No. 658,686. Patented Sept. 25, 1900.

F. SÜRTH.

APPARATUS FOR LUBRICATING AXLES AND SHAFTS.

(Application filed Mar. 31, 1900.)

(No Model.)

Fig. 3.

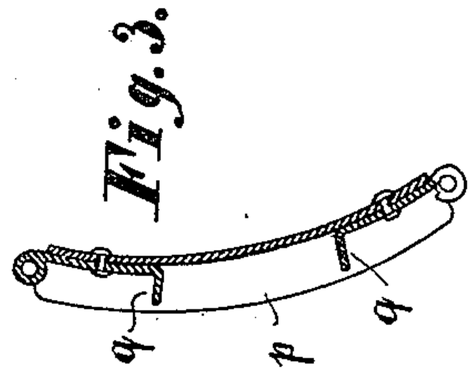


Fig. 2.

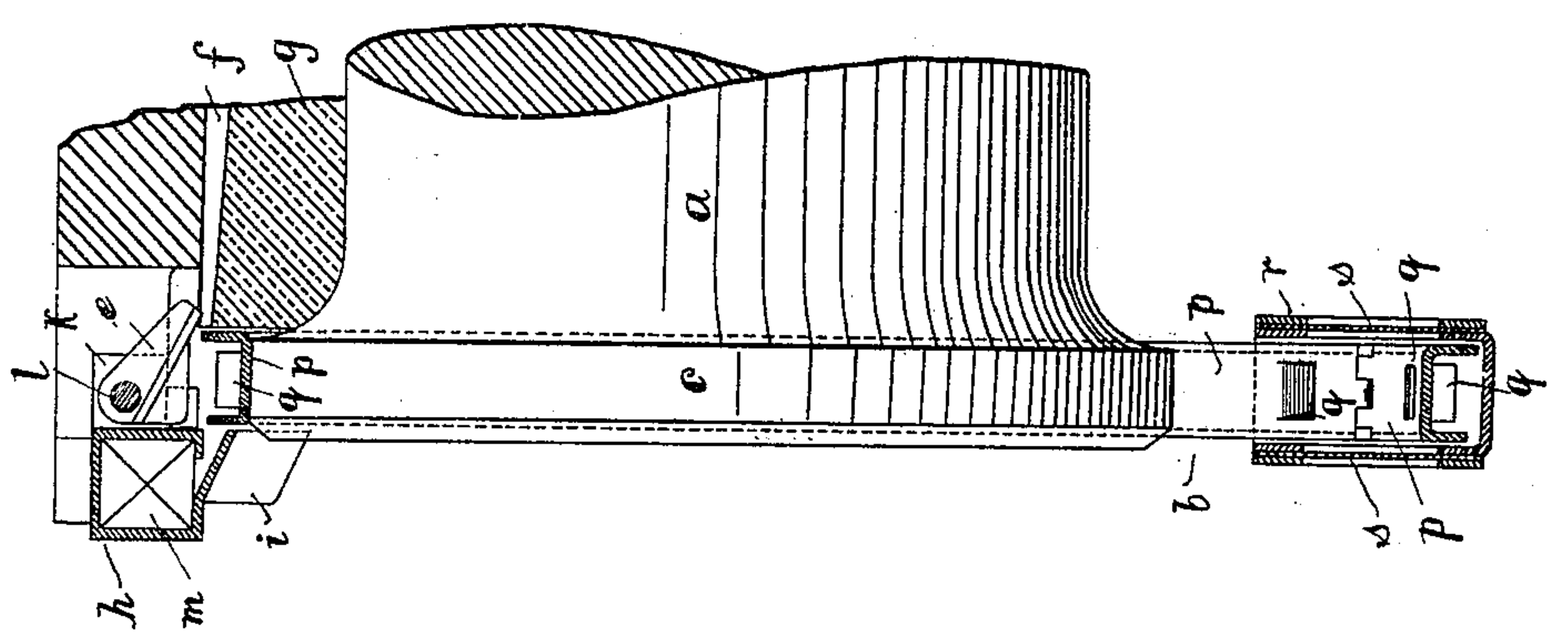
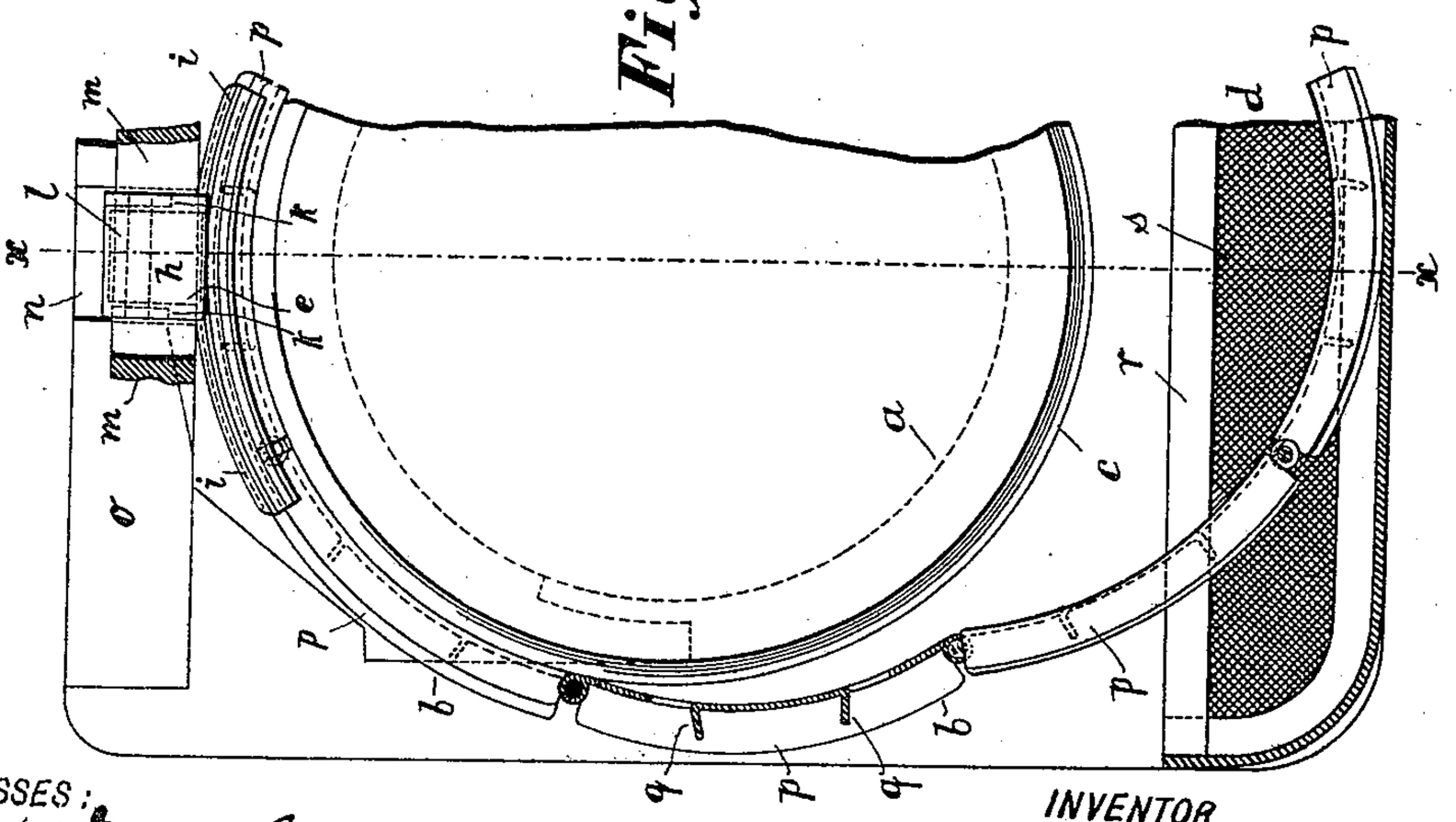


Fig. 1.



