

Nov. 11, 1924.

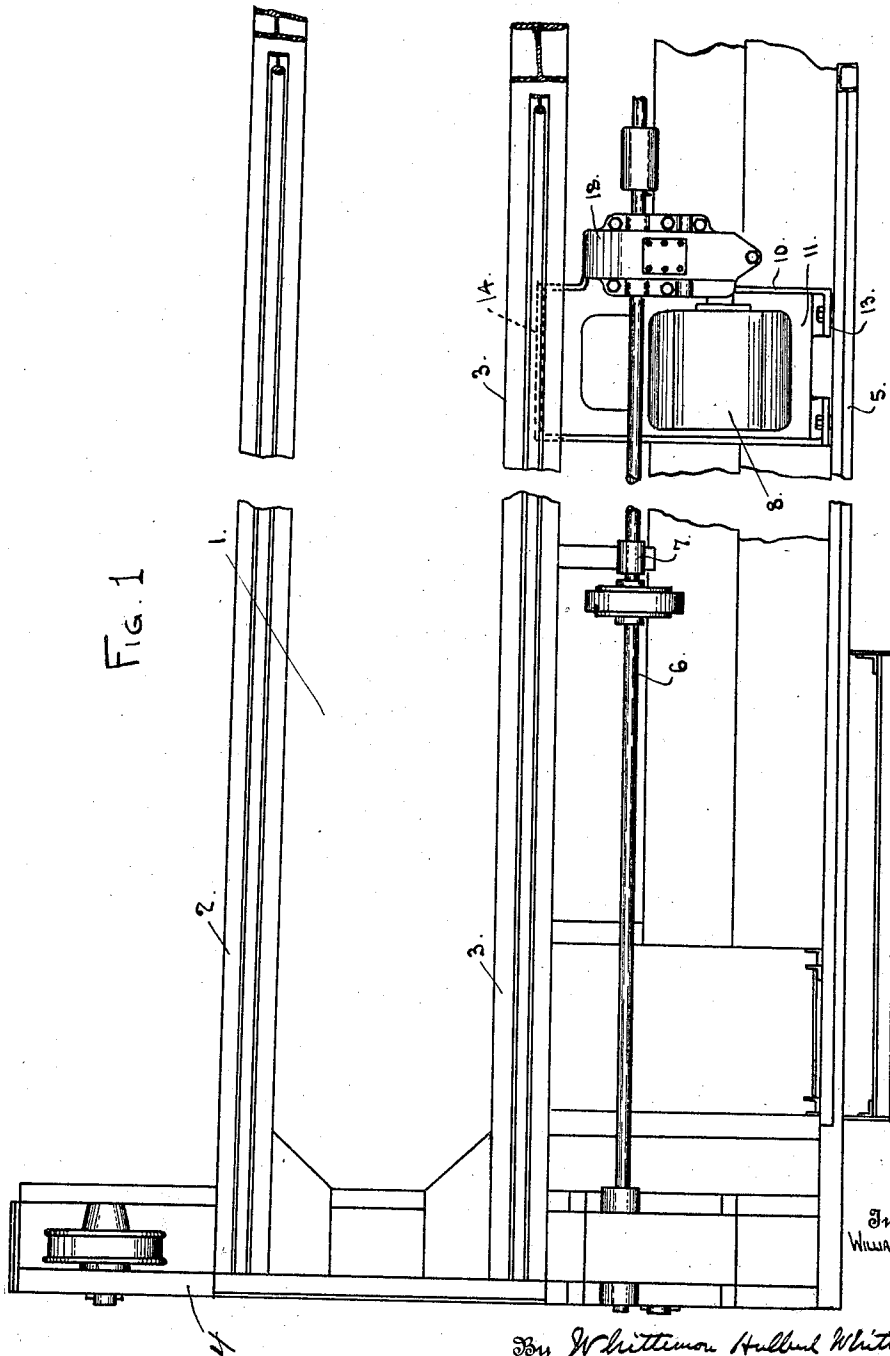
W. ROBERTSON

1,514,931

CRANE

Filed May 22, 1922

2 Sheets-Sheet 1



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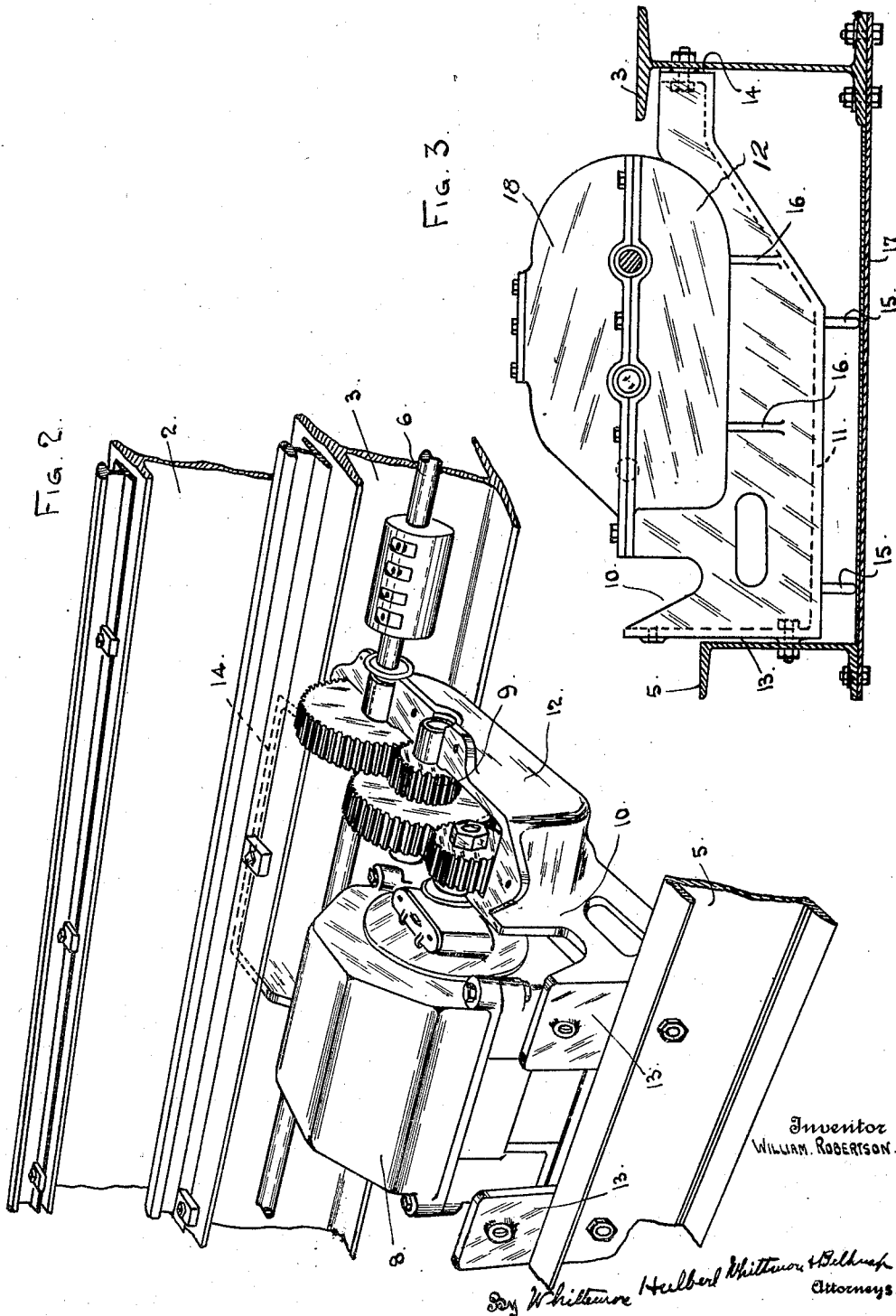
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UNITED STATES PATENT OFFICE.

WILLIAM ROBERTSON, OF DETROIT, MICHIGAN, ASSIGNOR TO NORTHERN ENGINEERING WORKS, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

CRANE.

Application filed May 22, 1922. Serial No. 562,919.

To all whom it may concern:

Be it known that I, WILLIAM ROBERTSON, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Cranes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to cranes of the electric travelling type and has for its object the provision of a novel combined support for the bridge motor and housing for the gearing between the motor and the bridge drive shaft extending longitudinally thereof. Other objects of the invention reside in adjustably supporting this combined support and housing upon the bridge of the crane, and in the novel features of construction and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:

Figure 1 is a plan view of a portion of an electric travelling crane embodying my invention;

Figure 2 is a perspective view of a part thereof;

Figure 3 is a side elevation of the combined motor support and gear housing showing the same secured in place.

The electric travelling crane has the bridge 1 formed by the parallel main girders 2 and 3, the trucks 4 at opposite ends of the bridge and supporting the same, and the auxiliary girder 5 extending parallel to and spaced from the main girder 3. The crane is propelled over its tracks through the drive shaft 6 extending longitudinally of the bridge between the main girder 3 and auxiliary girder 5, this shaft being journaled in brackets 7 upon the main girder. 8 is an electric motor connected to the drive shaft 6 through the reduction gearing 9.

