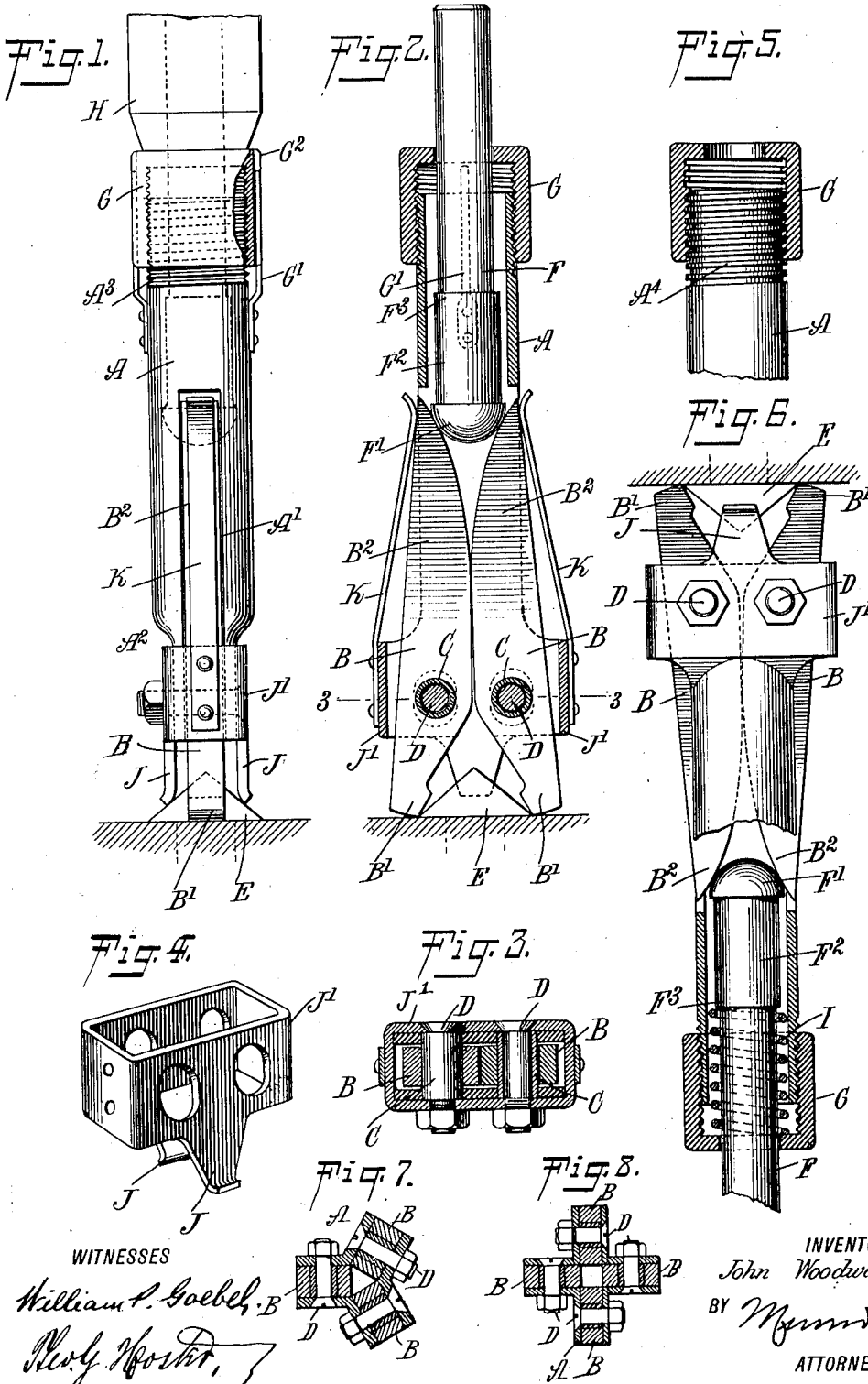


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RIVET CALKING TOOL.
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1,035,670.

Patented Aug. 13, 1912.



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JOHN WOODWARD, OF LEETONIA, OHIO.

RIVET-CALKING TOOL.

1,035,670.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN WOODWARD, a citizen of the United States, and a resident of Leetonia, in the county of Columbiana and State of Ohio, have invented a new and Improved Rivet-Calking Tool, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved rivet calking tool, which is simple and durable in construction, and arranged to permit a ready change in the calking hammers and guide for the use of the tool on different forms of rivet or bolt heads, with a view to calk or tighten the rivet or bolt.

For the purpose mentioned, use is made of a casing, calking hammers pivoted in the said casing, and guide arms on the casing for engagement with the sides of the rivet or bolt head.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an edge view of the rivet calking tool, part being in section; Fig. 2 is a sectional side elevation of the same; Fig. 3 is a sectional plan view of the same on the line 3—3 of Fig. 2; Fig. 4 is a perspective view of the guide sleeve and arms; Fig. 5 is a side elevation of the upper end of the casing with a modified form of cap, shown in section; Fig. 6 is a side elevation of the rivet calking tool in upside down position for use when calking or tightening overhead rivets or bolts; Fig. 7 is a sectional plan view of a modified form of the tool provided with three hammers; and Fig. 8 is a similar view of another modified form of the tool provided with four hammers.

