

No. 736,532.

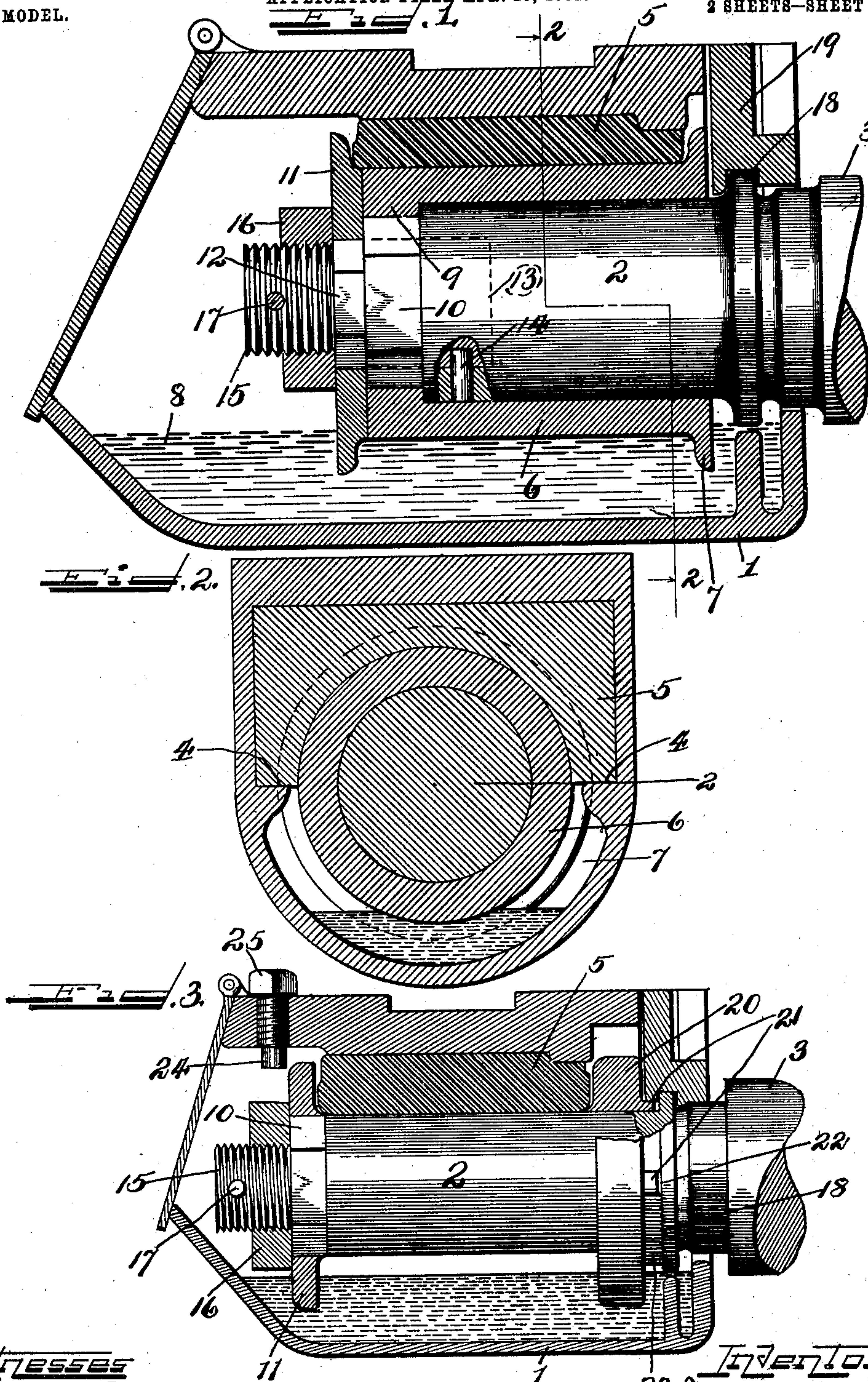
PATENTED AUG. 18, 1903.

