April 28, 1925.

1,535,221

C. C. HANSEN

SWIVEL MOUNTING FOR HOISTS

Filed March 12, 1924

2 Sheets-Sheet 1

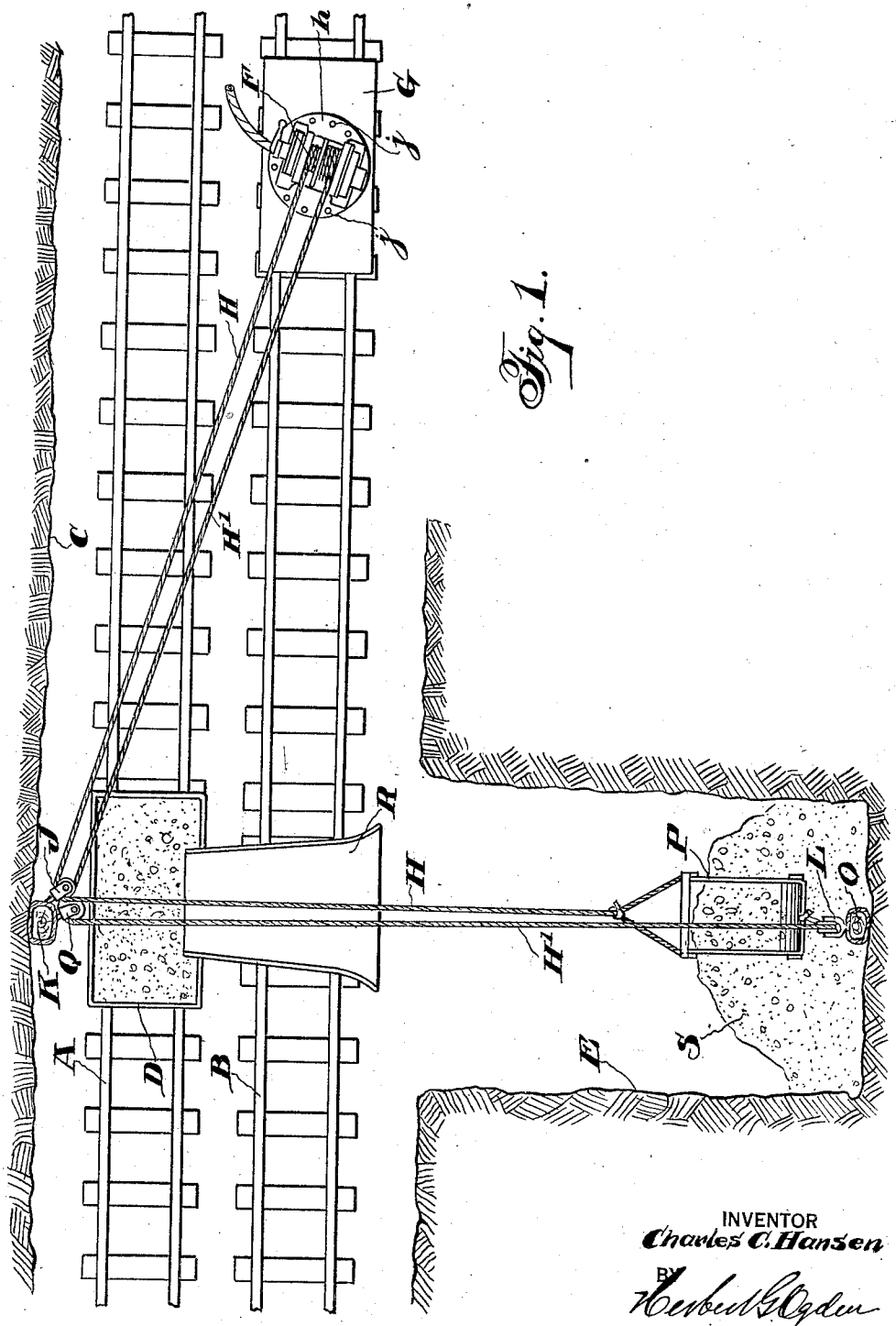

Fig. 1.

