

C. WEAVER & G. A. PRICE.
THROTTLE STEM GLAND.
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1,027,783.

Patented May 28, 1912.

Fig: 1.

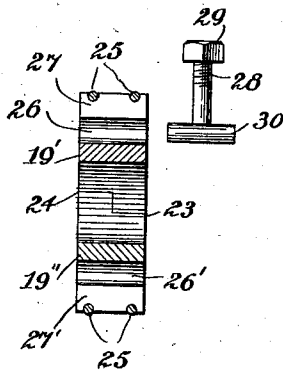
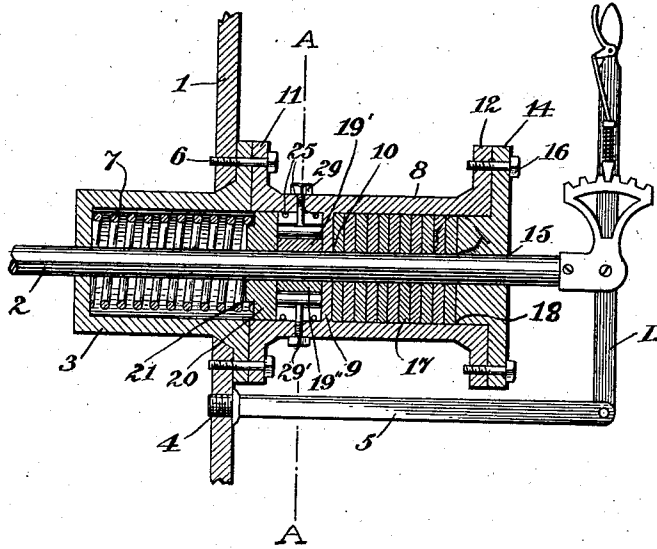


Fig: 3.

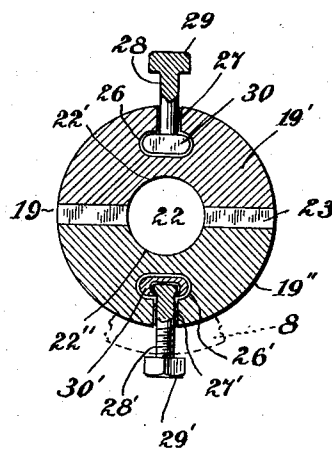


Fig: 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

CLAYTON WEAVER, OF PHALANX, AND GEORGE A. PRICE, OF DILLONVALE, OHIO.

THROTTLE-STEM GLAND.

1,027,783.

Specification of Letters Patent.

Patented May 28, 1912.

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To all whom it may concern:

Be it known that we, CLAYTON WEAVER and GEORGE A. PRICE, citizens of the United States, residing at Phalanx and Dillonvale, respectively, in the counties of Trumbull and Jefferson, State of Ohio, have invented certain new and useful Improvements in Throttle-Stem Glands, of which the following is a specification.

Our invention relates to improvements in throttle stem glands for locomotives in which escape of steam from the boiler along the surface of the throttle stem is normally guarded against and prevented; and the objects of our improvement are, first, to temporarily close all passage way for steam about the throttle stem from the exterior of the boilers, at the will of the engineer; second, to provide a gland for the throttle stem that shall be outside of the boiler and easy of access after the exit from the boiler has been temporarily sealed; third, to make use of the stuffing box that is furnished with the locomotive and thereby reduce the cost to a minimum; and, fourth, to save time in repairing the gland and the cost of coal and time necessitated by pulling the fires and sending for another locomotive to haul the train when the original packing about the throttle valve stem has blown out, as frequently happens. We attain these objects by the mechanism illustrated in the accompanying drawings, in which;—

Figure 1 is a longitudinal section of our invention attached to a broken away part of the back head of a locomotive boiler, and with a throttle stem and lever in elevation; Fig. 2 is a sectional view of our channel closing ring or gland, taken on the line A—A of Fig. 1; Fig. 3 is a section of the same taken at right angles to the view of Fig. 2, and an elevation of a clamping nut.

Similar characters refer to similar parts throughout the several views.

