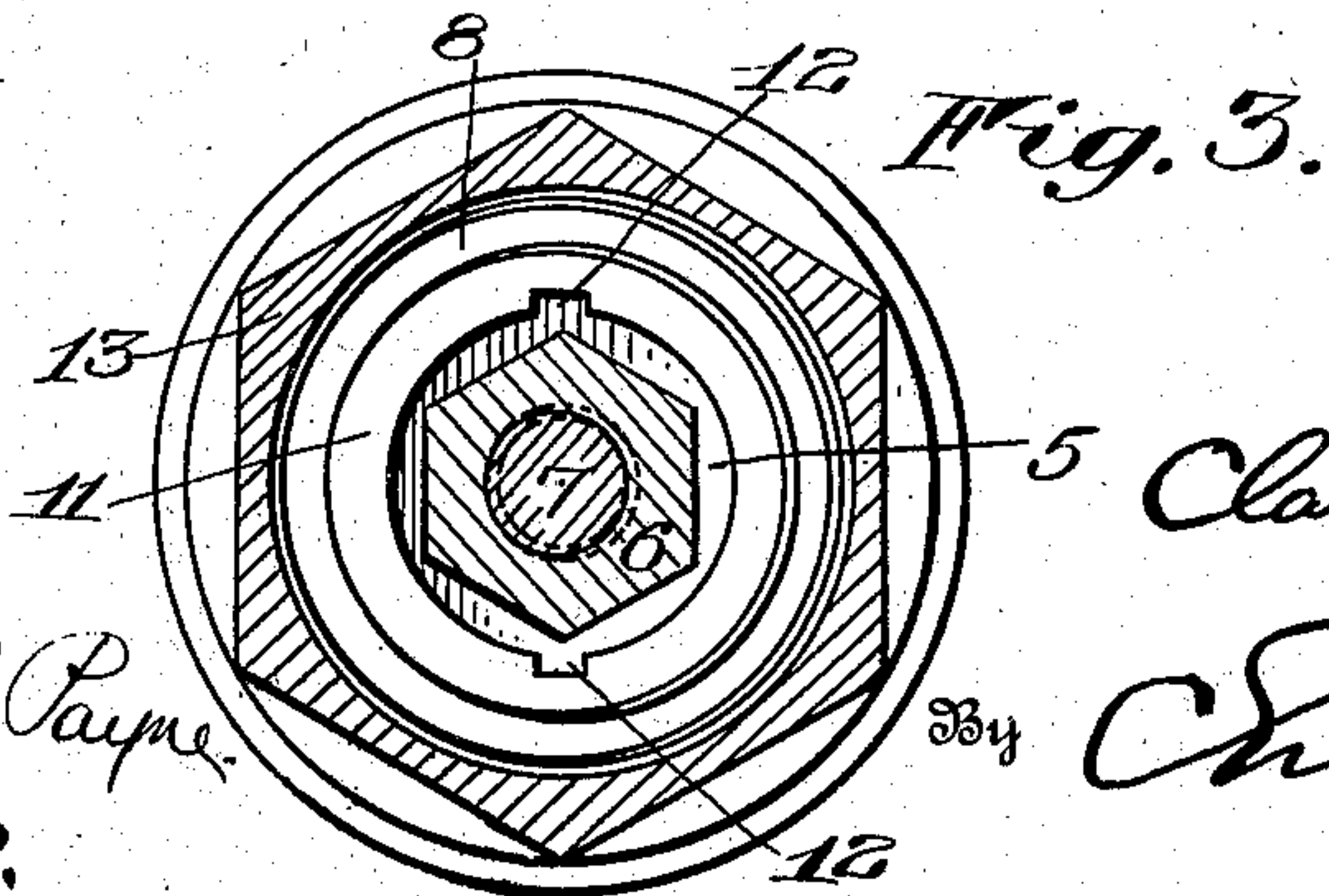
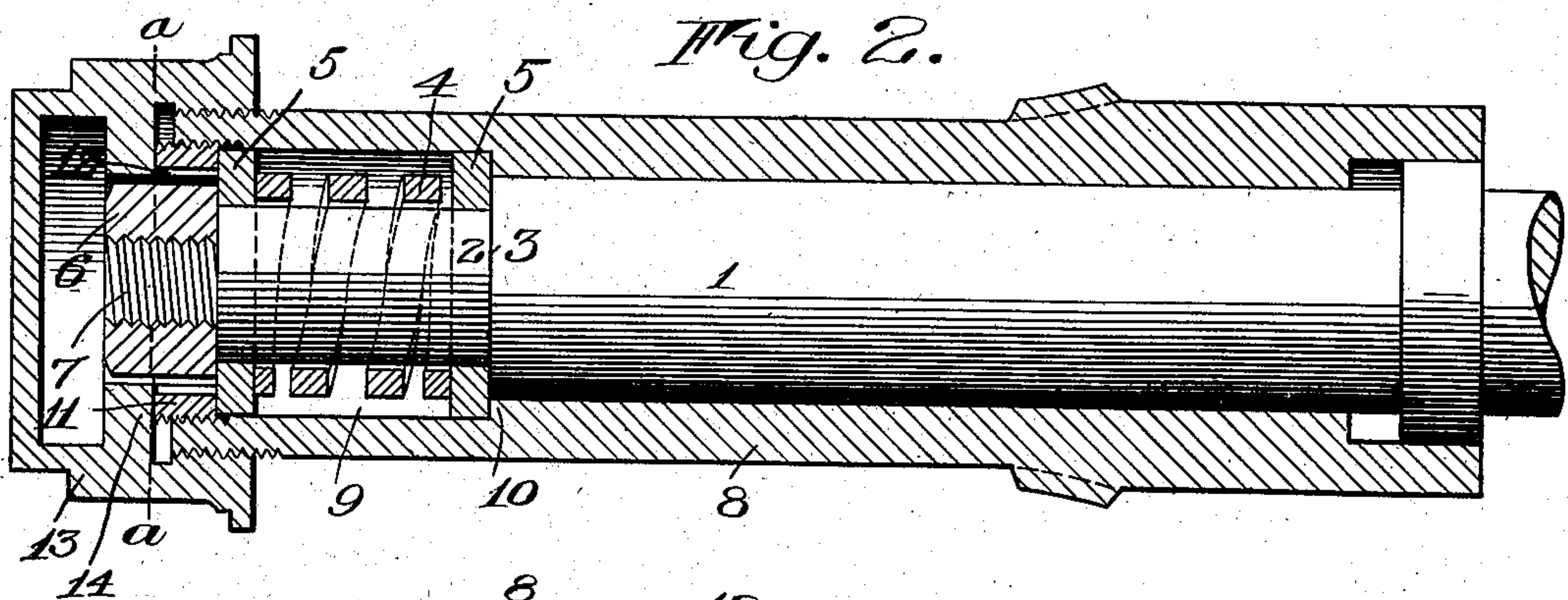
