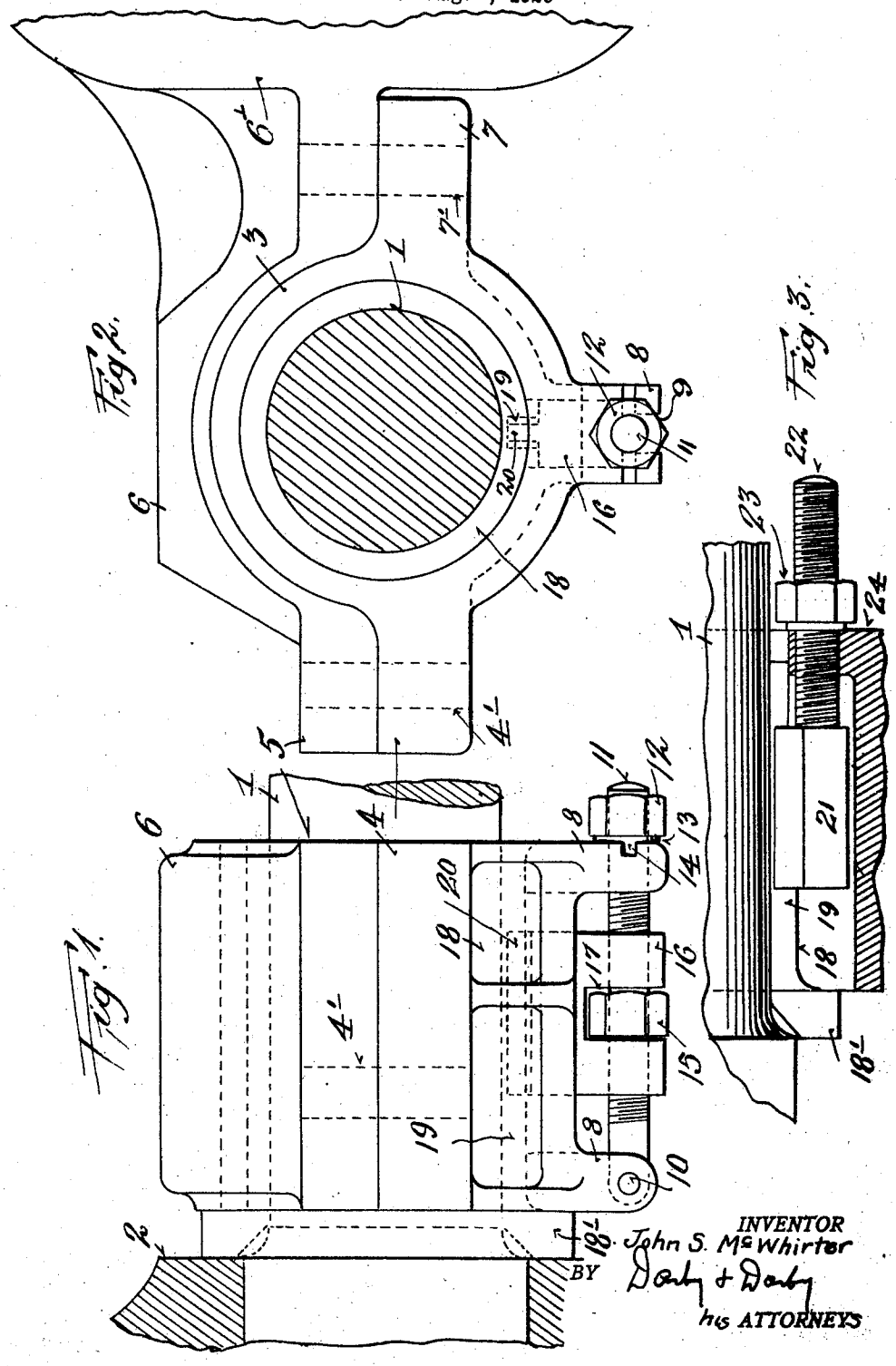
Sept. 18, 1928. 1,684,405

J. S. McWHIRTER

JOURNAL BEARING CONSTRUCTION

Filed Aug. 3, 1926



Patented Sept. 18, 1928. 1,684,405

UNITED STATES PATENT OFFICE.

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JOURNAL-BEARING CONSTRUCTION.

Application filed August 3, 1926. Serial No. 126,761.

This invention relates to a new journal bearing construction for use on railway motors.

One of the objects of this invention is the provision of a solid housing for supporting railway motors in combination with my novel means for securing the bearing brasses or sleeves within the housing.

A further object of this invention is to provide a construction of the solid type which is adapted to be easily assembled or taken apart.

A further object of this invention is to provide a bearing housing which is simple and easy to construct, and to keep in adjustment, and which may readily be adjusted to overcome any wear.

These and many other objects, as will appear in the following description, are secured by my novel construction.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, all as will be more fully disclosed in the following specification.

Referring to the drawings, in which the same reference numerals will be used wherever possible in the different views to indicate the same or similar parts,

Fig. 1 is a side elevational view with some parts broken away, of my novel bearing construction.

Fig. 2 is an end elevational view of the construction of Fig. 1.

Fig. 3 is an enlarged view, partly in cross-section, with parts broken away, showing a modified method of mounting the wedge key.

The present construction has been devised to provide a solid housing to be used for mounting railway motors instead of the split housing as has been used in railway motors and as disclosed in my copending application, Serial No. 728,825, filed July 29, 1924.