I. METZGER, DEC'D.  
O. & S. METZGAR, ADMINISTRATORS.  
JOURNAL BEARING.

APPLICATION FILED APR. 20, 1901.

2 SHEETS—SHEET 1.

NO MODEL.



WITNESSES  
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No. 736,532.

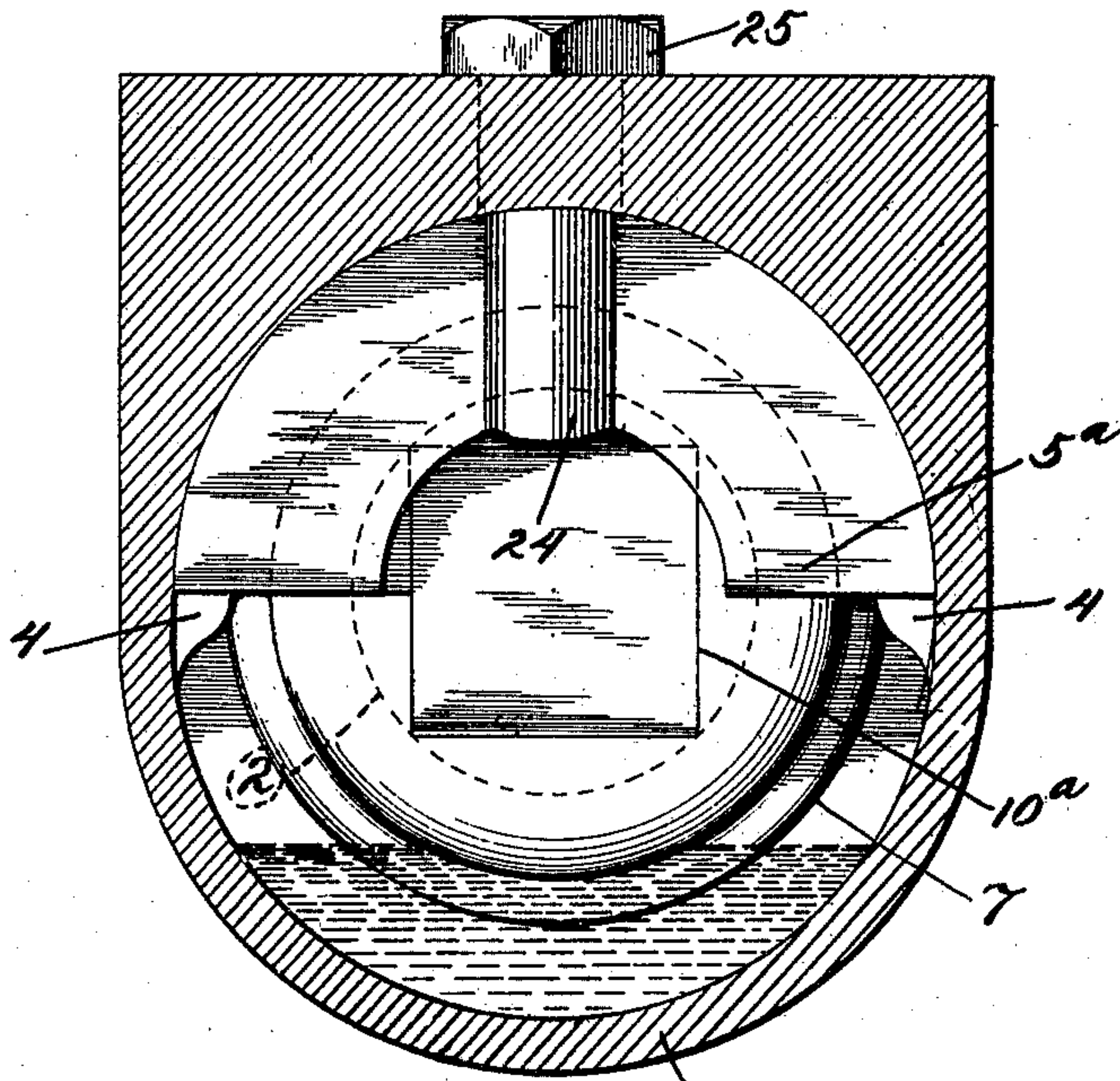
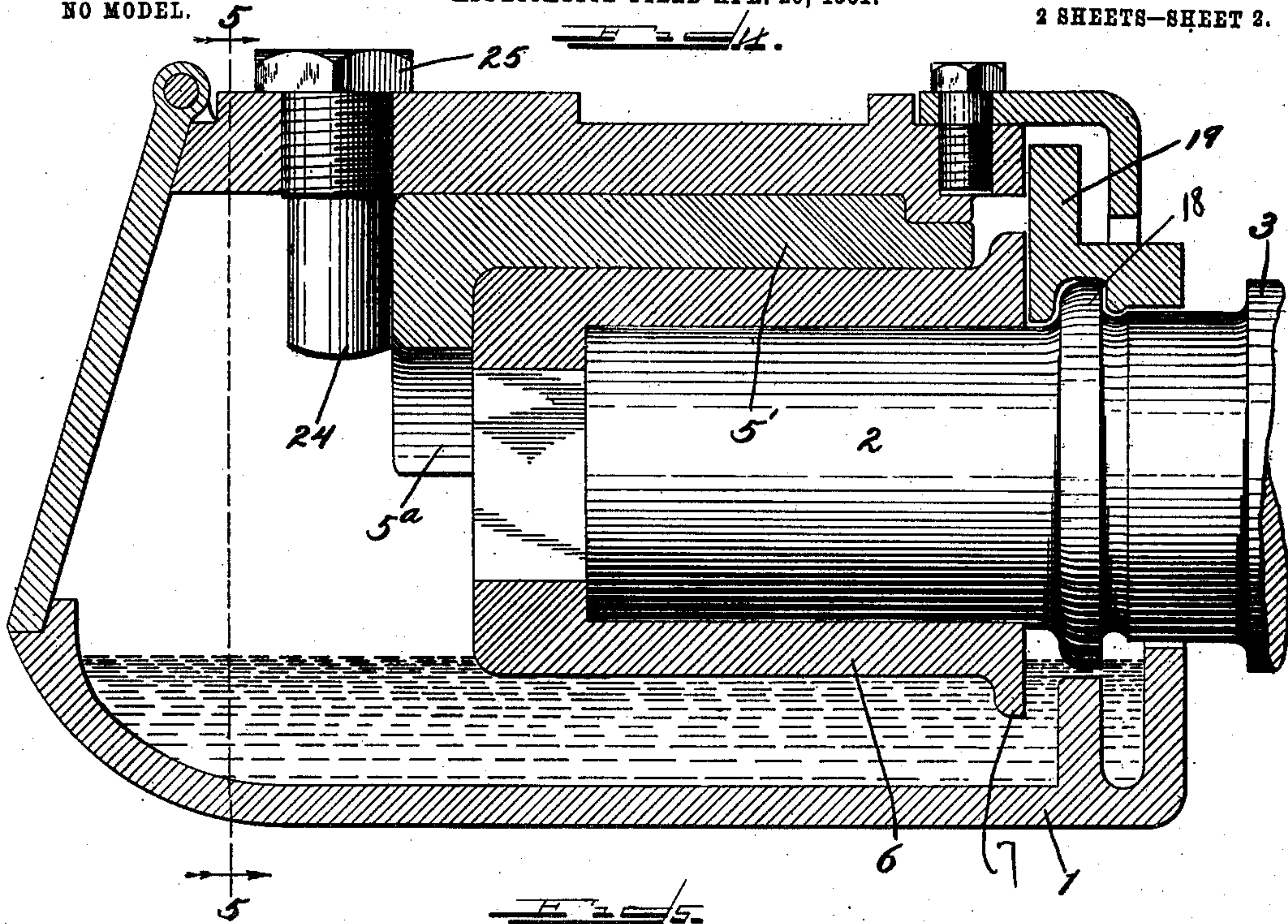
PATENTED AUG. 18, 1903.

