

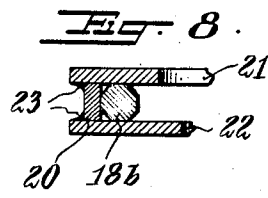
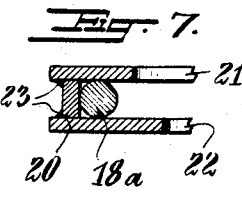
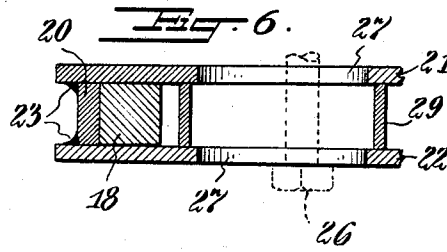
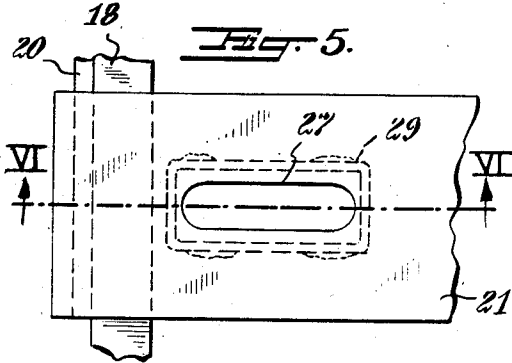
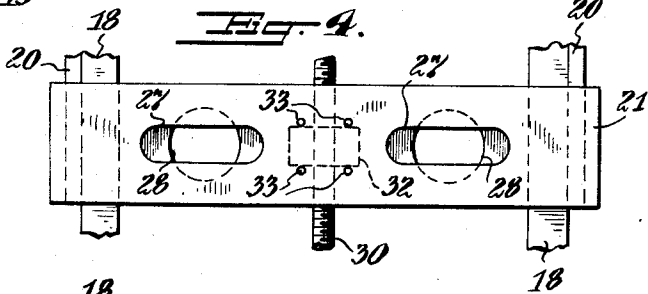
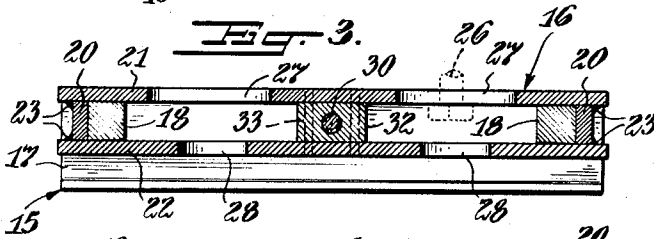
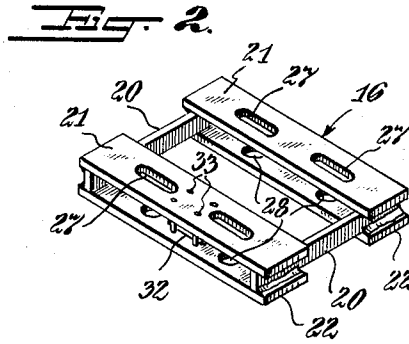
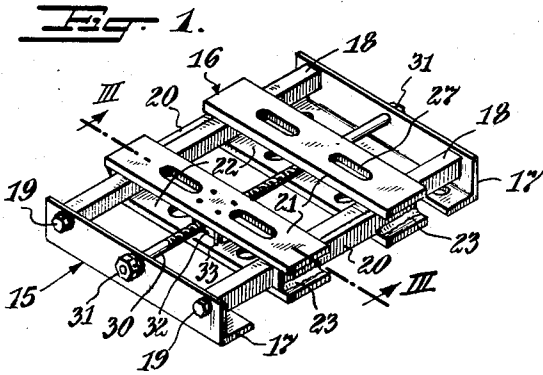
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SUPPORTS

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SUPPORTS

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3 Claims. (Cl. 308—3)

This invention relates to supports, and more particularly to that type of support for motors or other machinery for providing a movable carriage by which the motor or the like has adjustable relation to some other instrumentality.

