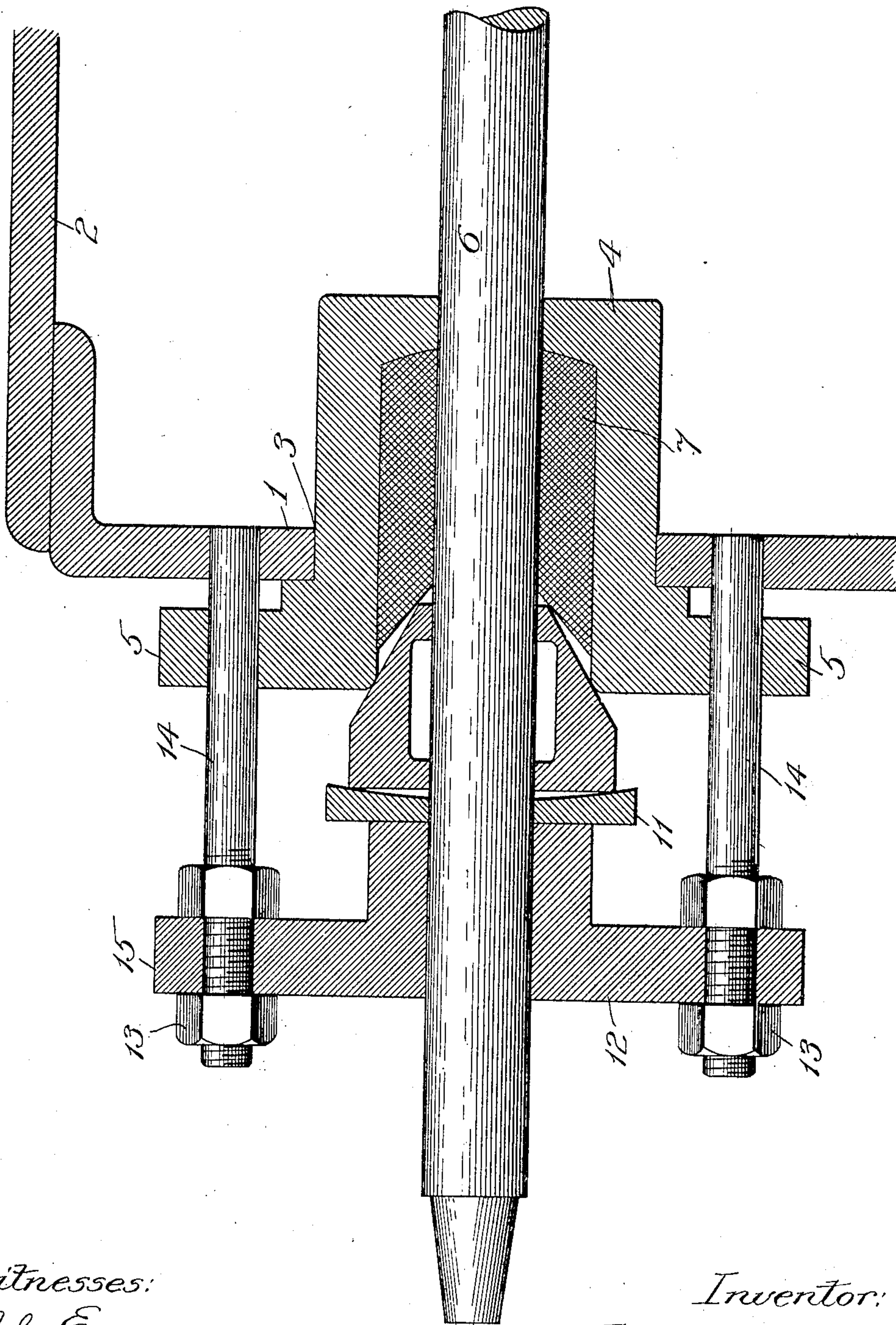


No. 887,405.

PATENTED MAY 12, 1908.

F. LOEDIGE.
VALVE PACKING.

APPLICATION FILED FEB. 25, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK LOEDIGE, OF CHICAGO, ILLINOIS.

VALVE-PACKING.

No. 887,405.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed February 25, 1908. Serial No. 417,686.

