

No. 791,299.

PATENTED MAY 30, 1905.

H. E. SMITH.
CONNECTING MECHANISM.
APPLICATION FILED JUNE 14, 1904.

Fig. 1.

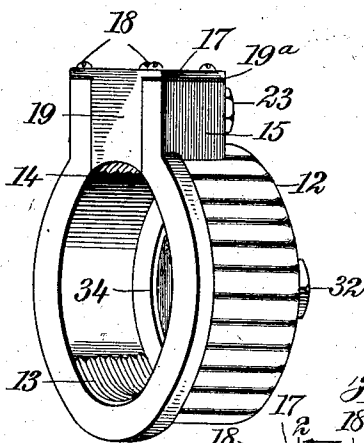
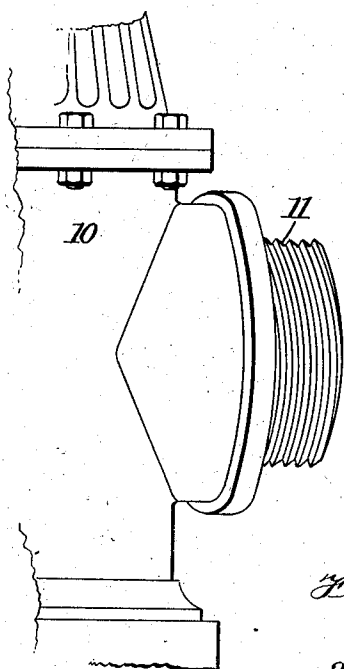


Fig. 6.



Fig. 4.

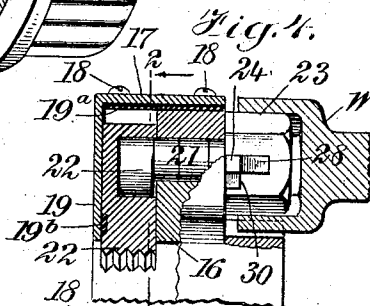


Fig. 2.

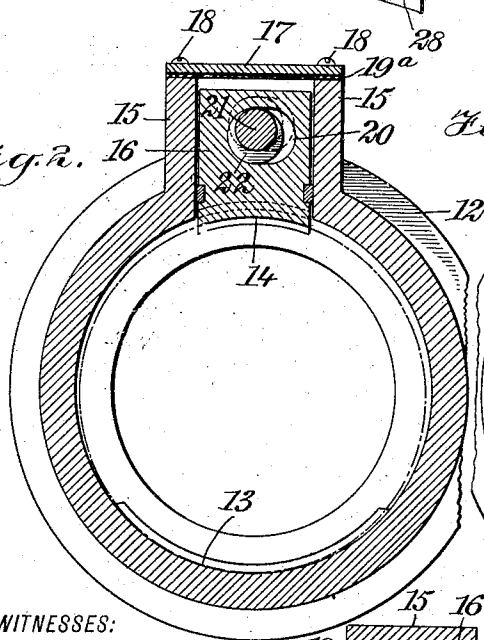
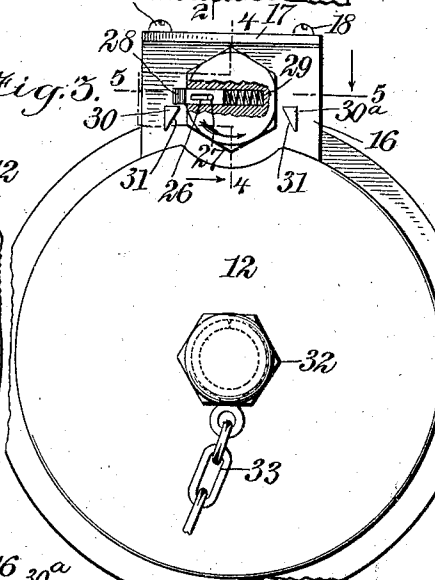


Fig. 3.

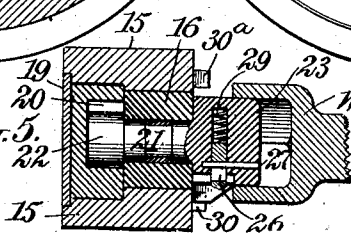


WITNESSES:

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Fig. 5.



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CONNECTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 791,299, dated May 30, 1905.

Application filed June 14, 1904. Serial No. 212,497.

To all whom it may concern:

Be it known that I, HARRY EDWARD SMITH, a citizen of the United States, and a resident of Roslyn, in the county of Kittitas and State of Washington, have invented a new and Improved Connecting Mechanism, of which the following is a full, clear, and exact description.

My invention relates to mechanism for connecting threaded elements, it being particularly applicable to the attachment of the caps of hydrants and the like.

It has for its principal objects the provision of such mechanism which is simple in construction and may be quickly operated.

It consists in the various features and combinations hereinafter described and claimed.

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 figures.

Figure 1 is a perspective view of a portion of a hydrant with a cap for its outlet, to which one embodiment of my invention is applied, said cap and hydrant being shown as separated. Fig. 2 is a broken transverse section taken in the plane indicated by the line 2 2 in Fig. 4. Fig. 3 is a broken front elevation of the cap. Fig. 4 is a sectional detail on the line 4 4 of Fig. 3. Fig. 5 is a horizontal sectional detail on the line 5 5 of Fig. 3, and Fig. 6 is a detail in perspective of the latch member.

