(No Model.)

J. W. HYATT.

ROLLER BOX FOR SHAFT HANGERS.

No. 485,938. Patented Nov. 8, 1892.

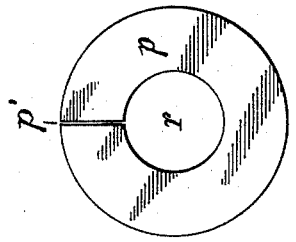

Fig. 3.

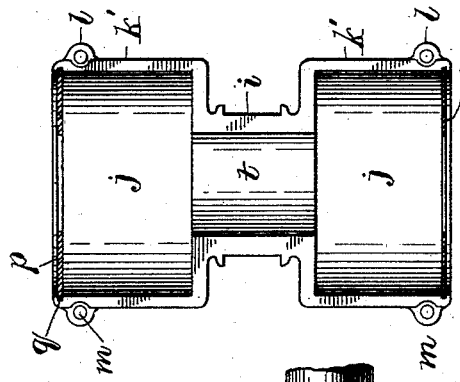

Fig. 4.

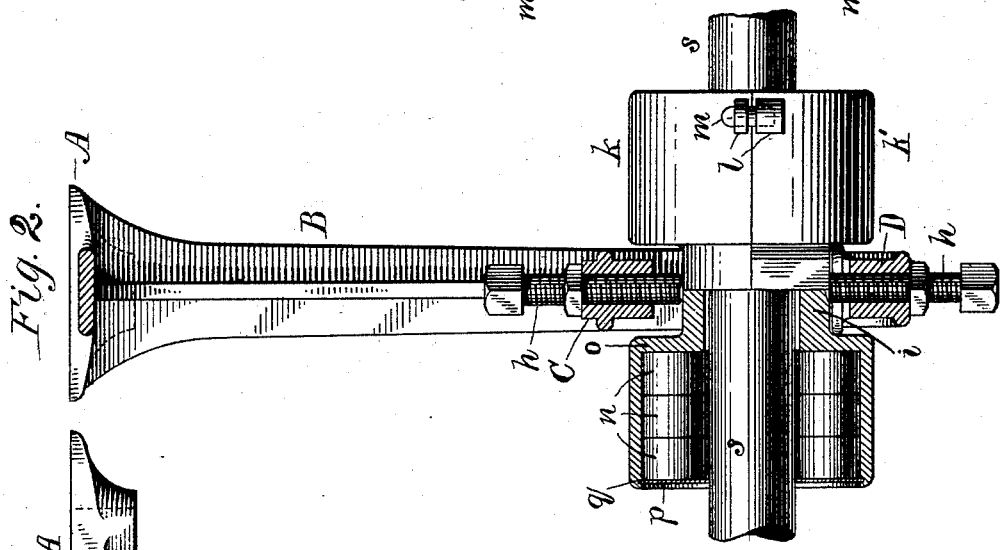

Fig. 2.

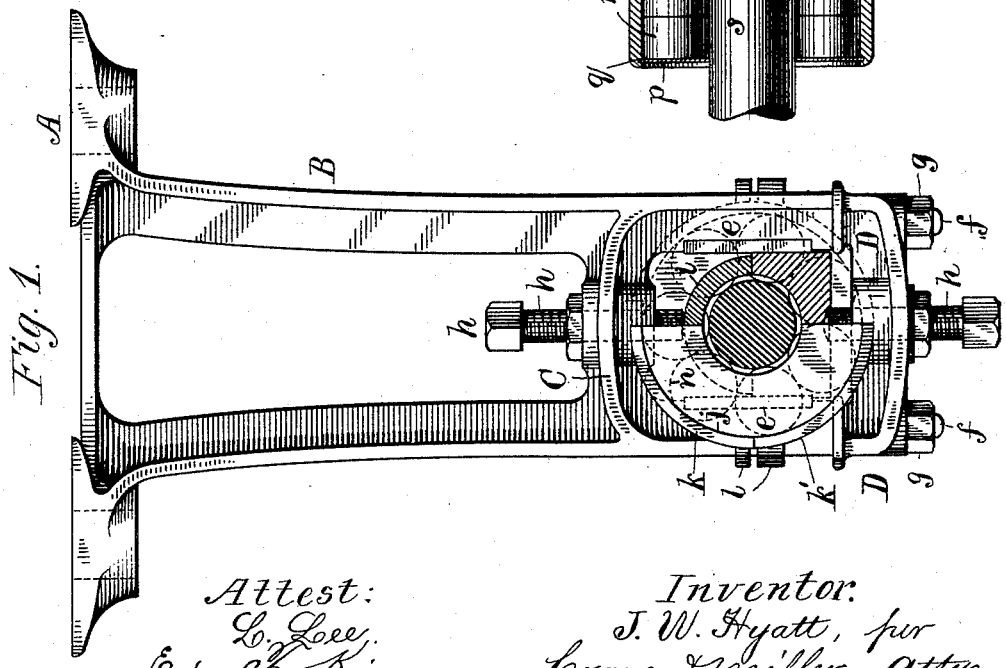

Fig. 1.

