S. L. BLAKE.

SPINDLE UPSETTING DEVICE.

APPLICATION FILED MAR. 24, 1908.

906,997.

Patented Dec. 15, 1908.

Fig. 1.

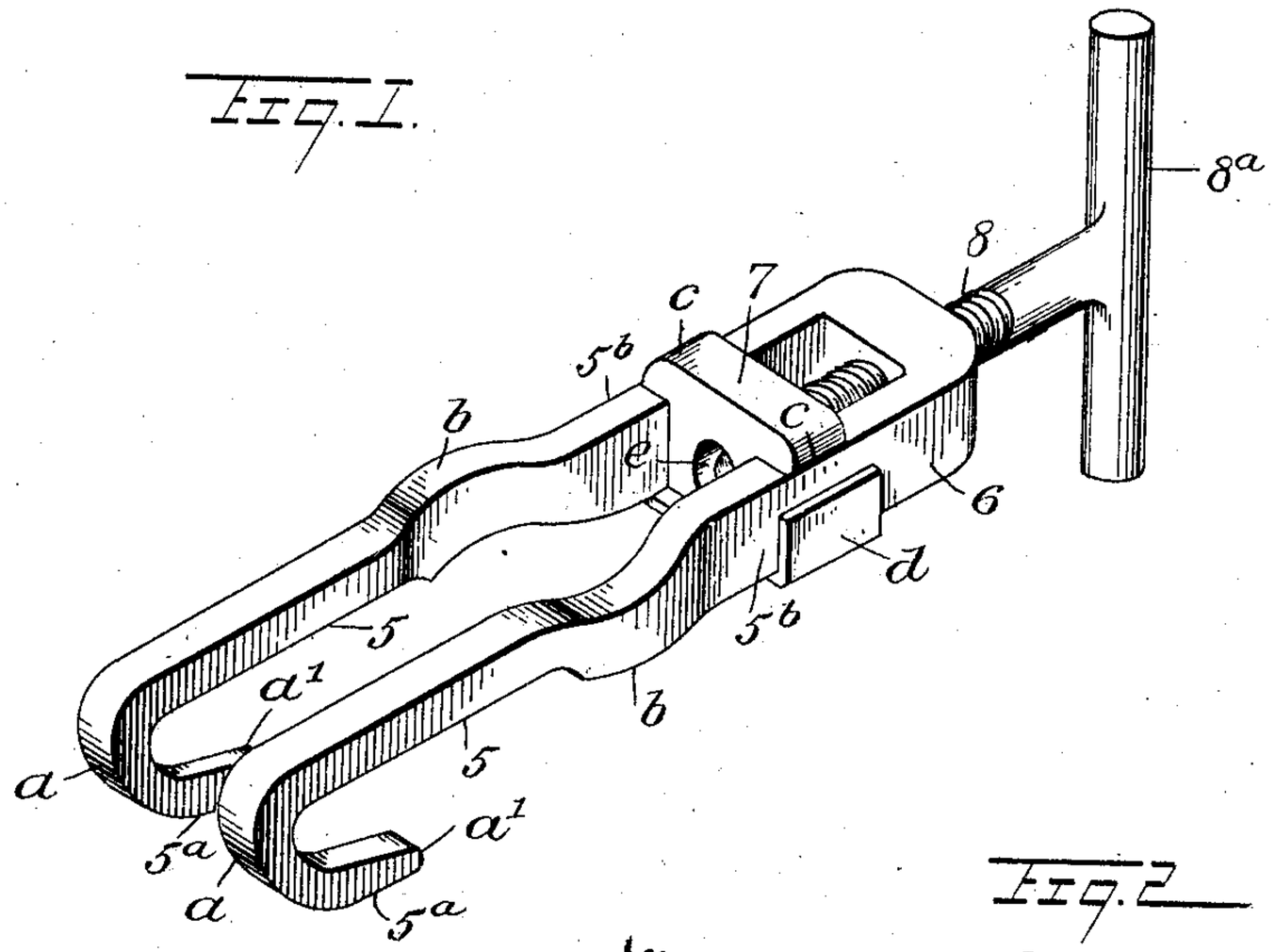

Fig. 2

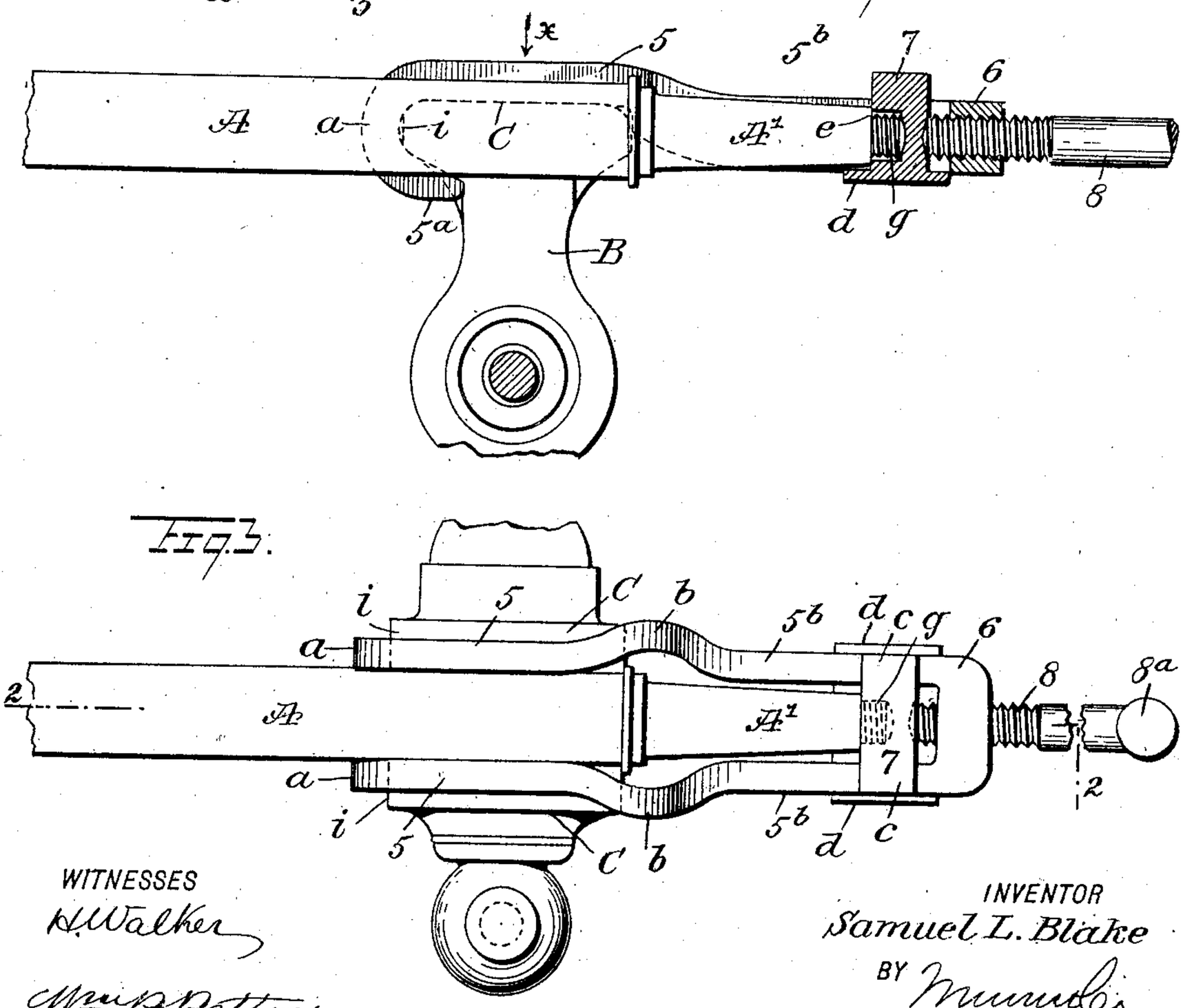

Fig. 3.

WITNESSES

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SAMUEL L. BLAKE, OF PADUCAH, TEXAS.

SPINDLE-UPSETTING DEVICE.

No. 906,997. Specification of Letters Patent. Patented Dec. 15, 1908.

Application filed March 24, 1908. Serial No. 423,037.

To all whom it may concern:

Be it known that I, SAMUEL L. BLAKE, a citizen of the United States, and a resident of Paducah, in the county of Cottle and State of Texas, have invented a new and Improved Spindle-Upsetting Device, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide novel details of construction for a device adapted to stave up or upset a vehicle axle spindle, by longitudinally applied compression, whereby a worn spindle may be restored to its original diameter and close fit within a box in a wheel hub when it is rotatably secured upon the spindle.

The invention consists in the novel construction and combination of parts, as is hereafter described and defined in the appended claims.

Reference is to be had to 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 a perspective view of the improved spindle upsetting device; Fig. 2 is a longitudinal sectional view of the improvement broken away at one end, and a side view of an axle spindle engaged by the upsetting device, taken substantially on the line 2—2 in Fig. 3, and Fig. 3 is a plan view of the improvement and axle spindle, seen in direction of the arrow *x* in Fig. 2.

