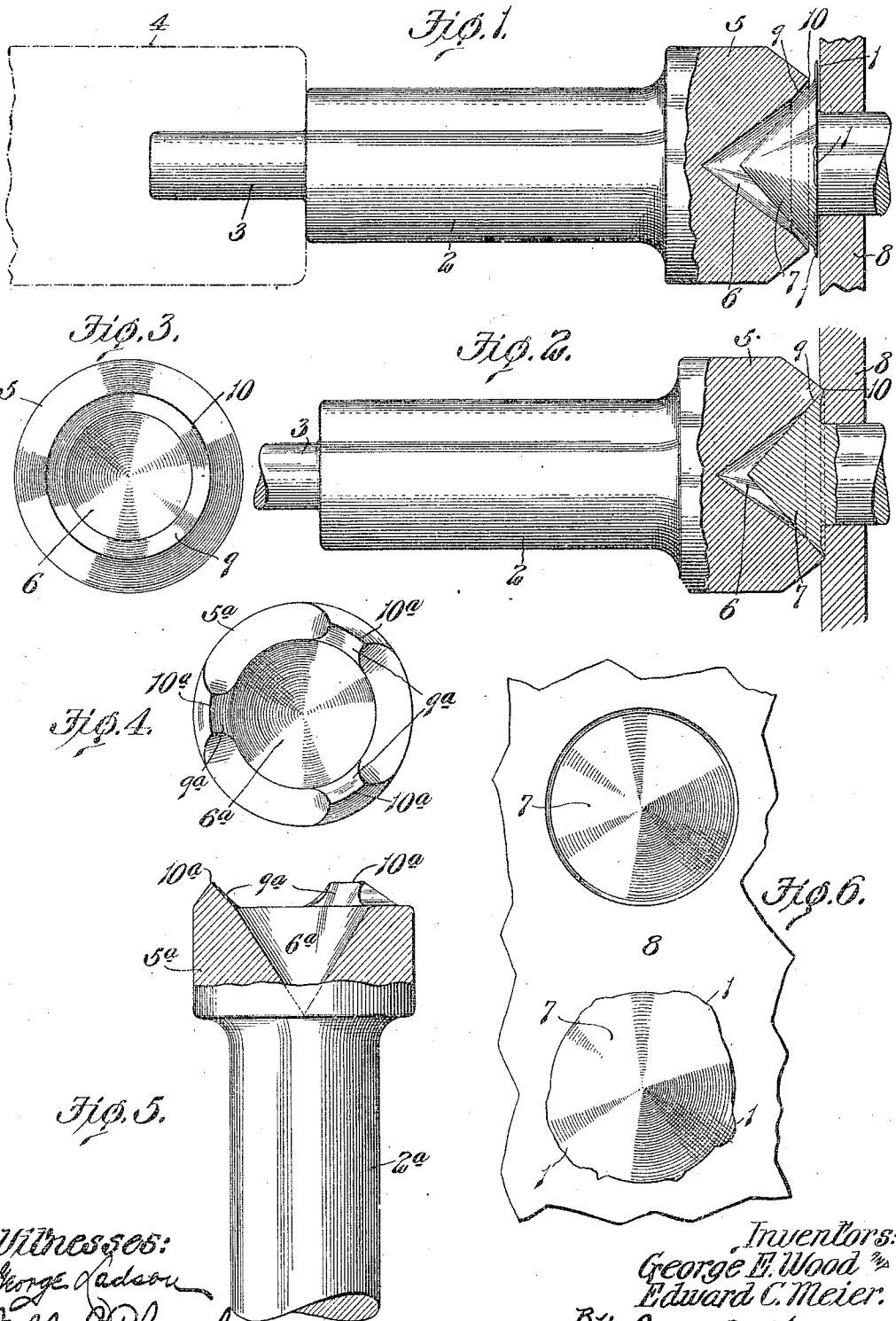


G. E. WOOD & E. C. MEIER.
RIVET CALKING TOOL.
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959,673.

Patented May 31, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE E. WOOD AND EDWARD C. MEIER, OF PHOENIXVILLE, PENNSYLVANIA, ASSIGNORS TO HEINE SAFETY BOILER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

RIVET-CALKING TOOL.

959,673.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed April 7, 1909. Serial No. 488,535.

To all whom it may concern:

Be it known that we, GEORGE E. WOOD and EDWARD C. MEIER, both citizens of the United States, residing at Phoenixville, Chester county, Pennsylvania, have invented a certain new and useful Improvement in Rivet-Calking Tools, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to tools for calking rivets.

Prior to our invention rivets were calked by means of a hand-chisel or sharp-pointed tool which the operator struck with a hammer so as to force the peripheral edge of the rivet-head into intimate engagement with the plate or other member through which the shank of the rivet projected. This method of calking rivets is slow and therefore expensive for the operator had to work the chisel gradually around the edge of the rivet-head, and it is also objectionable because the operator very often cuts the rivet-head too deeply into the plate or member with which it contacts.

The main object of our invention is to provide a rivet-calking tool of simple construction that can be used with a power-operated hammer, and which is so designed that a rivet can be calked in about one-third the time it takes to calk a rivet by the old hand method; namely, with a hand-chisel and hammer.

