J. D. WAERN.

SHAFT HANGER OR PLUMBER BLOCK.

APPLICATION FILED OCT. 1, 1918.

1,344,527.

Patented June 22, 1920.

2 SHEETS—SHEET 1.

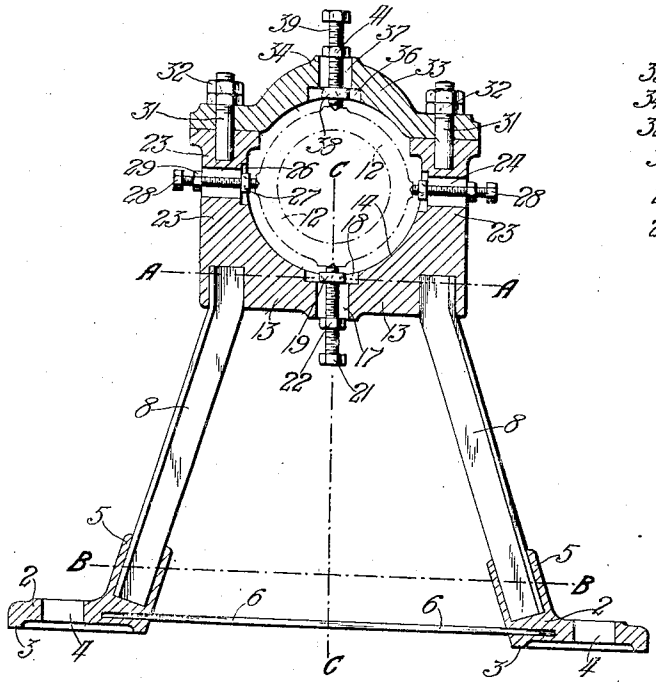


Fig. 1.

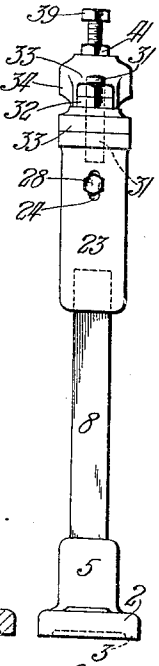


Fig. 2.

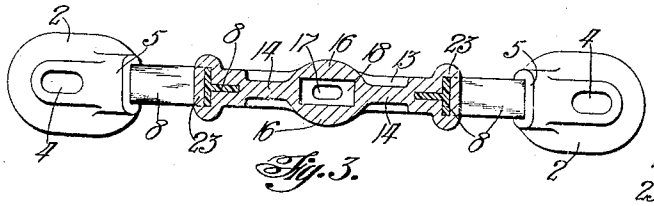


Fig. 3.

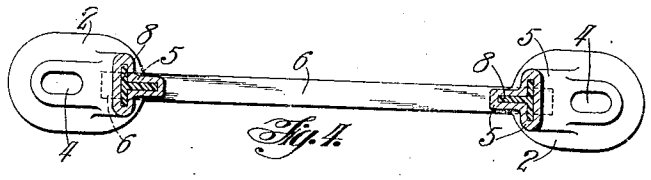


Fig. 4.

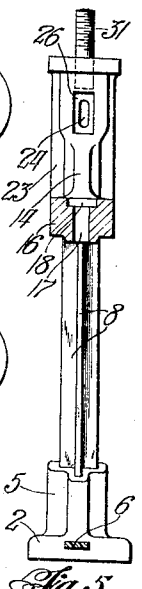


Fig. 5.

Inventor.

James D. Waern.

Atty.

J. D. WAERN.

SHAFT HANGER OR PLUMBER BLOCK.

APPLICATION FILED OCT. 1, 1918.

1,344,527.

Patented June 22, 1920.

2 SHEETS—SHEET 2

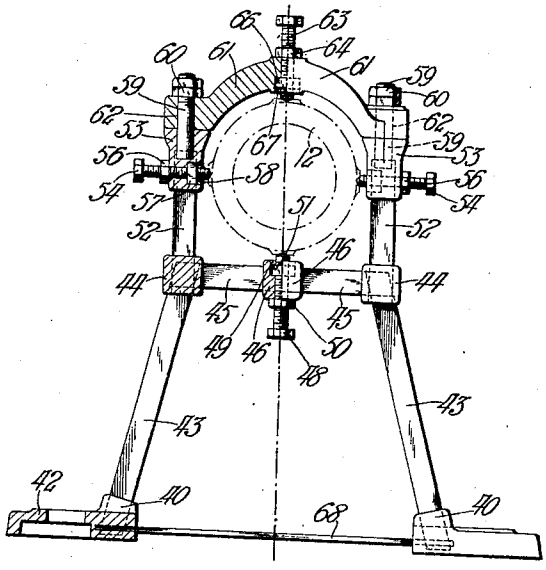


Fig. 6.