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UNITED STATES PATENT OFFICE.

FRANZ SÜRTH, OF DORTMUND, GERMANY.

APPARATUS FOR LUBRICATING AXLES AND SHAFTS.

SPECIFICATION forming part of Letters Patent No. 658,686, dated September 25, 1900.

Application filed March 31, 1900. Serial No. 10,897. (No model.)

To all whom it may concern:

Be it known that I, FRANZ SÜRTH, a subject of the Emperor of Germany, and a resident of Dortmund, in the Province of Westphalia, Germany, have invented certain new and useful Improvements in Apparatus for Lubricating Axles and Shafts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to apparatus for lubricating axles and shafts, and according thereto a metal lubricating-band is arranged outside of the journal, so as to obviate weakening of the brasses and a reduction of the bearing-surface. In contradistinction to the usual ring-lubricator the band-lubricator according to this invention surrounds the axle at a part of greater diameter outside of the journal, as hereinbefore stated, so that the liquid lubricant is not applied directly to the journal, but first to the brasses, whereby the impurities are separated and the bearings and journals are protected. An example of a band lubricating apparatus according to this invention is shown in the accompanying drawings on an axle with closed axle-box used on the Prussian State railways.

Figure 1 is a partial front elevation. Fig. 2 is a cross-section, and Fig. 3 is a detail view.

On the shoulder *c* of the rotary axle *a* there is placed a band *b*, composed of articulated parts *p* for conveying the lubricant from the oil-chamber *d* of the axle-box. The lubricant is transferred over the inner edge of the band by means of an oil-leader *e* into a channel *f* in the brass *g*, from which it flows through a central opening to the journal. The band *b* must of course be prevented from moving laterally on the shoulder *c*. Usually it will be prevented from moving in the direction of the journal by the face of the brasses *g*. To prevent movement in the opposite direction, special means must be provided. In the drawings there is shown a device which comprises a sleeve *h* with downwardly-bent wings *i i* and parallel lugs *k k* for carrying the pivot *l* of the oil-leader *e*. This protecting device mounted on the bolt *m* is prevented from moving by inserting the lugs *k k* into a recess *n* in the intermediate piece *o*, said lugs having a slight spring action, so that when they are forced into the said recess they will frictionally bear upon the side walls of the recess, and thereby support the said parts in position.

If necessary, the parts *p* of the band *b* can be provided with dippers *q q*. Furthermore, the band may be caused to dip into a special box with walls of fine-mesh wire-gauze *s*, so that as pure a lubricant as possible may be obtained on the brasses and stirring up of the oil may be avoided.

The operation of my improved lubricator for axles and shafts is as follows: By the rotation of the axle the endless articulated band is rotated with the same. The U-shaped links of the band and its dippers pass through the oil and take along a small quantity which adheres thereto. This quantity rises along the surface of the side flanges of the links and dippers, especially where the links come in contact with the upper portion of the axle, so that the oil is transferred from the said surfaces of the band to the under side of the inclined oil-leader *e*, which rests on the adjacent end of the brass *g*. The oil then flows from the under side of the leader over to the brass and is fed through the groove *f* to the journal as the band rotates at a high rate of speed. Each link of the band furnishes a small quantity of oil; but as all the links successively supply a small quantity a sufficient quantity for the regular lubrication of the journal is furnished.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States of America, is—

1. A lubricator for axles and shafts, comprising, in combination with the axle or shaft provided with an annular shoulder, a band composed of articulated members trained around and bearing upon the said shoulder, means for retaining the band on said shoulder and an oil-box in which the band dips, substantially as set forth.

2. A lubricator for axles and shafts, comprising in combination with the axle or shaft,

a band composed of articulated members trained over the same, an oil-box in which the band dips, and an oil-leader onto which the oil is thrown by the moving band for conducting the oil to the journal, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRANZ SÜRTH.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.