

No. 826,848.

PATENTED JULY 24, 1906.

P. J. HARRIGAN.
DUST GUARD FOR JOURNAL BOXES.

APPLICATION FILED JAN. 22, 1906.

Fig. 1.

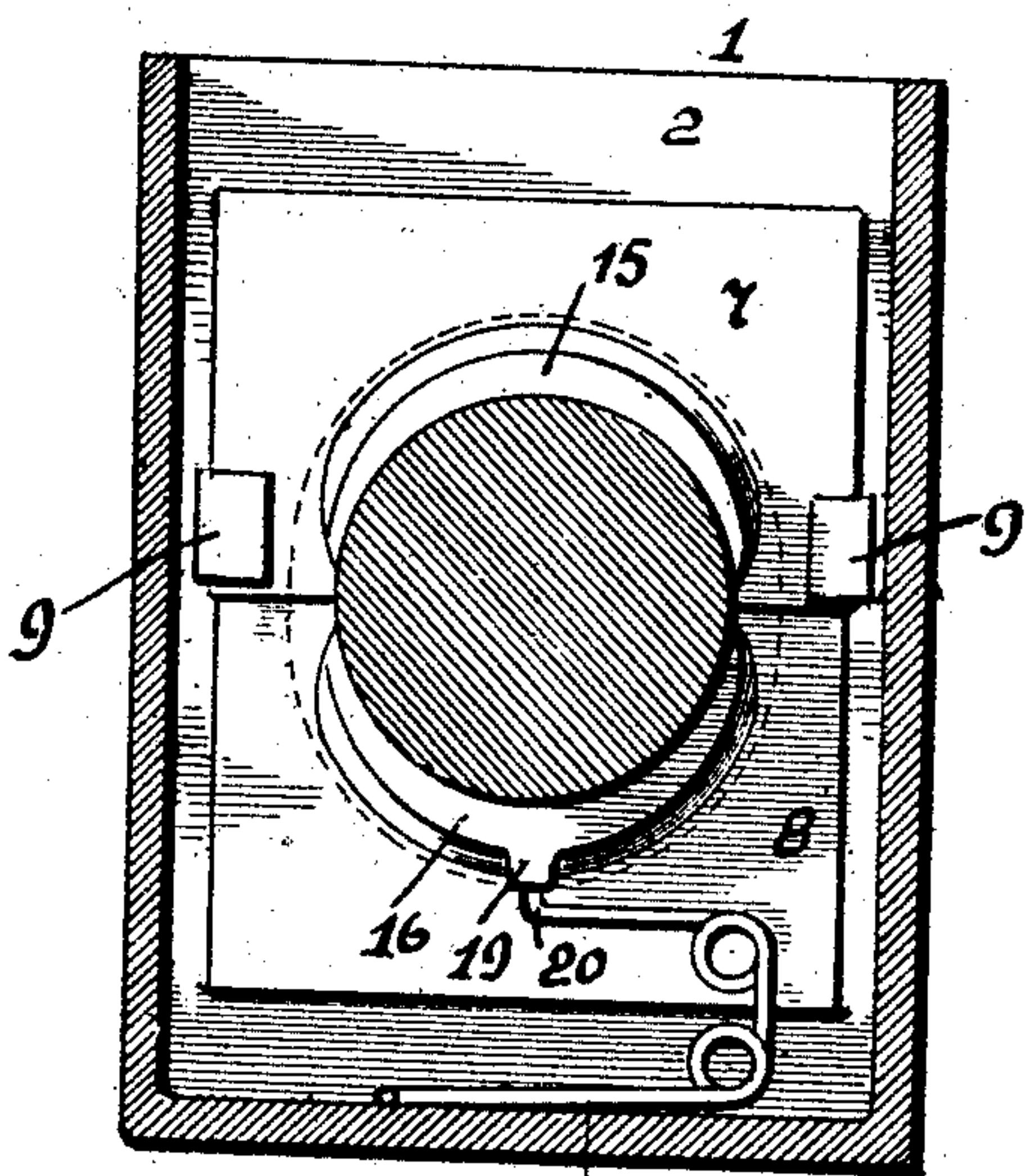
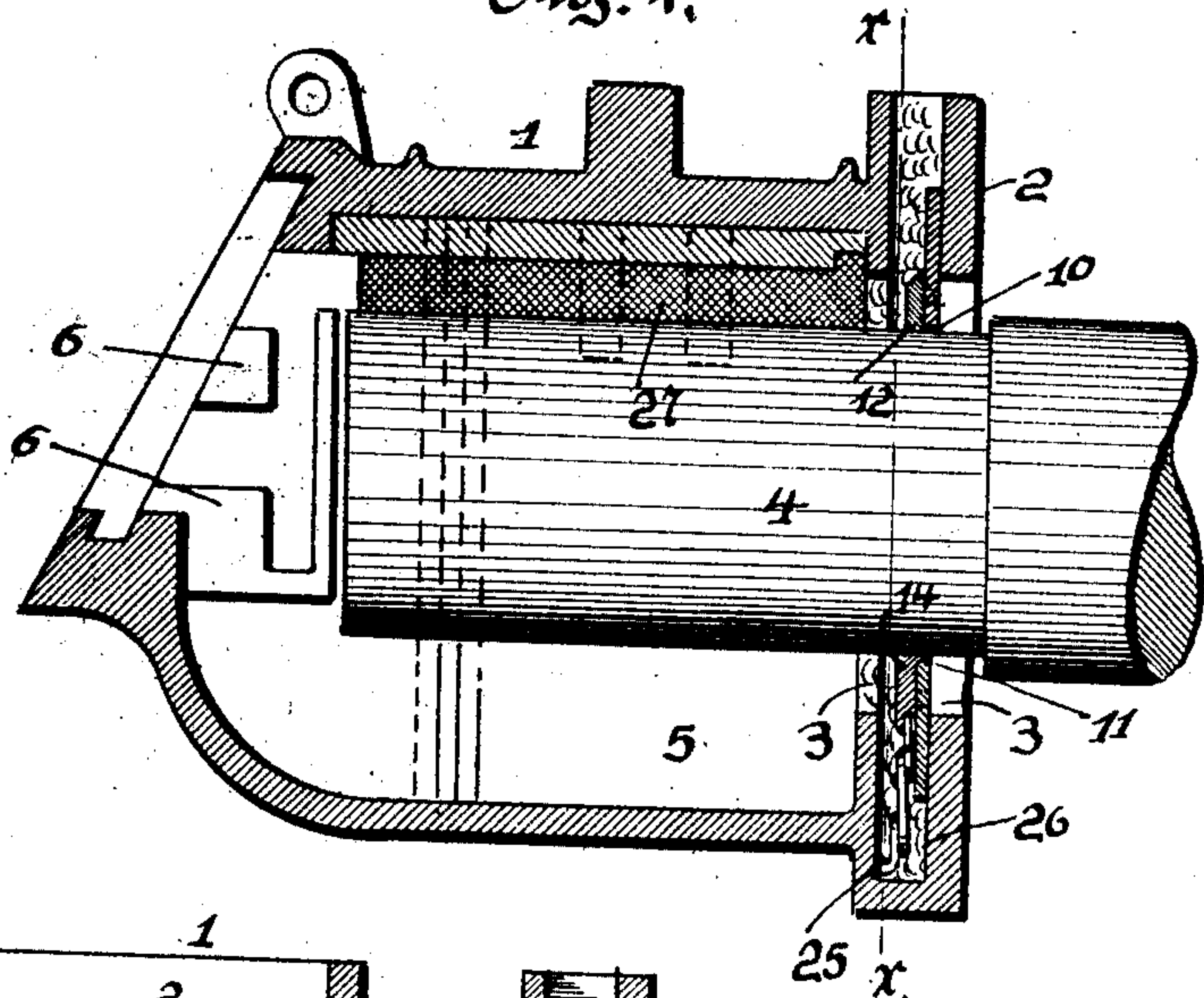


Fig. 2.