1 is a part of the back head of a locomotive boiler; 2 is a part of a valve stem that connects with the throttle valve ordinarily located near the dome of the boiler, and, passing through a stuffing box, is operated in the usual manner by a throttle lever L attached to the boiler at 4 by the arm 5. The box 3 is bolted to the boiler by bolts 6; and, when the locomotive is received, is filled with packing rings which rapidly deteriorate; are frequently blown out and have to be replaced by new ones. We remove

said packing rings and substitute for them a spring 7 in the original stuffing box.

8 is a cylindrical tube open at both ends and of the same interior diameter as box 3, but having a solid partition wall 9 built into it, with a central hole 10 therein to accommodate the stem 2; said tube 8 has annular outward projections 11 and 12 at its ends and is bolted to box 3 by the bolts 6, as shown.

14 is a solid, interiorly shouldered head with a central hole 15 for the passage of stem 3, and is bolted to the ring 12 by bolts 16, as shown, after the packing rings 17, that were taken from the box 3, have been put into the forward opening 18 of tube 8. Before the tube 8 is bolted to the box 3 by bolts 6 we insert in its rear open end a gland 19, made of two semicylindrical sections 19' and 19'', Figs. 2 and 3, which will be more fully described hereinafter. After inserting the gland 19 we insert a tail block 20 which has a reduced projection, 21, about which one end of the spring 7 is seated. Thereupon the whole apparatus is bolted to the box 3 and the boiler 1, as shown.

The gland 19 is made with a central hole 22, the surfaces about which are designated 22', 22'', of the exact diameter of the stem 2; is composed of halves 19' and 19'' whose adjacent diametrical edges 23 and 24 overlap each other evenly and accurately and are made steam tight faces by being ground. The surfaces of the parts surrounding the hole 22 are also ground to make a steam tight closure about stem 3 when said halves 19' and 19'' of said gland 19 are forced together. The periphery of gland 19 contains a plurality, preferably, of channels in which are seated stiff expansion rings 25. Two ovoid slots 26, 26' extend entirely through halves 19', 19'' of the gland 19, and have narrower necks, 27, 27', leading to the periphery of the gland 19.

28, 28' are screws smaller than necks 27, 27', through the shell of tube 8 at opposite points, and are swiveled into lugs, 30, 30' which are larger than necks 27, 27' and slightly smaller and of corresponding form to the slots 26, 26'.

In operation when the packing 17 blows out, or the steam escapes, the engineer turns the screws 28, 28' inward by means of their heads 29 29' and pinches the gland 19 till its ground faces 22, 22', 23 and 24 stop the escape of steam along the stem 2; and the

extension rings 25 prevent its passage around the periphery of the gland 19. The spring 7 forces the laterally ground faces 23 and 24 to a fit, while the screws 28, 28' fit their horizontal faces together. The escape of steam having been checked, the engineer takes off the head 14, removes the packing 17, inserts new packing carried for the purpose; replaces the head 14 and releases the gland 19 by unscrewing the screws 28, 28'.

We do not claim the use of an active and an inactive packing about a throttle valve stem nor the use of a double set of packings in a stuffing box for valve stems, nor means for forcing packing into close relation with a valve stem or a piston rod, but:—

We claim:—

1. The combination of a stuffing box; a throttle valve stem through it, a spring surrounding said stem and contained in said box; a secondary tube attached to said box; a wall in said secondary tube; a metal head seated in said spring and bearing against a gland diametrically halved and surrounding said stem; means for forcing said halves of said gland together; expansion rings sur-

rounding said gland; packing on the side of said wall away from said gland and a removable head for closing said secondary tube, substantially as shown and described. 30

2. A gland for valve stems having a hole in its center corresponding in size to the valve stem, and divided into two equal parts by a cut on one side below the center line, and extending half way through the gland, 35 a similar and parallel cut in the other side at a corresponding height above the center line, and a cut through the middle of the gland on a plane perpendicular to said cuts and connecting them so as to form halves 40 whose interior straight surfaces overlap each other at equal distances above and below the center of said gland; and means for forcing said halves together, substantially as shown and described. 45

In testimony whereof we affix our signatures in presence of two witnesses.

CLAYTON WEAVER.
GEORGE A. PRICE.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."