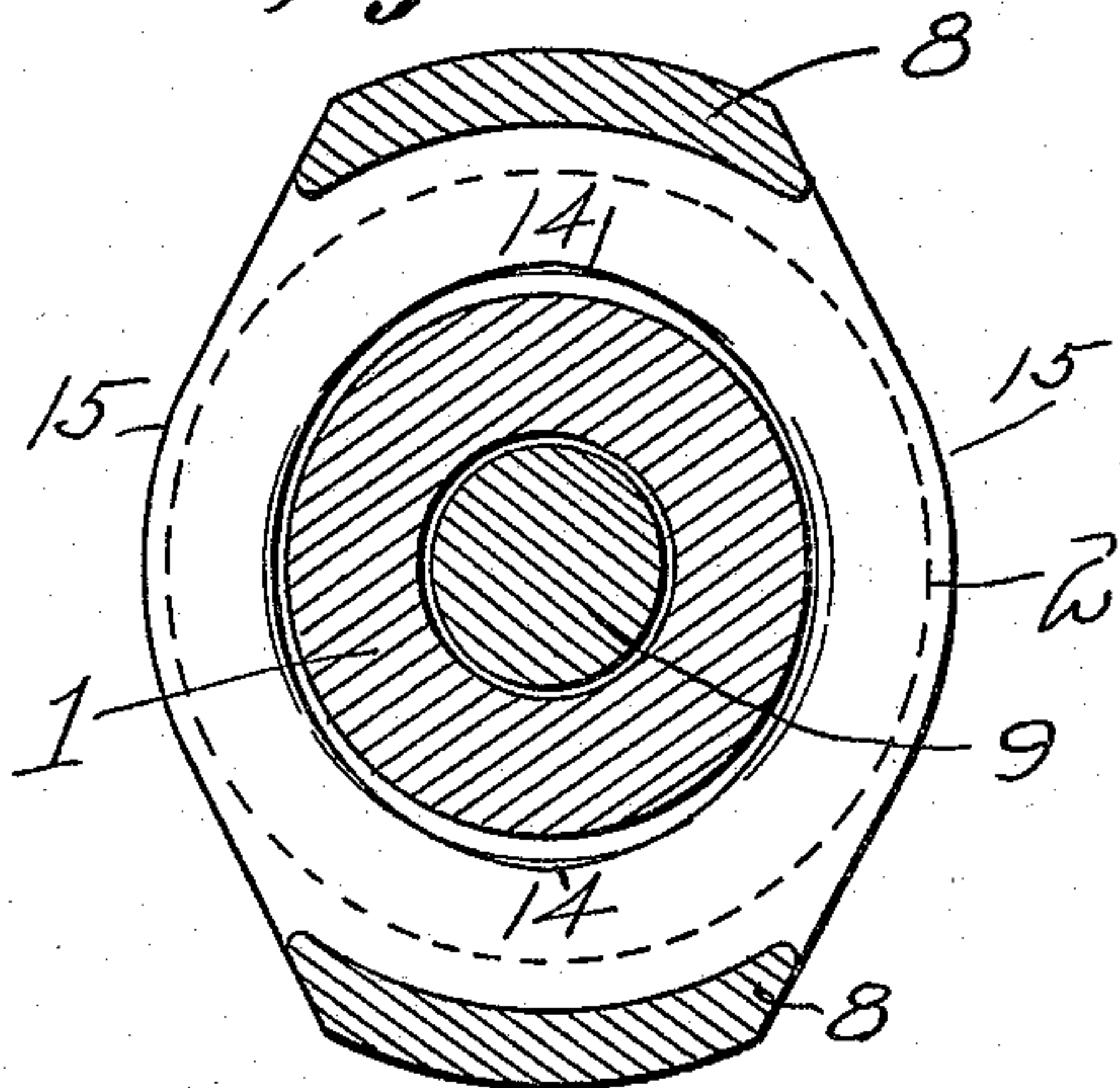
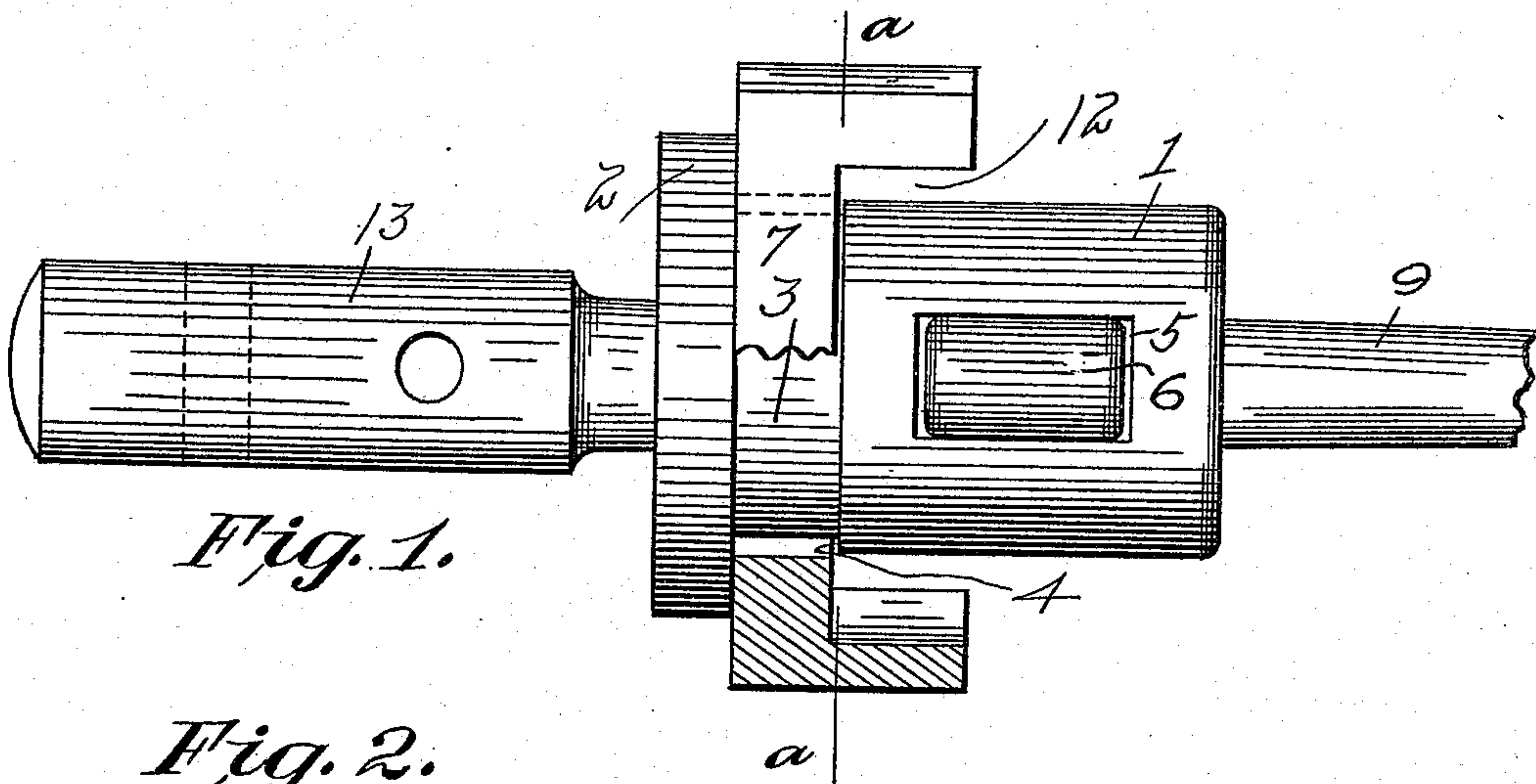