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2 Sheets-Sheet 2

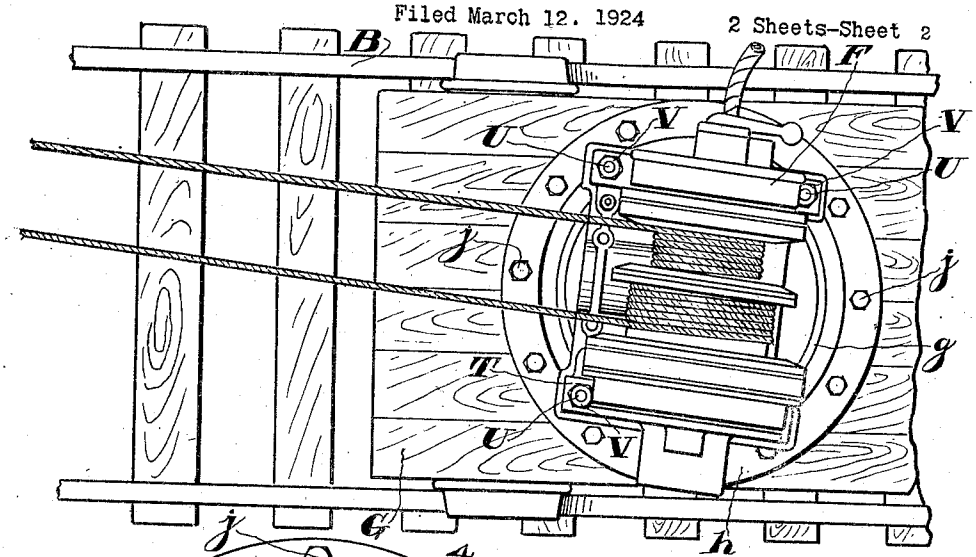

Fig. 2.

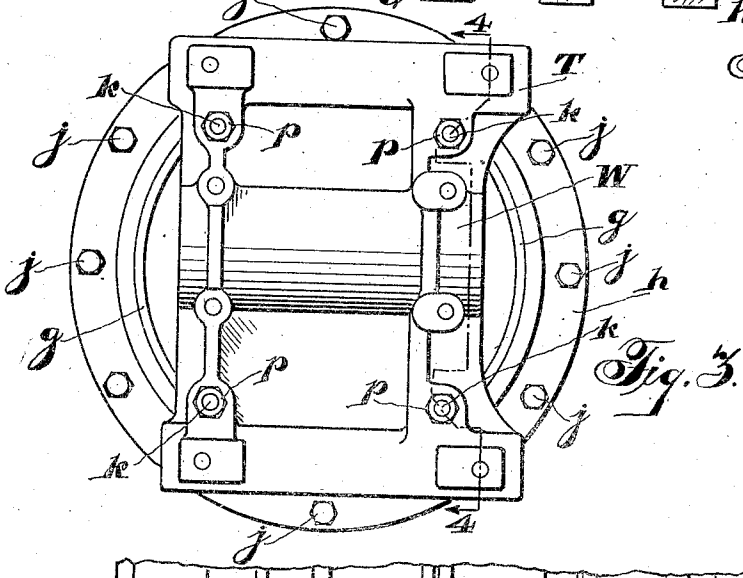

Fig. 3.

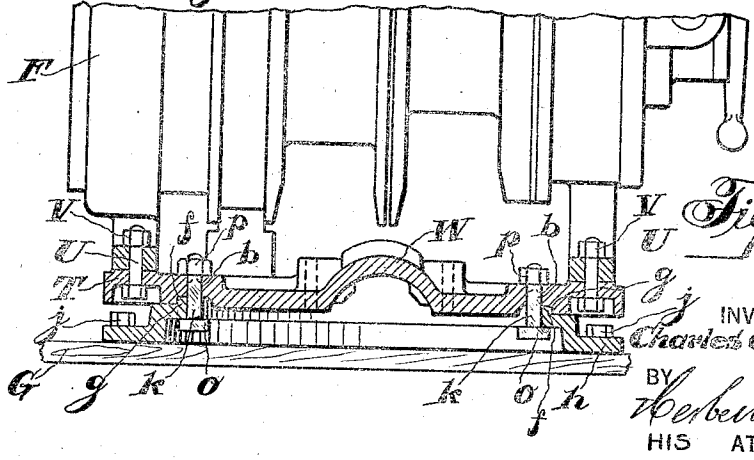

Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES C. HANSEN, OF EASTON, PENNSYLVANIA, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SWIVEL MOUNTING FOR HOISTS.

Application filed March 12, 1924. Serial No. 698,644.

To all whom it may concern:

Be it known that I, CHARLES C. HANSEN, a citizen of the United States, and a resident of Easton, county of Northampton, and State of Pennsylvania, have invented a certain Swivel Mounting for Hoists, of which the following is a specification accompanied by drawings.

This invention relates to a mounting for hoists which is adapted to be secured to supports of different characters and which is capable of being adjusted to any desired position about an arc of 360° in a horizontal plane.

Small, elastic fluid operated hoists are used in a variety of places for moving, lifting, hauling and handling jobs. They are particularly used in mines, clamped to various forms of supports for lowering, raising, hauling, dragging and for numerous other purposes.

In operating these hoists there are times when it is necessary to change the operative position of the hoist in a horizontal plane and heretofore this has been a tedious and cumbersome operation necessitating considerable time and trouble.

One object of this invention is to enable a mounting for a machine of the class above mentioned to be readily adjusted to any desired position in the working plane of the machine in a simple and improved manner.

Another object of the invention is to produce a mounting for a hoist which is composed of but few parts, is adapted to be readily assembled and disassembled, is comparatively inexpensive to manufacture and is sturdy and rugged in its construction.

A further object of the invention is to enable a mounting for hoists to be secured to a flat or curved support in a simple and convenient manner.

