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C. A. V. CARLSSON & C. E. BOHMAN.
AUTOMATIC CROSS HEAD PIN OILER.

APPLICATION FILED MAR. 4, 1902.

NO MODEL.

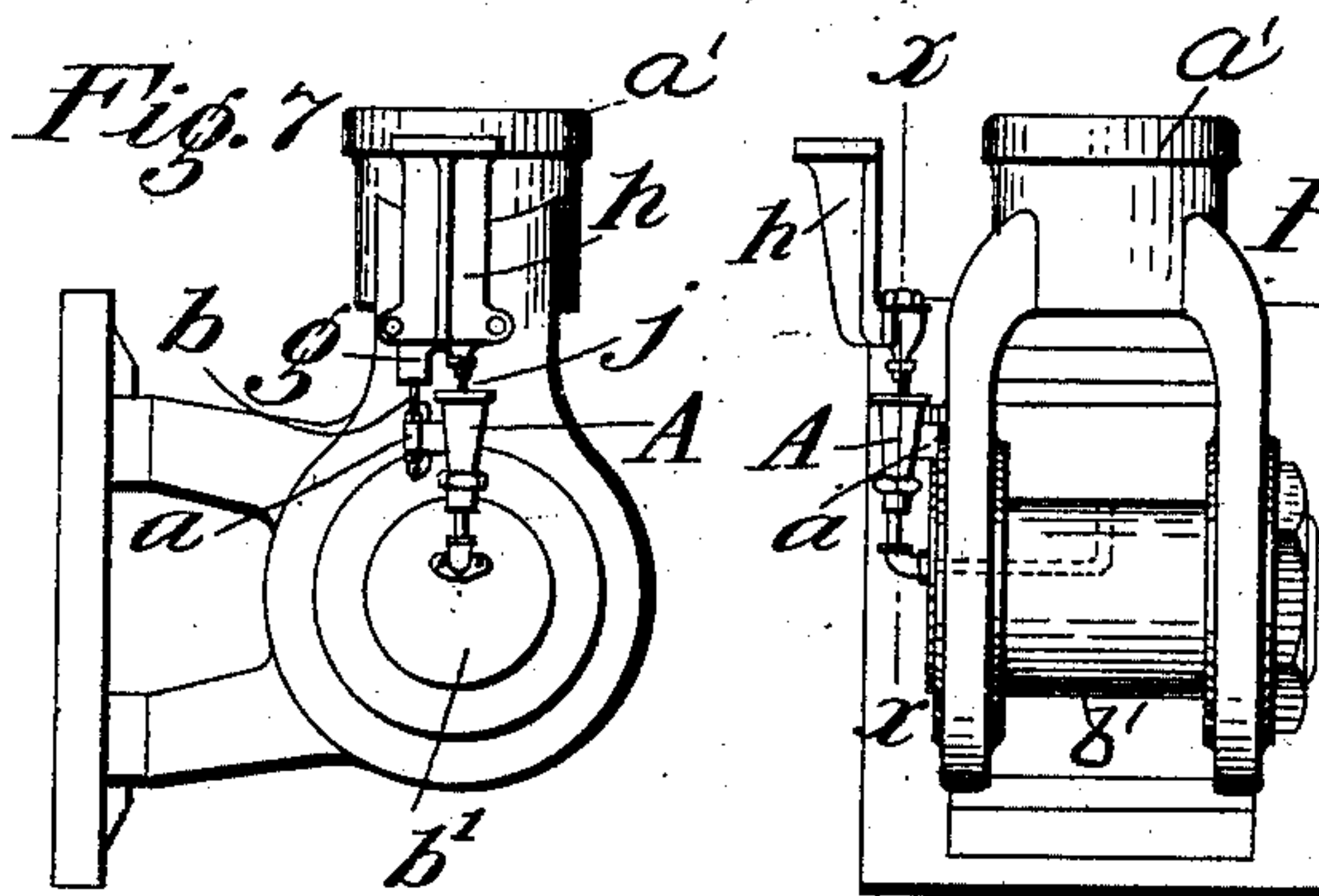
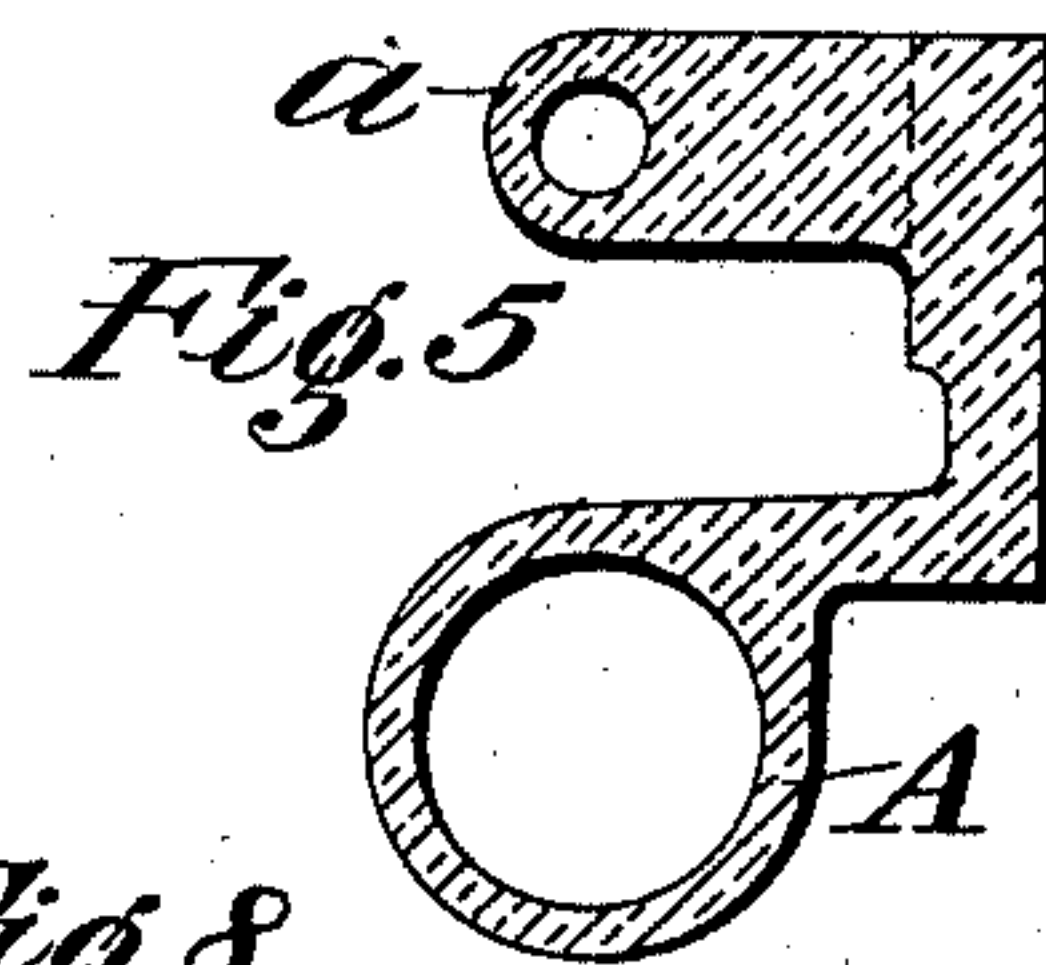
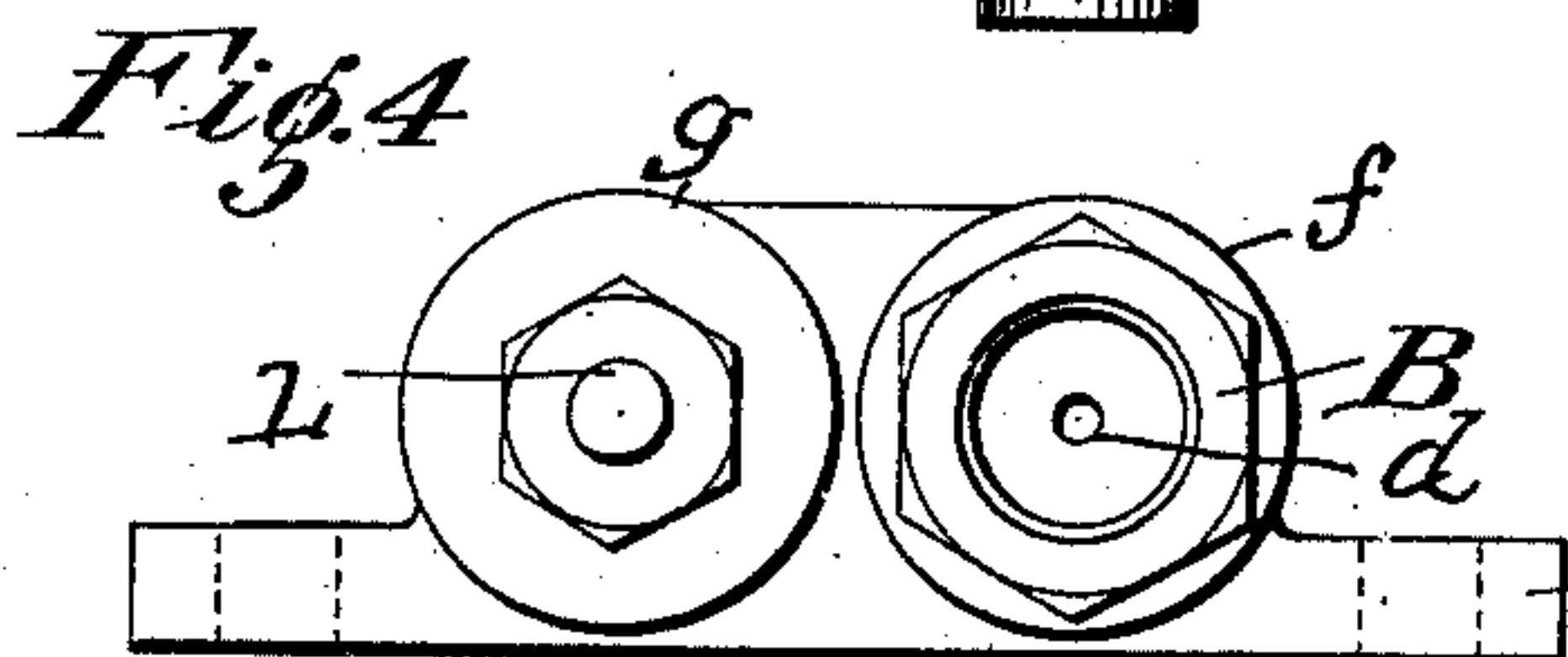
