(No Model.)

F. F. SWAIN.

ROD PACKING.

No. 434,736. Patented Aug. 19, 1890.

Fig. 1.

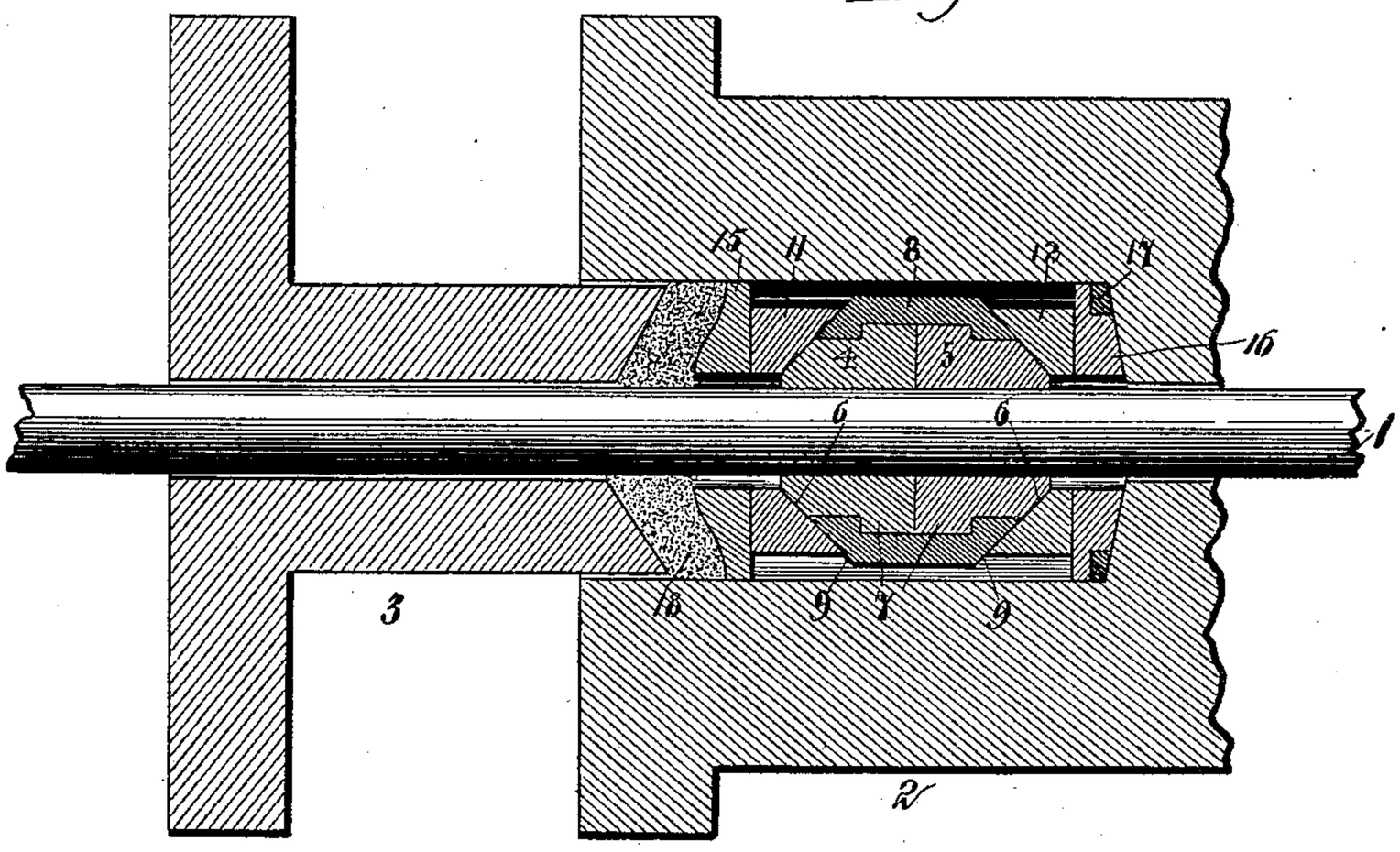
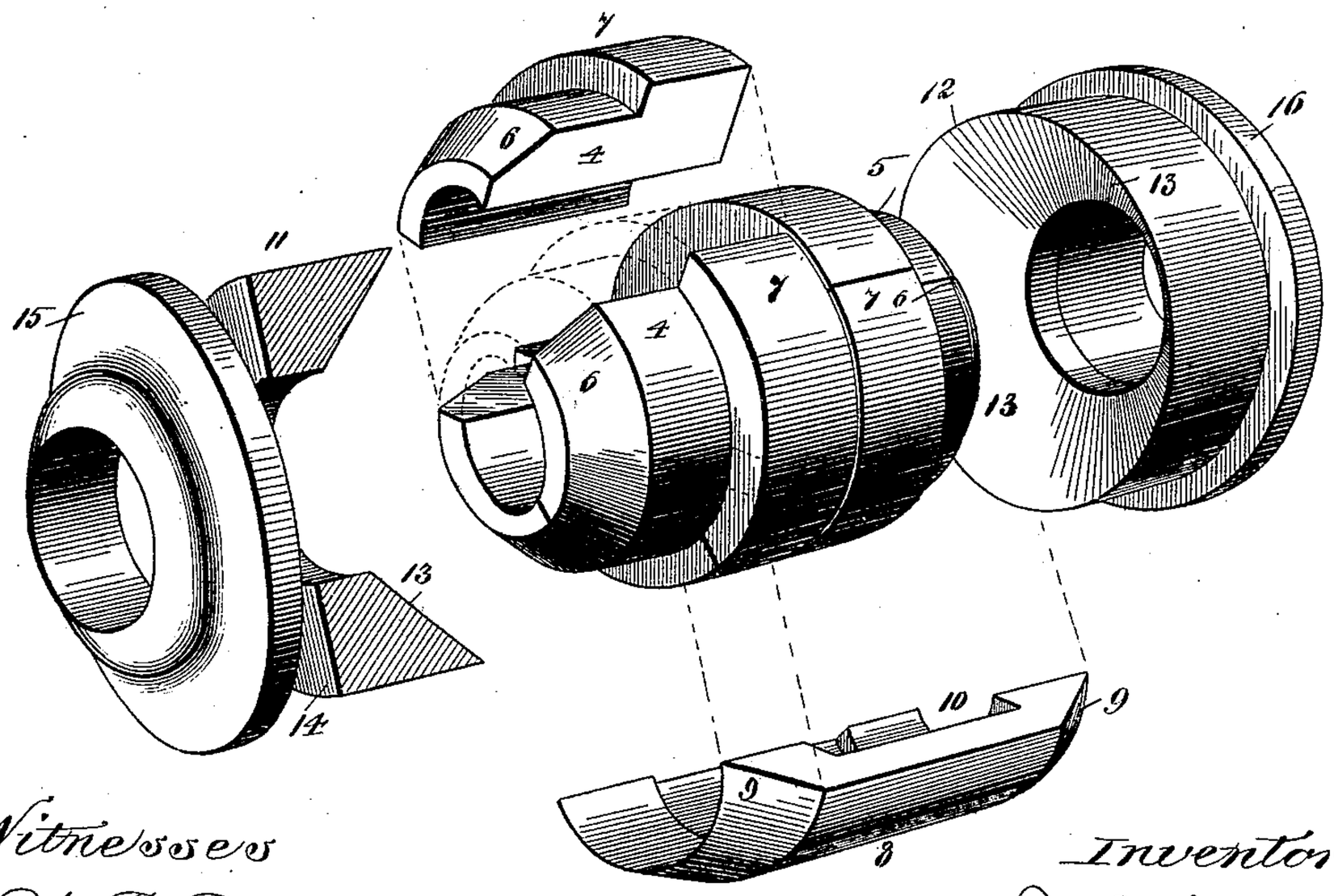


