No. 833,932. PATENTED OCT. 23, 1906.

R. KUBE.

METAL PACKING.

APPLICATION FILED APR. 3, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

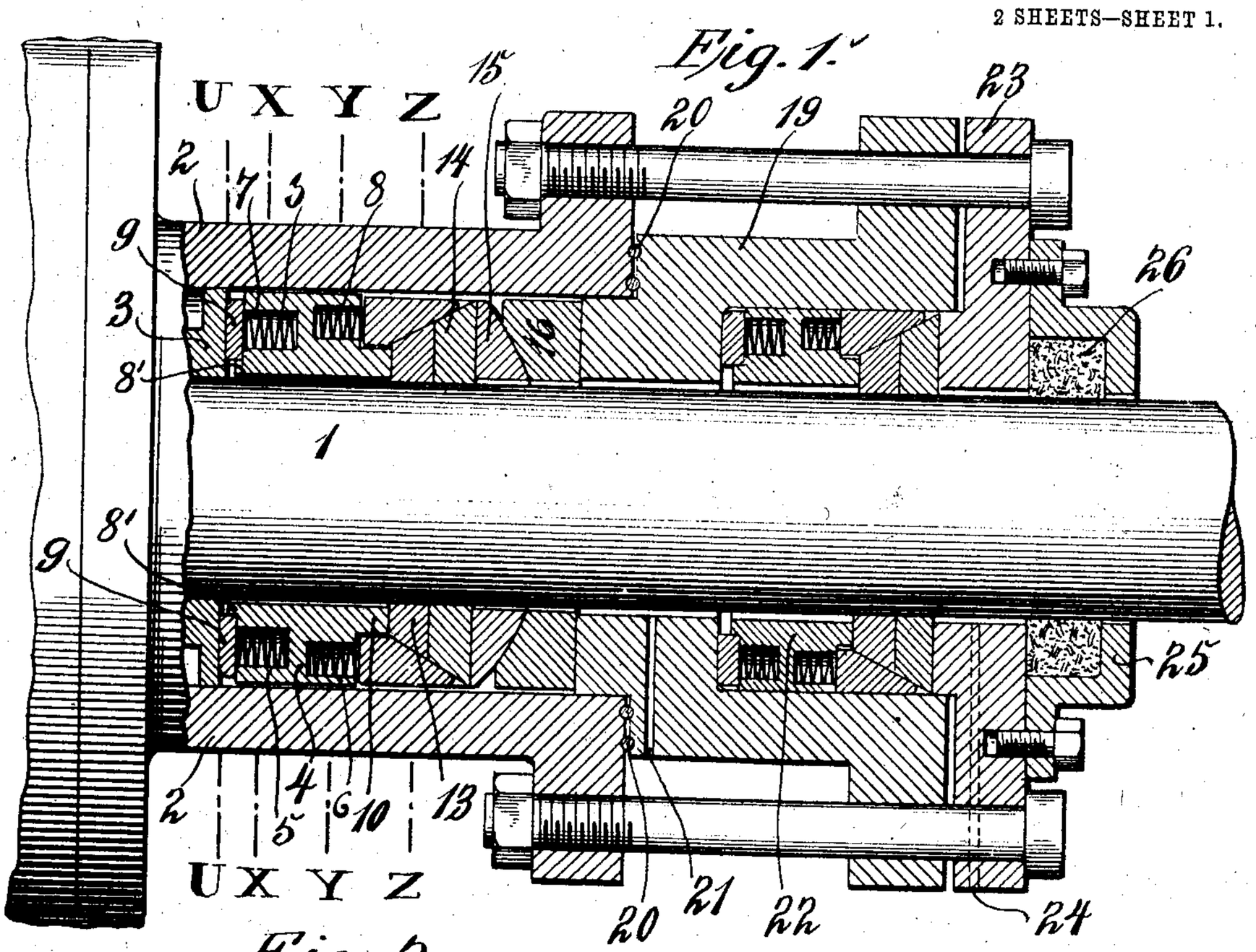


Fig. 2

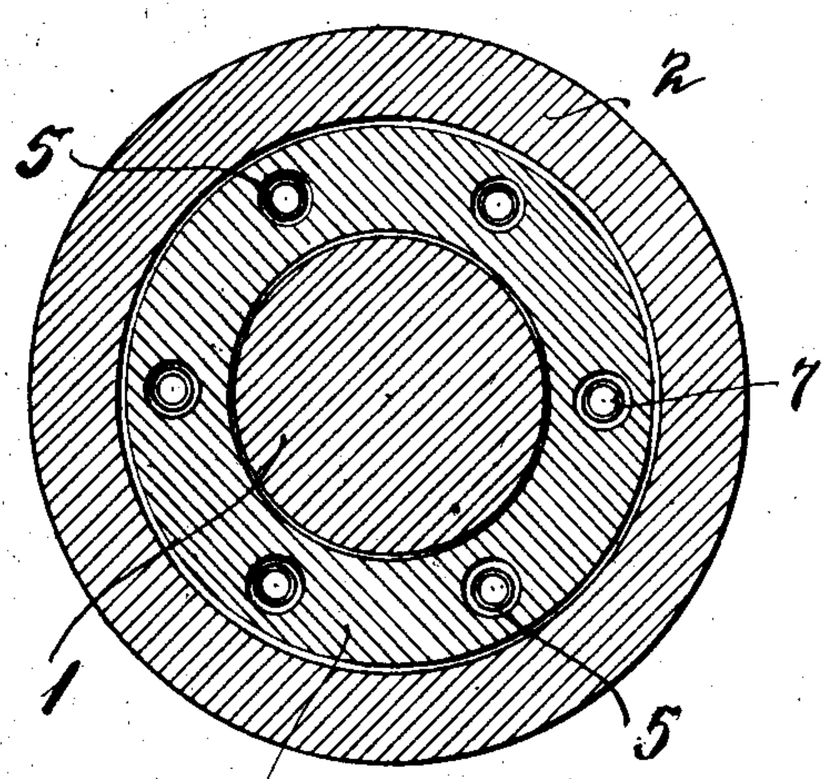
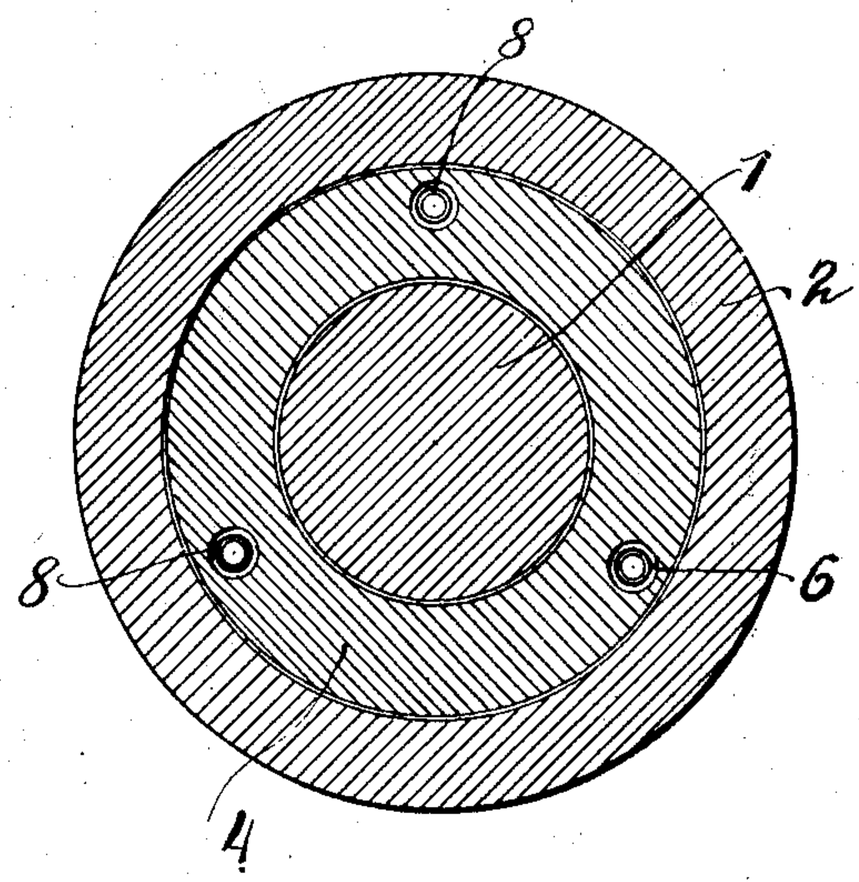


Fig. 3.