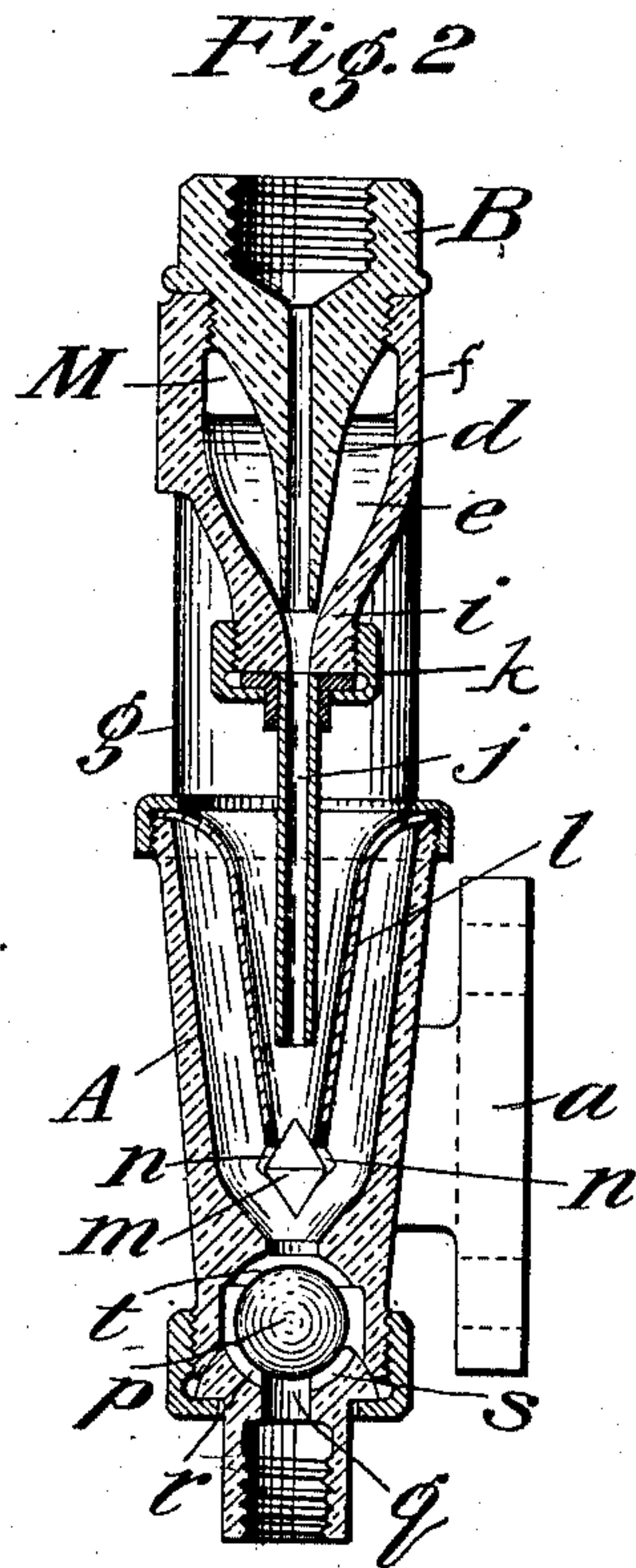
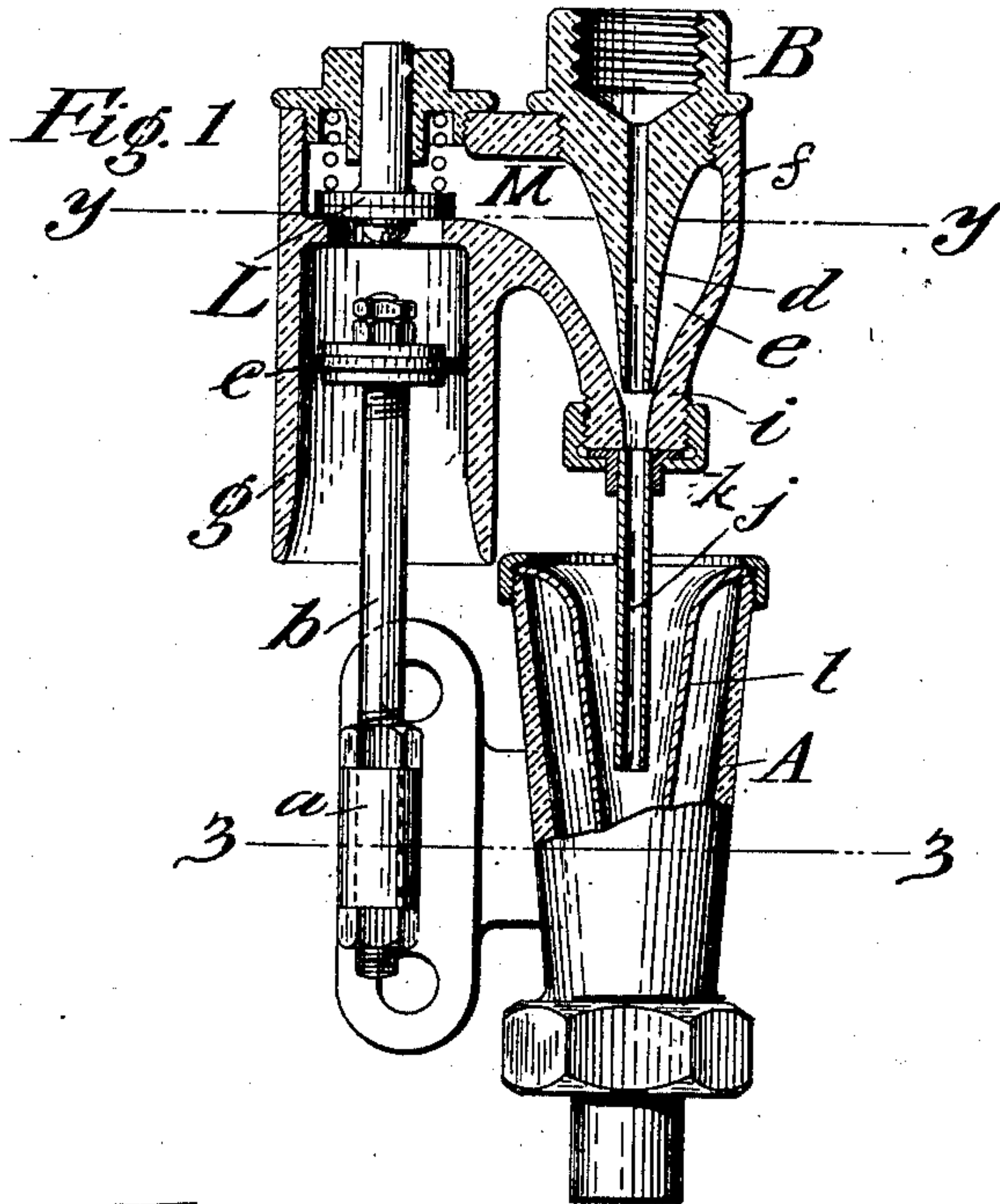