The improved spindle upsetting implement, is formed of metal, preferably wrought iron or steel, and comprises two similar limbs 5, 5, which have parallel sides and are formed integral, at like ends thereof, with a transverse head block 6, said head block serving to space the limbs 5, 5, apart in parallel planes. The free ends of the limbs 5, 5, are return bent, as at *a*, *a*, forming hooks 5^a, 5^a, thereon, the hook noses *a'* being suitably spaced from the limbs 5. At an equal distance from the hooks 5^a, near the longitudinal centers of the limbs 5, said limbs are formed with outwardly curved arches *b*, *b*, so as to suitably widen the space between the limbs at the arches.

Between the arches *b*, *b*, and the head block 6, are formed guides 5^b formed as portions of the limbs 5. These similar guides are rectangular in cross section and have their opposite sides disposed parallel with each other in pairs. Upon the guides 5^b, a cross head 7 is slidably mounted, consisting of a metal block body having two laterally projected jaws *c*, *c*, formed on each side thereof at and near the top face of the block, and two outwardly and upwardly extended hook flanges *d*, *d*, formed on said sides at or near the lower surface of the block body. The jaws *c*, *c*, are seated upon the top faces of the guides 5^b and the hook flanges *d*, *d*, have engagement with the lower surfaces and outer sides of said guides, when the cross head is placed in operative position on the latter.

Centrally in the head block 6, a threaded perforation is formed, that receives the threaded body of a pressure screw 8, said screw having a cross handle 8^a on its outer end. The inner end of the pressure screw 8, is convexed slightly and is seated in a corresponding concavity formed in the adjacent transverse wall of the cross head 7. Opposite the concavity which receives the end of the pressure screw 8, a socket *e* is formed in the transverse wall of the cross head, which is parallel with the wall having the concavity therein, said socket receiving the threaded end *g* of a spindle A' which is to be upset in its body to increase the diameter thereof, said spindle being formed upon one end of a metal axle A.

As a means for supporting the upsetting device while in use, it is preferred to utilize an ordinary metal vise, such as is generally used in blacksmith shops, the vise being secured in a vertical position on a work bench, not shown.

As shown in Figs. 2 and 3, B indicates the body, and C, C, the jaws of an ordinary vise, and when employed as a coöperative feature, the vise jaws C, C, are opened a suitable distance so as to receive between them the body A of a vehicle axle, the spindle A' of which is to be operated upon.

In conducting the upsetting operation, the spindle A' is heated to a proper degree so as to soften it, and then the body A of the axle is gripped in the jaws C, C, of the vise, leaving the spindle A' projecting beyond one side of the vise, the usual collar formed on the axle at the adjacent end of the spindle, occupying the space between the arches *b*, *b*, of the limbs 5, 5, when said limbs are in position for service. The hook members 5^a of the limbs 5, 5, are now engaged with the jaws C, C, at their ends *i* which are opposite those near the arches *b*, *b*; and as is clearly shown in Fig. 3, the spindle A' in its heated condition is disposed between the guides 5^b, the cross head 7 having been slid toward and near

the head block 6, to permit the proper location of the spindle, as shown. The cross head 7 is now moved toward the spindle A′, so as to insert the threaded end *g* of said spindle into the socket *e* in the cross head. The pressure screw 8 is now rotated, so as to cause its end to bear forcibly upon the cross head 7 directly opposite the engaged end of the spindle A′, and if necessary, an additional lever in the form of a tube of proper length may be slipped over the members of the handle 8ª alternately as the screw is rotated.

It will be seen that if the spindle has been properly heated and the operation is conducted quickly, the powerful pressure applied upon the end of the spindle A′ will stave or upset the body of the spindle so as to increase its diameter and cause the spindle to fit neatly in the box or skein in the wheel hub, not shown, that revolves on the spindle.

It is claimed for this implement that its judicious use will enable the proper increase in diameter of worn spindles, so as to prevent a rattle of the vehicle wheel thereon and render the spindle nearly as good as it was before excessive use had reduced its diameter.

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

1. An upsetting device, comprising two limbs spaced at like ends by a perforated and threaded head block, hooks on the opposite ends of the limbs, a cross head mounted slidably upon the limbs, and a pressure screw working in the head block and pressing upon the cross head.

2. An upsetting device, comprising a perforated and internally threaded head block, two limbs spaced by the head block and extended parallel with each other, return bent hooks on the ends of the limbs, guide formations on the limbs near the head block, a cross head loosely secured on the guide for movement thereon, and a pressure screw engaging the threaded perforation and pressing upon the cross-head.

3. An upsetting device, comprising two spaced members connected together at one end by a perforated and threaded head block, and provided with hooks at their opposite ends, the said members being outwardly curved at about their centers of length, a cross head sliding on said members and provided in one face with a socket, and a pressure screw working in the threaded perforation of the head block and engaging the cross head.

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

SAMUEL L. BLAKE.

Witnesses:
J. O. DOOLEN,
J. W. WOODLEY.