I. METZGER, DEC'D.  
O. & S. METZGAR, ADMINISTRATORS.  
JOURNAL BEARING.

APPLICATION FILED APR. 29, 1901.

2 SHEETS—SHEET 2.

NO MODEL.



Witnesses

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Att'y



# UNITED STATES PATENT OFFICE.

ISBON METZGER, OF NEAR WINFIELD, IOWA; OLIVER METZGAR AND  
SAMUEL METZGAR ADMINISTRATORS OF SAID ISBON METZGER,  
DECEASED.

## JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 736,532, dated August 18, 1903.

Application filed April 29, 1901. Serial No. 57,856. (No model.)

*To all whom it may concern:*

Be it known that I, ISBON METZGER, a citizen of the United States, residing near Winfield, in the county of Louisa and State of Iowa, have invented certain new and useful Improvements in Journal-Bearings, of which the following is a full, clear, and exact specification.

My invention relates more particularly to journal-bearings for car-axles; and it has for its primary object to provide an improved and efficient form of axle and bearing which shall be capable of carrying a large supply of oil or lubricant and uniformly distributing the same over the wearing parts, while excluding dust and dirt from the bearings and preventing the escape of lubricant.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a vertical longitudinal sectional view of my improved journal-bearing. Fig. 2 is a transverse section taken on the line 2 2, Fig. 1. Fig. 3 is a view similar to Fig. 1, illustrating a modification hereinafter described. Fig. 4 is a view similar to Fig. 1, illustrating a still further modified form of my invention; and Fig. 5 is a transverse section thereof, taken on the line 5 5, Fig. 4.

1 is a car-axle box of the usual or any suitable construction, having an opening in the rear end thereof for the admission of the journal or spindle 2, which may be formed on the axle 3, as usual. Formed on each of the side walls of the box 1, however, is a flange 4, which extends longitudinally of the spindle 2 at about the line of its horizontal diameter, and fitted accurately within the upper side of the box 1 and resting on these flanges 4 is a bushing 5, also commonly called the "brass," which may be constructed of brass or any other suitable material. The under side of this bushing 5 is concaved to receive the upper side of a sleeve 6, which is

inserted over the outer end of the spindle or journal 2 and is provided at its rear end with a peripheral flange 7, which dips into the oil or lubricant well 8, contained in the bottom of the box 1. The outer end of this sleeve is provided with an inwardly-projecting flange 9, which partially overlaps and abuts against the outer end of the spindle or journal 2 in such a manner as to hold the sleeve 6 against further inward movement on the journal, and this sleeve is prevented from turning relatively to the journal and compelled to revolve therewith by means of a shouldered projection 10, carried by the end of the spindle 2 and fitting into the flange 9, which is of complementary shape. In the example shown in the drawings the shouldered projection 10 is hexagonal; but any other non-circular or prismatic form will of course answer. This projection 10 in the form shown in Fig. 1 is formed directly on the spindle or journal 2 by cutting away the sides thereof.

Both the sleeve 6 and the bushing 5 are held against outward movement relatively to the spindle or journal 2 by means of a washer 11, secured on the end of the spindle and dipping into the oil 8, so as to carry the oil up as the spindle revolves and deposit the same upon the superposed parts, whence it finds its way to the upper side of the sleeve 6. This washer 11 is held in place and compelled to revolve with the journal and the sleeve 6 by means of a shouldered projection 12, extending from the end of the shoulder 10. In the example shown in the drawings this shoulder 12 is on a plug 13, driven into the end of the spindle and held in place in any suitable way, such as by brazing or by means of a pin 14, driven thereinto through the side of the spindle. The shoulder 12, like the shoulder 10, may be hexagonal or of other non-circular form, fitting in a complementary aperture in the washer 11, so as to cause the latter to revolve. The outer end of the plug 13 is screw-threaded, as shown at 15, for receiving a retaining-nut 16, which holds the washer 11 in place and causes it to abut firmly against the outer end of shoulder 10. Pin 17 may be driven through threaded end 15 for preventing dislodgement of the nut 16.



