Nov. 24, 1936. W. D. HAMERSTADT 2,062,128

PIVOTAL MOUNTING FOR PULLEY STRUCTURES

Filed Aug. 16, 1935

FIG. - 1

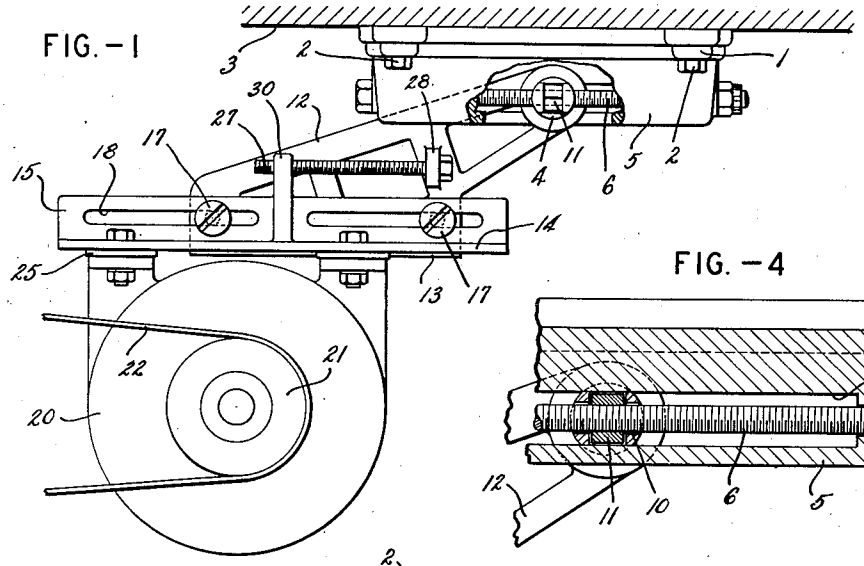


FIG. - 4

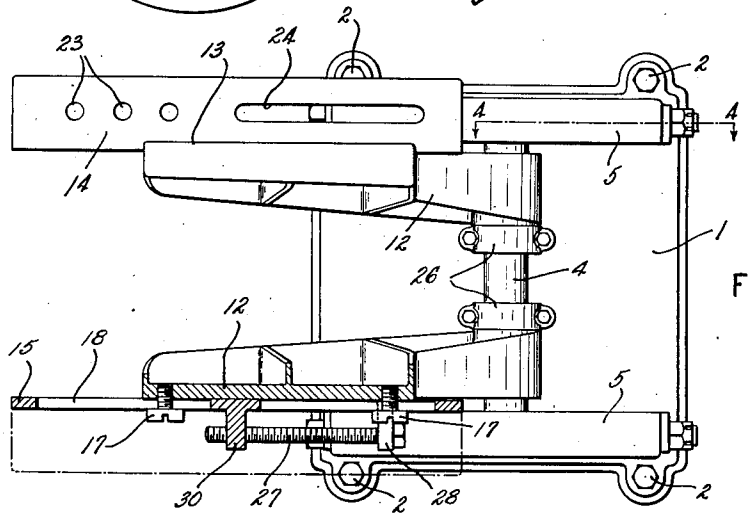


FIG. - 2

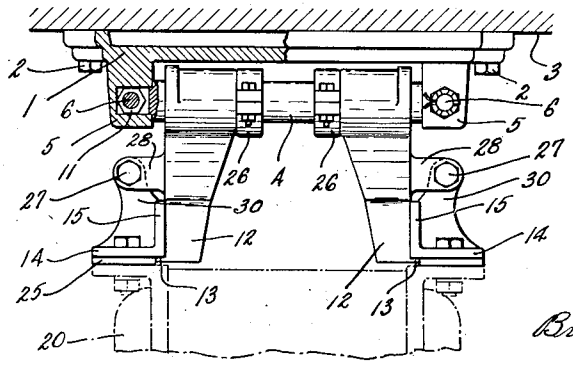


FIG. - 3

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PIVOTAL MOUNTING FOR PULLEY STRUCTURES

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4 Claims. (Cl. 248—17)

This invention relates to pivotal mountings for pulley structures and more particularly, to ceiling mountings for pulley-carrying electric motors.

In certain industries, the use of ceiling line shafts is preferable to that of individual motor drives, but the difficulty has been to obtain for such line shafts, drives which are efficient and dependable.

It is therefore the general object of the present invention to provide for the driving motor of a ceiling line shaft a pivotal mounting which not only insures for such line shaft a drive which is efficient and dependable but which also insures for such driving motor ease and simplicity of adjustment.