The casing A of the rivet calking tool is preferably made tubular, and provided near its lower end with a slot A' for the passage of calking hammers B, B, mounted to turn on bushings C held in the flattened sides B² forming the terminals of the casing A. Bolts D pass through the bushings C and the flattened sides A² of the casing, to hold the bushings in place. The hammer heads B' of the calking hammers B, B project beyond the lower terminal of the casing A to engage the base of a rivet or bolt head E at diametrically opposite points, as will be readily understood by reference to Figs. 1

and 2. The hammers B, B are provided with upwardly-extending tails B² having their upper edges curved, as shown in Fig. 2, for engagement by the rounded-off head F' of a piston F, extending within the upper end of the casing A and mounted to slide in a cap G screwing in the upper threaded terminal A² of the casing A. The piston F is provided adjacent the head F' with an enlarged portion F² for stiffening and increasing the weight of the piston to insure an effective blow of the hammers on the rivet or bolt head. Now by screwing the cap G outward or inward on the casing A the upper end of the piston projects more or less beyond the cap for receiving the desired blow, by a motor or pneumatic hammer H. The cap G also serves as a rest for the motor or pneumatic hammer H to enable the operator to hold the calking tool firmly in proper position on the work. The cap G is adapted to be locked in the adjusted position by suitable means, such, for instance, as springs G' secured to the casing A and engaging lengthwise-extending slots G² formed exteriorly on the cap G. If desired, the springs G' may be dispensed with and other means employed; for instance, the screw thread A⁴ on the upper end of the casing A may be made square, as shown in Fig. 5, for engagement with corresponding screw threads on the cap G. When the tool is used upside down for calking or tightening the heads of overhead rivets or bolts, as shown in Fig. 6, then use is preferably made of a spring I coiled around the piston F and resting with its lower end on the cap G and pressing with its upper end on the shoulder F³, so as to normally hold the piston F in its proper position to allow the motor or calking hammer to operate continuously.

In order to guide the hammer heads B' relative to the rivet or bolt heads E, use is made of guide arms J located opposite each other and at right angles to the hammer heads B', and the said guide arms J depend from a sleeve J' fitting exteriorly on the lower terminal A² of the casing A. The bolts D previously mentioned engage the opposite sides of the sleeve J so as to securely hold the sleeve J in position on the terminal A². In order to keep the hammer heads B' normally in open position, use is made of flat springs K attached to the opposite sides of the sleeve J' and pressing with their free ends on the tails B² of the hammers B.

When it is desired to change the hammers B for use on different forms of rivets or bolts, then it is only necessary to remove the bolts D, sleeve J' and bushings C for placing a different set of calking hammers in position, together with a sleeve J' having guide arms J corresponding to the new set of hammers to be used. The parts can then be readily replaced on the casing A and the tool is ready for use on a different form of rivet or bolt head.

It is understood that for cone-head rivets, steeple head rivets and the heads of crown bolts and stay bolts, hammers B having differently shaped hammer heads B' are used, to correspond to the shape of the said heads, and consequently different forms of guide arms J are also necessary to bring the hammer heads B' in proper position relative to the bases of the rivet or bolt heads.

It is understood that the guide arms J engage the sides of the bolt or rivet head, while the hammer heads B' act on the bases of the rivet or bolt heads, as will be readily understood by reference to Figs. 1 and 2.

The sleeve J' carrying the arms J is preferably provided with elongated openings J² for the bolts D, so as to allow vertical adjustment of the sleeve J' to properly adjust the guide arms J relative to the form of rivet or bolt head to be acted on by the tool.

The rivet calking tool shown and described is very simple and durable in construction, and is composed of comparatively few parts, not liable easily to get out of order.

As shown in Figs. 2, 3 and 6 two calking hammers B are employed, but three or four such hammers may be mounted on the casing A and actuated by a piston F, as will be readily understood by reference to Figs. 7 and 8.

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

1. A rivet calking tool having a casing open at its lower end, calking hammers pivoted in the casing and projecting outwardly of the open end thereof, and guiding mem-

bers also projecting from said casing end and adapted to engage the bolt head and remain in such engagement when the calking hammers are out of contact with said bolt head.

2. A rivet calking tool, comprising a casing having a slotted end, calking hammers extending in the slot of the said casing and having their heads projecting beyond the end of the casing, bolts extending transversely through the casing at the slotted end for the said hammers to turn on, guide arms rigidly attached to the slotted end of the casing by the said bolts and adapted to engage the rivet head whereby to prevent accidental displacement of the tool during its operation, and means for simultaneously actuating the said calking hammers.

3. A rivet calking tool, comprising a casing having a slotted end, calking hammers extending in the slot of the said casing and having their heads projecting beyond the end of the casing, bolts extending transversely through the casing at the slotted end for the said hammers to turn on, a guide comprising guide arms adapted to engage the head of a rivet, and a sleeve carrying the said guide arms, the sleeve fitting exteriorly on the slotted end of the casing and being provided with slots through which the said bolts pass to adjustably secure the same, and means for simultaneously actuating the said calking hammers.

4. A rivet calking tool, comprising a casing, calking hammers pivoted in the said casing, an operating piston for the said calking hammers, a cap adjustably threaded on the outer end of the casing and through which extends the said piston, and means whereby to lock said cap in a selected position of adjustment.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN WOODWARD.

Witnesses:

URIAH L. METZ,
GEORGE WELLS.