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UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY.

ROLLER-BOX FOR SHAFT-HANGERS.

SPECIFICATION forming part of Letters Patent No. 485,938, dated November 8, 1892.

Application filed May 17, 1892. Serial No. 433,382. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Roller-Boxes for Shaft-Hangers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to furnish a convenient means for applying antifriction-roll bearings to the shafting-hangers which are already in general use and which afford in most instances a very contracted space for the admission of the journal-box. For applying antifriction-rolls to such bearings I have devised a journal-box with a contracted waist adapted to fit between the vertical guides which are ordinarily provided in the bottom of a shafting-hanger, and I form each end of the box with an enlarged cylindrical chamber adapted to receive suitable antifriction-rolls. The contracted waist is formed with a clearance-passage through which the shaft may be inserted, and the rolls and roll-chambers are constructed to hold the shaft in the center of such clearance-space. The shaft when rotating in the box is thus sustained wholly by the antifriction-rolls and is supported without the necessity for any lubrication. To facilitate the introduction of the rolls or their examination in the roll-chambers without removing the box from the hanger, the end of the box is closed with a removable cover, which is preferably formed of a disk of thin metal fitted into a cylindrical groove near the end of the roll-chamber.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is an end view of a hanger with the journal-box shown in cross-section through the waist at one side of the center line. Fig. 2 is a side view of the hanger with the hanger and journal-box shown in section at the center line where hatched. Fig. 3 is an end view of one of the removable covers; and Fig. 4 is a plan of the lower half of the journal-box with the covers shown in place, both covers being shown in section at the center line.

A is the foot of the hanger, and B the legs united by a fixed cross-bar C. The legs below the cross-bar form vertical guides *e*, and a removable cross-bar D is attached to the lower end of the legs in the usual manner by bolts *f* and nuts *g*. Set-screws *h* are inserted through the cross-bars to clamp the top and bottom of the journal-box and to adjust the same vertically.

The box is formed with contracted waist *i*, having at its opposite ends the shells *k k'*, which form enlarges cylindrical chambers *j* and is divided horizontally into top and bottom sections, (lettered *k* and *k'* in Fig. 2,) which sections are provided with lugs *l*, having dowels *m* fitted in the same to hold the sections in line.

Rolls *n* are shown fitted in the roll-chamber in three sets of seven each, being held in place solely by their flat sides and their contact with the ends of the chamber. The inner end of the chamber is formed by a flat flange *o* upon each end of the waist and the outer end of the chamber is provided with an interior groove *q*, adapted to receive a disk-like cover *p*. Such cover is slit at one side at *p'*, as shown in Fig. 3, and is thus adapted to spring over the shafting in case the latter is already erected. The cover *p* is formed with holes in the middle a little larger than the shaft *s*, which is shown in the box in Figs. 1 and 2, and is thus readily slipped endwise upon the shaft for application to or removable from the journal-box. The waist *i*, as shown in the section of the waist in Fig. 1, is made of the same dimensions and strength as the ordinary journal-box, which would be fitted between the guides *e*, and is thus held securely in place when inserted between the guides and the cross-bars C and D and clamped by the set-screws *h*.

In applying the journal-box to the hanger before the shaft is inserted the rolls may be fitted within the chambers and secured therein by fitting the covers *p* into place, and the box may in its entirety be secured in the hanger and the shaft inserted through the same. To facilitate the insertion of the shaft, the set-screws *h* may be widely separated and the top *k* may be lifted somewhat from the bottom *k'* of the box. The top and bottom of the box may also be fitted within the hanger and the shaft placed within the same with the covers *p* slipped upon the shaft, after which the rolls *n* may be readily inserted in the

open ends of the boxes and the covers inserted in their places.

To facilitate the fitting of the cover into the groove *q*, the top of the box may be lifted a little from the bottom. It is not material how the rolls be held within the box, and it is obvious that the outer end of the box may be formed integral with the shell *k k'* the same as the flange *o*.