More specific objects of the present invention will appear from the following description of one embodiment thereof, reference being had to the accompanying drawing in which

Fig. 1 is a side elevation of a ceiling mounting for the driving motor of a ceiling line shaft, said mounting embodying the invention here involved; Fig. 2 is a bottom plan view of said mounting, parts thereof being broken away and in section to more clearly illustrate certain details of its construction; Fig. 3 is a rear elevation of said mounting, parts thereof being broken away and in section and a portion of the motor carried by the mounting being shown in dot-dash lines; and Fig. 4 is a detail vertical section of parts of said mounting, the section being on the line 4—4, Fig. 2.

In said drawing, 1 designates the metal base of the present improved ceiling mounting, said base being of generally flat form and of any suitable size and shape. As here shown, the base 1 is of generally square shape and is provided at each of its four corners with a suitable aperture to receive a suitable bolt 2 by means of which the base is rigidly secured to a ceiling or other overhead support 3.

Pivotally associated with said base are the two motor-carrying arms of the present mounting, and in the embodiment of the invention here illustrated, said arms are suitably secured, in a manner to be hereinafter described, to a transversely disposed pivot rod 4 with which said base is adjustably provided. Extending longitudinally along the two side edge portions of said base and supported by and enclosed within suitable housings 5, with which said base is integrally or otherwise suitably provided, are two elongated members, here shown as adjusting screws 6, between which said pivot rod 4 transversely extends and on which its end portions are adjustably mounted. In the ends of the two housings 5 are suitable apertures 7 through which extend the end portions of the two adjusting screws 6, and in the inner side walls of said housings are suitable longitudinally disposed slots 8, one in each housing, through which extend the end portions of the pivot rod 4. Heads on the front ends of said adjusting screws enable them to be readily turned for adjustment of said pivot rod and nuts on the rear ends of said screws enable them to be removably maintained in the base housings therefor.

In the particular embodiment of the invention here illustrated, the end portions of the pivot rod 4 are bifurcated and are provided with transversely disposed unthreaded openings 10 through which extend the two adjusting screws 6. To effect adjustment of said pivot rod by turning movement of either or both of said screws, the bifurcated end portions of said pivot rod have associated therewith suitable nuts 11 which are threaded on said screws, there being one such nut on each screw arranged between the two parts of one of the bifurcated end portions of said pivot rod. Rotation of said nuts is effectively prevented by the base 1 and its screw housings 5, so that turning movement of both screws effects translational adjustment of the pivot rod 4 longitudinally of said base, for initially effecting proper belt tension, and turning movement of one screw only effects rotational adjustment of said rod, about the adjacent end portion thereof, for effecting proper belt tracking, all as will be readily understood.

As will be apparent from an examination of my prior Patent No. 1,935,878, granted November 21, 1933 for a Pivotal mounting for pulley structures, the two motor-carrying arms of the present ceiling mounting are the parts which distinguish it from the floor or wall mounting of my aforesaid patent.

In order to enable the motor on the present mounting to be located in substantially the same horizontal plane as the ceiling line shaft which it is to drive, and hence to have, for convenient access thereto, sufficient clearance relative to the ceiling or other support 3 from which it is suspended, and to also enable adjustment of said motor to be easily, simply and quickly made, by one man working overhead from a ladder or the like, the two motor-carrying arms of said mounting are of special construction, each such arm comprising a strong and sturdy bracket member and a strong and sturdy angle iron member associated therewith.

As shown in the accompanying drawing, the

bracket member 12 of each motor-carrying arm has its upper end mounted on the pivot rod 4, between its adjusting screws 6, for pivotal movement about said rod and for slidable adjustment therealong. On its lower end portion, each such bracket member is provided with an outwardly extending and generally horizontally disposed ledge 13, preferably formed integrally therewith and firmly supporting the correspondingly extending and correspondingly disposed bottom portion 14 of the angle iron member associated therewith, the vertically disposed portion 15 of said angle iron member being adjustably secured to the lower end portion of said bracket member, for endwise adjustment therealong, by means of suitable clamping screws 17 carried by said bracket member and extending through longitudinally disposed slots 18 in said vertically disposed portion 15 of said angle iron member.

For the rigid securement thereto of an electric motor 20, the pulley 21 of which is adapted to be connected by a belt 22 to the pulley of the line shaft to be driven, the horizontally disposed bottom portions 14 of the two angle iron members are provided adjacent their front ends with longitudinally spaced bolt-receiving apertures 23 and adjacent their rear ends with longitudinally extending bolt-receiving slots 24, said apertures and said slots enabling motors of varying base lengths to be rigidly bolted thereto. Preferably, suitable washers 25 are arranged between said angle iron members and a motor secured thereto, as shown. Inasmuch as the two bracket members 12 are mounted on the pivot rod 4 for individual adjustment therealong, said bracket members may be so spaced relative to each other that motors of varying base widths may be readily secured to the angle iron members carried thereby. For releasably maintaining said bracket members in proper adjusted position on said pivot rod, suitable collars 26 are arranged on said rod, as shown.