The inner or opposed sides of the flange 7 and washer 11 are curved or inclined toward the mid-length of the spindle, and there is left between said curved sides and the ends of the bushing 5 slight V-shaped spaces or crevices, as clearly shown in Fig. 1, so that the oil carried up by said flange 7 and washer 11 will readily leak down between the bushing and the sleeve 6.

10 The end of the spindle 2 where it adjoins the axle 3 may be provided with a flange 18 for engaging in and holding a wooden or other suitable dust-guard 19 of the usual construction inserted at the end of the box over the  
15 journal.

With a journal-bearing thus constructed it will be seen that the moving or wearing parts are copiously supplied with lubricant during the motion of the journal and the journal  
20 proper is protected absolutely from wear, the entire wear being borne by the incasing sleeve 6, which when broken or worn beyond usefulness may be readily removed through the end of the box and replaced by a new one,  
25 thus keeping the journal proper intact.

In the form of the invention shown in Fig. 3 the sleeve 6, before described, is omitted, and the rear end of the journal, or that end adjacent to the axle 3, is provided with an oil-  
30 distributing and dust-arresting flange 20, which is slipped thereon from the outer end of the spindle and is compelled to rotate with the spindle by means of lugs or teeth 21, formed on the flange 20 and engaging in  
35 sockets 22, of complementary shape, formed in the edge of a shoulder 23 on the spindle. This flange or collar 20 is held against outward movement toward the outer end of the box by means of the bushing 5, which in turn  
40 is held against outward longitudinal movement relatively to the spindle 2 by the washer 11 the same as in Fig. 1. In this form of the invention, however, the washer is held on the spindle 2 and caused to rotate therewith by  
45 the hexagonal or other suitable shoulder 10, formed directly on the end of the spindle, and the washer is held in place by the nut 16, threaded on the projection 15, which in this instance, however, may, if desired, be formed  
50 directly upon the spindle 2.

The upper side of the box 1 may be provided with a lug 24, projecting downwardly therefrom into line with the washer 11 and

bushing 5 for limiting the movement of the latter outwardly with reference to the box. 55 This lug 24 is formed on the lower end of a set-screw 25, threaded in the top of the box.

In the form of my invention shown in Figs. 4 and 5 the washer or flange 11, described with reference to Fig. 1, is omitted and the bush- 60 ing or sleeve 6 is held against outward longitudinal movement by a depending flange 5<sup>a</sup> on the bushing or brass 5', which, as shown more clearly in Fig. 5, is of semicircular form and projects down over the upper side of the 65 outer end of the sleeve 6, where the latter is shouldered on the spindle 2. The shoulder in this particular instance is of a square formation, as shown at 10<sup>a</sup>, and engages in an opening of complementary form in the outer 70 end of the sleeve 6. The bushing or brass 5' is in turn held against outward longitudinal movement by a stout lug consisting of the set-screw or bolt 24 25, described with reference to Fig. 3. When it is desired to replace either 75 the sleeve 6 or brass 5', it is simply necessary to jack up the box until the weight is relieved from the spindle, then back off the lug 24 25, so that the brass and sleeve may be removed through the outer end of the box. 80

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

1. In a journal-bearing the combination of a box, a spindle inserted therein, a sleeve 85 having a flange on one end inserted over said spindle, a washer secured to the end of said spindle and rotating therewith and overlapping the end of said sleeve and a bushing secured in the box between the flange on the 90 sleeve and said washer, substantially as set forth.

2. In a journal-bearing, the combination of a box having an opening for a spindle, the spindle in said opening having an outer flange, 95 a flange removably fixed on the spindle adjacent to and inwardly from said first flange, and a dust-guard saddled over said first flange on said spindle, and having a downwardly-projecting flange arranged between the two 100 said flanges on the spindle, substantially as set forth.

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Witnesses:

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