

No. 696,453.

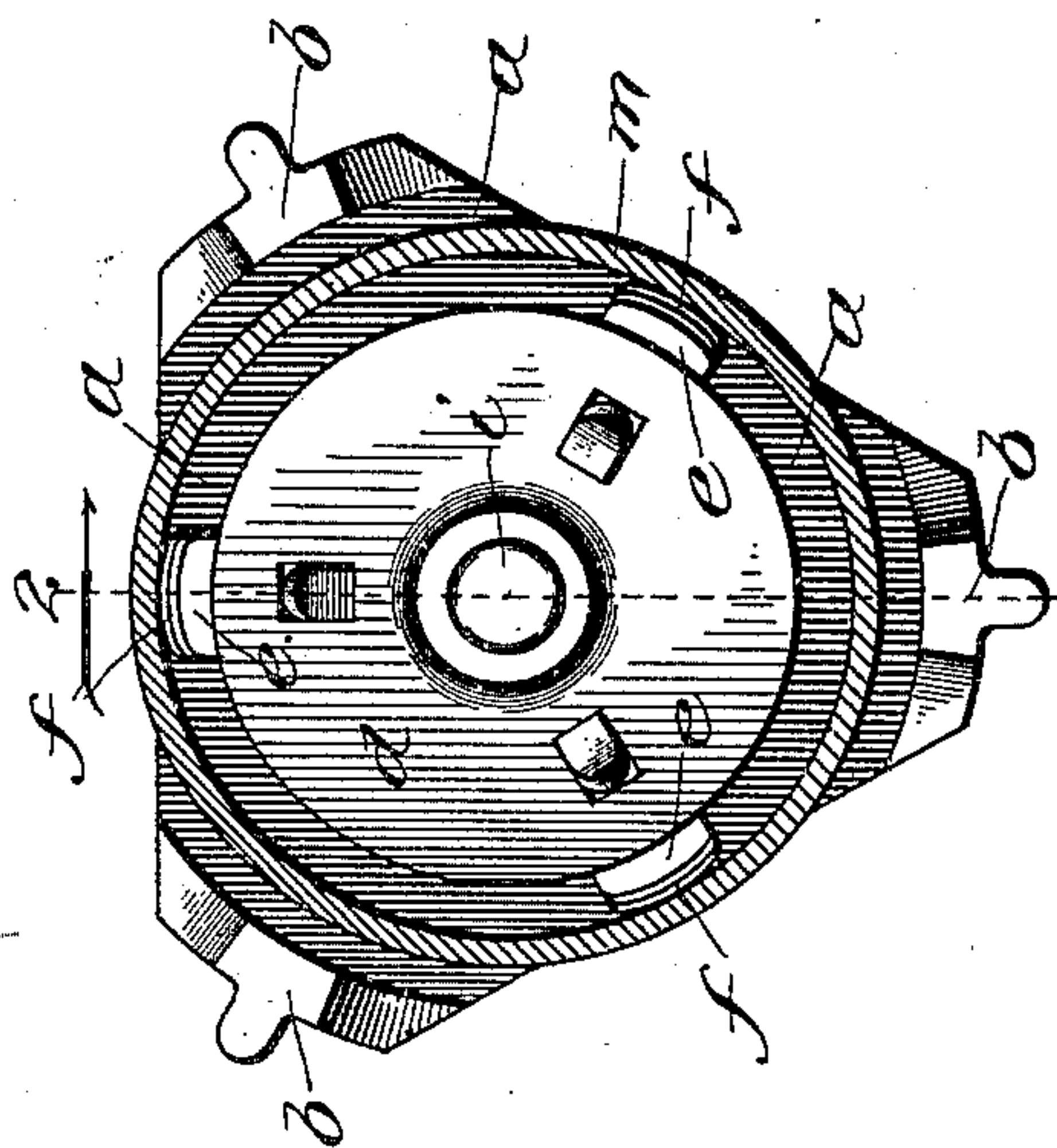