The arrangement of the loose rolls in several contiguous series within the box is claimed in my patent, No. 385,266, dated June 26, 1888; but other arrangements of antifriction-rolls may be used in connection with my journal-box for hangers, as the essential feature of the journal-box consists in the contracted waist, with a clearance-passage *t* for the shaft, and provided at opposite ends with enlarged cylindrical chambers adapted to receive antifriction-rolls. With this construction the shaft is supported upon two sets of rolls and is practically sustained by two bearings separated by the length of the contracted waist. The shaft is thus firmly secured, and as it is free from contact with any stationary part of the bearing it is adapted to run without lubrication, and may thus be operated for a long time without requiring any attention.

By the peculiar form of the journal-box, with a contracted waist in the middle and enlarged cylindrical chambers at the ends, I am enabled to supply an antifriction-roll bearing to almost any ordinary hanger without making any change whatever in the hanger. In constructing such an antifriction-journal box for a hanger the waist is made of suitable width to fit between the guides *e* and of suitable length to sustain the flanges *o* and the shell *k k'* upon opposite sides of the hanger-legs. The antifriction-journal box thus constructed can then be substituted for the box previously in the hanger with very little labor, and then furnishes a corresponding support for the revolving shaft. As hangers adapted for a certain size of shaft are commonly made of the same dimensions between the legs, it is obvious that the antifriction-journal box for a given shaft will be adapted to fit a considerable variety of hangers now in use.

The invention is equally useful in the construction of new hangers, as the contracted waist permits the application of large and durable antifriction-rolls to the hanger-box without enlarging the space between the guides *e*, which would greatly increase the width of the hanger and render it clumsy and heavy in appearance.

In the section of the waist in Fig. 1 it will be noticed that the lower half or bottom of the waist is made with vertical sides externally, which prevent it from rotating between the guides, while the top of the waist is made cylindrical externally, which form adapts it for insertion between the guide and a shaft in any case where the shafting and hangers are already erected and it is desired to apply the roller-box thereto. In such case the top of the box is wholly separated from the bottom and is first applied in an inverted position to the shaft and then turned around upon the same into its normal position. (Shown in Fig. 1.) The bottom of the box is then inserted between the guides, and the cross-bar D is secured in its place by the nuts *g*. In cases where the shaft is already erected the slip *p'* in the cover *p* permits the application of the covers to the shaft by twisting the edges adjacent to the notch a sufficient distance apart to slip over the shaft until the latter is in the central hole *r*. The edges are then brought into contiguity, thus flattening the cover and adapting it to slip into the groove *q*, which is done by slightly separating the parts *k k'* of the shell. The clamping of the parts together by the screw *h* then secures the covers rigidly in place. It will be noticed in Fig. 1 that while the contracted waist is adapted to fit between the guides in any ordinary hanger the cylindrical shells at the ends of the box which contains the rolls *n* are no greater in diameter than the external width of the hanger. The roller-box does not therefore appear of any greater dimensions than the hanger itself, even if it be larger than the hanger-box for which it is substituted.

It is obviously immaterial how the top and bottom of the shell are held in line with one another, and bolts or other means may be used in place of the dowels for such purpose.

By providing the box with a contracted waist having enlarged cylindrical shells at its opposite ends I am enabled to use antifriction-rolls of relatively-large diameter without enlarging the hanger, and thus secure a more durable construction than where very small rolls are used.

I am aware that antifriction-rolls have been applied to hangers of novel construction; but I am not aware that any journal-bearing has been constructed with antifriction-rolls at the opposite ends and provided with a waist adapted to fit the guides in an ordinary hanger, so as to utilize the hangers already extensively in use for supporting and adjusting the journal-box.

Wherever guides are used in an ordinary hanger, the journal-box extends between them and sufficient space exists to admit the contracted waist of my roller journal-box. My invention thus furnishes a convenient, economical, and effective means of applying an antifriction-journal to the shafting-hangers already in use.

I do not claim the mere application of a roller journal-box to a hanger, as I am aware that is old; nor do I claim a removable cover as new upon a journal-box, but the particular means of applying and retaining the cover removably, as shown and described herein.

Having thus set forth the nature of my invention, what I claim herein is—

1. The combination, with a hanger having the guides *e* and the cross-bars C D, of the roller journal-box divided horizontally and having the contracted waist *i* fitted to the guides *e* and provided at opposite ends with the enlarged cylindrical chambers *j* and anti-friction-rolls, and the cross-bars having means for adjusting the box vertically between the guides, substantially as herein set forth.

2. The combination, with a hanger having the guides *e* and the cross-bars C D, of the roller journal-box divided horizontally and having the contracted waist *i* fitted to the guides *e* and having at opposite ends the enlarged cylindrical chambers provided with grooves *q* in their outer ends, and the removable covers *p*, fitted in the grooves *q* and split at one side, and thereby adapted to spring over the shaft, as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN W. HYATT.

Witnesses:
FRANK T. MORTON,
THOMAS S. CRANE.