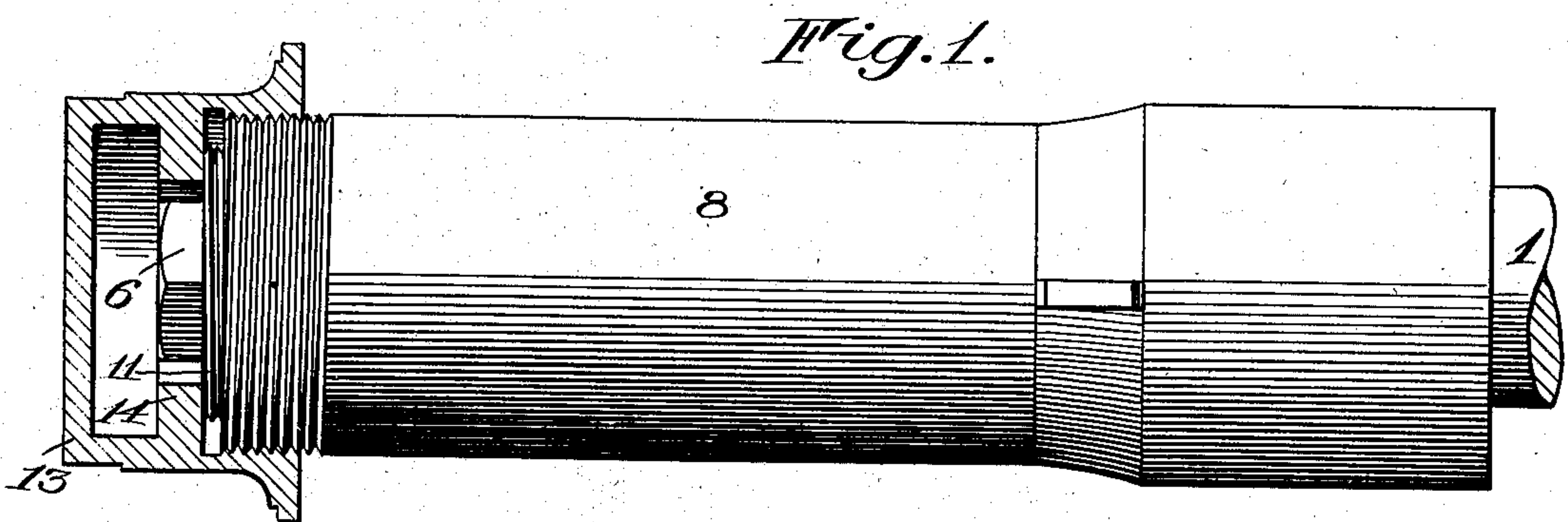


