

No. 754,834.

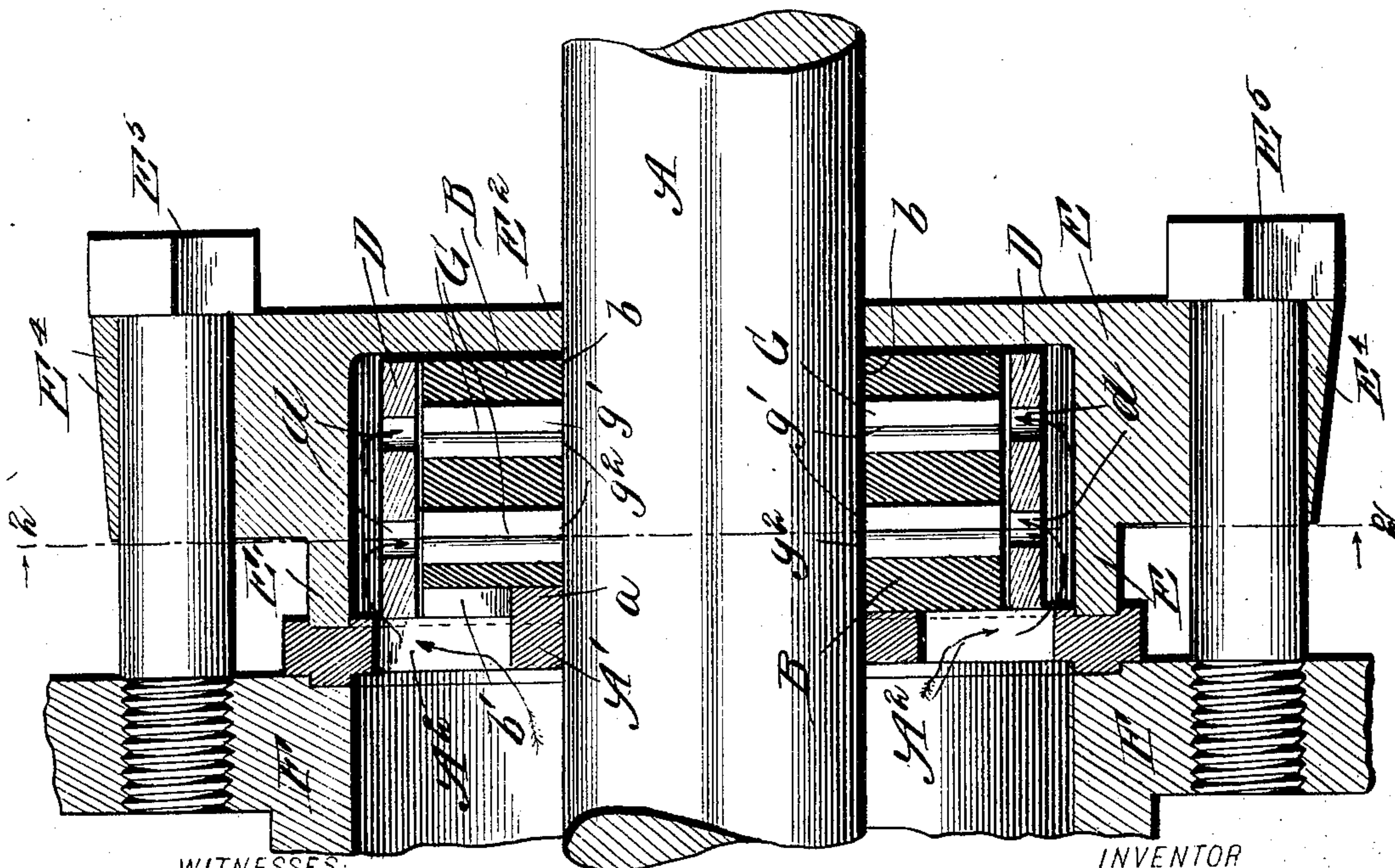