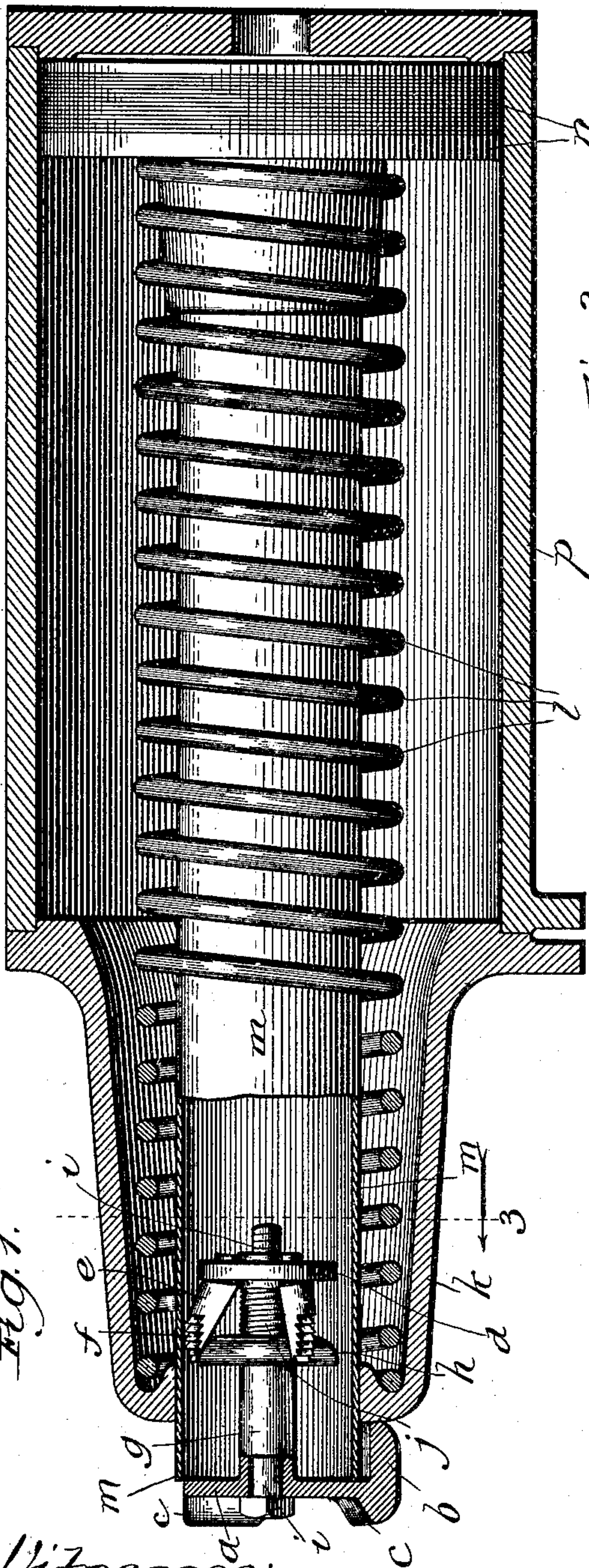
Patented Apr. 1, 1902.