No. 885,153.

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C. E. HECKMAN.
DEVICE FOR SECURING AXLE BOXES TO AXLES.
APPLICATION FILED DEC. 6, 1907.



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DEVICE FOR SECURING AXLE-BOXES TO AXLES.

No. 885,153.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed December 6, 1907. Serial No. 405,302.

To all whom it may concern:

Be it known that I, CLARENCE E. HECKMAN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Devices for Securing Axle-Boxes to Axles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The present invention relates to devices for securing axle boxes to axles of the type in which a spring or other yielding element is interposed between said parts to take up end thrust in two directions and it has for an object to provide an improved construction wherein the axle box may be adjusted to engage the yielding element in such a manner that the rotation of the box will not be retarded but all loose movement or play will be prevented.

Another object is to provide a construction in which the yielding device is so mounted that it will be withdrawn and held by the axle box when the latter is removed to grease or oil the axle spindle.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings wherein is shown an embodiment of my invention, Figure 1 represents a side view of an axle box arranged on one end of an axle, the axle cap being shown in section. Fig. 2 shows all parts of the invention in longitudinal section except the axle; and Fig. 3 is a sectional view on line *a-a* Fig. 2.

Referring more particularly to the drawings 1 indicates a spindle portion of an axle which may have a reduced portion 2 near one end to provide a shoulder or abutment 3, the reduced portion being surrounded by a yielding device comprising preferably a helical spring 4 and two movable abutments 5 at the ends of the spring. This device is held on the reduced portion by the axle nut 6 having engagement with a screw threaded extension 7 and serving as a removable abutment for the yielding device.

Surrounding the axle spindle is the axle

box 8 which has an enlarged bore 9 at its outer end, forming a shoulder 10 which engages the inner end of the yielding device, the two movable abutments 5 of the yielding device having a diameter almost equal to the diameter of the bore 9 so that the box turns about these abutments. The other end of the yielding device is engaged by an adjustable abutment 11 which is arranged within the axle box and preferably has external threads to engage with internal threads in the end of the box. This abutment is preferably in the form of a ring having notches 12 by which it may be turned to be adjusted until both it and the abutment or shoulder 10 engage opposite ends of the yielding device, the engagement being such that the axle box has no play but at the same time may turn freely relatively to the device. The threaded connection between the box and the adjustable abutment should be such that the rotation of the axle box will tend to loosen or move the abutment away from the yielding device and not to move in the direction to compress the spring.

In order to lock the movable abutment in its adjusted position and at the same time to inclose the parts to exclude dust, I employ an axle cap 13 which engages the exterior of the axle box with threads disposed in a direction opposite to the direction of the threads which connect the movable abutment 11 to the box. By reason of the right and left handed threads connecting the abutment and the cap to the box and of an inwardly extending flange 14 or other portion on the cap which engages the movable abutment, the latter is locked against turning, due to the turning of the axle box in operation.

To remove the axle box the cap 13 is unscrewed from the box and then the nut 6 is taken off. The axle box is now withdrawn and the yielding device comes off also and is held within the box.

With this invention to take up for wear, it is only necessary to remove the cap, and when the box is removed there is no danger of misplacing the yielding device as it is held in the box between the two internal abutments.

The yielding device is mounted to rotate on the axle so that should the adjustable abutment be turned so far that the device is clamped between the abutments of the axle

box, the latter may turn freely, although end play will be present.

I claim as my invention:

1. The combination with an axle and a yielding device surrounding the same, of an axle box having an internal abutment arranged to engage one end of the yielding device, and an adjustable abutment arranged within the box to engage the other end of the yielding device and movable to compensate for wear on both abutments.

2. The combination with an axle and a yielding device surrounding the same, of an axle box having an internal abutment arranged to engage one end of the yielding device and internal threads, and an adjustable abutment movable on the internal threads to compensate for wear on both abutments and arranged to engage the other end of the yielding device.

3. The combination with an axle having a reduced end, a yielding device surrounding the reduced end, and a nut securing the device in place, of an axle box surrounding the axle having an internal abutment arranged to engage one end of the yielding device, and an adjustable abutment arranged within the box to engage the other end of the yielding device and movable to compensate for wear on both abutments.

4. The combination with an axle and a yielding device surrounding the same, of an axle box having an internal abutment arranged to engage one end of the yielding device, an adjustable abutment arranged

within the box to engage the other end of the yielding device, and a cap for the axle box having a portion arranged to engage the adjustable abutment to lock it in its adjusted position.

5. The combination with an axle and a yielding device surrounding the same, of an axle box having internal threads and an internal abutment arranged to engage one end of the yielding device, an adjustable abutment engaging the internal threads and arranged to engage the other end of the yielding device, and a cap for the axle box having threaded engagement with the latter, the threads being disposed in a direction opposite to the direction of the threads on the adjustable abutment, and said cap having a portion to engage the adjustable abutment to lock the latter in its adjusted position.

6. The combination with an axle having a reduced end, a yielding device surrounding the reduced end, and a nut securing the device in place, of an axle box surrounding the axle having an internal abutment arranged to engage one end of the yielding device, an adjustable abutment arranged within the box to engage the other end of the yielding device; and a cap for the axle having a portion locking the adjustable abutment against movement.

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Witnesses:

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