It is comparatively simple to lower unit labor cost of an item which is produced in such large quantities as to justify expensive tooling and jigs for its manufacture. Unfortunately, motor bases or supports do not come in this category, and to attain low unit cost, with production running in the hundreds rather than in thousands of thousands, it becomes imperative to devise a construction which has ultra-simplicity both in its fabricated parts and in the assembly thereof. In addition to these requirements of simplicity of construction and rapidity and ease of assembly, the support must fulfill other demands of the trade, of which easy sliding, noiselessness, rigidity and compactness are of essential importance. The support of the present invention is made in recognition of the problems posed by these several requirements and demands, and by its construction and method of manufacture thereof, I have fulfilled the objectives of simplicity, ease of assembly and low cost with all of the attributes above mentioned required to make it marketable and satisfactory to purchasers.

Particular mention is made as to the demand for the support to be noiseless, as this has been the most prevalent shortcoming of prior art supports wherein attempt has been made to lower production cost by utilization of a bent sheet-metal member making sliding contact with a rail, as chatter develops for readily explainable reasons.

Referring to the accompanying drawing, in which like numerals of reference indicate similar parts throughout the several views;

Figure 1 is a perspective view of a support or motor base embodying my invention;

Figure 2 is a perspective view of the carriage alone constituting an element of said motor base or support;

Figure 3 is a cross-section on line III—III of Fig. 1;

Figure 4 is a plan of a portion of the carriage in mounted position upon the rails;

Figure 5 is a plan similar to Fig. 4, but with a spacer collar provided for use with supports for heavier loads;

Figure 6 is a cross-section on line VI—VI of Fig. 7;

Figure 7 is a cross-section of carriage and rail, similar to Fig. 3, but showing a cylindrical rail; and

Figure 8 is another cross-section of the character of Fig. 7, but showing a rail of octagonal cross-section.

In the specific embodiment of the invention illustrated in said drawing, said support comprises generally a fixed or basal portion 15 and a movable carriage 16 mounted on the fixed portion. Said fixed or basal portion is shown as comprising a pair of spaced parallel cleats 17 adapted to be secured to any appropriate surface. Between these cleats, next to the ends thereof, is a pair of parallel rails 18 with the ends of the rails securely held by the cleats, and assembled so that the rails and cleats form a rec-

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tangle of which the cleats will be arbitrarily referred to as the ends and the rails as the sides of the rectangular assembly of said basal portion of the support.

The rails, except for Figs. 7 and 8, are shown as bars or rods of solid and rectangular cross-section, and are preferably of square cross-section. In the broadest aspect of the invention, however, I do not confine myself to rectangular cross-section of rails, and in Fig. 7 have indicated use of a rail 18a of circular cross-section, and in Fig. 8, a rail 18b having more than four sides, the illustration specifically selected showing an octagonal cross-section. By utilization of bolts or studs 19 projecting through the cleats and threaded into the ends of the rails, the upper faces of the polygonal rails may be readily located in a common plane and correspondingly the lower faces of the two rails will likewise be in a common plane. Rods or bars of the character indicated and having uniform thickness and smooth faces are readily obtainable on the market, but if desired, the faces which in use make sliding contact with the carriage, may be ground.

The movable carriage 16 is preferably fabricated from bar steel of rectangular cross-section, and includes two such bars, herein designated as shoes 20, which extend longitudinally of and in sliding contact with side faces of the rails. For simplification of description, the rails will be considered as located horizontally at a common level, and consequently the shoes likewise extend horizontally and are preferably in facial contact with the outside faces of the rails. Thus oriented, the rails and shoes have vertical cross-sectional dimensions that are substantially equal, so that the upper faces of the shoes lie in a plane common with the upper faces of the rails, and correspondingly the lower faces of the shoes lie in a common plane with the lower faces of the rails, said planes being common to both of the rails and both of the shoes.