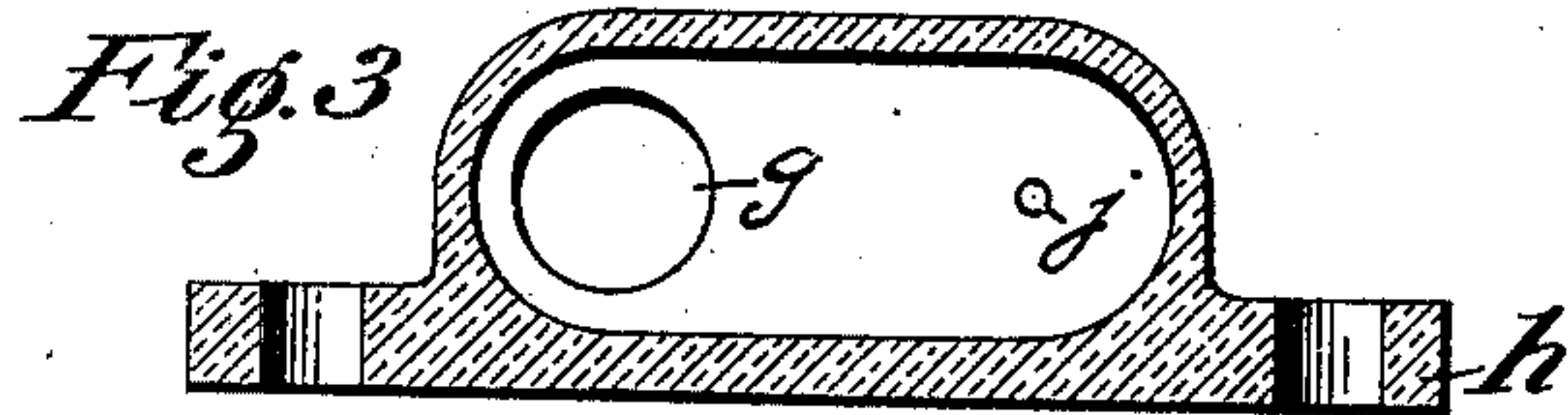
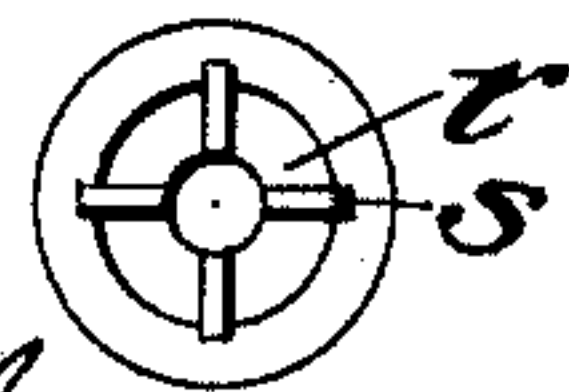