Another object is to provide a power-operated rivet-calking tool which is so designed that it will exert uniform pressure on all portions of the peripheral edge of the rivet-head and thus sink said peripheral edge evenly into the plate or member with which it contacts.

Figure 1 of the drawings is an elevational view, partly in section, of a rivet-calking tool constructed in accordance with our invention, the head of said tool being broken away to more clearly show the construction of same; Fig. 2 is a view similar to Fig. 1, showing said tool in operative position on a rivet-head after the calking operation has been completed; Fig. 3 is an end view of the head of the tool; Fig. 4 is an end view of a slightly modified form of our invention; Fig. 5 is an elevational view, partly in ver-

tical section, of the tool shown in Fig. 4; and Fig. 6 is a view showing an uncalked rivet and a rivet that has been calked.

Fig. 1 of the drawings shows a form of tool that we prefer to use for calking imperfect rivets; namely, rivets whose heads are provided with rough edges or burs 1, as shown in Fig. 6. This tool comprises a shank 2 having a cylindrical extension 3 that is adapted to be inserted in the tool-receiving socket of a power-operated hammer 4, shown in broken lines in Fig. 1, such, for example, as a hammer that is operated by a pneumatic, electric, or hydraulic medium. The opposite end of said shank 2 is provided with a head 5 in which an approximately conical-shaped socket 6 is formed for receiving the head 7 of a rivet whose shank passes through a plate 8, or other member. This socket 6 is so formed that when the head of the tool is placed over the head of a rivet only the lower edge portion 9 of the walls of said socket will bear upon the peripheral edge portion of the rivet-head, the bevel of the portion 9 of said socket conforming to the bevel of the rivet-head, and the remaining portion of the wall of said socket 6 being so shaped that it does not bear upon the rivet-head. In using a tool of this construction, the operator places the head 5 of the tool over the rivet-head and then turns on the power that actuates the hammer 4, the blows which the shank 2 of the tool receives from said hammer causing the beveled surface 9 on the head 5 to force the peripheral edge of the rivet-head 7 into intimate engagement with the plate 8 and finally sink it down into said plate, as shown in Fig. 2, thus producing a perfectly tight joint. The head 5 is provided with a calking edge 10, and during the calking operation the shank 2 is rotated and is also canted slightly relatively to the rivet so that said calking edge 10 will remove the burs or rough projections 1 on the head of the rivet, said calking edge 10 also acting to cut the rivet-head into the plate 8 slightly, as shown in Fig. 2.

For calking perfect rivets; namely, rivets whose heads are of perfect contour and free from burs, we prefer to use the tool shown in Figs. 4 and 5. This tool is very similar to that illustrated in Figs. 1 and 2 except that the head is not provided with a con-

tinuous beveled surface 9 and a continuous calking edge 10. The head of the tool shown in Figs. 4 and 5 is provided with a socket 6^a for receiving the head of the rivet, and two or more teeth provided with calking edges 10^a and also beveled surfaces 9^a that conform to the beveled surface of the peripheral edge of the rivet-head and thus bear firmly upon same, the socket 6^a being so shaped that the walls of same do not bear upon the head of the rivet. In calking a rivet with a tool of this construction, the operator merely rotates the shank 2^a after the power which actuates the hammer 4 has been turned on, the blows which the shank of the tool receives from said hammer causing the beveled surfaces 9^a on the head to force the peripheral edge of the rivet-head snugly against the plate 8 and the calking edges 10^a cutting said rivet-head into the plate 8, as shown in Fig. 2.

The main advantage of a tool of the form shown in either Figs. 1 or 4 is that it enables a rivet to be calked in about one-third the time it takes to calk a rivet with a hand-chisel and hammer as has heretofore been the practice. It also produces a more finished piece of work, for the edge of the rivet-head is perfectly circular and the head is sunk or cut into the plate 8 evenly because the tool exerts uniform pressure on all portions of the peripheral edge of the rivet-head.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A rivet-calking tool comprising a shank having a head which is provided with a conical-shaped socket whose outer edge portion is of different angularity than the inner portion of the socket, so that when the tool is placed upon a rivet only the outer edge

portion of said socket will bear upon the head of the rivet.

2. A rivet-calking tool comprising a shank, and a head on said shank provided with a plurality of rigid spaced teeth having calking edges and inclined surfaces that are adapted to bear upon the peripheral edge portion of a rivet head during the operation of calking same.

3. A rivet-calking tool comprising a shank that is adapted to be connected to a power hammer, said shank being provided with a head having a calking edge and an approximately conical-shaped socket whose outer edge portion is of different angularity than the inner portion of the socket so that when the tool is placed upon a rivet only the outer edge portion of said socket will bear upon the head of the rivet.

4. A rivet-calking tool, comprising a shank having a cylindrical-shaped extension that is adapted to be connected to a power-operated hammer so as to enable said shank to be rotated relatively to said hammer during the calking operation, an integral head on said shank provided with a plurality of integral teeth having calking edges and inclined faces that conform to the peripheral edge portion of a rivet-head, the head on said shank also being provided with a socket into which the rivet-head projects and said socket being so shaped that the shank can be canted relatively to the rivet during the calking operation.

In testimony whereof, we hereunto affix our signatures, in the presence of two witnesses, this 2nd day of April, 1909.

GEORGE E. WOOD.
EDW. C. MEIER.

Witnesses:

HENRY D. RANKIN,
KENNETH CALDER.