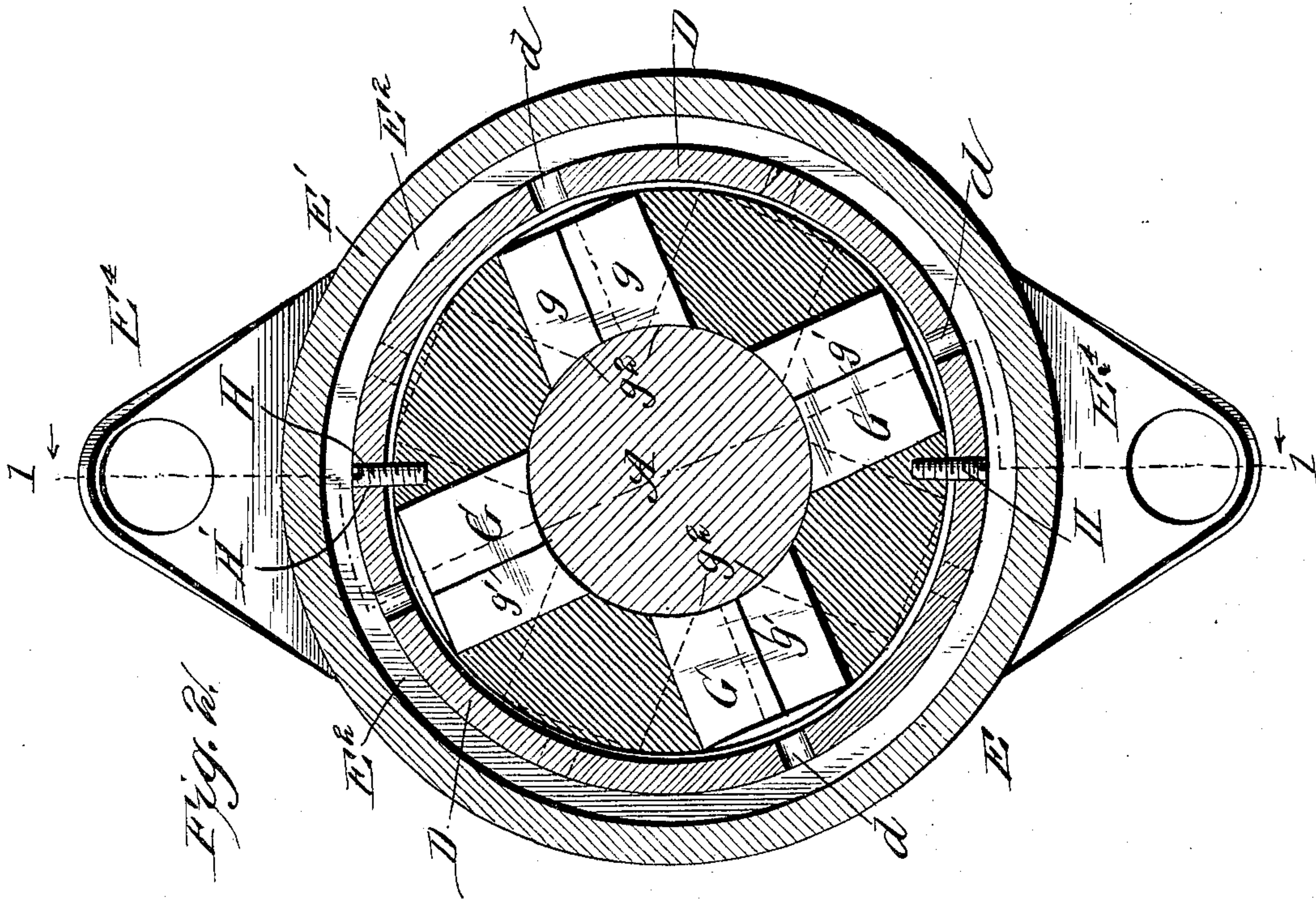
PATENTED MAR. 15, 1904.