Fig. 8

Fig. 6



Witnesses
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UNITED STATES PATENT OFFICE.

CARL A. V. CARLSSON AND CARL E. BOHMAN, OF AUBURN, NEW YORK.

AUTOMATIC CROSS-HEAD-PIN OILER.

SPECIFICATION forming part of Letters Patent No. 719,565, dated February 3, 1903.

Application filed March 4, 1902. Serial No. 96,638. (No model.)

To all whom it may concern:

Be it known that we, CARL A. V. CARLSSON and CARL E. BOHMAN, citizens of the United States of America, and residents of Auburn, county of Cayuga, and State of New York, have invented certain new and useful Improvements in Automatic Cross-Head-Pin Oilers, of which the following is a specification.

Our invention relates to means for lubricating cross-head pins of reciprocating parts, as the cross-heads of steam and other engines, particularly vertical engines; and it consists, essentially, of improved devices carried on the cross-head and other devices in connection with a stationary oil-feeder, as a so-called "sight-feeder," whereby the oil delivered by the feeder is intermittently injected into the oil-cup of the cross-head at the moment of the proper conjunction of the oil-cup and the discharge-nozzle of the feeder, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is partly a vertical section and partly a side elevation of the apparatus. Fig. 2 is a vertical central section of the funnel and socket of Fig. 1, the view being from the right-hand side of Fig. 1. Fig. 3 is a horizontal section on line *y y* of Fig. 1. Fig. 4 is a top view. Fig. 5 is a horizontal section on line *z z* of Fig. 1. Fig. 6 is a plan of the lower seat of a check-valve employed to prevent escape of the injected oil on the back stroke of the cross-head. Figs. 7 and 8 are elevations showing the general arrangement of the apparatus.

A represents a funnel, and *a* a bracket for attaching said funnel to the cross-head *a'*, the pin of which, *b'*, is to be lubricated. *b* is a piston-rod set upright on said bracket alongside of the funnel and reaching a little higher than the top of the funnel and carrying a piston *c* on its upper end.

B is a socket for reception of the base connection of a "sight-feed" or other lubricator and constituting a receptacle for the graduated oil-feed, said socket having a downwardly-projecting nozzle *d* at the lower end projecting into the chamber *e* of the shell *f*, which carries a vertical hollow cylinder *g*, open at the lower end, and is mounted on a bracket *h*, to be attached to any suitable sta-

tionary support, with the nozzle *d* and the cylinder *g* coinciding axially with the funnel A and the piston *c*, respectively. The shell of chamber *e* has a nozzle *i* below the extremity of nozzle *d* and coincident with it, into which said nozzle *d* discharges, and to the end of this nozzle *i* an extension-tube *j* is attached by a coupling *k* or any equivalent device, or it may be an integral prolongation of the nozzle, said extension being of such length that the end reaches well into the chamber of said funnel when the cross-head reaches the upper extremity of its stroke. At the same time the piston *c* reaches well into the cylinder *g*, compressing the air therein and forcing some of it through a check-valve *L* into a passage *M*, communicating with chamber *e* for forcibly ejecting oil out of nozzle *i* and extension-tube *j* into the funnel A, the said extension *j* being a capillary tube, in which oil falling into it from nozzle *d* will be retained when not subject to the air-jet to prevent waste while the funnel is so far below the end of tube *j* that the drops of oil might be blown away. The bore of nozzle *d* may be of capillary size also, if desired; but it is not essential.