WITNESSES

Harry C. Hebig

Estelle V. Wale.

INVENTOR

Rudolph Kube

BY

Max V. Ordahair

ATTORNEYS

No. 833,932. PATENTED OCT. 23, 1906.

R. KUBE.

METAL PACKING.

APPLICATION FILED APR. 3, 1906.

2 SHEETS—SHEET 2.

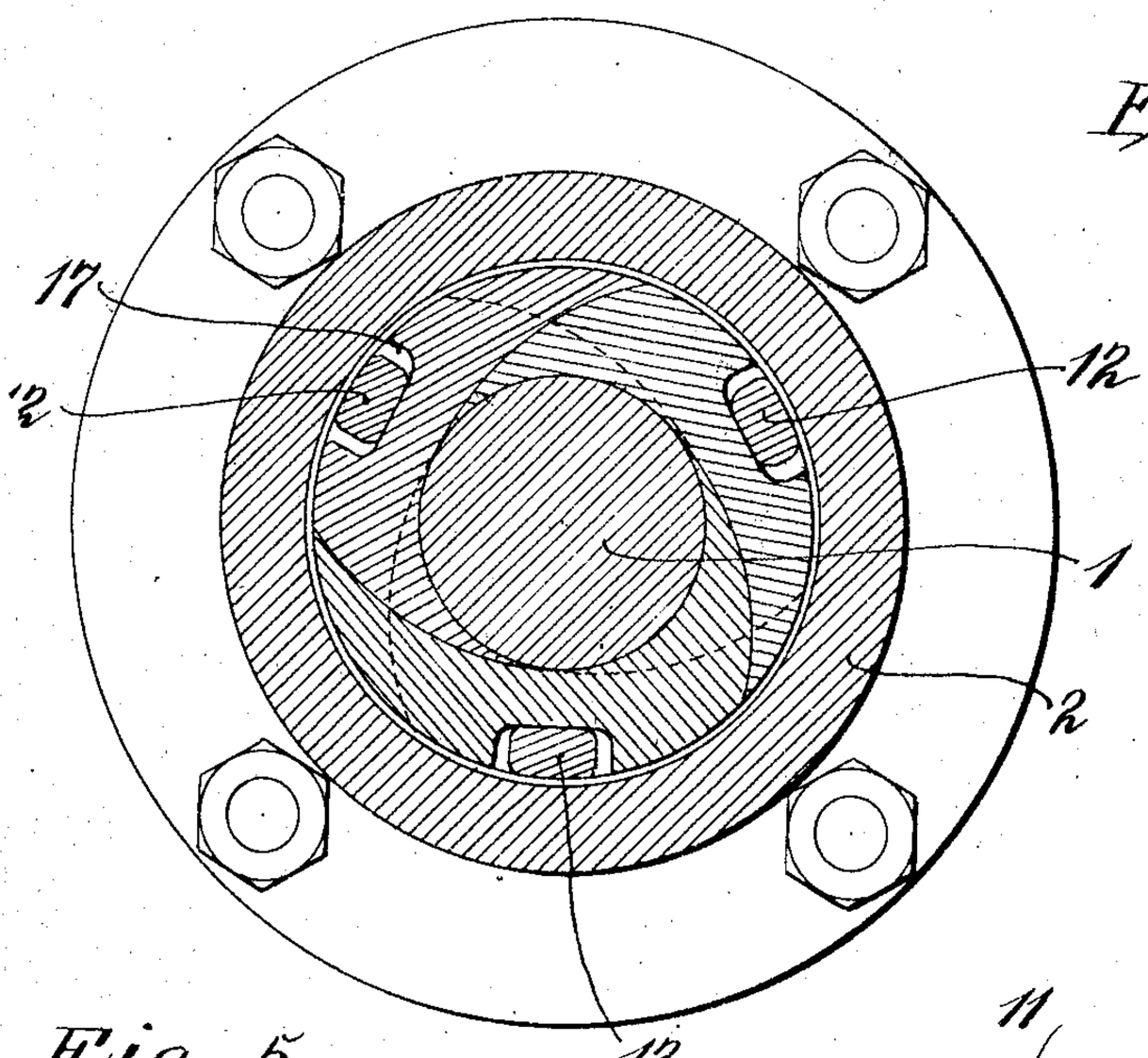


Fig. 4.