For supporting the electric motor 8 and at the same time housing the reduction gearing 9, I have provided the combined support and housing 10 having the base 11 for carrying the motor and the integral housing 12 at one side of the base for inclosing the reduction gearing. Extending from the base 11 are the forward flanges 13 and the rearward flange 14, which have

bosses adapted to abut against the webs of the auxiliary girder 5 and main girder 3 respectively. Depending from the base 11 are the transverse flanges 15 which serve to reinforce the base. There are also the webs 16 extending between the bottom of the housing 12 and the adjacent side of the base. The housing 12 is split in the plane of the axes of the gears of the reduction gearing, and its upper part or cover 18 is removably secured to the lower part by suitable means.

The combined motor support and housing is adjustable vertically of the bridge, its forward and rearward flanges being engageable with the auxiliary and main girders in different positions of vertical adjustment, and being adapted to be secured thereto in these positions as by bolts. This adjustment is made possible by removing the plate 17 and lowering the combined support and housing, or by raising the auxiliary and main girders, so that the bolts through the auxiliary girder 5 engage the upper bolt holes of the forward flanges 13 and the bolt hole in the rearward flange 14 registers with an opening in the main girder 3 which is not shown but which lies in substantially the same horizontal plane as the opening in the auxiliary girder 5, to receive the bolt.

The combined support and housing is also carried upon the bridge by means of the plate 17 secured to the lower flanges of the auxiliary and main girders, the depending flanges 15 of the combined support and housing being engageable with this plate in one position of vertical adjustment of the combined support and housing relative to the bridge or being carried upon the plate through intermediate shims.

With this arrangement, as described, the combined support for the electric motor and housing for the reduction gearing between the electric motor and the crane driving shaft serves to reinforce the bridge of the crane and at the same time provides a compact arrangement whereby the motor with the reduction gearing may be more quickly assembled. Furthermore, the compact support and housing is vertically adjustable relative to the bridge to provide for various limited differences in construction. Also, the cover of the housing por-

tion of the combined support and housing is removable to permit of ready access to the reduction gearing.

What I claim as my invention is:

- 5 1. In an electric travelling crane, the combination with a main girder, of an auxiliary girder extending substantially parallel thereto, a drive shaft extending longitudinally of said main girder in between
10 said main girder and auxiliary girder, an electric motor, gearing between said electric motor and drive shaft for driving the latter from the former, and a combined support for said motor and housing for said gearing
15 between said main and auxiliary girder and directly carried by said girders.
2. In an electric travelling crane, the combination with the bridge and trucks at opposite ends thereof, of a drive shaft extending
20 longitudinally of the bridge, an electric motor, gearing between said motor and drive shaft for driving the latter from the former, and a combined support for said motor and housing for said gearing adjustably mounted
25 upon said bridge.
3. In an electric travelling crane, the combination with a main girder and an auxiliary girder extending substantially parallel thereto and spaced therefrom, of a drive
30 shaft extending substantially parallel to and between said girders, an electric motor, gearing between said motor and drive shaft for driving the latter from the former, and a combined support for said motor and housing
35 for said gearing adjustably vertically secured at its opposite ends to said girders.
4. In an electric travelling crane, the combination with a main girder and an auxiliary girder extending substantially parallel
40 thereto and spaced therefrom, of a drive shaft extending substantially parallel to and between said girders, an electric motor between said girders, gearing between said

motor and drive shaft for driving the latter from the former, and means for supporting
45 said motor and inclosing said gearing comprising a base and an integral housing for the lower portion of said gearing, and also a removable cover cooperating with said
50 housing, and means for adjustably supporting said base upon said girders.

5. In an electric travelling crane, the combination with a main girder, of an auxiliary girder extending substantially parallel
55 thereto, a drive shaft extending substantially parallel to and between said girders, an electric motor, gearing between said motor and drive shaft for driving the latter from the former, a combined support for
60 said motor and housing for said gearing comprised of one integral piece forming the support for said motor and a base and housing for the lower portions of said gearing, a
65 removable cover cooperating with the housing portion of said integral piece, and means for adjustably supporting said support and housing upon said girders.

6. In an electric travelling crane, the combination with a main girder, of an auxiliary girder extending substantially parallel
70 thereto, a drive shaft extending substantially parallel to and between said girders, an electric motor, gearing between said motor and drive shaft for driving the latter from the former, a combined support for
75 said motor and housing for said gearing comprising a base with reinforcing flanges thereunder, an integral housing for the lower portion of said gearing, with reinforcing webs extending between the bottom
80 of said housing and the top of said base, a removable cover cooperating with said housing, and means for adjustably supporting said base upon said girders.

In testimony whereof I affix my signature.
WILLIAM ROBERTSON.