N. H. ALBRECHT.
ROD PACKING.

APPLICATION FILED AUG. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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Fig. 1

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No. 754,834.

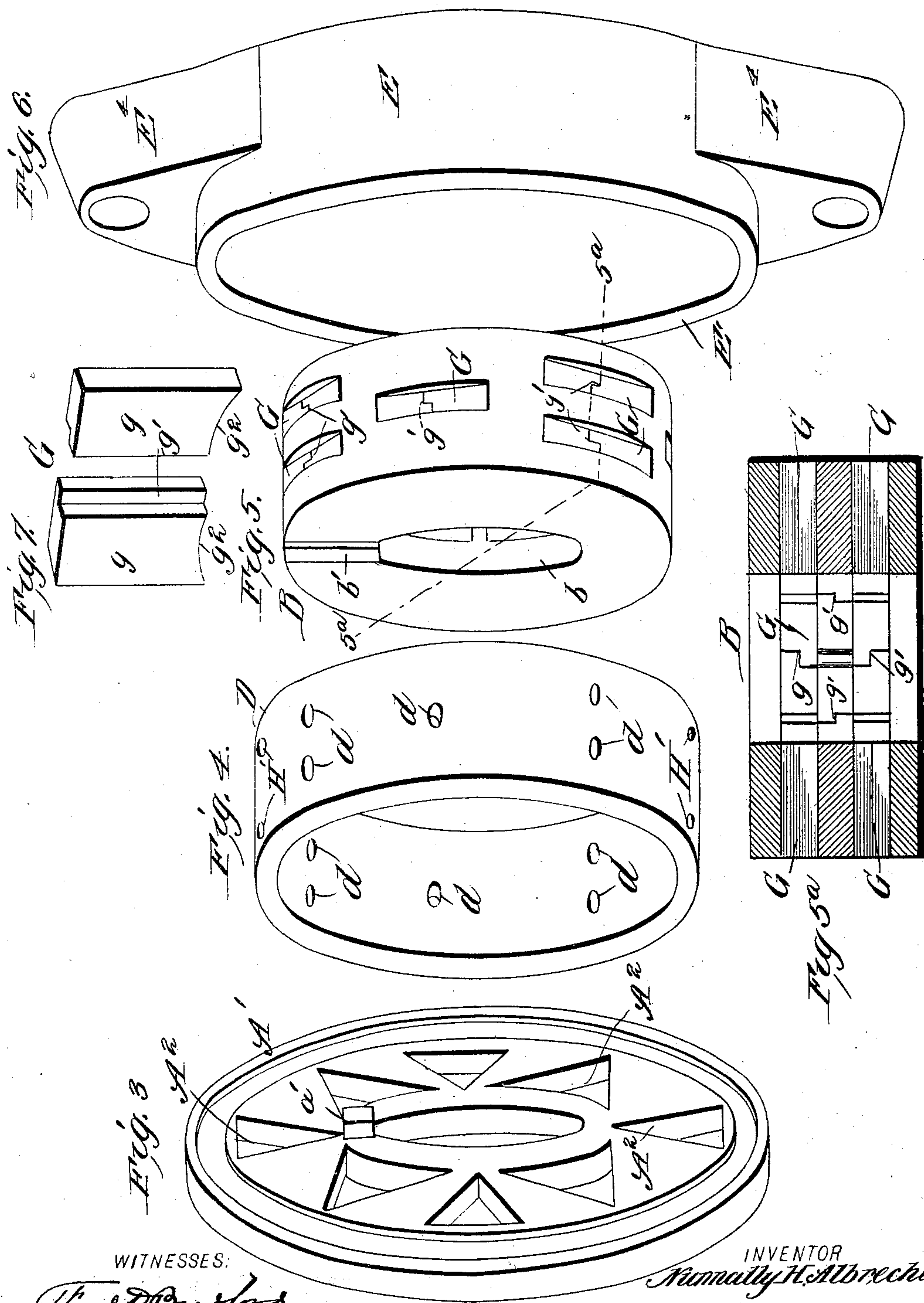
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2 SHEETS--SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

NUNNALLY HENRY ALBRECHT, OF COLUMBUS, GEORGIA.

ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 754,834, dated March 15, 1904.

Application filed August 21, 1903. Serial No. 170,285. (No model.)

To all whom it may concern:

Be it known that I, NUNNALLY HENRY ALBRECHT, a citizen of the United States, residing at Columbus, in the county of Muscogee and State of Georgia, have made certain new and useful Improvements in Rod-Packings, of which the following is a specification.