G. WIEDEKE, SR.
TUBE EXPANDER.
APPLICATION FILED MAR. 6, 1909.

930,820.

Patented Aug. 10, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

GUSTAV WIEDEKE, SR., OF DAYTON, OHIO, ASSIGNOR TO GUSTAV WIEDEKE & COMPANY,
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TUBE-EXPANDER.

No. 930,820.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed March 6, 1909. Serial No. 481,799.

To all whom it may concern:

Be it known that I, GUSTAV WIEDEKE, Sr., citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Tube-Expanders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in tube expanders for expanding the ends of tubes to rigidly secure them to boiler heads or tube sheets. In the process of using these tools, much handling or manipulation of the same is incidental, and the guard being an independent part of the implement, it is desirable that it be placed thereon in a manner that will avoid its detachment in handling or manipulating the tool.

The object of the present invention is to provide means for maintaining the guard upon the tool at all times in an operative condition and without employing a greater number of parts than is desirable, as will be hereinafter described in the specification and pointed out in the claim.

Preceding a detailed description of the invention, reference is made to the accompanying drawings, of which—

Figure 1, is a longitudinal elevation of a tube expander having my improvements applied; a portion of the guard is broken away as well as a portion of the mandrel. Fig. 2, is a sectional view on the line *a a* of Fig. 1.

In a detail description of the invention, similar reference characters indicate corresponding parts.

The roller cage 1 has a suitable number of peripheral openings 5 which communicate with a longitudinal central bore through which the mandrel 9 is extended, the man-

drel being of the usual tapered form. The rollers 6 are driven outwardly through the cage openings 5 against the interior surface of the tube in a well-known manner.

The tube is not shown in the drawings but it will be understood that the cage is projected in the end thereof which is to be expanded and the expansion takes place by rotating the mandrel from the handle 13. The cage is provided with an integral flange 2 at the outer end thereof, and a peripheral recess 3 which provides a shoulder 4 around the periphery of the cage between which and the flange 2 the peripheral recess 3 lies. The guard 7 has an opening 14 which is of sufficient diameter to admit of said guard being passed over the body of the cage against the flange 2. In this position, the guard surrounds the peripheral recess 3 and there is slight play between the adjacent peripheral shoulder 4 on the cage and the side of the guard.

It is desirable that the guard shall have some looseness upon the cage and also that it may not become detached in handling the implement. To meet these requirements, the opposite sides 15 of the guard are given the necessary pressure in a vise or otherwise to bring the opposite edges of the opening 14 a suitable distance inward from the shoulder 4 to prevent the guard from slipping over the body or cage of the implement. In other words, the diameter of the opening 14 in the guard is slightly decreased in one direction so that it is made smaller than the diameter of the body of the cage. It will be borne in mind, however, that the pressure thus exerted upon the guard is not sufficient to rigidly bind the guard to the cage, and this should not be the case, as it is necessary the guard should be sufficiently loose within the peripheral recess 3.

The lateral extensions 8 of the guard it will be understood, engage the boiler head or tube sheet (not shown) in a well-known manner, and the space 12 between the lateral extensions of the guard and the outer cir-

cumference of the cage is occupied by the end of the tube when the implement is in position.

I claim:

- 5 In a tube expander, the combination with a roller cage supporting expanding rollers and one end of which has an integral flange, the body of said cage adjacent to said flange being provided with a peripheral recess, of a
10 guard supported upon said cage within said

peripheral recess by opposite sides of said guard being compressed within the peripheral recess.

In testimony whereof I affix my signature, in presence of two witnesses.

GUSTAV WIEDEKE, SR.

Witnesses:

MATTHEW SIEBLER,
R. J. McCARTY.