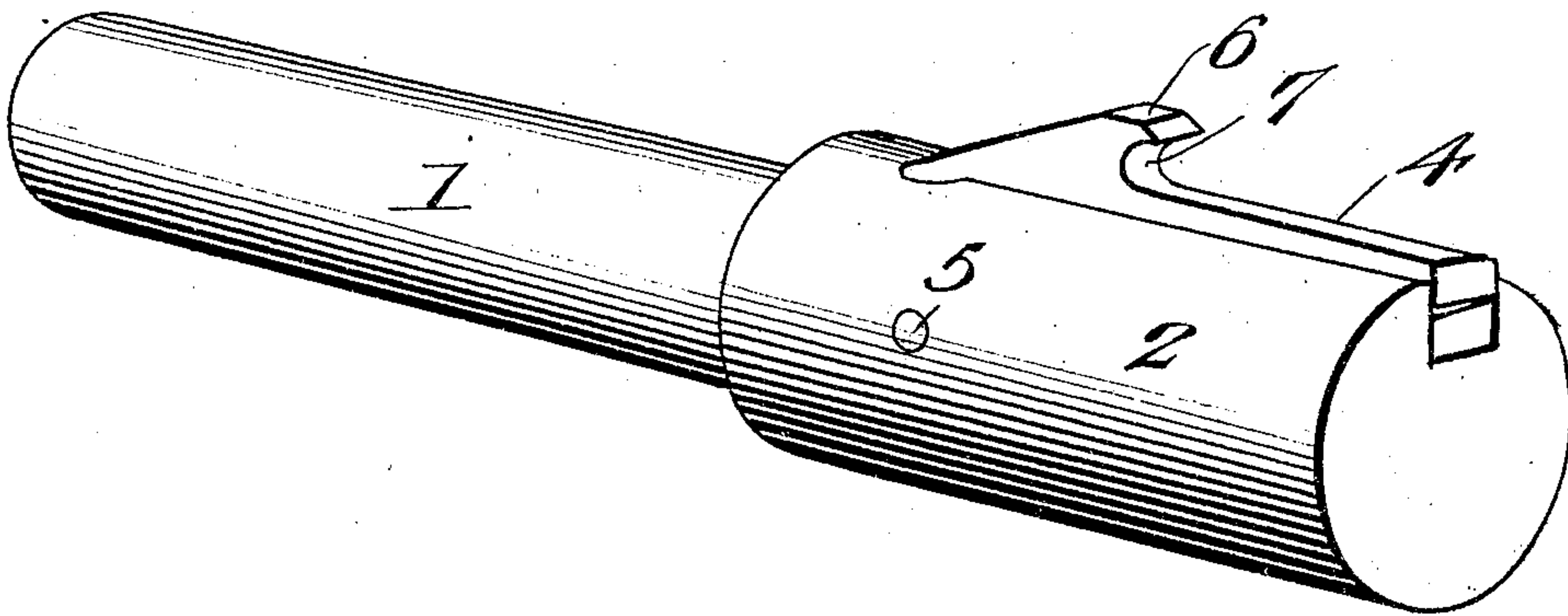


No. 855,363.

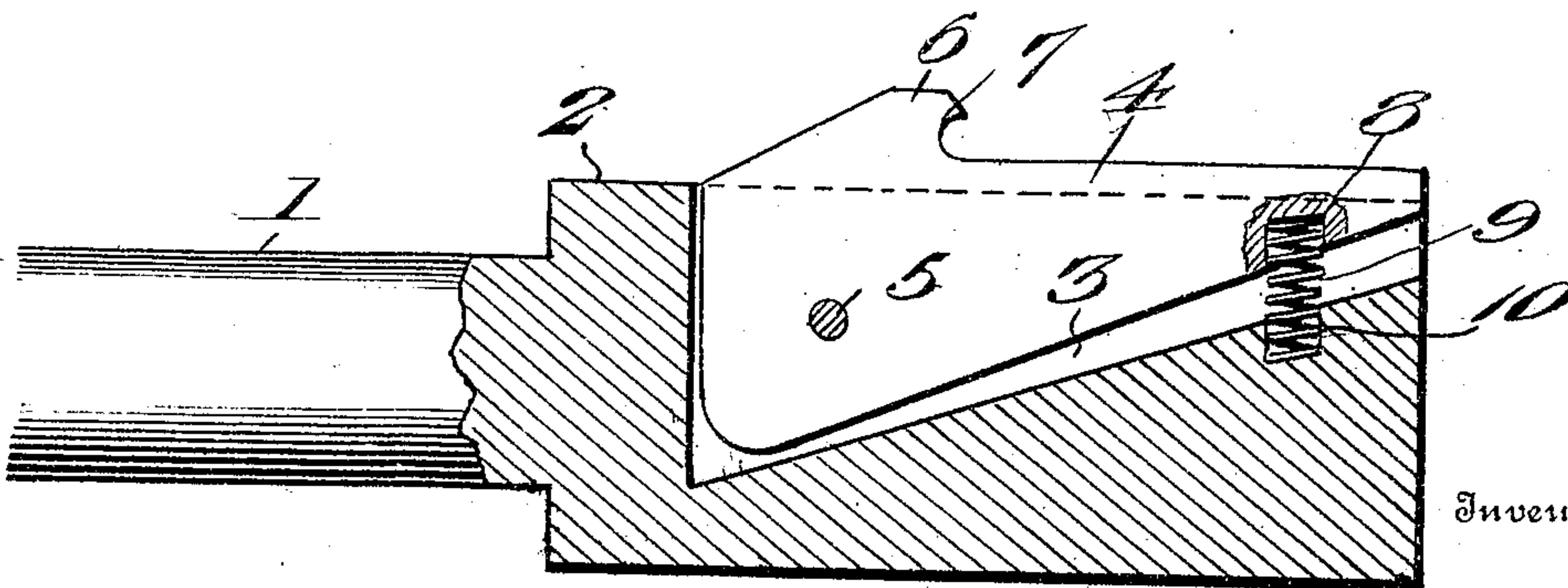
PATENTED MAY 28, 1907.

