

No. 822,759.

PATENTED JUNE 5, 1906.

J. S. PATTEN.

CONCAVED JOURNAL BOX AND DUST GUARD.

APPLICATION FILED AUG 17, 1904.

2 SHEETS—SHEET 1

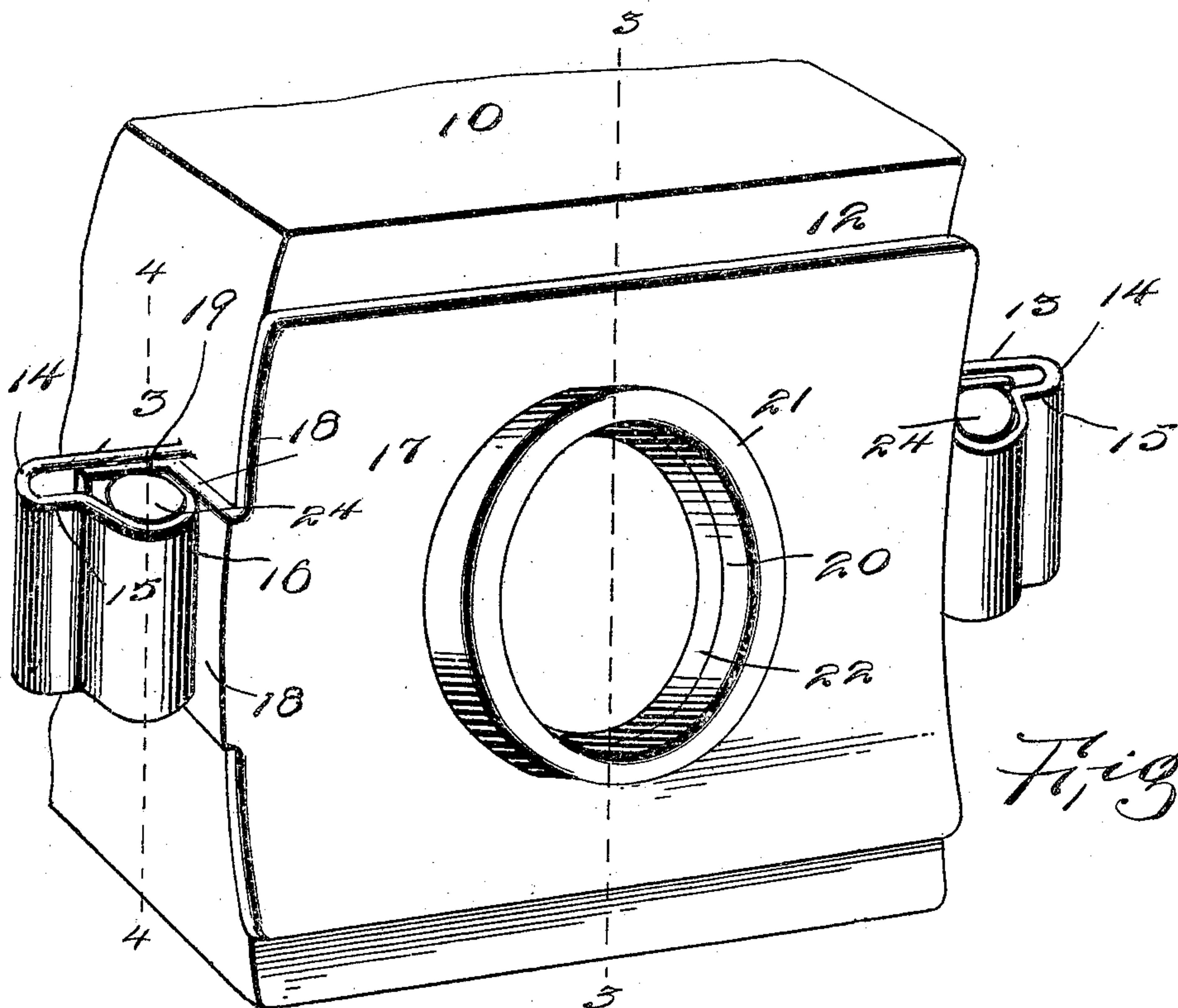
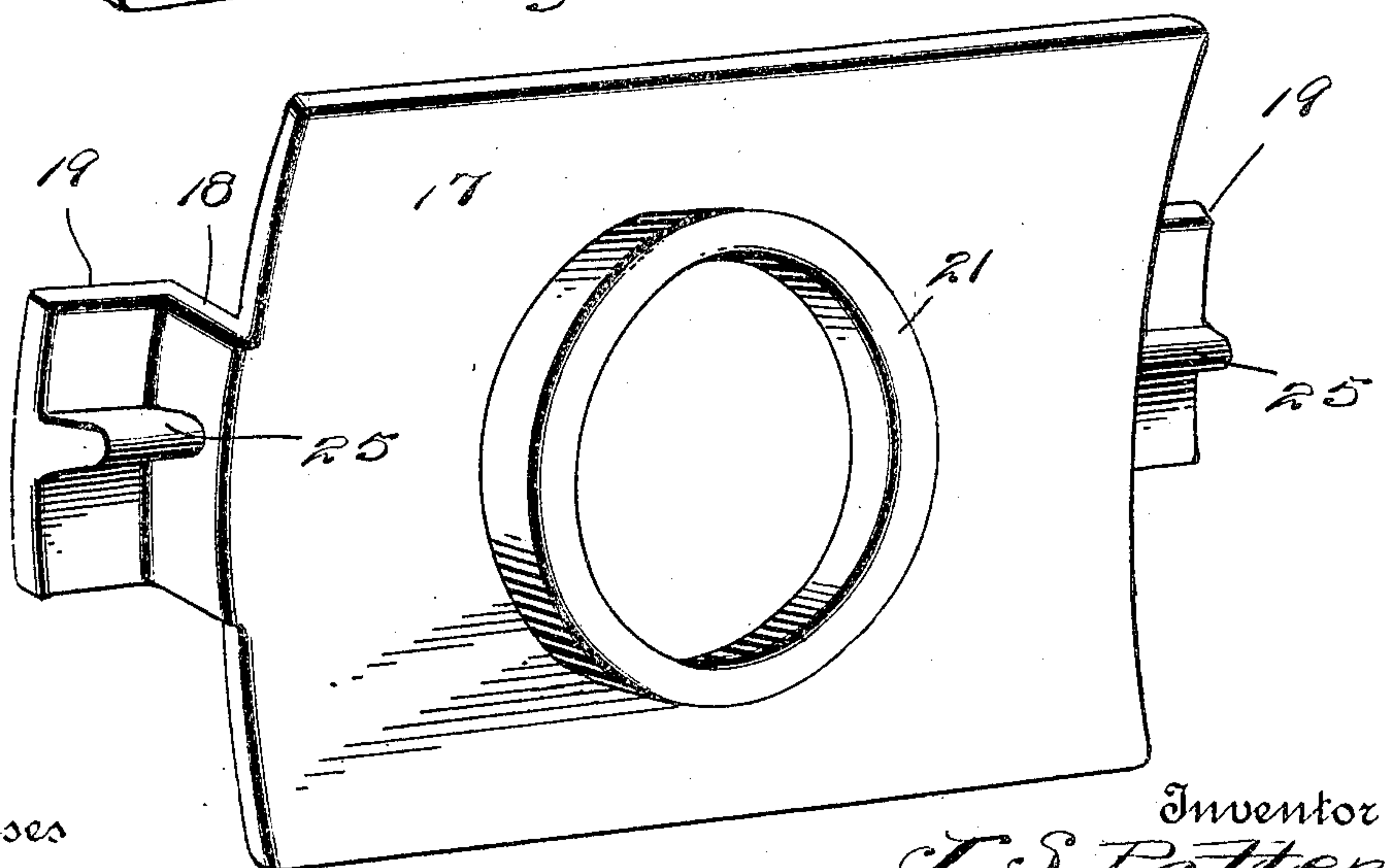