Fig. 5.

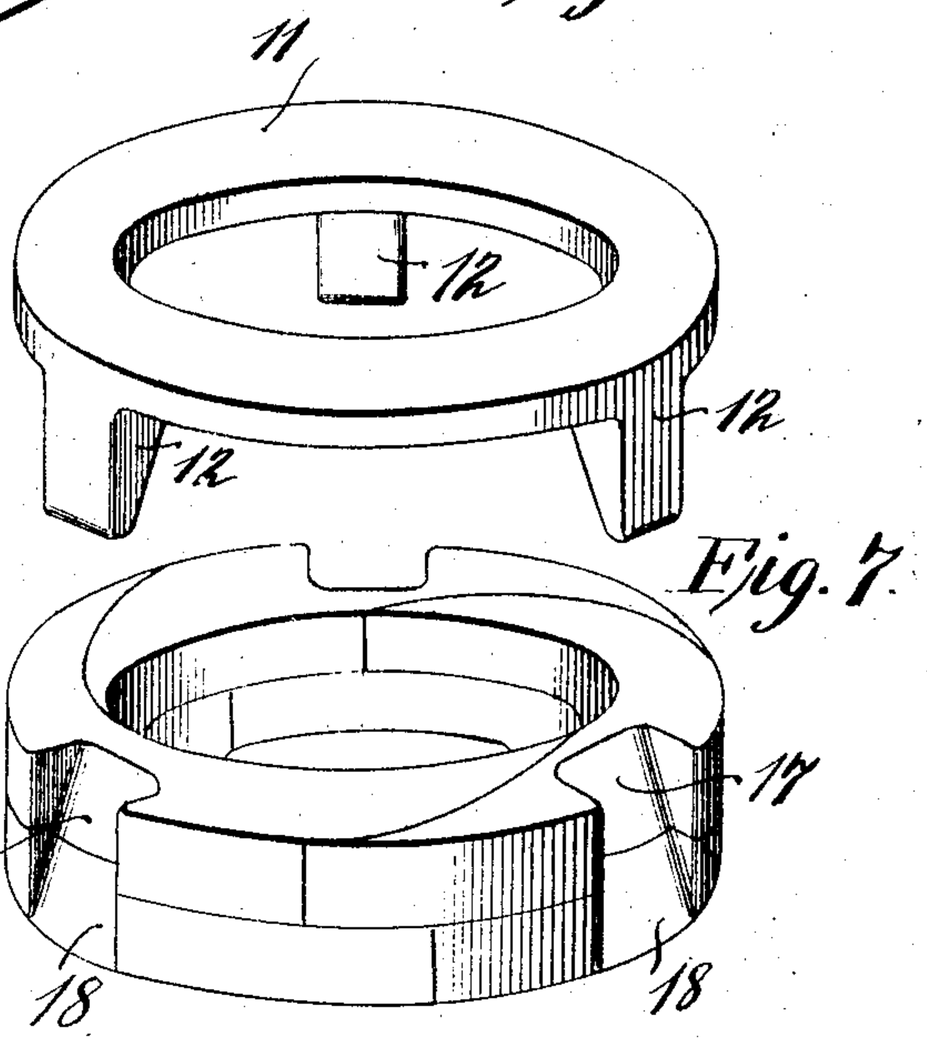
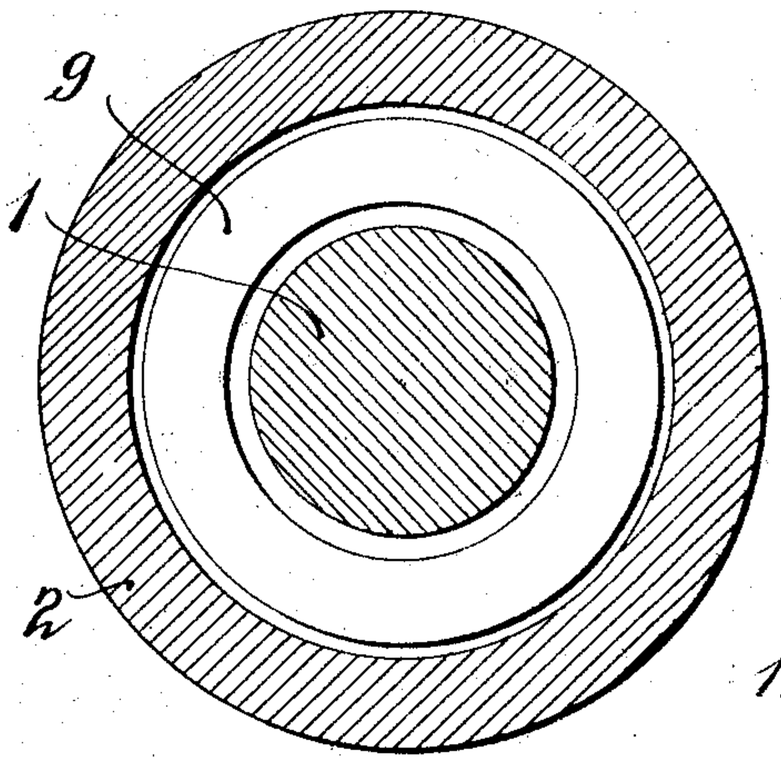