To all whom it may concern:

Be it known that I, FREDERICK LOEDIGE, a citizen of the United States, residing at 93 Orchard street, Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Valve-Packing, of which the following is a specification.

My invention relates to an improved construction of metal packing for the piston of a valve, which shall render it durably effective in preventing leakage past the piston of the fluid-pressure controlled by the valve.

While my improvement is adaptable to the pistons of valves of various kinds for different purposes, I have more especially devised it for use on a locomotive-engine throttle-valve and therefore, though without intending to limit it thereto, describe it in that particular connection, in which it is illustrated in the accompanying drawing, showing, by a broken view, a longitudinal section of the device.

In the rear head 1 of a boiler 2 is seated, at an opening 3, a metal stuffing-box 4 projecting into the boiler and flanged at 5 on its outer edge. The valve-stem 6 extends centrally through the stuffing-box in which is confined about it a sleeve 7 of brass or other metal relatively harder than the metal of which the packing 8, hereinafter described, is composed. The outer end of the bushing 7 is formed into an inwardly tapering packing seat 9. The packing 8 is an annular head of general cone-frustum shape with its tapered section tapering to an angle more acute than that of the seat 9, to bear at its inner end against the latter at a considerable depth therein, substantially as represented, while toward the outer end of the packing-head its tapering section finds bearing about the outer edge of the mouth of the stuffing-box, thus having two bearing-points at and from which to exert its packing function. The interior of the packing is chambered out, as shown at 10, to reduce the friction against the valve-stem, as one purpose, and for the further purpose of weakening it about its inner and outer ends so that, being formed of metal relatively softer than that of the bushing, it will yield under the force of the fluid-pressure against the inner end of the bushing, to hug closely about the valve-stem at the opposite ends of the chamber 10. The metal I prefer to use for the packing-head, which describes a circle of uniform diameter about its outer-end portion, is a composition consisting of tin

and Babbitt metal, in the proportions of about three parts of each to two parts of lead. A metal washer 11, preferably of brass and shown to be concave on its inner face, surrounds the stem and is confined at its concave face against the outer end of the packing-head by the gland 12, which is secured in place by the nuts 13 on the threaded ends of the studs 14 extending from the head 1 through the flange on the stuffing-box and a flange 15 on gland.

Fluid-pressure in the boiler exerted against the bushing 7 forces its seat against the seating-end of the head 8, thereby compressing the weakened inner end of the latter about the valve-stem to prevent leakage at that point, while the pressure, acting in opposition to the confinement by the gland of the packing-head against the mouth of the stuffing-box, beddingly compresses the softer metal of the head against the same and thus prevents leakage of pressure about the bushing at that point.

What I claim as new and desire to secure by Letters Patent is—

1. In combination with a valve-stem, a springless packing therefor comprising a stuffing-box through which the stem passes, containing a metal bushing having an inwardly-tapering packing-seat in its outer end, and an annular metal tapering packing-head confined about the stem to bear at its narrower inner end against said seat and toward its outer end against the mouth of the stuffing-box.

2. In combination with a valve-stem, a stuffing-box through which the stem passes, containing a metal bushing having an inwardly-tapering packing-seat in its outer end, and an annular tapering packing-head of metal relatively softer than that of said bushing, confined about the stem to bear at its narrower inner end against said seat and toward its outer end against the mouth of the stuffing-box.

3. In combination with a valve-stem, a stuffing-box through which the stem passes, containing a metal bushing having an inwardly-tapering packing-seat in its outer end, and an annular tapering chambered packing-head of metal relatively softer than that of said bushing confined about the stem to bear at its narrower inner end against said seat and toward its outer end against the mouth of the stuffing-box.

4. In combination with the rear head of a

boiler, a throttle-valve stem working through
the said head and a stuffing-box extending
through said head and through which said
stem passes, a metal bushing in the stuffing-
5 box having an inwardly-tapering packing-
seat in its outer end, an annular chambered
tapering packing-head of metal relatively
softer than that of said bushing, bearing at
its narrower inner end against said seat and

toward its outer end against the mouth of 10
the stuffing-box, a washer on the outer end
of said packing-head, and a gland secured
on said head to bear against the washer.

FREDERICK LOEDIGE.

In presence of—

A. U. THORIEN,
RALPH SCHAEFER.