Fig. 1.



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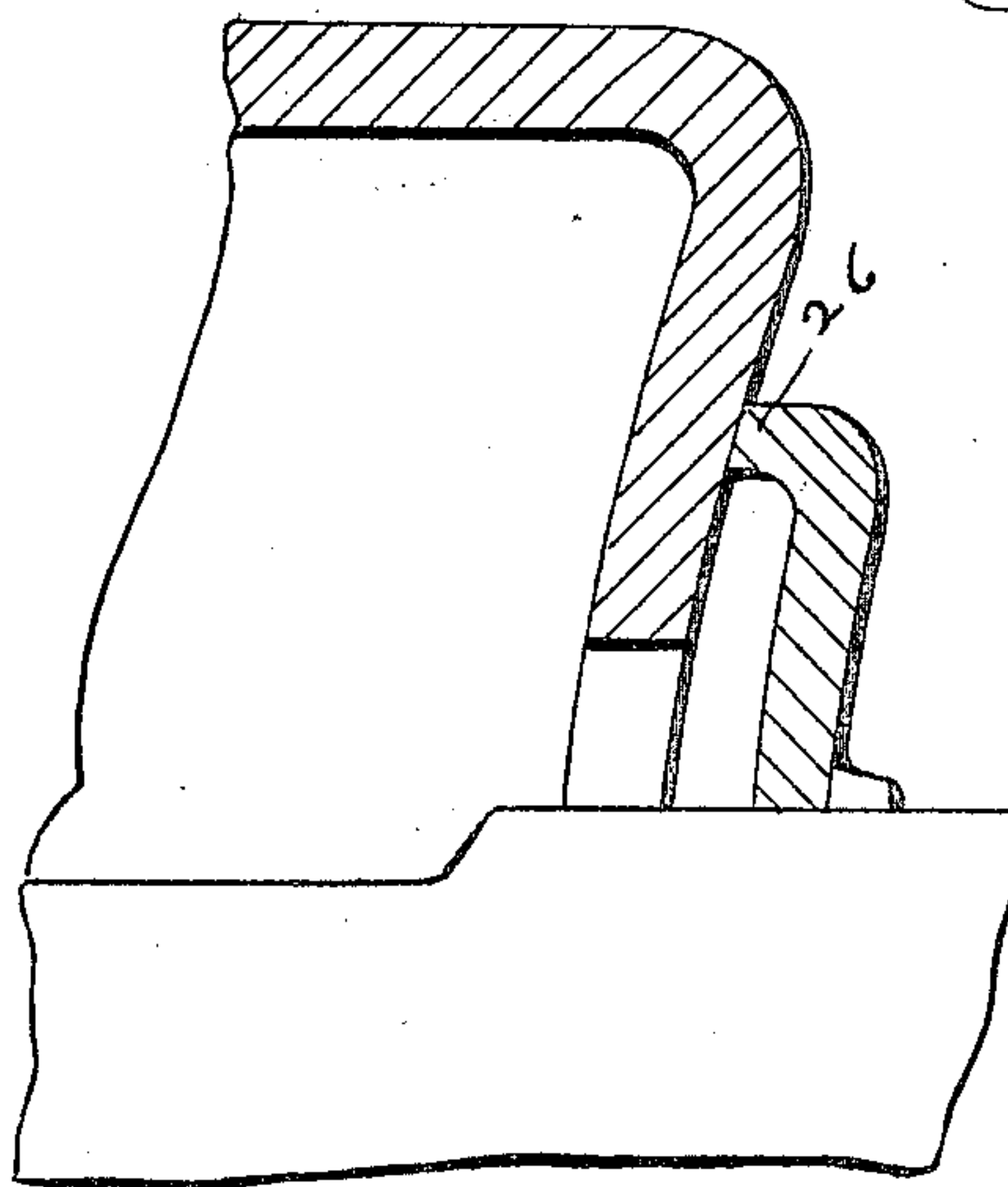