The numeral 10 designates a hydrant, which is provided with a threaded outlet member 11. This outlet may be covered by a cap 12, which has threaded sections for coaction with the threads of the companion member. These sections are here shown as two in number, one of which (indicated at 13) is formed upon the cap, while the other is oppositely situated and carried by the face of a movable member 14. The member 14 operates within a chamber furnished by a casing consisting of opposite side walls 15 15, projecting from the cap, and a front wall 16, the casing being closed by a cover-plate 17, which may be secured in place by screws 18 and has an inwardly-extending rear wall 19. A packing 19^a, of fabric or the like, is preferably placed between the cover-plate and the casing and also at 19^b

in a slot in the member 22 for coaction with the rear wall to exclude dust. The movable section may slide in the chamber from its outward position, as is illustrated in Fig. 1, to that in coaction with the member 11, shown in Fig. 2. It has extending through it from front to rear an elongated opening 20, into which projects an actuating-spindle 21, journaled in the wall 16 and having fixed to it an actuating member or cam 22, located within the opening 20 and having a diameter substantially equal to the width thereof. The length of the slot is sufficient to permit the rotation of the cam without its forcing the movable section laterally against the casing-walls. Upon the outer end of the spindle is a head 23, which, as illustrated, is hexagonal and adapted for engagement by a wrench W, which is preferably of the box type and fits the head rather closely.

To retain the movable section in either its coaction with the member 11 or withdrawn therefrom, locking mechanism is provided, preferably carried by the spindle. This is here shown as comprising a latch member 24, having a shank 25, operating in a suitably-formed recess extending transversely of the spindle-head. In the shank is an opening 26, through which a pin 27 extends to limit the movement of the latch. This latch is provided with a contact-face 28, inclined toward the outer extremity of the head and held normally projected beyond its recess by a spring 29, situated at the rear of the shank and co-acting therewith and with the opposite wall of the recess. The latch may coöperate with either of contact projections 30 and 30^a, carried by the wall 16 of the casing at opposite sides of the spindle-head. Each of these projections has an inclined face 31, extending toward the center of the cap and outwardly therefrom.

Fig. 3 of the drawings shows the cap as it would appear in place upon the hydrant. Now if it is desired to remove it therefrom the wrench is placed over the spindle-head and contacts with the latch, forcing it into its recess and removing it from coaction with the projection 30. This permits the spindle to be rotated in the direction of the arrow through

substantially one hundred and eighty degrees, whereupon the cam acting upon the upper side of the opening 20 raises the section 14 into the casing, so that its threads are disengaged from those of the member 11. This causes the cap to drop slightly downward, freeing the opposite section 13, and allows it to be withdrawn longitudinally. As the spindle approaches the end of its rotary movement the latch is brought into a plane above the projection 30^a, and upon the removal of the wrench said latch is forced out by its spring and locks the section in its raised position. If the operator partially withdraws the wrench before the latch has been raised above the projection, the movement may still be completed, since the latch contacts with the inclined face 31, which retracts it until it is projected by the spring upon the upper side. To restore the cap to its original position, it is placed vertically upon the member 11 and the wrench brought into coaction with the spindle-head, depressing the latch and permitting a rotation in a direction reverse to the arrow until the latch has reached the position above the projection 30, illustrated in Fig. 3. This brings the section 14 again into coöperation with the threads of the member 11. If it is desired to set the cap more firmly upon the hydrant, this may be accomplished by the application of the wrench to a hexagonal or square boss 32, projecting from the axis of the cap. This boss serves as a convenient means for securing the ordinary retaining-chain 33. A gasket may be inserted in the cap at 34 to secure a watertight joint with the hydrant-outlet. It will thus be seen that the mere application of the wrench affects the unlocking of the actuating mechanism, and that a half a turn of said mechanism so frees the cap that it may be withdrawn by a direct pull, thus providing for very speedy and effective operation, features exceedingly desirable in anything connected with fire apparatus.

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

1. The combination with a threaded member, of a coacting cap, a casing extending

from a side of the cap and being provided with projections, and a threaded section and actuating mechanism therefor mounted within the casing and comprising a latch for coaction with the projections.

2. The combination with a threaded member, of a coacting cap provided with an external projection and having a movable threaded section, of actuating mechanism for said section comprising a spindle provided with a head, and a locking member movable laterally of the head and coacting with the projection.

3. The combination with two threaded members, one of which has a movable threaded section, of actuating mechanism for said section comprising a spindle provided with a head, and a locking member mounted in and movable laterally of the head and having a face inclined toward the outer extremity of the head.

4. The combination with two threaded members, one of which has a movable threaded section, of actuating mechanism for said section adapted to receive an operating-tool, and locking mechanism carried by the actuating mechanism and operable by said tool.

5. The combination with two threaded members, one of which has a movable threaded section, of actuating mechanism for said section comprising a spindle adapted to receive an operating-tool, and a locking member mounted in the spindle and movable by the tool.

6. The combination with two threaded members, one of which has a movable threaded section, of actuating mechanism for said section comprising a spindle provided with a head which is adapted to receive an operating-tool, and a locking member mounted in the head for coaction with the tool.

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

HARRY EDWARD SMITH.

Witnesses:

E. A. SMITH,
HENRY SMITH.