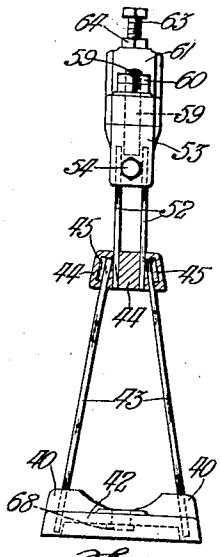


Fig. 7.

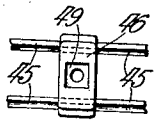


Fig. 8.

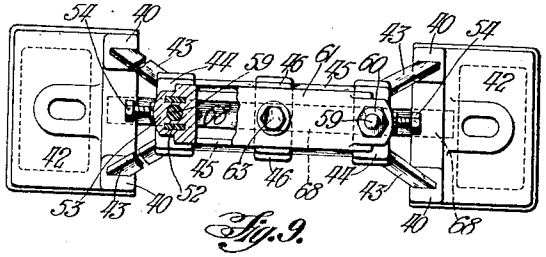


Fig. 9.

Inventor.

James D. Waern.

Atty.

UNITED STATES PATENT OFFICE.

JAMES DICKSON WAERN, OF SOUTH MELBOURNE, MELBOURNE, VICTORIA, AUSTRALIA.

SHAFT-HANGER OR PLUMBER-BLOCK.

1,344,527. Specification of Letters Patent. **Patented June 22, 1920.**

Application filed October 1, 1918. Serial No. 256,403.

To all whom it may concern:

Be it known that I, JAMES DICKSON WAERN, a subject of the King of Sweden, and a resident of the city of South Melbourne, a suburb of the city of Melbourne, in the county of Bourke, State of Victoria, Commonwealth of Australia, (whose post-office address is corner of City Road and Cecil street, in the said city of South Melbourne,) have invented certain new and useful Improvements in and Connected with Shafting-Hangers or Plumber-Blocks, of which the following is a specification.

This invention relates to supports for rotating shafting which are either suspended from a roof, ceiling, wall or upright, or rest upon the ground or extensions above the same.

In most of the constructions hitherto used for this purpose the frame or bearing which surrounds the shaft has been cast in one with the legs or supports connecting the bearing with the ceiling, floor or other surface from which the shaft is hung or supported. This has necessitated the construction of special patterns and a special casting according to the distance of the shaft from the floor or surface to which it is attached. The foregoing method of casting in one piece is therefore costly owing to the variety of patterns required for different lengths of legs of the supports necessitated by different dispositions of the shafting. Furthermore the legs and other projecting parts of such castings are extremely liable to fracture under knocks or strains.

The object of this invention is to provide a combination or composite cast metal and wrought metal or steel hanger or support which is extremely strong and is also light and cheap to manufacture. The legs and certain other parts are made of wrought metal or steel which will endure excessive strains without danger of fracture. By the invention it is possible to reduce the cost of an installation as the cast metal parts may be standardized and yet made to suit different requirements. The wrought metal or steel parts are variable in length and shape and thus enable different sizes of hangers to be readily built up from castings of standard size and shape. In the construction of these hangers or supports a large number of patterns is therefore not required as any variation in the spread of the feet or the distance of the bearing from said feet may be arranged for by simply altering the length of the wrought metal or steel legs. The mold boxes for the cast metal parts are thus adaptable to the manufacture of hangers of different sizes.

Referring to the drawings which form part of this specification:—

Figure 1 is a front view of the preferred form of the invention. All of the cast metal parts are shown in section, while the wrought iron or steel parts are unsectioned.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a cross section on line A—A of Fig. 1, parts being removed for convenience of illustration.

Fig. 4 is a cross section on line B—B of Fig. 1.

Fig. 5 is a vertical section on line C—C of Fig. 1, the cap and other parts being removed for convenience of illustration.

Fig. 6 is a front view of a modification one-half showing the cast metal parts in section and the other half showing all the parts in elevation.

Fig. 7 is a part sectional side view of Fig. 6.

Fig. 8 is a detail plan of a thrust block and portion of the wrought iron or steel cross bars on which it is cast.

Fig. 9 is a part sectional plan of Fig. 6.

In all views, the wrought metal or steel parts are shaded to better distinguish them from the cast metal parts.

As seen in Figs. 1 to 5 the invention is in the form of a hanger having two feet 2 each of which is a counterpart of the other. Each is of cast metal and is provided underneath with a border or lip 3. An elongated hole 4 is made through each foot to accommodate the holding bolts and from each foot protrudes an extension 5.

Between the two feet extends a wrought iron or steel tie bar 6, this may be round, square, rectangular or of other section and its ends pass into the cast feet as shown.

Outstanding from the extensions 5 are two legs 8 of wrought iron or steel. These can be of any suitable section, preferably T section as shown. The inner or lower end of each leg passes into one of the extensions 5. The length of the legs depends upon requirements.

The outer or upper end of each leg 8 passes into a frame or junction piece which accommodates the bearing ring 12 as shown in broken lines. The frame or junction

piece is a casting and includes a bridge 13 having reinforcing webs 14. In the center of the bridge is a central enlargement 16. Through this enlargement is a round ended elongated minor hole 17 adjoining which is a square ended elongated major hole 18.