In cross-heads working more rapidly than gravity does on falling bodies oil might escape out of the mouth of funnel A on the downstroke, to prevent which we have provided the funnel-shaped cover *l* to the mouth of said funnel with a double-pointed deflector *m* in its smaller extremity, one end of which points upward and the other end downward, the said upper point being in such relation to small passages *n* of the extremity of the cover that oil will escape from above; but oil thrust upward against the lower point of the deflector will be thrust away from said passages, and thus be prevented from escaping from the cover. As a further means of preventing such escape we have provided the double-seated ball check-valve *p* in the passage *q*, leading to the pin to be lubricated, the lower seat of which, *r*, is grooved at *s* to allow the oil to flow downward freely; but the upper seat *t* is a tightly-closing seat, whereon the valve closes when the speed of the downstroke is greater than the gravitating action of the ball, and thus serves to limit escape of oil into the funnel. Either of these checks against reverse action of the oil may

be used alone or both together, as here shown, as may be desired.

What we claim as our invention is—

1. The combination of the funnel and the
5 air-compressing piston carried on a cross-head, and an air-compressing cylinder and means to connect the same to a fixedly-located oil-feeder, said cylinder and connections being adapted for periodical coaction with said
10 piston and funnel for intermittently injecting the oil from the receptacle into said funnel by compressed-air jets.
2. The combination of the funnel and the
15 piston carried on a cross-head, and a cylinder, and means to connect the same to a fixedly-located oil-feeder, said cylinder and connections being adapted for periodical coaction with said piston and funnel for intermittently
20 injecting the oil from the receptacle into said funnel, said connections comprising in part a capillary tube for retaining the oil in the receptacle during non-action of the said injecting apparatus.
3. The combination of the funnel and the
25 piston carried on a cross-head, and a cylinder, and means to connect the same to a fixedly-located oil-feeder, said cylinder and connections being adapted for periodical coaction with said piston and funnel for inter-
30 mittingly injecting the oil from the receptacle into said funnel, said connections comprising the air-compressing cylinder coacting with the piston, the chamber receiving the oil from the receptacle and periodically re-
35 ceiving jets of compressed air, a nozzle delivering the oil from said receptacle into said chamber, check-valve controlling the communicating passage between the air-com-

pressing cylinder and said chamber, and the capillary tube for retaining the oil from the
40 receptacle in the intervals of non-action of the injecting apparatus.

4. The combination of the funnel and the piston carried on a cross-head, and a cylinder, and means to connect the same to a fixedly-located oil-feeder, said cylinder and
45 connections being adapted for periodical coaction with said piston and funnel for intermittently injecting the oil from the receptacle into said funnel, the funnel-shaped cover
50 of said oil-receiving funnel, and a check device to prevent reverse flow of the oil through the smaller extremity of the cover.

5. The combination of the funnel and the piston carried on a cross-head, and a cylinder and means to connect the same to a fixedly-located oil-feeder, said cylinder and
55 connections being adapted for periodical coaction with said piston and funnel for intermittently injecting the oil from the receptacle into said funnel, the funnel-shaped cover
60 of said oil-receiving funnel, and a check device to prevent reverse flow of the oil through the smaller extremity of the cover, consisting of the pointed deflector connected with
65 the smaller end of said cover and adapted to deflect the oil tending to enter the opening in the cover in the reverse direction.

Signed at Auburn, New York, this 13th day of February, 1902.

CARL A. V. CARLSSON.
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Witnesses:

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