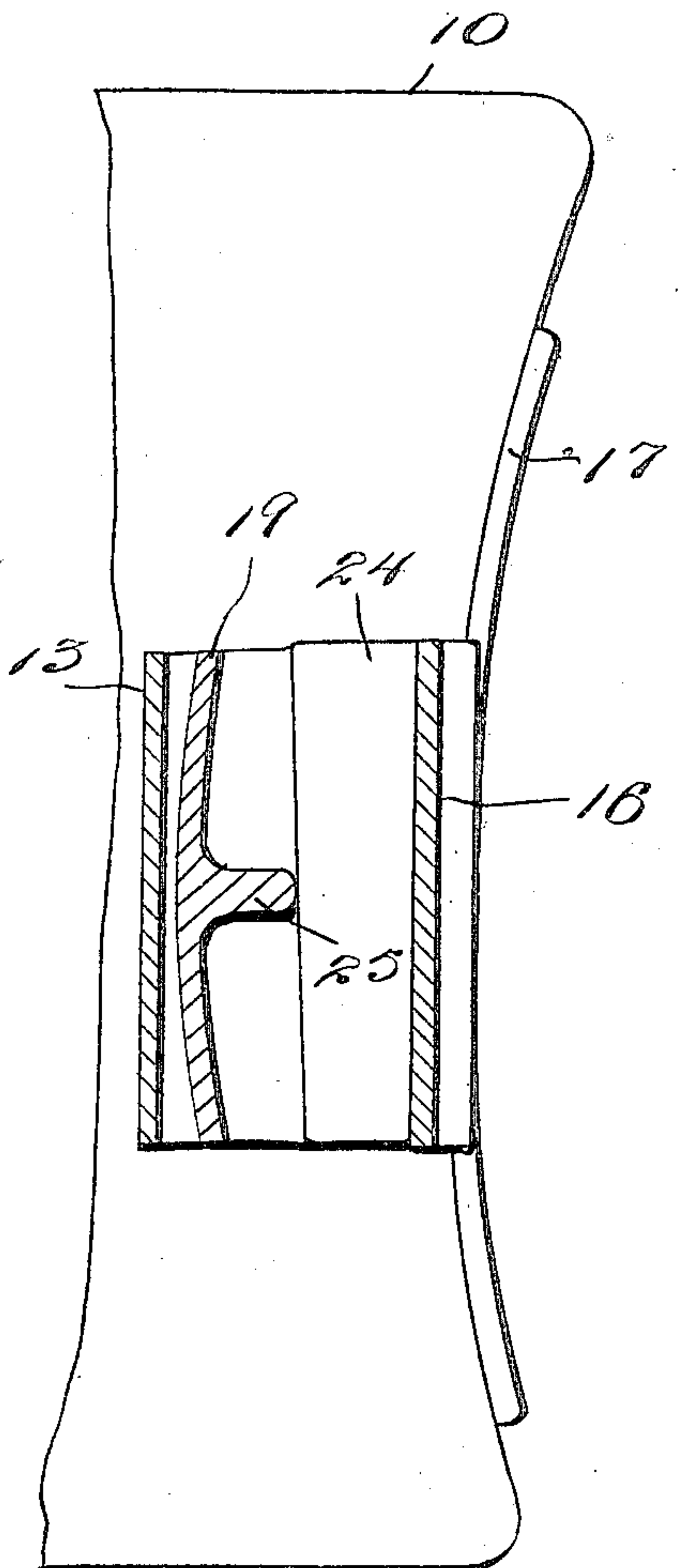
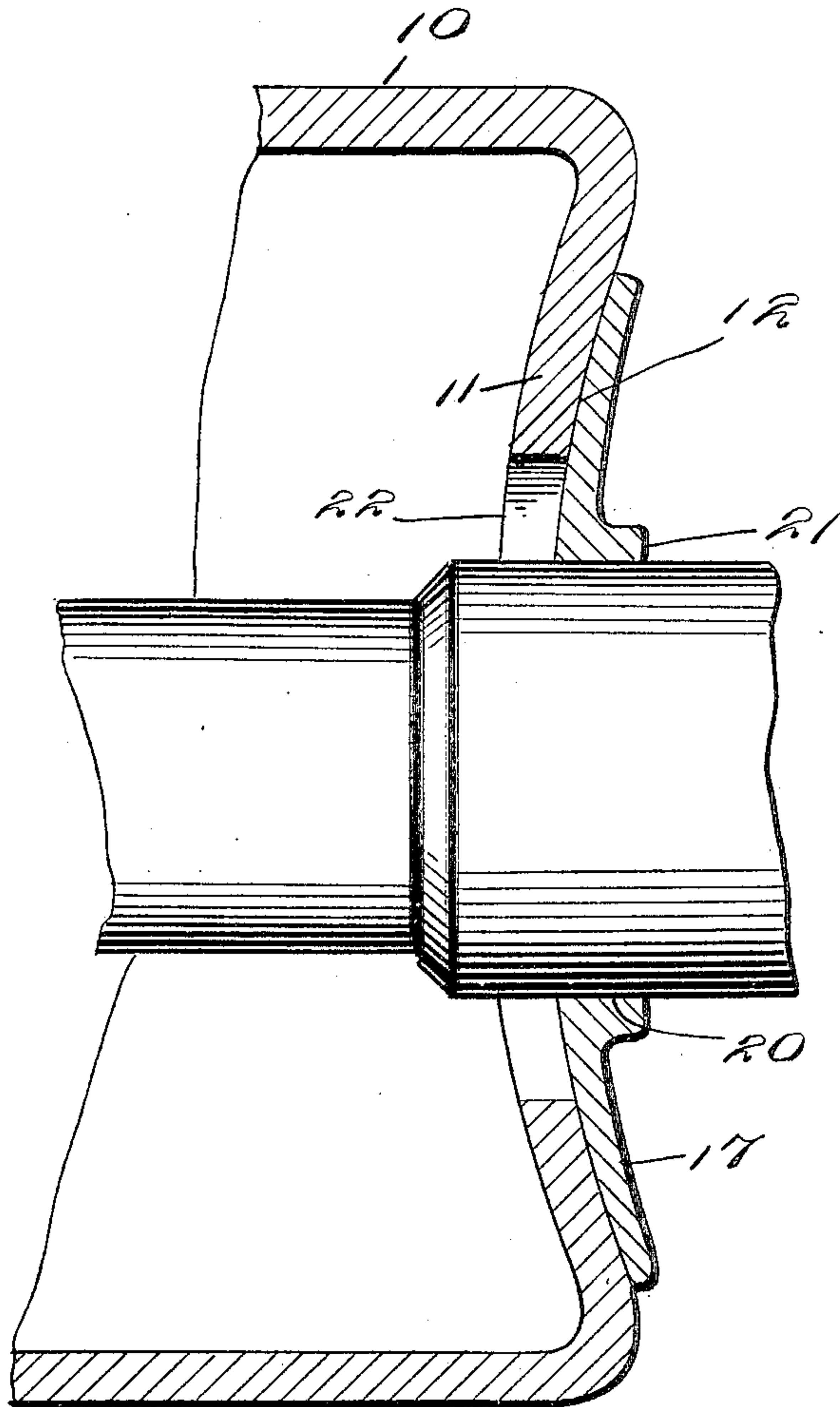
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE

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CONCAVED JOURNAL-BOX AND DUST-GUARD.

No. 822,759.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 17, 1904. Serial No. 221 040.

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Concaved Journal-Boxes and Dust-Guards; 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.

This invention relates to railway journal-boxes and dust-guards therefor, the object of the invention being to provide an outside guard for the inner end of the journal-box, and, further, to provide a construction wherein the shape will be such that the guard-plate will be supported, at least in part, by the box. It is common to support the dust-guard plate upon the axle, but constant rotation of the axle in the plate wears away the upper face of the opening through which the axle passes and a corresponding space is left between the lower portion of the face of the opening and the bottom of the axle for ingress of dust. The wear is of course proportional to the friction and the friction is proportional to the weight of the plate upon the axle. It is therefore evident that if the weight of the guard-plate is supported partly by the box the wear of the plate on the axle will be decreased and the life of the plate will be correspondingly lengthened.

A further object of the invention is to provide a simple and efficient means for holding the guard-plate with a dust-proof joint close against the outer face of the inner end of the journal-box while permitting of movement of the guard over the face as it is shifted by movement of the journal-box with respect to the wheel-axle and to provide means which will permit of ready application and removal of the guard-plate.

Other objects and advantages of the invention will be understood from the following description.

This structure in its broad aspect is the converse of that forming the subject-matter of my application for United States Letters Patent, Serial No. 221,041.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar parts in the several

views, Figure 1 is a perspective view showing the inner end portion of a journal-box and a dust-guard plate embodying the present invention. Fig. 2 is a perspective view of the guard-plate. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a section on line 4 4 of Fig. 1. Fig. 5 is a detail sectional view showing a modification.