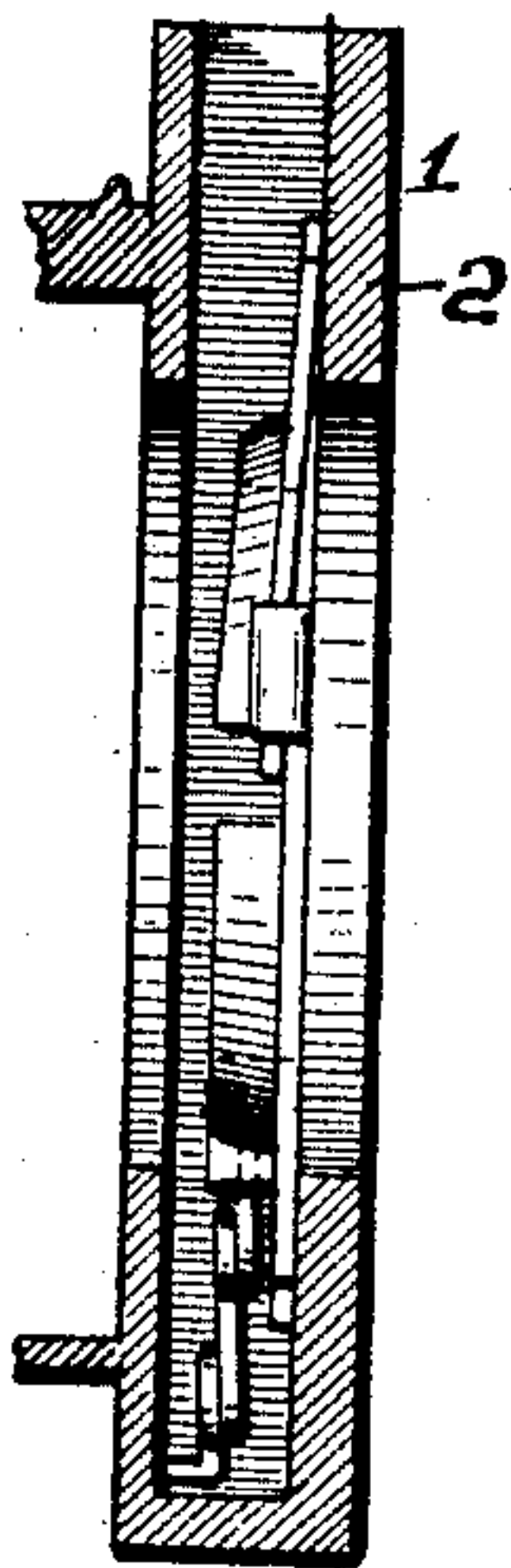


Fig. 3.

