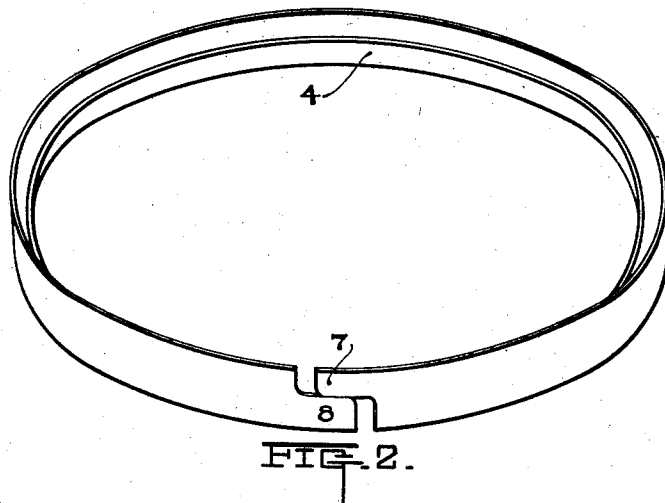
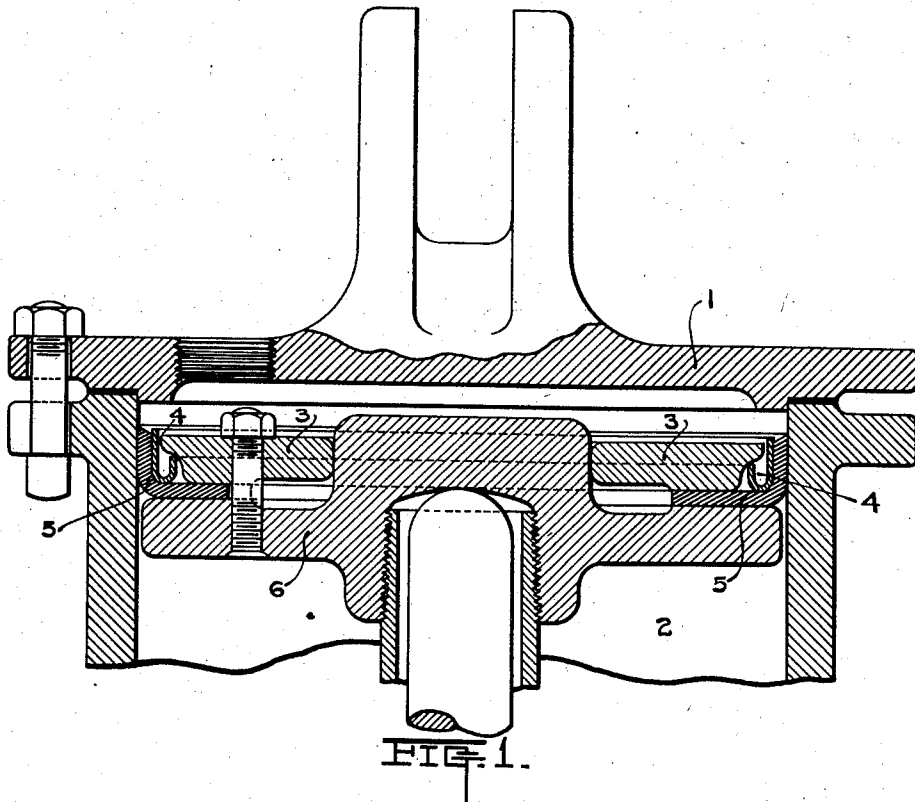


G. F. DE WEIN.
PACKING EXPANDER.
APPLICATION FILED JULY 27, 1910.

1,079,404.

Patented Nov. 25, 1913.



WITNESSES—

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GEORGE F. DE WEIN, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO H. W. JOHNS-MANVILLE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PACKING-EXPANDER.

1,079,404.

Specification of Letters Patent.

Patented Nov. 25, 1913.

Application filed July 27, 1910. Serial No. 574,054.

To all whom it may concern:

Be it known that I, GEORGE F. DE WEIN, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Packing-Expanders, of which the following is a specification.

This invention relates to improvements in the construction of packing expanders particularly adapted to be used for expanding the cup leather packings generally used in brake cylinders of air brakes.

The object of the invention is to provide a packing expander which is simple in its construction, efficient in its operation and which can be easily manufactured.

In the use of expanders in connection with cup shaped packings it has been found essential to have the expander coat along the entire cylindrical portion of the packing. Several devices have been constructed in which such coaction has been obtained, but all of these have been difficult to manufacture since they require either a special rolled stock or a great deal of machining in their construction.

A feature of the present invention is to construct the expander from sheet metal and entirely with the use of dies, thereby eliminating the above mentioned constructive difficulties.

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 part in like or different views.

Figure 1 is a fragmental, central vertical section through a brake cylinder and piston showing an expander built in accordance with the invention applied thereto. Fig. 2 is a perspective view of the expander ring shown in Fig. 1.

The brake cylinder 2, having the cylinder head 1 fastened thereto, is bored to receive the cup leather, or other suitable material, packing 5. The packing 5 is therefore circular, and continuous and is clamped between the piston body 6 and the plate 3 by means of a series of studs and nuts. The plate 3 is of an outside diameter somewhat less than the internal diameter of the cylindrical portion of the cup shaped packing 5,

and has its peripheral corner nearest the piston body 6 cut away, thus forming an annular space between the packing 5 and the plate 3.

The packing expander ring 4, which is preferably constructed of sheet metal, is J-shaped in cross section. When inserted in working position, the hooked end or leg of the J is located in and spans the annular space formed between the packing 5 and the plate 3, the long leg of the J coacting against the inner surface of the cylindrical portion of the cup shaped packing 5. By thus inserting the ring 4, any possibility of outward slipping of the ring is prevented, due to the coaction of the short leg of the J with the plate 3. The ring 4 is expansible and discontinuous by having its abutting ends formed with projections 7, 8, thereon. These projections are formed by cutting the ends of the ring Z-shape, this cutting being done before producing the J formation of the ring 4. The Z-shape of the parting between the ends of the ring lies entirely within the longer leg of the J, the parting at the bend of the J being along a single plane.

In forming the ring 4, a strip of sheet metal is first suitably formed at its ends and bent to form a cylinder, after which it is inserted in a cylindrical form having a depression at its lower end which corresponds in shape to the final external shape of the expander ring 4. A die which closely fits the interior surface of the form and having a projection of a shape corresponding to that of the interior surface of the ring 4, is inserted within the cylindrical form and is brought down against the sheet metal cylinder therein. As the die approaches the lower part of the form, the cylindrical sheet metal is gradually formed into the ring 4 having the J section as shown. In order to permit the formation of the ring by means of a die, it is not desirable to produce at the hooked end of the J section a bend which is over 180 degrees in extent. It has also been found that a J section in which the legs approach parallelism provides sufficient stiffness to give the proper expanding force to the ring 4.

It should be understood that it is not desired to be limited to the exact details of construction shown and described, for ob-

vious modifications will occur to a person skilled in the art.

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

- 5 A piston packing expander ring consisting of a thin strip of spring metal bent up along one edge so as to have a J-shaped cross section, and curved into a circle with abutting but disconnected ends, the shorter

lip of the J being on the inside of the ring so 10 formed.

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

G. F. DE WEIN.

Witnesses:

W. H. LIEBER,
JOHN DAY, Jr.