It has been found in actual practice that the split type of housing is subject during actual operation, to becoming loose and worn, so that there is danger of the parts becoming separated when this is not desired. By means of the solid housing, there is no possibility of the bearings working loose as a result of the clamping bolts being loosened as in the split bearing type. With the bearing being made detachable from the housing of the motor, instead of being formed thereon, as in the old split bearing type, individual bearing fits may be obtained by machining and applying the bearing to the axle in the machine shop at the time the wheels are mounted in place, or when other repairs are made to the axle, instead of attempting to fit the bearings to the axle at the time the motor is mounted. In using this type of housing it will be necessary to slip both the commutator end and the pinion end housing over the wheel fit to the center of the axle before the wheels are mounted, after which the split lining may be machined to fit the axle, at which time the housing may be slipped back in position by sliding it over the outside of the bronze lining. To do this, however, as will appear in the following description, it will be necessary to remove the wedge key used for tightening the linings within the housing until the lining is in its proper place.

The two following arrangements are adapted to accomplish these purposes.

Referring to Figures 1 and 2, the axle is shown at 1, on which is mounted the wheel 2. The bearing housing 3 has two diametrically opposite horizontal projections 4 and 7. An integral extension 6 is supported on the motor frame or end housing 6′ and comprises a concave portion which fits over the housing proper, and a horizontal extension 5, which lies adjacent to the extension 4 of the housing. The bores 4′ and 7′ provide sockets for clamping bolts, which hold the extension 6 in its place on the bearing housing. Depending from the bearing housing are two projections 8, in which is mounted the threaded rod 11, pivoted to one of the extensions at 10, and fitting within the notch 9 in the other extension. A nut 12, cooperating with a washer 13, having a small projection 14 fitting into the notch, as shown, serves to secure the threaded rod 11 in place. Mounted on the threaded rod is a slidable wedge key 16, having a notch 17 therein, within which the nut 15 is mounted. By threading the nut 15 back and forth upon the rod 11, the wedge key 16 may be caused to move longitudinally of the bearing. The bearing brass or lining 18 may be made of a single piece of material, having a longitudinal slot therein to form an interrupted cylinder, or the bearing brass may be made in two approximately semi-circular parts, each being a little less than a semi-circle, so that when they are fitted together, they form an interrupted cylinder. The reduced or tapered end 20 of the wedge key 16 is adapted to move backwards and forwards within the slot 19, formed in the bearing lining. The opposed edges of the

slots are tapered, so that as the wedge key moves in one direction it serves to expand the lining within the housing to tightly clamp it in place, and when moved in the opposite direction it serves to permit the lining to contract and become loose in the housing, so that it may be readily removed.

A modification is shown in Fig. 3, where the shaft 1 is shown as before, and the lining 18 is provided with the longitudinal slot 14, as above described. The wedge key 21 is rigidly secured to the threaded rod 22, which extends through the bearing housing, indicated this time at 24, and has mounted thereon, the nut 23, which cooperates with the housing 24 to draw the wedge 21 to the right, in which direction of motion it causes the lining 19 to expand into clamped relation with respect to the housing, as will be readily apparent. 18′ represents a spacing washer or ring which serves to space the housing from the wheel, and to prevent the entrance of dirt and grit to the bearing, and the escape of oil therefrom.

It will be seen from the foregoing description, that when it is desired to remove the bearing lining in the modification shown in Figures 1 and 2, the nut 12 and washer 13 may be removed, and the rod 11 swung down about its pivot to remove the wedge key out of the longitudinal slot in the bearing lining. The lining may then be slid longitudinally of the shaft, to aid in its removal. In the modification shown in Fig. 3, the nut 23 may be removed, and the wedge 21 and its extension 22 removed out of the housing along with the bearing lining.

In actual commercial operation, it has been found that this particular method of mounting the motors on the axle, has many practical advantages which make it far more desirable than the split housing type of motor support. With this type of construction, the bearings may be bored by machine to fit the individual axle bearing seat on which it is to be used, applied to the axle and clamped in place before the shipment is made of the wheel and axle equipment. It will be readily apparent, of course, that mounting bearings in the solid housing affords a very much more rigid construction from a mechanical standpoint than is secured in the split type of housing. This type of housing or bearing is made possible only through the use of my improved wedge key construction, since it would be otherwise very difficult to obtain the proper fit and the proper pressure between the axle bearing and the housing.

I am, of course, aware that many modifications and changes in the details of construction and relative arrangement of parts will readily suggest themselves to those skilled in the art, and I do not, therefore, desire to be limited to the particular construction disclosed herein, but rather to any construction embodying the principles of my invention, as I define them in the appended claims.

What I seek to secure by United States Letters Patent, is:—

1. In a bearing construction, the combination with a frame forming a solid bearing housing, of a bearing lining in said housing having a longitudinally extending slot completely interrupting said lining, said housing having a slot in alignment with the slot in said lining, movable means extending through the slot in said housing and adapted to move in the slot in said lining and means including a threaded rod pivotally mounted on said housing and a member on said rod and engaging said movable means to move the same in the slot in said lining to expand it into engagement with said housing.

2. In a bearing construction, the combination with a bearing housing, of a lining for said housing having a slot therein, a wedge adapted to move in said slot, a threaded rod pivotally mounted on said housing and a nut on said rod adapted to engage said wedge to move it in said slot.

3. In a bearing construction, the combination with a bearing housing, of a lining for said housing having a slot therein, a wedge adapted to move in said slot, a threaded rod pivotally mounted on said housing, a nut on said rod to engage in a notch in said wedge to cause the wedge to move and means engaging the free end of said rod and the housing to hold the rod in a position so that the nut engages the notch in said wedge.

In testimony whereof I have hereunto set my hand on this 21st day of July A. D., 1926.

JOHN S. McWHIRTER.