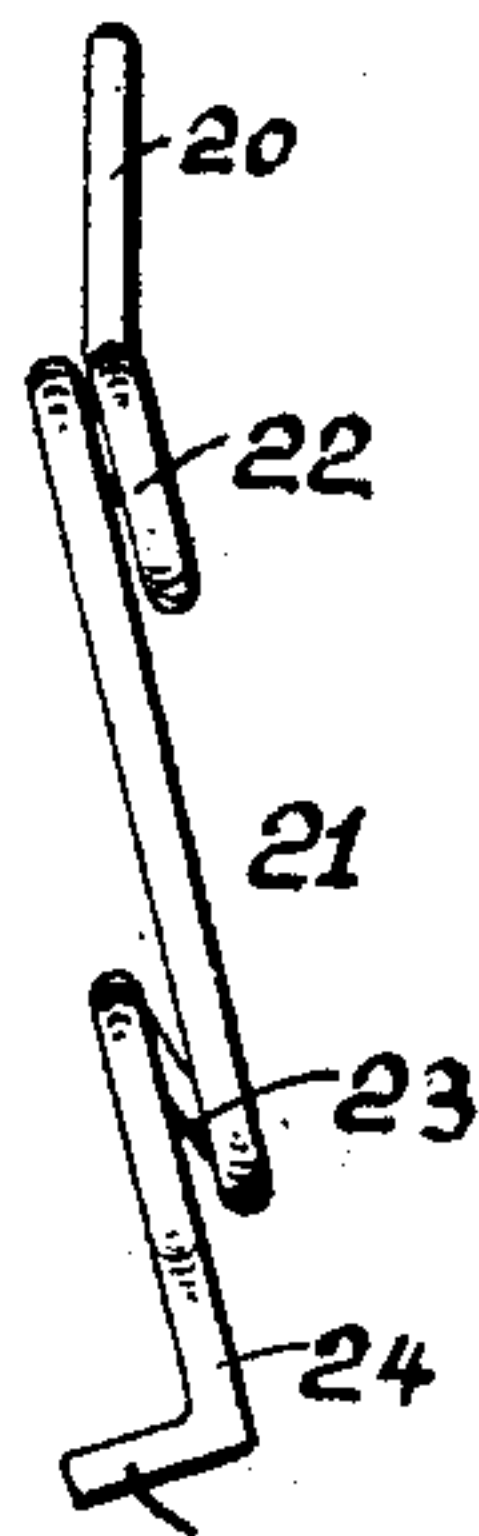


Fig. 4.

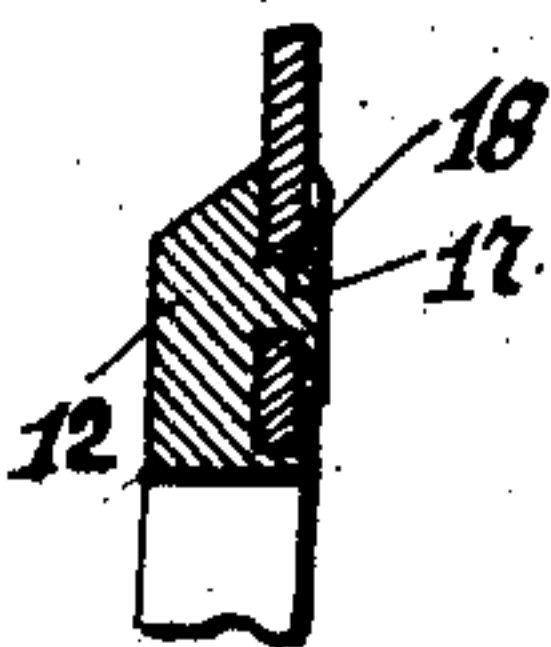


Fig. 5.

Witnesses:
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UNITED STATES PATENT OFFICE.

PATRICK J. HARRIGAN, OF McKEESPORT, PENNSYLVANIA.

DUST-GUARD FOR JOURNAL-BOXES.

No. 826,848.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed January 22, 1906. Serial No. 297,217.

To all whom it may concern:

Be it known that I, PATRICK J. HARRIGAN, a citizen of the United States of America, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Dust-Guards for Journal-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in dust-protectors for journal-boxes; and the invention has for its primary object to provide a novel form of self-adjusting protector for the journal-boxes of rolling-stock.

Another object of this invention is to provide a dust-protector which will permit of a thorough lubrication of that portion of an axle entering the journal-box, at the same time excluding all dust and dirt from the journal-box, thereby providing a smooth bearing upon the axle and preventing the journal-bearing from becoming ground or worn from the small particles that may enter the journal-box.