Further objects of the invention will hereinafter appear and the invention is shown in one of its preferred embodiments in the accompanying drawings, in which—

Figure 1 is a diagrammatic top plan view of part of a mine showing one method of "slushing" ore from a drift,

Figure 2 is a top plan view of a hoist mounted on a platform car,

Figure 3 is a top plan view of the mounting for a hoist shown in Figure 2,

Figure 4 is a vertical sectional view of the mounting with a hoist connected thereto, a part of the hoist being broken away.

Referring to the drawings and more particularly to Figure 1, one method of "slushing" is shown which is carried out underground in numerous mines. Two pairs of tracks A and B may extend into a tunnel C and small mine cars D are adapted to run on these tracks. It is often desirable to dig a drift E from the tunnel C and in order to save time and labor it has been found expedient to "slush out" or remove the earth and rock from these drifts mechanically. In accordance with the method of "slushing" shown, a fluid operated, double drum hoist F, which may be of the type shown in the patent to Ditson #1,421,183 granted June 27, 1922, is mounted on a platform car G, which may be prevented from moving on the tracks by any suitable means. A cable H is secured at one end to the haulage drum of the hoist F and extends around a pulley J, which is secured to a snatch-block K and the other end of the cable is attached to a scoop P. A cable H′ is secured to the opposite end of the scoop P and circles a pair of pulleys L and Q, which are secured to the snatch blocks O and K respectively, and is wound around the tail rope drum of the hoist F. The hoist F is so constructed that when one drum is driven by the motor, the other drum is free to rotate independently thereof. By driving the haulage drum and winding up the cable H, the scoop P is drawn towards the car D and by means of a slideway R, the scoop P discharges its load into the car D. In order to return the scoop P to the pile of ore S to refill it, the tail rope drum is driven to wind up the cable H′ and the haulage drum is free to rotate to release the cable H. In this manner the ore in the drift E may be "slushed" in a comparatively short time and with a minimum expenditure of time and labor.

It is often desirable to adjust the position of the hoist F about a perpendicular axis in a horizontal plane on the car G because the contour or shape of the tunnel or drift varies as the work proceeds or for other reasons and, in accordance with the present invention, the hoist F is preferably secured to a base plate T by bolts U and nuts V. The base plate T is in this instance rectangular in its general formation, and

is preferably formed with a curved portion W to enable the base plate T to be mounted on a corresponding surface if desired.

An annular guideway *f* is preferably formed in the bottom of the base plate T, and a guide in the form of an annular upwardly extending flange *g* is formed on the bed plate *h* and is adapted to extend into the guideway *f*. The bed plate *h* is preferably annular in its formation and is in this instance adapted to be secured to any flat surface, as the platform of the car G, by stud bolts *j*. The base plate T is adapted to rotate on the bed plate *h* through an arc of 360° and is guided in such movement by the flange *g* on the bed plate *h* which cooperates with the guideway *f* on the base plate T.

In order to prevent unseating of the base plate T when adjusting the hoist F to any desired position in a horizontal plane or to clamp the plates T and *h* rigidly together, bolts *k* which are in this instance rectangular in cross section, having heads *o*, are adapted to extend into rectangular holes *b* formed in the base plate T and are rotatable with said base plate. The heads *o* are adapted to bear against the under side of the flange *g* and nuts *p* are screwed onto the opposite ends of the bolts *k*. By tightening the nuts *p* on the bolts *k* the base plate T may be locked against movement relative to the bed plate *h*. Although the bolts *k* and the holes *b* are shown rectangular in formation, it is to be understood that they may take any other form without departing from the spirit of the present invention but it is preferable that the bolts *k* be prevented from turning in the holes *b* so that the nuts *p* may be readily tightened.

It will be observed that by this mounting, the hoist F may be adjusted to any desired position in a horizontal plane and may be securely mounted on a curved support or flat support by merely removing the bolts *k* and nuts *p* and so may readily accommodate itself to a variety of situations.

I claim:

1. In a hoist, the combination of a base plate having an annular guideway, a bed plate, an upwardly extending annular flange on said bed plate cooperating with said guideway and adapted to enable said base plate to be rotated about said upwardly extending flange, and means rotatable with the base plate to prevent unseating of the base plate and for clamping said bed plate and base plate together against rotation.

2. In a hoist, the combination of a base plate having an annular guideway, a bed plate, an upwardly extending annular flange on said bed plate cooperating with said guideway and adapted to enable said base plate to be rotated about said upwardly extending flange, and means to prevent unseating of said base plate while rotating, and for clamping said bed plate and base plate together against rotation, including bolts extending through said base plate and engaging said flange, said bolts being rotatable with said base plate.

3. In a hoist, the combination of a base plate having an annular guideway, a bed plate, and an upwardly extending annular flange on said bed plate cooperating with said guideway and adapted to enable said base plate to be rotated relative to said bed plate, said base plate being formed with a plurality of holes adapted to receive bolts to enable said base plate to be clamped to said bed plate, a flat support and the like.

In testimony whereof I have signed this specification.

CHARLES C. HANSEN.