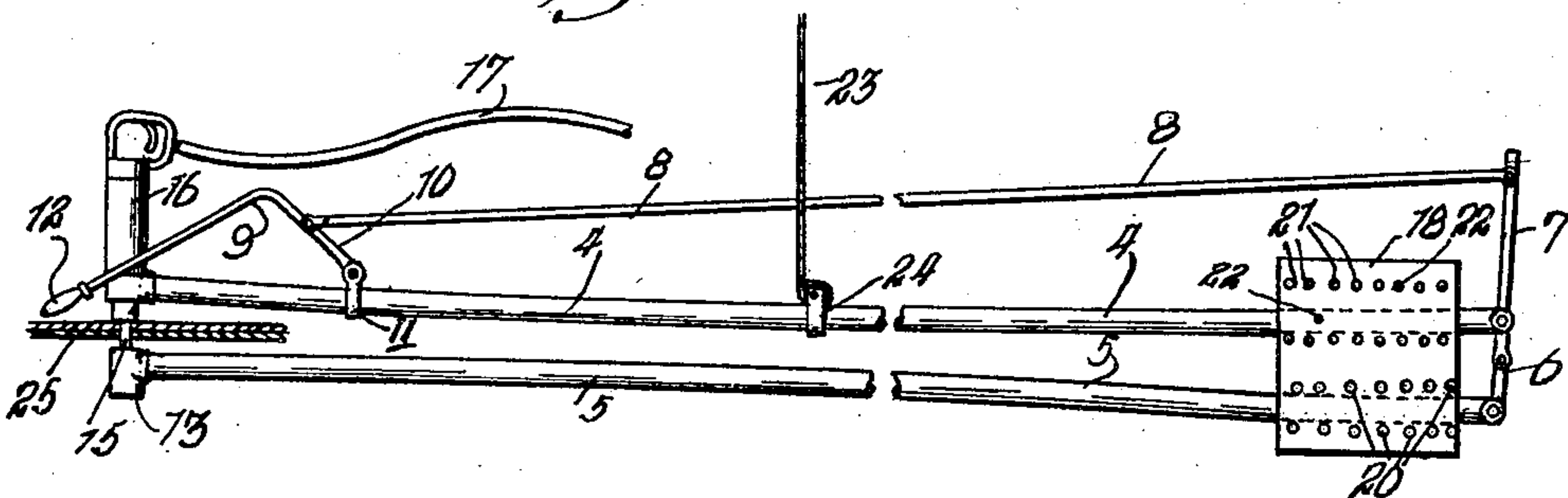
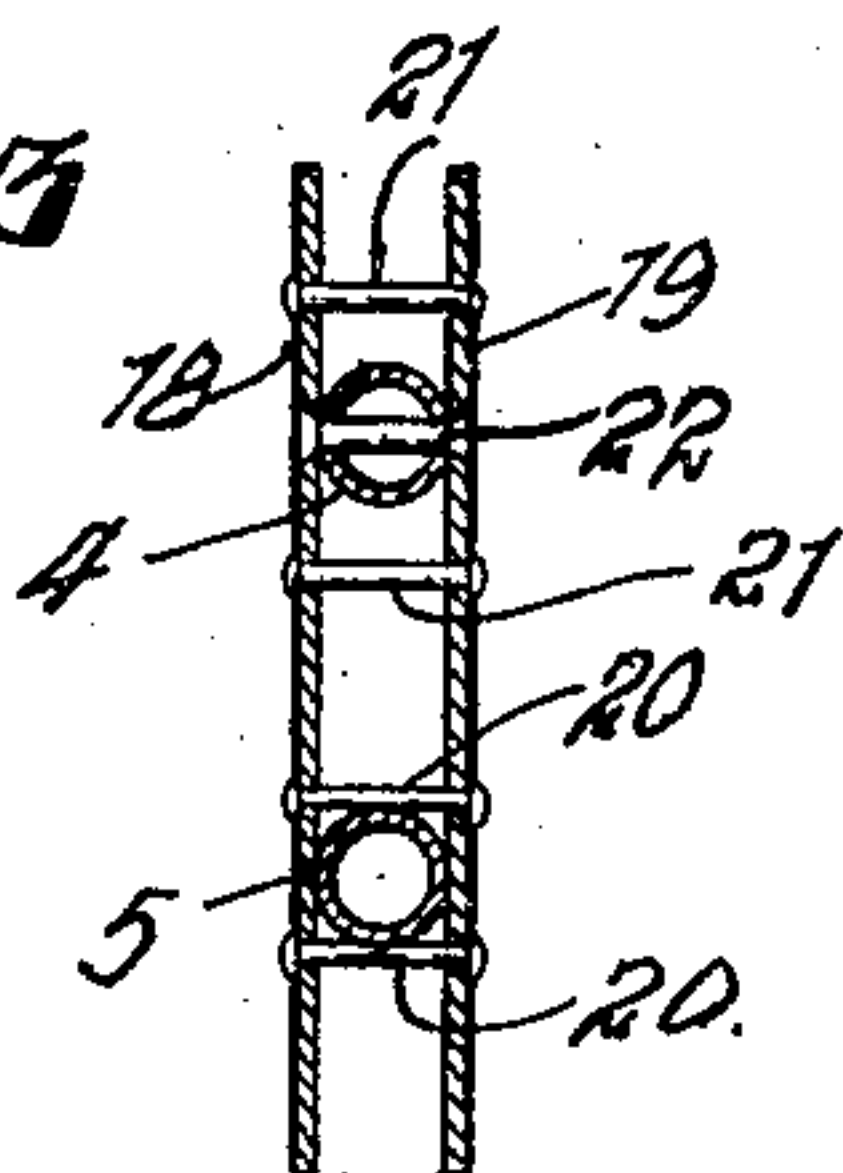