L. A. TINNES.  
FLUE BEATER TOOL.  
APPLICATION FILED MAR. 16, 1907.

*Fig. 1.*



*Fig. 2.*



Inventor

*Lewis A. Tinnes,*

Witnesses

Witnesses  
Wm. Koeth.  
A. S. Amore

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Attorney

# UNITED STATES PATENT OFFICE.

LEWIE A. TINNES, OF BIRD ISLAND, MINNESOTA.

## FLUE-BEATER TOOL.

No. 855,363.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed March 16, 1907. Serial No. 362,681.

*To all whom it may concern:*

Be it known that I, LEWIE A. TINNES, a citizen of the United States, residing at Bird Island, in the county of Renville and State of Minnesota, have invented new and useful Improvements in Flue-Beater Tools, of which the following is a specification.

This invention relates to flue or tube beating tool and has for its objects to provide a comparatively simple, inexpensive device of this character which may be readily operated by an unskilled person, and one which in practice will effectually beat the tubes after they have been expanded in the usual manner, the beating being accomplished more readily and quickly than with an ordinary beating tool.

With these and other objects in view, the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of a flue beater embodying the invention. Fig. 2 is a view partly in section, the section being taken centrally and longitudinally through the tool head.

Referring to the drawing, 1 designates the tool shank provided in its forward end with a cylindrical head 2 having a laterally opening, longitudinal slot or recess 3 designed to receive a beater tool or blade 4 pivoted at a point adjacent its rear end by means of a pin 5 extended transversely through the head 2 and slot 3. The tool is preferably a forging of tool steel and tempered and is formed on the outer edge at a point near its rear end with a projecting portion 6 having a semi-circular undercut beating or forming surface 7. Formed in the inner edge of the tool adjacent its forward end is a socket 8 in which is seated one end of a compression spring 9 having its other end seated in a socket 10 formed in the head 2 at the bottom of the re-

cess 3, said spring serving in practice to press the tool yieldably into contact with the inner face of the tube or flue and the surface 7 in proper relation to the expanded end of the tube and flue.

In practice, the tool is introduced into the tube or flue after the end thereof is expanded back against the tube plate of the boiler, and the surface 7 of the tool is adjusted to the expanded end. While holding the shank in one hand, the operator strikes the end of the shank with a hammer and between succeeding blows turns the tool a slight distance until the entire expanded end of the tube is operated on. Also in this manner, leaky flues can be calked or beaten. In practice, the beaters are made in different sizes for flues of different diameters.

Having thus described the invention, what I claim and desire to secure by Letters Patent, is:—

1. A flue working device comprising a shank having a head provided with a longitudinal laterally opening slot, a tool movably arranged in said slot and provided with a projecting portion having an undercut forming surface, and a spring arranged beneath the tool for pressing the same yieldably to active position.

2. A flue beating device comprising a body provided with a longitudinally extending laterally opening slot, a tool pivoted in said slot and having a laterally extending portion provided with concaved surface for operating on the expanded end of a flue, and a spring arranged beneath the tool for pressing the latter yieldably to active position.

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

LEWIE A. TINNES.

Witnesses:

D. R. MILLER,  
W. H. FEWER.