In the major hole 18 is situated a square nut 19 through which passes an adjusting screw 21 locked by a locking nut 22.

Extending from the bridge 13 are sides 23. In each of these sides is a minor elongated round ended hole 24 and a major elongated square ended hole 26. In each of the major holes 26 is a square nut 27 on an adjusting screw 28 which is locked by a locking nut 29.

Extending from the sides 23 are wrought iron or steel studs 31 the inner ends of which pass within the sides of the frame or junction piece. Nuts 32 engage the threaded outer ends of the studs.

In combination with the foregoing is used a cast metal cap 33 having a central enlargement 34. Through this enlargement is formed a square ended elongated major hole 36 and a round ended elongated minor hole 37. A square nut 38 is placed in the square ended hole 36 through which passes an adjusting screw 39 locked by a locking nut 41. The inner ends of all the adjusting screws engage the bearing ring 12 for the proper alinement of the shaft.

In the modification seen in Figs. 6 to 9 the feet 42 are provided with twin extensions 40 and are each cast upon the lower or inner ends of two wrought iron or steel legs 43. Cast upon the upper or outer ends of each pair of legs is a cast iron junction block 44. Uniting the two opposite junction blocks 44 are two wrought iron or steel cross bars 45. These bars as well as the legs 43 may be of any suitable section but preferably are of the flat rectangular section shown.

In the middle of the cross bars and cast around the same is a cast metal thrust block 46. Through the thrust block is a hole passing an adjusting screw 48. Around the said adjusting screw is a lock nut 50. Formed in the cast metal thrust block is a square hole 49 to accommodate a square nut 51 on the inner end of the adjusting screw 48.

Into each junction block 44 passes the inner or lower ends of a pair of wrought iron or steel extension bars 52. The outer or upper ends of said extension bars have cast around them outer junction blocks 53. Through each outer junction block is a threaded hole to accommodate an adjusting screw 54. On each adjusting screw is a lock nut 56 and a square nut 57 which latter is accommodated by a square hole 58 formed in the outer junction block. Passing into each outer junction block 53 is the inner end of a wrought iron or steel stud 59 around which are nuts 60.

In combination with the foregoing is used a cast metal cap 61 having holes 62 to pass the studs 59. The cap is also provided with a central threaded hole to pass an adjusting screw 63. Around the adjusting screw 63 is a lock nut 64 and a square nut 66, the latter being accommodated by a square hole 67 formed in the cap.

Uniting the feet 42 is a wrought iron or steel tie bar 68 the ends of which extend into the cast metal of the feet as shown and securely brace them together.

To construct a hanger as seen in Figs. 1 to 5 the legs 8 are first cut from T iron or other such suitable material, to the desired length according to the distance the shafting is disposed from the feet 2.

The legs, together with the tie bar 6 and the studs 31 which are all composed of wrought iron or steel are then laid in their proper relative positions within the mold boxes and held in such positions by any suitable means. The molten metal to form the castings is then poured into the molds to form the feet and the frame or junction piece which accommodates the bearing. When this metal has cooled off the legs, the tie bar, and the studs 31 will be firmly embedded in the castings and a hanger is produced which is cheaper and stronger than the ordinary cast iron structure. The legs 8 may be of ordinary stock material and to form hangers of different heights, it is merely necessary to cut the legs longer or shorter as desired, the same patterns being usable for the cast parts in many different cases where the spread of the feet or the distance of the bearing frame from said feet may vary. The elongated holes to accommodate the adjusting screws are formed during casting and no machining or thread cutting tools is therefore necessary for the reception of the adjusting screws which are engaged and supported by their respective nuts.

To construct a hanger as in Figs. 6 to 9, the four legs 43 are cut from wrought iron or steel to the desired length and are inserted in the mold boxes together with the cross bars 45, the extension bars 52, the studs 59 and the tie bar 58 all of which are of wrought iron or steel and are disposed in their proper relative positions as shown. The metal to form the castings 42, 44, 46 and 53 is then poured into the molds, provision being made to accommodate the adjusting screws and their square nuts. When the castings have cooled off the wrought metal or steel parts will be thoroughly incorporated therein and upon the addition of the cap 61, which is cast separately, the hanger is ready for use.

It will be obvious that the shape of the

hangers or supports may vary considerably for different requirements, without departing from the nature, spirit and scope of the invention as defined by the appended claim.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

A composite unitary shaft support or hanger having the height defining portions of wrought material and the bearing portions of cast material united with the height defining portions by being cast around the latter, whereby the parts of the structure more largely subjected to strain and liability of fracture are inherently resistant thereto, and the bearing parts subjected to wear inherently more resistant thereto and substantially standardized without regard to the height defining portions.

In testimony whereof I affix my signature.

JAMES DICKSON WAERN.

Witness:

CECIL M. LE CLASTERN.