J. KORINEK.

HOLDING TOOL FOR AIR BRAKE PISTONS.

(Application filed June 13, 1901.)

(No Model.)



Witnesses:

Wm. E. Chayford,
John Enders, Jr.

By

Joseph Morinek
Thomas F. Sheridan,
Attys—

UNITED STATES PATENT OFFICE.

JOSEPH KORINEK, OF CHICAGO, ILLINOIS.

HOLDING-TOOL FOR AIR-BRAKE PISTONS.

SPECIFICATION forming part of Letters Patent No. 696,453, dated April 1, 1902.

Application filed June 13, 1901. Serial No. 64,372. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH KORINEK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Holding-Tools for Air-Brake Pistons, of which the following is a specification.

This invention relates to that class of tools which are arranged to grasp the hollow piston-rod of an air-brake cylinder and hold it in engagement with the cylinder-head, so that such cylinder-head, hollow piston, piston-head, and tension-springs may be removed from their engagement with the cylinder for the purpose of inspection, cleaning, oiling, or repairing, all of which will be appreciated by those skilled in the art.

The object of the invention is to provide a simple, economical, and efficient tool for holding the hollow piston-rod, cylinder-head, and piston-head, with the tension-spring, together and permit the same to be removed from engagement with the cylinder; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation of an air-brake cylinder and other parts, showing my improved holder in operative engagement therewith; Fig. 2, a longitudinal sectional view of the holder, taken on line 2 of Fig. 3; and Fig. 3 a cross-sectional view taken on line 3 of Fig. 1 looking in the direction of the arrow.

In the art to which this invention relates it is well known that it is quite desirable to provide a holding-tool which may be inserted into the hollow piston-rod of an air-brake cylinder, clamp the same, with its piston-head, cylinder-head, and intermediate spring, together, so that such parts may be removed together from their engagement with the cylinder proper, and then permit of all such parts being cleaned, oiled, or repaired. It will be understood by those skilled in the art that it would take considerable time to remove and replace these different parts singly, because of the compression necessary to put in the spring when holding the cylinder-head in position for bolting to the cylinder and that in their disassociation they would be liable to

come into contact with sand or grit, all of which would interfere with their subsequent efficient operation when the parts were reassembled.

The principal object of this invention, therefore, is to provide a holding-tool of the class described which will be economical to manufacture and simple in its operation, all of which will be more fully hereinafter described.

In constructing a holding-tool in accordance with these improvements I make what I prefer to term a "standard portion" *a*, having three or more legs *b*, extending inwardly from the peripheral edge of the standard portion, so that they may span the hollow piston-rod, as shown particularly in Fig. 1, and come into contact with the end of the cylinder-head. The standard portion is also provided with three or more outwardly-extending legs *c*, so that when the parts are removed from engagement with the cylinder these outwardly-extending lugs act as a supporting-base to support the parts in a vertical position out of contact with the gritty or sandy floor, all of which will be appreciated by those skilled in the art.

To provide means by which the hollow piston-rod may be grasped and held in engagement with the cylinder-head, a cross-head *d* is provided and has pivotally or loosely mounted therein a plurality of dogs *e*, having their outer free ends provided with serrations or teeth *f* where they contact with the inner surface of the tubular piston-rod. To extend or move these dogs outwardly and hold them firmly in engagement with the inner surface of the tubular piston-rod, the standard is provided with an inwardly-projecting tubular portion *g*, having an annular flange *h* on its inner end, the curved surface of which, as shown in Figs. 1 and 3, contacts the inner free ends of the dogs. To move the cross-head backward and forward, an operating-bolt *i* is provided, having its head portion in engagement with the outer surface of the standard and its threaded portion engaging an axial threaded opening in the cross-head, as shown particularly in Fig. 1. Between this cross-head and the annular flange on the tubular projection of the standard is inserted a helical tension-spring *j*, which serves to move the

cross-head in one direction—that is, when the operating-bolt is rotated to the left against the movements of the hands of a watch the spring holds the head of the operating-bolt in engagement with the standard and imparts a relatively inward movement to the cross-head, at the same time carrying the dogs inwardly with it and out of engagement with the piston-rod. A rotary movement of the operating-bolt to the right, the same as the movement of the hands of a watch, carries the cross-head outwardly against the tension of the spring *j* and at the same time brings the dogs into engagement with the annular flange, forcing the free ends outwardly and into engagement with the inner tubular portion of the cross-head.

When the inwardly-projecting lugs *b* on the standard portion are placed in contact with the cylinder-head *k*, the usual operating-spring *l*, which surrounds the tubular piston *m* and which is interposed between such cylinder-head and the piston-head *n*, serves to hold and lock the parts firmly together and in engagement with the holding-tool, so that when the usual securing-bolts (not shown) of the cylinder-head are removed the head, together with the tubular piston, piston-head, and operating-spring *l*, may be removed from their engagement with the air-brake cylinder *p* and permit the same to be cleaned, oiled, or repaired, as may seem desirable or necessary.