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRED F. SWAIN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO WM. S. BATES, OF SAME PLACE.

ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 434,736, dated August 19, 1890.

Application filed April 19, 1890. Serial No. 348,699. (No model.)

To all whom it may concern:

Be it known that I, FRED F. SWAIN, of Chicago, Illinois, have invented certain new and useful Improvements in Rod-Packings, of which the following is a specification.

My invention relates to metallic rod-packings; and it consists in the employment of certain iustrumentalities and in their combinations with each other. These instrumentalities are, first, a bearing-sleeve with conical ends composed of two or more segmental bearing-rings; second, a binding-sleeve with conical ends composed of segments and encircling the bearing-sleeve and keeping its rings together; third, two pressure-rings—one at each end of said sleeves—provided with countersunk or funnel-shaped faces adjacent to said sleeves, adapted to act upon the conical ends of the sleeves to press them toward the rod, and with plane faces opposite the sleeves; fourth, two finishing-rings with plane faces to bear against the plane faces of the pressure-rings, and with their opposite faces of such form as may be desired, and, fifth, such details as may be required by the varying circumstances of use.

The particular combinations to which I limit myself are recited in the claims at the end hereof.

In the accompanying drawings I have shown the invention applied to a piston-rod and in what I consider its best form.

Figure 1 is a longitudinal section. Fig. 2 is a perspective view, partly in section, showing the parts of the packing.

In the figures, 1 is a piston-rod. 2 is a stuffing-box, and 3 the gland.

4 and 5 are rings, which I call "bearing-rings," because they have a bearing on the rod. They are composed of segments, as shown in Fig. 2, so that they may contract upon the rod as they wear. Their adjacent faces are plane or fit together, so that the two rings constitute a sleeve. The ends of this sleeve are conical, as at 6, and the middle portion is raised, as at 7.

8 is a ring or sleeve composed of segments, one of which is shown in Fig. 2. It has conical ends 9, and is preferably of such size that its conical ends form a continuation of the conical ends 6 of the bearing-sleeve. The middle portion of sleeve 8 is grooved, as at 10, to fit over the raised portion of rings 4 and 5. This sleeve I call a "binding-sleeve," because by means of groove 10 it binds rings 4 and 5 together.

11 and 12 are rings, which are non-segmental, and are placed at the ends of the bearing and binding sleeves. Their faces adjacent to said sleeves are countersunk or funnel-shaped, as shown, to fit the conical ends of said sleeves. I call these rings "pressure-rings," because their function is by means of their bearing on the conical ends of the bearing-sleeve to press the latter against the rod. They also incidentally press the binding-sleeve against the bearing-sleeve. The faces 14 of the pressure-rings are plane and at right angles to the rod. The rings 11 and 12 and the two sleeves are smaller than the inside of the stuffing-box, so that if the rod vibrates laterally they may move freely with it and not bind, and this they are permitted to do by the plane faces 14 of the pressure-rings sliding on the parts adjacent to them.

15 and 16 are "finishing-rings," so termed because their function is to finish the ends of the stuffing-box—that is, to provide plane surfaces for the plane faces of rings 11 and 12 to bear against. They may in some cases be integral with the stuffing-box and gland; but I prefer to make them separate. They may be the full diameter of the inside of the stuffing-box, as they are not intended to move, and their inner diameter should be larger than the rod to permit the latter to vibrate.

17 is a packing-gasket between the ring 16 and the bottom of the stuffing-box.

18 is an elastic medium between ring 15 and the end of the gland. It may be of fiber, as shown, or of something else, as preferred.

In use the parts of the rings 4, 5, and 8 should be so placed together as to break joints with each other to prevent leakage at the joints.

I claim—

1. In a rod-packing, the combination, substantially as set forth, of the bearing-sleeve composed of segmental rings and provided with conical ends, and a ridge on its body formed partly on one ring and partly on the other, and the binding-sleeve composed of seg-

ments encircling the bearing-sleeve and provided with conical ends and a groove in its inner face to receive the ridge of the bearing-sleeve.

2. The combination, substantially as set forth, of the conical-ended bearing-sleeve composed of segmental rings and having a raised central portion or ridge, the conical-ended segmental binding-sleeve with an interior groove to receive said ridge encircling the bearing-sleeve, the pressure-rings fitting the conical ends of said sleeves and with plane faces opposite thereto, and the finishing-rings with plane faces bearing against said pressure-rings.

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