Referring now to the drawings, there is shown a portion of a journal-box 10, the inner end 11 of which is reëntrant, so that the inner end face 12 is concaved, the curvature of the wall 11 being only in a vertical plane.

It will be noted that the inward curvature of the end wall 11 of the journal-box results in the formation of a tapered lower corner-pocket, the end wall hanging over the pocket and this serving in a measure to prevent the waste in the box from rising to the opening 22. This removes in great part the danger of the waste being crowded out through the opening.

At the side of the box 10 are formed integral guide-flanges which extend first outwardly at right angles to the side faces of the box, as shown at 13, then are curved backwardly, as shown at 14, from which points they extend toward the box and parallel with the portions 13, as shown at 15, and then are curved outwardly and then inwardly to form the semicylindrical portions 16.

In connection with the journal-box there is employed a dust-guard plate 17, which is curved or bent to correspond to the face 12, against which it is adapted to fit snugly, the lateral ends of the plates 17 being extended forwardly at right angles to the plate, as shown at 18, and then outwardly, as shown at 19, parallel with the central or body portion 17 of the plate. The proportions of the plate 17 and its wings 19 are such that the plate may be lowered into place with its central or body portion against the face 12, its portions 18 in close relation to the side faces of the box 10 and its wings 19 between the portions 13 and the portions 15 and 16 of the guides. In the center of the plate 17 is an opening 20 to receive the journal, which fits the opening snugly and rotatably, there being an annular flange 21 formed upon the outer face of the plate, so as to thicken the wall of the opening 20 and give a greater bearing-surface for the journal. The open-

ing 20 in the plate registers with the opening 22 in the end of the journal-box.

To hold the plate 17 close against the concaved face of the journal-box, a frusto-conical wedge 24 is provided at each side of the box and is engaged with the corresponding holder 16 with its minor end downwardly, the wedge bearing against the inner face of the holder and against the lug 25, formed upon the wing 19 at that side of the plate 17. The lugs 25 are midway of the upper and lower edges of the plate, and the wedges in pressing thereagainst hold the plate close against the end of the box, while permitting slight movement of the plate as the journal moves in the opening in the end of the box.

By concaving the inner end of the journal-box the lower half of the outer end face of the box acts to support in a measure the plate 17, while incidentally the inward slant of the lower portion of the wall 11 serves to prevent rising of the waste, so that it does not have the usual tendency to pass out through the opening in the end of the box and to find its way between the guard-plate and the journal after the guard-plate has become slightly worn.

Instead of forming the guard-plate to make direct contact with the concaved face of the journal-box the plate may be provided with a flange 26 at its edge which will directly engage the end face of the box and by wearing away will present a ground joint, so that ingress of dust will be effectually prevented. The flanged plate is shown in Fig. 5 of the drawings.

What is claimed is—

1. The combination with a journal-box having a concaved inner end face provided with an opening to receive a journal, of a dust-guard plate curved to correspond to said face and disposed thereagainst, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

2. The combination with a journal-box

having a reëntrant inner end wall and a corresponding concaved inner end face through which is formed an opening to receive a journal, of a dust-guard plate having a portion thereof fitted to said concaved face and in contact therewith continuously about said opening, said plate having an opening registering with that of the box to receive the journal, and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

3. The combination with a journal-box having an end opening to receive a journal, of guides carried by the box, a dust-guard plate disposed against the end of the box and having an opening registering with that of the box, wedges engaged in the guides and against portions of the plate in position to hold the plate against movement from the box longitudinally of the axis of its opening and means cooperating with the wedges for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

4. The combination with a journal-box having an end opening to receive a journal, of a dust-guard plate disposed against the end of the box, and having an opening registering with that of the box, and means for holding the plate against the box and with which means the plate is in rocking contact.

5. The combination with a journal-box having an end opening to receive a journal, of a dust-guard plate disposed against the end of a box and having an opening registering with that of the box and having a forwardly-directed lug projecting at each side of said opening and means bearing against the rear ends of said lugs for holding the plate against the box and with which means, said lugs are in rocking contact.

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

JAMES S. PATTEN.

Witnesses:

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