

1,040,494.

A technical drawing of a circular frame assembly, likely a component of a vehicle's interior or exterior trim. The drawing shows a circular frame with a central opening. The frame is composed of several parts, indicated by numbered callouts:

- 1**: Points to the main circular frame structure.
- 2**: Points to a small, rectangular component, possibly a fastener or clip, located at the top left and top right of the frame.
- 3**: Points to a curved, elongated component, possibly a trim piece or a hinge, located at the bottom left of the frame.
- 4**: Points to a small, rectangular component, possibly a fastener or clip, located at the bottom center of the frame.
- 5**: Points to a small, rectangular component, possibly a fastener or clip, located at the bottom right of the frame.
- 6**: Points to a small, rectangular component, possibly a fastener or clip, located at the top right of the frame.

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UNITED STATES PATENT OFFICE.

IRVING J. BENT, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALLIS-CHALMERS COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF NEW JERSEY.

PACKING FOR RECIPROCATING RODS.

1,040,494.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed June 23, 1910. Serial No. 568,424.

To all whom it may concern:

Be it known that I, IRVING J. BENT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Packing for Reciprocating Rods, of which the following is a specification.

This invention relates to improvements in the construction of packing, and in particular to improvements in the construction of metallic packing used for packing reciprocating rods.

The object of the invention is to provide a metallic packing for reciprocating rods which is simple in its construction and efficient in operation.

A clear conception of one embodiment of the invention can be obtained by referring to the accompanying drawing in which like reference characters designate the same or similar parts.

The drawing shows a plan view of a metallic three-section packing ring constructed in accordance with the invention, a portion of one of the segments of the ring being shown in section.

The metallic packing ring consists essentially of three equal segments or sections 1, which sections 1 are separated by small air gaps or spaces 4 intermediate their adjacent ends. The sections 1 have lugs or projections 6 at their ends, which projections extend outwardly beyond the normal external diameter of the major portion of the ring formed by the three sections 1. The spring ring 3 coacts against the outer ends of the projections 6 only, being free from coaction with the remaining outer surfaces of the sections, and is constructed with its mid portion of slightly greater thickness than its end portions so as to produce equal inward pressure at all points of its length. One of the sections 1 is provided with dowels 2, or similar outwardly projecting means, near its ends but intermediate the projections 6 formed thereon. The dowels 2 project somewhat beyond the ends of the projections 6. The spring ring 3 is of such length that it embraces two of the sections 1 and the projections 6 of the third section 1, thus extending from dowel to dowel around the major portion of the packing.

In the construction of the packing the sections 1 are preferably constructed of a

cast material, such as iron, brass, or other metal. The mutilated spring ring 3 which coacts with the projections 6 on the sections 1 is made of steel and has an internal diameter, before being placed in normal coaction with the lug 6, which is somewhat less than that to which it is spread during its positioning around the sections 1. In casting the sections 1, a single mold suffices for casting all of the sections of a ring, since these sections 1 are all alike. It will also be noted that it is not intended to limit this invention to a three-section ring, as any desired number of sections could be used.

In machining the sections 1 forming the ring, the three sections 1 are placed into a chuck and the outer ends of their projections 6 are turned to the proper diameter. The sections 1 forming the ring are then placed into an external chuck which coacts against the machined periphery of the projections 6, and the internal surface is turned to its proper diameter. The side surfaces of the ring are then machined to make the sections 1 of a desired width. Holes are then drilled into one of the sections 1 and the dowels 2 inserted therein, these dowels 2 being pressed or brazed into place.

In placing the packing ring onto a reciprocating shaft, thereby utilizing same as a packing ring, the three sections 1 forming the ring are first placed in coaction with and surrounding the shaft, the internal surfaces of the sections 1 coacting with the outer surface of the shaft. The spring ring 3 is then snapped into place and holds the sections firmly in position. The dowels 2 prevent the spring ring 3 from shifting circumferentially around the sections 1 and thus prevent possibility of any of the sections becoming loose.

It will be noted that with the construction shown an annular space 5 is formed between the sections 1 and the spring ring 3, due to the coaction of the ring 3 with the sections 1 at the ends of the projections 6 only. This feature prevents the spring ring from sticking in any set position on the sections 1 which it embraces, thus producing a more effective packing due to the flexibility thereof, than would be obtained by having the spring ring 3 coact with the entire outer surfaces of the sections 1.

The sections 1 could just as easily be formed with a continuous outer surface or

periphery having a diameter equal to that of the peripheries of the projections 6. With such a construction the spring ring 3 would be formed with inwardly projecting lugs at its end and central portion. Such construction would be an inversion of the construction shown, since the lugs or projections 6 would in this event be formed on the interior of the ring 3 instead of on the exterior of the sections 1. The effect produced by such a construction would be exactly analogous to that produced by the construction shown.

If the ring were formed of more than three sections 1, the spring ring 3 would be of greater length, in every case embracing all but one of the sections. The ring 3 need not be mutilated as shown, and may extend around the entire packing ring, but such construction would only be desirable if the projection 6 were formed at the mid instead of the end portions of the sections 1. Such construction would avoid the use of dowels 2, since the sections 1 would find no mutilation in the ring 3 at which they could become loosened.

It should be understood that it is not desired to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

It is claimed and desired to secure by Letters Patent:—

1. In a metallic packing, a rod, a plurality of end to end sections coacting about said

rod, single spring ring coacting about said sections and in contact therewith at points near the adjacent ends of said section only, and means for preventing circumferential shifting of said ring.

2. In a metallic packing, a rod, a plurality of metallic sections coacting with said rod, a ring directly coacting with the sections only at points adjacent the ends of said sections, and means for preventing circumferential shifting of said ring.

3. In a metallic packing, a rod, a plurality of metallic sections coacting with said rod and having adjacent ends, an outwardly projecting portion on each of said sections, a ring directly coacting with said outwardly projecting portions only, said ring tending to retain said portions in coaction with said rod, and means for preventing circumferential shifting of said ring.

4. In a metallic packing, a rod, a plurality of end to end sections coacting with said rod, a ring surrounding said sections and spaced therefrom except at points adjacent the ends of said sections, said ring directly coacting with said sections at said points, and means for preventing circumferential shifting of said ring.

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

IRVING J. BENT.

Witnesses:

JACOB M. DAMPTZ,
BENJAMIN B. WOOLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

It is hereby certified that in Letters Patent No. 1,040,494, granted October 8, 1912, upon the application of Irving J. Bent, of Chicago, Illinois, for an improvement in "Packing for Reciprocating Rods" errors appear in the printed specification requiring correction as follows: Page 2, line 36, before the word "single" insert the article *a*; same page, line 38, for the word "section" read *sections*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 29th day of October, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.