The provision of the horizontally disposed bracket member ledges 13, as a support for the motor-carrying angle iron members, not only eliminates shearing stresses on the clamping screws 17, which in time they might not be able to withstand, but also enables endwise adjustment of said angle iron members relative to their associated bracket members, and hence adjustment of said motor relative to the driven ceiling line shaft, to be greatly facilitated.

To enable such adjustment of said angle iron members, and hence of the motor 20 secured thereto, to be easily, quickly and simply made, by one man working overhead from a ladder or the like, a pair of auxiliary or secondary adjusting screws 27 are provided, one for each angle iron member and its associated bracket member. For convenient access thereto, said auxiliary adjusting screws extend generally horizontally along the outer side wall surfaces of the two bracket members, said bracket members and said angle iron members being provided with suitable lugs 28 and 30, respectively, having suitable threaded openings therein through which such screws extend.

After unloosening the clamping screws 17, and with the motor-carrying angle iron members supported on the ledges 13 of the two bracket members, the auxiliary adjusting screws 27 may be manipulated to move said angle iron members, and hence the motor 20, to the proper position to utilize that portion of the motor's weight which is required to provide correct tension of its belt 22. Counter-clockwise manipulation of the auxiliary adjusting screws permits movement of said angle iron members and said motor forwardly, toward the driven pulley of the ceiling line shaft, and thus effects an increase in belt tension, whereas clockwise manipulation of said auxiliary adjusting screws moves said angle iron members and said motor rearwardly, from said driven pulley of said ceiling line shaft, and thus effects a decrease in belt tension. After the motor-carrying angle iron members are so positioned relative to the bracket members on which they are supported that proper tension of the belt 22 is effected, the clamping screws 17 are retightened, to maintain said angle iron members in such position, and the pivot rod screws 6 are so turned that said angle iron members, and the motor 21 secured thereto, are brought back to substantially horizontal positions.

Once the proper belt tension has been established, the weight of the pivoted motor 20, the pulley 21 of which is lightly cradled in the belt 22, automatically maintains said belt at a proper and constant tension throughout its life, the pivotal mounting of said motor enabling it to instantly adjust itself to compensate for any change in belt length, whether caused by normal belt elongation, atmospheric conditions, peak loads, centrifugal force or otherwise. Driving power is delivered to the ceiling line shaft steadily and dependably, and the performance and capacity of the machinery driven from said line shaft are very materially improved.

While it is believed that the value and advantages of the present invention will be readily apparent from the foregoing description of one embodiment thereof, it is to be understood that said invention is not limited to what is herein described and/or illustrated but includes all such changes that fall within the scope of what is claimed.

What I claim is:

1. A pivotal mounting for a pulley structure, said mounting comprising a base adapted to be rigidly secured to a suitable support, and a pulley structure carrier including bracket means pivotally associated with said base, supporting means adapted to have a pulley structure rigidly secured thereto, and securing means for adjustably securing said supporting means to said bracket means, said bracket means being provided with seat means projecting therefrom and on which said supporting means seats, said seat means being independent of said securing means.

2. A pivotal mounting for a pulley structure, said mounting comprising a base adapted to be rigidly secured to a suitable support, and a pulley structure carrier including bracket means pivotally associated with said base, supporting means adapted to have a pulley structure rigidly secured thereto, and securing means for adjustably securing said supporting means to said bracket means, said bracket means being provided with ledge means projecting therefrom and on which said supporting means seats, said ledge means being independent of said securing means.

3. A pivotal mounting for a pulley structure, said mounting comprising a base adapted to be rigidly secured to a suitable support, and a pulley structure carrier including a pair of bracket members pivotally associated with said base, a pair of supporting members adapted to have a pulley structure rigidly secured thereto, and securing means including a screw for adjustably securing one of said supporting members to each of said bracket members, each of said bracket members

being provided with a ledge projecting therefrom and on which one of said supporting members seats, the ledges of said bracket members being independent of said securing means.

4. A pivotal mounting for a pulley structure, said mounting comprising a base adapted to be rigidly secured to a suitable support, and a pulley structure carrier including bracket means pivotally associated with said base, supporting means adapted to have a pulley structure rigidly secured thereto, said bracket means being provided with seat means projecting therefrom and on which said supporting means seats, adjusting means independent of said seat means for effecting adjustment of said suporting means relative to said bracket means, and securing means independent of said adjusting means for securing said supporting means in adjusted position.

WILLIAM D. HAMERSTADT.