Fig. 6.

Fig. 7.



WITNESSES

Harry C. Hoffig.

Estelle V. Wale.

INVENTOR

Rudolph Kube

BY

Max D. Ordmann

ATTORNEYS

UNITED STATES PATENT OFFICE.

RUDOLPH KUBE, OF NEW YORK, N. Y.

METAL PACKING.

No. 833,932. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed April 3, 1906. Serial No. 309,617.

To all whom it may concern:

Be it known that I, RUDOLPH KUBE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Metal Packings, of which the following is a specification.

The present invention pertains to metallic packings for piston-rods, and has for its object to produce an effective packing.

It chiefly consists in the arrangement of a plurality of sectional rings, the sections of which are tightly pressed onto the circumference of the piston-rod by means of spring-actuated wedge-shaped forks.

My invention further consists in the construction, arrangement, and combination of parts which will be readily understood by reference to the description of the accompanying drawings, in which similar reference-numerals denote corresponding parts, and in which—

Figure 1 is a longitudinal section of the stuffing-box containing my new packing; Fig. 2, a cross-section through line *x x* of Fig. 1; Fig. 3, a cross-section through line *y y* of Fig. 1; Fig. 4, a cross-section through line *z z* of Fig. 1; Fig. 5, a cross-section through line *u u* of Fig. 1; Fig. 6, a perspective view of the fork, and Fig. 7 is a perspective view of the sectional rings.

1 denotes the piston-rod, 2 the stuffing-box, and 3 the ordinary inner bushing. Loosely embracing the piston-rod 1 is a ring 4, which at its inner and outer surfaces is provided with a plurality of pockets 5 6 to receive coil-springs 7 8. The rear surface of the ring 4 is embossed to form a short neck 8′, around which a ring 9, covering the pockets 5, is mounted. The ring 9 is adapted to rest against the bushing 3 when the parts forming the metal packing are assembled and to press with its outer surface on the springs 7, arranged in the pockets 5.

The outer surface of the solid ring 4 is similarly embossed to form a neck 10, and loosely mounted upon the latter is a ring 11, the outer surface of which is provided with wedge-shaped projections 12, forming a fork, Fig. 6.

