

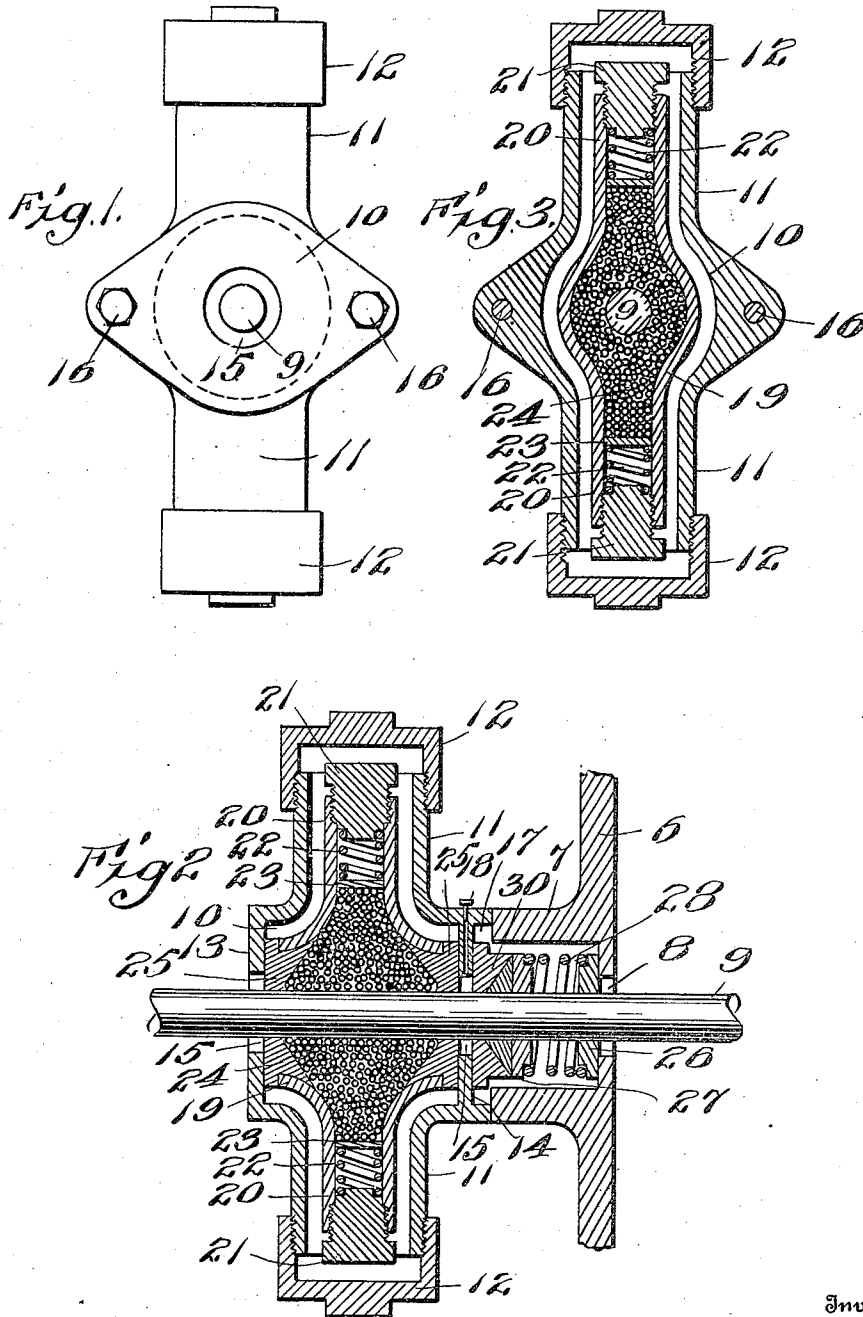
T. A. JOHNSTON & T. L. FINLEY.

ROD PACKING.

APPLICATION FILED JUNE 2, 1909.

948,610.

Patented Feb. 8, 1910.



Witnesses
Geo. S. Thom
A. S. Jew

Inventors
Thomas A. Johnston
Thomas L. Finley

By *A. S. Jew*
 Attorney

UNITED STATES PATENT OFFICE.

THOMAS A. JOHNSTON, OF CHADRON, AND THOMAS L. FINLEY, OF LONG PINE, NEBRASKA, ASSIGNORS OF THREE-FOURTHS TO SAID JOHNSTON AND ONE-FOURTH TO SAID FINLEY.

ROD-PACKING.

948,610.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed June 2, 1909. Serial No. 499,776.

To all whom it may concern:

Be it known that we, THOMAS A. JOHNSTON and THOMAS L. FINLEY, citizens of the United States, residing at Chadron and Long Pine, in the counties of Dawes and Brown, respectively, and State of Nebraska, have invented certain new and useful Improvements in Rod-Packing, of which the following is a specification.