My invention is an improvement in rod-packing for use on steam-cylinders and in other locations where it is desired to pack a rod, such as a piston-rod; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal section of a packing embodying my invention on about line 1 1 of Fig. 2. Fig. 2 is a cross-section on about line 2 2 of Fig. 1. Fig. 3 is a detail view of the end plate. Fig. 4 is a detail perspective view of the retaining-band. Fig. 5 is a detail perspective view of the cage with the packing-blocks in place. Fig. 6 is a detail perspective view of the box or case, and Fig. 7 is a detail perspective view of a pair of the packing-blocks. Fig. 5^a is a cross-section on about line 5^a 5^a of Fig. 5.

In carrying out my invention I provide packing-blocks in pairs, fitted slidably together, and a cage having radial mortises in which the packing-blocks operate, said cage being fitted within a retaining band or ring and the latter, with the cage in place, being then fitted within a box or casing having a fixed end plate for retaining the packing devices at one side and a removable end plate for holding the packing devices at the other side, said removable end plate being provided with openings for the passage of steam between the retaining-band and the box or casing, the band having openings opposite the radial mortises in the carrier, so steam may operate to force the packing-blocks in against the rod.

In the construction shown the rod A to be packed extends through the removable end plate A', thence through the cage B, surrounded by the band D, and thence through the fixed end plate of the box or casing E.

The box or casing E is open at one end, E', has the fixed end plate E² at its opposite end, and is provided with lugs E⁴ for the bolts E⁵,

by which the packing may be secured to the cylinder or the valve-chest head or to the flange of a stuffing-box, as indicated as F in Fig. 1 of the drawings. The cage B is provided with the radial mortises B', extending from its outer edge radially to the opening b for the rod A. As shown, I have arranged the recesses B' in pairs side by side, such pairs alternating with an intermediate single mortise B', so the bearing-blocks operating in the single intermediate mortises may overlap at their inner edges the bearing-blocks operating in the pairs of mortises, it being understood from the detail cross-sectional view Fig. 5^a that the intermediate mortises communicate laterally at their inner portions with the inner ends of the mortises B', which are arranged in pairs, so that the packing-blocks afford packing extending throughout the circumference of the rod A. The packing-blocks G are preferably constructed in two sections g, fitting together at their inner edges and riveted at g' at such edges, as shown in Figs. 5 and 7. At their inner edges the sections g are curved at g² to correspond with the curvature of the rod A, as is best shown in Figs. 2 and 7 of the drawings. In its inner end the cage B is provided with a radial groove b', in which operates the lug a' on the end plate A', as will be understood from Figs. 1 and 3 of the drawings.

The retaining-band D fits over the cage B and the bearing-blocks therein and is held to the said cage, it may be, by means of screws H, passing through openings H' in the band D, as shown in Fig. 2 of the drawings. This band D is provided with ports d, through which the steam may pass from the outer side of the said band D to operate upon the bearing-blocks in the cage B, the said ports d being opposite the blocks G, as will be understood from Figs. 1, 2, 3, and 5.

In operation steam is admitted between the box or casing E and the band D and operates upon the blocks G, movable in the mortises B', in such manner as to press the said blocks against the rod in proportion to the pressure of the steam. In order to admit steam to bear against the outer side of the band D, I provide the end plate A' with openings A², through

which the steam passes to a point outside the band D, as indicated by the arrows in Fig. 1, and operates to press the blocks firmly against the rod, as will be understood from the drawings.