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BOILER-RIVETING HAMMER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANDREW M. MORRISON, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Boiler-Riveting Hammers, of which the following is a specification.

This invention relates to an improved boiler riveting hammer; and has for its essential object to provide a comparatively simple, efficient and portable tool, capable of heading rivets from the inside as well as the outside of a boiler.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, showing this improved portable pneumatic boiler riveter, with its arms open; Fig. 2 a similar view to Fig. 1, the riveter arms being in closed operative position; and Fig. 3 a transverse section, taken on line 3—3 of Fig. 1.

This improved portable pneumatic boiler riveter comprises, essentially, upper and lower movable resilient arms 4 and 5, respectively, preferably made from four inch gas piping. The upper and lower movable arms are secured together at their rear ends by a toggle joint 6, or otherwise, whose upper projecting arm 7 is pivotally connected with a longitudinal lever 8, pivotally connected at its other end with a hand lever 9, which in turn is pivotally secured at its lower end 10 to a retainer or collar 11 about the upper movable arm 4, it being understood that the outer end 12 of said hand lever is in convenient position for the operator to grasp the same for moving the lever 8, which in turn actuates the toggle joint 6 for opening and closing the upper and lower riveter arms.

Upon the forward end of the lower movable resilient arm 5 is positioned a suitable rivet retaining die 13, and downwardly projecting from the outer end of the upper movable riveter arm 4 is a corresponding rivet die 14, said dies being in substantial alinement with one another for grasping and retaining a rivet 15 during the riveting operation, which is carried on by means of a portable pneumatic hammer 16 of any approved type, connected to an air supply hose 17 from any suitable source of supply, or otherwise.

At the rear end of the device are two flat metal sheets 18 and 19, as indicated in Fig. 3, usually about one-half inch in thickness, and said sheets are bolted tightly in place against the lower movable riveter arm 5, said bolts 20 impinging against the lower arm for holding it rigidly in place; whereas, in the case of the upper movable riveter arm 4 the bolts 21 are spaced above and below said arm a distance sufficient to not interfere with its freedom of movement and action, said arm having a hinge bolt 22 passed therethrough, so as to give it a hinged mounting.

This portable boiler riveter is maintained in suspended position by means of a chain 23 attached, at its lower end, to a movable collar 24 about the upper riveter arm 4.

In use, this portable riveter is suitably positioned adjacent to the boiler shell or casing 25, its lower resilient riveter arm 5 projecting inside of said boiler shell, and its upper riveter arm being correspondingly positioned outside thereof. The rivet 15 is then inserted in place either from the inside or outside of the boiler shell or casing as desired, after which the hand lever 9 is drawn back from the open position shown in Fig. 1 to the closed position shown in Fig. 2, the upper and lower rivet dies 13 and 14 fixedly engaging the rivet 15, after which the pneumatic hammer 16 is operated for heading the rivet.

The principal advantages arising from the use of this improved construction are—its comparative simplicity of construction; its adaptability for riveting from either the inside or outside of the boiler shell or casing; the construction of the riveter frame arms, which possesses the requisite strength and resiliency required in the riveting operation; the hinged mounting for said riveter arms; and the provision for balancing the whole apparatus so that there is some weight upon the rivet itself.

Without limiting myself to the aforesaid construction, I claim:

1. A boiler riveter consisting of a resilient arm carrying a heading tool, and a resilient arm carrying a swaging tool, means for mounting said arms in position, and a connection between said arms operating to swing the ends of said arms carrying the tools toward and from each other, the resiliency of said arms being such that when the tools are brought into operative posi-

tion with the work the arms will be sprung toward one another, and generate a spring tension which will serve to hold the tools in proper contact with the work during the riveting operation, substantially as described.

5 2. In a boiler riveter, upper and lower resilient metallic arms, the rear ends of said riveter arms being connected together by a toggle joint, a system of levers in connection
10 with said toggle joint for opening and closing said riveter arms, opposite metallic sheets bolted together at the rear end of the

device, the upper riveter arm having a hinged bolt passed therethrough and secured to said sheets for giving it a hinging action, upper and lower rivet dies secured to the forward end of said riveter arms, and means for heading rivets, substantially as described. 15

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