This invention relates to improvements in rod packing for vibrating rods such as piston rods and the like. It includes or utilizes the packing of shot or spheres shown in U. S. Patents Nos. 779,480, 872,132 and 894,739, the improvements of the present invention being particularly directed to the casings or parts for holding the packing and for compressing the same against the rod, as well as a new form of stuffing box formed in part in the head or wall of the cylinder.

The former patents, above referred to, show a packing of shot compressed against the rod by a single plug and spring. In the present invention two or more plugs are used, arranged oppositely or symmetrically around the rod, giving compression on both or all sides of the rod, which makes a more perfect packing. As the rod travels it may loosen or wear the packing, and by having several plugs and springs compressing on opposite sides it has been found in practice that the shot or packing keeps filling around the rod on all sides thereof, so that looseness which might otherwise be caused by wear or by insufficient pressure produced by one plug is avoided, and the shot fill or feed automatically to proper position against all sides of the rod. The special construction of the stuffing box in the cylinder wall allows full space for vibration of the rod, and saves any trouble which might occur in consequence of having to bore out the walls of the steam chest or cylinder head to allow room for vibration.

The present invention also embodies several other advantages particularly with respect to simplicity of construction, as will be more fully apparent from the following description and the drawings.

In the drawings, Figure 1 is an end elevation of the invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross section on the line 3—3 of Fig. 2.

Referring specifically to the drawings, 6 indicates the cylinder head or the end of

the steam chest or other structure to which the packing is applied. It is made with an outwardly projecting neck 7, and an opening 8 through which the rod 9 works, said opening being sufficiently larger than the rod to allow for full lateral vibration thereof; and the bore of the neck 7 is enlarged to form a chamber for a part of the inner or auxiliary packing.

The outer or main packing box has an outer cylinder casing 10 from which project two diametrically opposite nipples 11 which receive and are closed by screw caps 12. The drawings show two of these nipples, but three or more may be used if desired. When two are used they are preferably arranged diametrically opposite to each other. The cylindrical casing 10 has at its outer end an inwardly projecting flange 13, and has near its inner end an inwardly projecting flange 14, these flanges being annular to provide openings 15 through which the rod passes, said openings being larger than the rod to allow for vibration. The inner end of the casing rests against the neck 7, and the casing is held tightly thereto by bolts 16 tapped into the cylinder head or chest. The flange 14 is spaced somewhat from the inner end of the casing 10, forming a recess 17 for a purpose to be hereinafter explained. Oil may be let into the space around the rod by a lubricating device 18. Within the outer casing thus formed is an inner cylindrical casing 19 having necks 20 corresponding in position to the nipples 11 of the outer casing and projecting outwardly in said nipples. The necks 20 receive screw plugs 21 which compress springs 22 against followers 23 bearing against the shot or sphere packing 24 which surrounds the rod. The inner casing 19 is closed at the ends by cupped rings 25 which fit the rod snugly and which back or rest against the flanges 13 and 14 at the opposite ends of the outer casing.

Within the neck 7 on the cylinder head are opposite rings 26 and 27 with a coiled spring 28 between, the former fitting over the opening 8 and the latter bearing against a cupped ring 30 which backs or rests against the inner side of the flange 14 and covers the opening 15. The recess 17 is provided in order that the cupped ring 30 may have full vibration, said recess giving it space to move laterally in all directions as the rod

vibrates. The pressure against the packing on opposite sides thereof does not permit the same to fall away from the rod under any conditions of wear. The outer casing 10 is
5 sufficiently larger than the inner casing 19 to allow the latter to vibrate with the rod in all directions, the rings 25 sliding in contact with the flanges at the ends of the outer casing. The nipples 11 are sufficiently larger
10 than the necks 20 to allow movement of the latter in all directions.

The shot packing may be provided with graphite, Babbitt metal or lubricating material mixed therein, the action of the packing
15 in preventing the escape of steam being the same as described in the former patents mentioned.

We claim:

1. A rod packing comprising an outer
20 casing having a plurality of nipples projecting on different sides thereof, an inner casing within said outer casing and spaced therefrom to allow for movement incident to the vibration of the rod, said inner casing
25 having necks projecting into the nipples, packing for the rod, within the inner casing, and spring pressed followers in the

necks, pressing in different directions against the packing.

2. A rod packing comprising an outer casing 30 having a plurality of nipples projecting on different sides thereof, an inner casing within said outer casing and spaced therefrom to allow lateral vibration, said inner casing having necks projecting into the nip- 35 ples, cupped packing rings fitting in the ends of the inner casing, around the rod, the concave sides of the rings being presented inwardly and the outer sides of the rings resting against the ends of the outer casing, 40 a packing of spheres within the casing, in contact with the concave faces of said packing rings, and spring-pressed followers bearing against said packing of spheres in the necks. 45

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

THOMAS A. JOHNSTON.
THOMAS L. FINLEY.

Witnesses:

B. F. PITMAN,
G. M. BABCOCK,
L. O. CLARK,
S. H. KYNER.