I claim—

1. In a holding-tool of the class described, the combination of a standard portion adapted to span the hollow piston-rod of an air-brake cylinder and contact with the head thereof, a cross-head provided with a plurality of movable dogs, a relatively non-rotatable inwardly-extending portion arranged between the outer standard portion and the cross-head, and means for moving the cross-head in one direction to extend the dogs into engagement with the hollow piston-rod and in the opposite direction to permit them to collapse from such engagement, substantially as described.

2. In a holding-tool of the class described, the combination of a standard portion adapted to span a hollow piston-rod and contact a cylinder-head thereon, a cross-head provided with a plurality of pivotal dogs, a relatively non-rotatable arm connected with the outer standard portion and arranged between it and the cross-head, and an operating-bolt in engagement with the standard for moving the cross-head in one direction to extend the pivotal dogs and in the opposite direction to permit them to collapse, substantially as described.

3. In a holding-tool of the class described, the combination of a standard portion provided with inwardly-extending lugs which span a hollow piston-rod so as to contact a cylinder-head thereon, a cross-head arranged to be moved backward and forward and pro-

vided with a plurality of pivoted dogs having serrations or teeth at their free ends, a hollow relatively non-rotatable inwardly-projecting portion on the standard in contact with the free ends of the pivotal dogs, and an operating-bolt for moving the cross-head in one direction to extend the pivotal dogs into contact with the tubular piston-rod and in the opposite direction to permit them to collapse, substantially as described.

4. In a holding-tool of the class described, the combination of a standard portion provided with inwardly-extending lugs which span a hollow piston-rod so as to contact with a cylinder-head thereon, a cross-head arranged to be moved backwardly and forwardly and provided with a plurality of pivoted dogs having serrations or teeth at their free ends, a relatively non-rotatable inwardly-projecting portion on the standard in contact with the inner portion of the free ends of the pivotal dogs, an operating-bolt for moving the cross-head in one direction to extend the pivotal dogs and in the opposite direction to permit them to collapse, and a tension-spring interposed between the relatively non-rotatable projection and the cross-head, substantially as described.

5. In a holding-tool of the class described, the combination of a standard portion adapted to span a tubular piston-rod and provided with inwardly-projecting lugs to contact an air-brake cylinder-head thereon, outwardly-projecting lug mechanism forming a supporting-base to rest the mechanism on the ground and an inwardly-projecting tubular portion provided with an annular flange on its inner end, a cross-head provided with a plurality of pivotal dogs extending forward into contact with the annular flange, a tension-spring interposed between the cross-head and the annular flange, and an operating-bolt in rotatable engagement with the standard and in threaded engagement with the cross-head to move the same forwardly and backwardly against and with the tension of the spring, substantially as described.

6. In a holding-tool of the class described, the combination of an outer standard portion, a hollow relatively non-rotatable arm, a cross-head provided with a plurality of pivoted dogs adapted to contact with the end of the hollow arm, and a bolt connected with the cross-head and arranged to extend through the hollow arm and outer standard portion and moving the cross-head backward and forward, substantially as described.

7. In a holding-tool of the class described, the combination of an outer standard portion, a cross-head provided with movable arms, a relatively non-rotatable portion arranged between the outer standard portion and the cross-head in operative connection with the movable arms on such head, and means for moving the cross-head in one direction to expand the movable arms thereon and in the

opposite direction to permit them to collapse, substantially as described.

5 8. In a holding-tool of the class described, the combination of an outer standard portion, a movable head portion provided with a plurality of movable arms, a relatively non-rotatable rigid arm portion arranged between the outer standard portion and the head in operative connection with the movable arms

on such head, and means for moving the head 10 and movable arms toward the rigid arm to extend the movable arms on such head, and in the opposite direction to permit them to collapse, substantially as described.

JOSEPH KORINEK.

Witnesses:

THOMAS F. SHERIDAN,
HARRY IRWIN CROMER.