By my invention it will be noticed I furnish an automatic metallic rod-packing which can be used on any valve-stem or piston on any pump, locomotive, or stationary engine or elsewhere where it may be desired to pack a rod and which will work with the fluid-pressure of air, steam, or water, ample steam or fluid space being afforded between the retaining-band D and the casing and the said band being provided with ports for the passage of the steam to operate upon the bearing-blocks. The bearing-blocks, being arranged in pairs lapping at their inner edges, are so arranged as to break joints at their inner ends, and thus pack the entire circumference of the rod. By means of the dowel *a'* and the groove *b'* in the cage the cage may be held from turning on the rod, the cage fitting the box sufficiently loose to permit it to vibrate. It will also be noticed that my packing dispenses with the use of springs, has no rings to stick or close together, and the packing-blocks are so arranged that they cannot be blown out in use. When the steam or other fluid is shut off, pressure or wear on the packing is immediately released. As the packing has free connection with the box or cylinder, it will receive oil from the steam-chest or cylinder, as the case may be. I thus provide a self-acting or automatic piston in which there is no wear or pressure on the stem or rod when the engine is shut off, which avoids the necessity of springs or rings, in which any suitable metal may be used for the packing-blocks, in which the retaining-band D is held to the case in such manner that if the said band should be broken it will still be retained in position to operate upon the cage, in which the packing is lubricated from the cylinder, and which can be cheaply made and easily applied in use.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in rod-packing herein described, comprising the box or casing, the cage to fit therein and having an opening for a rod to be packed, radial mortises leading from said opening and arranged in pairs and in a set of single mortises intermediate said pairs, the pairs of mortises and the intermediate mortises lapping at their inner ends, the blocks operating in said mortises and made in sections and slidable upon each other at their meeting edges, and curved at their inner ends to conform to a rod, the retaining-band fitting upon the cage and having ports for the passage of steam to operate upon the packing-blocks, and the end plate having openings for the passage of steam to operate between the retaining-band and the box or

casing, and also provided with means for preventing the turning of the cage on the rod, substantially as and for the purposes set forth.

2. A rod-packing comprising a cage having radial mortises, packing-blocks movable radially in said mortises, a retaining-band fitting over the cage and having ports for the passage of steam or the like to operate upon the radially-movable blocks, and a box or casing substantially as set forth.

3. A packing comprising a cage having radial mortises for packing-boxes, said mortises being arranged in a series of pairs alternating with a series of single mortises, the single mortises and mortises of the pairs lapping and communicating at their inner ends, and packing-blocks operating in said mortises substantially as set forth.

4. The combination with the box or casing having an end plate, of the cage and its packing-blocks within the box or casing, the retaining-band encircling the cage and the packing-blocks and having ports for the passage of steam and the like to the packing-blocks, and the end plate having openings for the passage of steam to the retaining-band substantially as set forth.

5. A rod-packing comprising the box or casing, the cage therein, the packing-blocks operating in the cage, the retaining-band encircling the cage, and having ports, and the end plate having openings for the passage of steam into the box or casing substantially as set forth.

6. A rod-packing comprising the cage having radial mortises for packing-blocks, the packing-blocks operating in said radial mortises and arranged in pairs slidable upon each other at their inner edges, and means for admitting steam or the like to operate upon the outer ends of the said blocks substantially as set forth.

7. The combination of the box or casing, the cage therein and having radial mortises for the packing-blocks, the packing-blocks in said radial mortises, the retaining-band encircling and secured to the cage and having ports for the passage of steam or the like to the packing-blocks and the end plate having openings to admit steam between the retaining-band and the box or casing substantially as set forth.

8. The combination of the box or casing, the cage, the packing-blocks movable in the cage and arranged in pairs slidable upon each other at their inner edges and curved at their inner ends to fit a rod, a retaining-band encircling and secured to the cage and having ports for the passage of steam or the like to operate upon the packing-rods and means for admitting steam or the like to operate between the retaining-band and the box or casing substantially as set forth.

9. The combination of the box or casing having a fixed end plate, the opposite end plate fitted to the box or casing and having openings for the passage of steam or the like, the

cage fitting in the box or casing, the packing-
blocks operating in the cage, and the retain-
ing-band encircling and secured to the cage
and having ports for the passage of steam or
the like to operate upon the packing-blocks
substantially as set forth.

10. The combination of the box or cage, the
end plate fitted thereto and having perfora-
tions for the passage of steam or the like and

provided on its inner ends with a projecting
lug, the cage having the radial groove to re-
ceive said lug on the end plate, and the pack-
ing devices carried by the cage substantially
as set forth.

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Witnesses:

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