To this end I have devised a novel two-part dust-protector which may adjust itself to the spindle or journal end of an axle irrespective of the position the journal-box assumes relative to said axle, it being a well-known fact that the jarring of rolling-stock when in motion causes a slight yet perceptible movement between the journal-box and the axle.

The dust-protector is constructed whereby it will normally engage the axle and the rear face of the journal-box and prevent the dirt and dust from entering the journal-box and in any manner interfering with the perfect cooperation of the different parts of the journal-box.

The protector is also constructed whereby certain portions of it may be renewed when it has become worn, easy access being had to the dust-protector at the same time, permitting of the axle being thoroughly lubricated.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described and claimed.

Referring to the drawings accompanying this application, like numerals of reference

designate corresponding parts throughout the several views, in which—

Figure 1 is a vertical sectional view of a journal-box having the end of an axle journaled therein, illustrating my improved dust-protector used in connection therewith. Fig. 2 is a cross-sectional view taken on the line $x x$ of Fig. 1. Fig. 3 is a vertical sectional view of a portion of the journal-box, illustrating the dust-protector in side elevation. Fig. 4 is a side elevation of a double-acting spring used in connection with the dust-protector. Fig. 5 is a detail sectional view of a portion of the dust-protector.

In the accompanying drawings I have illustrated a conventional form of journal-box 1, embodying a dust-protecting casing 2, having transverse openings 3 3 formed therein to permit of the contracted or spindle end 4 of an axle protruding therethrough. The journal-box is formed with a customary lubricant and waste receptacle 5, also the journal-stop supports 6 6, which have been the subject-matter of another application, filed January 22, 1906, Serial No. 297,218.

The present invention relates to a dust-protector which is mounted in the casing 2 of the journal-box, and in practice I construct the dust-protector of two metallic plates 7 and 8, the upper plate being slightly smaller than the lower plate 8. The upper edges of the plate 8 are provided with lugs 9 9, which form guideways for the plate 7, whereby said plate may slide downwardly upon the face of the plate 8. The plates 7 and 8 are provided with semicircular openings 10 and 11, respectively, in their confronting edges, and the edges of said openings are lined with Babbitt metal 12 and 14 or the like soft metal. The lining of the edges of said openings forms semicircular ribs 15 and 16, which are adapted to engage the periphery of the contracted or spindle end 4 of an axle. The Babbitt metal forming the ribs 15 and 16 is preferably secured to the plates 7 and 8 by providing said plates with a plurality of openings 17 adjacent to the edges of the semicircular openings 10 and 11, and when molding the Babbitt metal upon the plates a portion of the metal is permitted to enter the openings 17 and form a head 18 upon the opposite side of the plates, whereby the Babbitt metal will be firmly held in engagement with said plates.

The rib 16 of the plate 8 is provided with

an enlargement 19 upon its lower edge, into which protrudes the end 20 of a double-acting spring 21. The spring 21 is formed by bending a piece of wire into two loops 22 and 23 and by bending the supporting end 24 of the spring out of alinement with the end 20 of the spring. The spring 21 is mounted in the bottom of the casing 2, the bearing end 24 being adapted to rest upon the bottom of the casing while the end 20 engages the rib 16 of the plate 8. In so placing the spring 21 within the casing 2 the bearing end 24 of the spring will engage the rear wall 25 of the casing, while the opposite end 20 of the spring will force the plate 8 into engagement with the front wall 26 of the casing, normally holding the plate 7 in engagement therewith, as said plate is slidably mounted in the lugs 9 9 of the plate 8. The spring 21 serves the double function of holding the plate 8 in an elevated position, at the same time holding said plate, together with the plate 7, in engagement with the front wall 26 of the casing 2, thereby preventing all dirt or dust from entering the opening 3 of the front wall and passing downwardly into the casing 2.