13 and 14 are sectional rings which form the packing proper. The same are adapted to tightly fit around the piston-rod when their sections are assembled. Each ring is preferably composed of three sections having equal shape and size, Figs. 4 and 7, the cuts being made in a circle drawn tangentially to the circle of the piston-rod 1. The rings 13 and 14 are adapted to fit upon one another with the cut lines of their sections running in reverse directions. (See Fig. 4, in which the cut lines of ring 13 are shown in full lines and those of ring 14 in dotted lines.) The ring 13 is adapted to rest against the neck 10 of the ring 4. Loosely mounted upon the piston-rod 1 is a ball-bearing 15 16, which is adapted to rest against the outer ring 14. The sectional rings 13 14 are provided in their circumference with a plurality of excavations 17 18, which in number correspond with that of the wedge-shaped projections 12 of the fork-ring 11 and which are in their width somewhat larger than that of the projections to loosely engage the latter. The excavations 17 of the ring 13 are adapted to register with those, 18, of the ring 14, when the rings are fitted upon each other, and the inner surface of two registering excavations forms an inwardly-directed incline which corresponds with the inner surface of the engaging wedge 12.

When the packing parts are properly mounted, the fork 11 engages with its wedge members 12 the excavations 17 18, whereby the said members, being pressed outward by the coil-springs 8 and sliding on the inclines of the respective excavations 17 18, are caused to compress the sectional rings 13 14 and to thus form an effective packing. At the same time the coil-spring 7 in the pockets 5 by pressing against the bottom of their pockets hold the neck 10 in tight contact with the sectional ring 13, preventing hereby a displacement of the sections. The pockets 6, containing the springs 8, which in number correspond with that of the wedges, are arranged to lie in line with the latter. 19 is the gland that with a short neck is adapted to fit in the stuffing-box 2 and rest against the socket 16. 20 20 are wire rings partly embedded in the inner surface of the gland to allow an additional packing when the gland is tightly fastened to the flanges of the stuffing-box. 21 is the ordinary oil-discharge.

In addition to the above-described main packing there is inside the gland an auxiliary metal packing 22, which is composed of the same parts as the main packing and which has the object to retain the steam that may

pass through the main packing. The auxiliary packing is closed up by a cover 23, which also is provided with an oil-discharge 24.

25 is a cap fastened to the cover 23 and adapted to contain fiber packing 26.

It is obvious that instead of two sectional rings, as shown and described, there may be three or more both in the main and auxiliary packing and there may be some other changes made in the construction of the various parts without deviating from the spirit of my invention.

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

1. In a metal packing for piston-rods, the arrangement of metal rings composed of a plurality of sections, and a spring-actuated fork with wedge-shaped members adapted to embrace said sectional rings and to hold the sections of the latter in tight contact with each other and with the piston-rod, substantially as and for the purpose as specified.

2. In a metal packing for piston-rods, the arrangement of sectional metal rings, a fork with wedge-shaped members adapted to embrace said sectional rings, a ring having pockets, springs arranged in the latter and adapted to press against the fork to hold the sections of the sectional rings in tight contact with each other and the piston-rod, substantially as and for the purpose specified.

3. In a metal packing for piston-rods, the arrangement of sectional rings, a fork having wedge-shaped members adapted to embrace the said sectional rings, a ring having pockets at its inner and outer surfaces, springs arranged in said pockets, a ring covering the inner pockets and serving as retainer for the springs therein, the outer spring being adapted to press against the fork and to hold the sections of the sectional rings in tight contact with each other and with the piston-rod, substantially as and for the purpose specified.

4. In a metal packing for piston-rods, the arrangement of sectional rings having a plurality of wedge shaped excavations in their circumference, the excavations of one sectional ring being adapted to register with those of the others, a spring-actuated fork having wedge-shaped projections to engage with the said excavations and to rest upon the inclines of the latter, whereby the sections of the sectional rings are held in close contact with each other and the piston-rod, substantially as and for the purpose specified.

5. In a metal packing for piston-rods, the combination with a stuffing-box, of sectional metal rings, a spring-actuated fork with wedge-shaped projections to embrace the said sectional rings and hold the sections thereof in tight contact with each other and the piston-rod, a ball-bearing resting against the outer sectional ring and a gland for tightening the metal packing, substantially as and for the purpose specified.

6. A metal packing for piston-rods, comprising sectional rings, a spring-actuated fork embracing the said rings, a ball-bearing resting against the outer ring, a gland and an auxiliary metal packing inclosed in said gland and consisting of similar parts as the main packing, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLPH KUBE.

Witnesses:
JOHN T. CARMODY,
MAX D. ORDMANN.