By referring to Figs. 1 and 3 of the drawings it will be noted that the upper end of the casing 2 is open, which permits of easy access being had to the periphery of the contracted or spindle end 4 of an axle, and within the casing 2 and upon the axle waste will be placed which will be saturated with a suitable lubricating-oil to insure an easy operation of the end of the axle within the journal-box.

Heretofore two-part boards or wooden plates have been used in the casings 2, these boards or plates entirely filling the space between the walls 25 and 26 of the casing and preventing a lubricant from being placed in the top of the rear half of the journal-box. Consequently that portion of the journal-bearing 27 nearest the wheel mounted upon the axle of the journal-box is less lubricated and causes the rear end of the journal-bearing to wear more speedily than the forward end. My invention aims to obviate this defect by making provision for a lubricant to enter the journal-box at the rear end of the journal-bearing and, together with the waste and lubricant placed within the receptacle 5, insures an easy bearing of the axle within the journal-box.

By providing the plates 7 and 8 with Babbitt metal or the like soft material the bearing edges of the plates 7 and 8 can be renewed from time to time without dispensing with the plates 7 and 8, thus permitting of said plates being used for a considerable period of time. As the plate 7 is adjustably mounted upon the plate 8, said plate may descend by gravity and quickly recede, according to the movement of the contracted end or spindle 4 of an axle, while the spring 21 is

adapted to follow the axle on the same movement upwardly, thereby insuring a snug engagement of the plates 7 and 8 with the axle and preventing dirt or dust from entering the openings 3 of the journal-box.

The dust protector or guard prevents a lubricant or oil from issuing or unduly wasting from the back of the journal-box, and by the construction of the guard or protector the top can be easily removed when the brass and journal-key of the box are to be taken out.

The guard or protector may be constructed of lead, vulcanized fiber, or the like material, and any suitable composition may be used in lieu of Babbitt metal.

I do not care to confine myself to the type of journal-box in connection with which the dust-protector is used.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a journal-box having a casing, and an axle extending through said casing, of a two-part protector mounted within said casing and surrounding said axle, one of said parts being slidably mounted in lugs carried by the other of said parts, a double-acting spring having a lateral extension at its lower end, said spring being mounted in the bottom of said casing and exerting pressure in a vertical and in a lateral direction and engaging the lowermost part of said protector, said spring being adapted to hold the lowermost part in an elevated position, and the protector in its entirety against the end wall of said casing, and Babbitt metal carried by said protector and engaging said axle, substantially as described.

2. The combination with a journal-box having a protector-casing, and an axle extending through said casing, of a two-part protector detachably mounted in said casing, said protector consisting of two plates slidably connected together, said plates having semicircular openings formed therein, to embrace said axle, Babbitt metal carried by the edges of said openings and engaging said axle, a double-acting spring mounted in the bottom of said casing, one end of said spring bearing against the casing, the other end of said spring bearing directly against one of the plates of the protector, said spring exerting pressure in a vertical and lateral direction to hold said protector in an elevated position and in engagement with the wall of said casing, substantially as described.

3. The combination with a journal-box having a protector-casing and having the end of an axle journaled therein, of a protector mounted in said casing and surrounding said axle, said protector consisting of two plates, soft metal carried by the axle-contacting edges of said plates, a double-acting spring having coils and a laterally-projecting end, said end bearing on the bottom of the casing-cavity and said spring being adapted to hold

said protector in an elevated position and in engagement with one of the walls of the casing, substantially as described.

4. The combination with a journal-box,
5 having the end of an axle journaled therein,
of a protector carried by said journal-box,
and surrounding said axle, a Babbitt-metal
casting seated in the protector and in trans-
verse openings extending through said pro-
10 tector and engaging the periphery of said

axle, means to normally hold said protector in an elevated position and in engagement with one of the walls of said box, substantially as described.

In testimony whereof I affix my signature 15
in the presence of two witnesses.

PATRICK J. HARRIGAN.

Witnesses:

K. H. BUTLER,

E. E. POTTER.