Said carriage also includes upper and lower cross members 21, 22 secured respectively to the top and bottom faces of the shoes. For economy of material and for minimizing the weight of the support, said cross members are arranged in pairs of which one pair may be considered as next to the forward end of the carriage and the other pair as next to the rear end of the carriage. The upper member of each pair is directly above, but separated from the lower one of the respective pair of members. Furthermore, the lateral ends of the members project beyond the respective outer faces of the shoes. Unification of said members with said shoes is obtained by a fillet weld 23 at the outside face of the shoe where the respective member overlaps beyond said shoe. Since attachment to the shoes is proximate to the several ends of the shoes, and attachment of the members is proximate to the several ends of the members, the carriage is thereby constructed as a double-level rectangular unit, with the interior dimensions substantially equal to the exterior span of the rails and to the vertical height of the rails with minimum clearance for permitting sliding of the carriage on said rails. Consequently the carriage is confined to longitudinal movement only and can neither twist laterally or vertically with respect to the rails, though fabricated with few and simple parts.

For small sizes of supports, the motor or the like to be mounted thereon may be secured by bolts 26 projecting through slots 27 in upper member 21, a hole 28 large enough to pass the bolt head being provided in lower member 22 beneath the slot. For large sizes, it is preferable to have bolts 26 extend through both upper and lower cross members 21, 22, and a spacer 29 for each bolt interposed between the members around the location of corresponding slots as shown on Figures 5 and 6. Said spacer will prevent said members being bowed to-

ward each other when compressive force is applied by the bolt 26. Other things being equal, this arrangement has twice the strength of the arrangement in Figure 3 where only one member, 21, serves to support the load. If spacer 29 is welded to the cross members 21, 22, the strength of the cross member assembly will be increased still more. Where spacer 29 is used, regardless of whether or not it is welded to the cross members, the lower cross member 22 is also provided with slots 27 coincident with slots 27 in the upper member 21 to permit positioning of the bolts 26.

Arbitrary showing of one means of sliding the carriage on the rails utilizes a threaded rod 30 parallel to and between the rails, said rod being rotatable as by a nut 31 pinned on the end of the rod where projecting through cleat 17. Said rod is suitably held against longitudinal displacement, and as one means of attainment, another nut 31 is pinned to the opposite end of the rod at the outside of the cleat 17 thereat. An intermediate part of the rod is threaded through a carriage-driving nut 32 which fits between a pair of members 21, 22 so as to be held from rotating, and retained fore and aft between pins 33 from displacement longitudinally of the carriage or axially of itself. The pins afford limited lateral play for the carriage-driving nut to obtain axial alignment of said nut with the threaded rod 30.

I claim:

1. A support of the character described, comprising a basal portion and a slidable carriage carried thereby, said basal portion having parallel rails of rectangular cross-section thereby providing top, bottom and side planar longitudinal surfaces, and said carriage having shoes with rail-contacting flat faces at the outer side surfaces of and juxtaposed against said rails, said shoes having top and bottom flat areas in the respective planes of the top and bottom planar surfaces of said rails, and said carriage having two other flat faces parallel to each other and perpendicular to said rail-contacting flat faces of said shoes and in sliding engagement with said top and bottom planar surfaces of both of said rails and projecting across and secured in flat engagement against said top and bottom flat surfaces of said shoes.

2. A support of the character described, comprising a basal portion and a slidable carriage therefor, said basal

portion having two rails of rectangular cross-section and each having an upper flat face in a common plane to both and each having an under flat face in a common plane to both, said planes being parallel, and said rails each having an outer side face, the two said side faces being parallel to each other, and said carriage having cross members extending across said rails in slidable engagement with said upper and under faces of said rails, one said cross member having a flat under face in the first mentioned plane and the other cross member having a flat upper face in the second mentioned plane, said carriage having rectangular shoes secured between said cross members at said outer side faces of said rails and providing inwardly directed faces in slidable engagement respectively with said outer flat faces of said rails, the effective height of said rectangular shoes in secured position between said members being substantially equal to the distance between said planes, said rails being confined within said effective height by said slidable engagement of the upper and under faces thereof respectively with said under and upper faces of said cross members in said planes, and said inwardly directed faces of the rectangular shoes at the outer sides of said rails both confining the carriage against lateral displacement and providing sliding and guiding contact of the full surfaces of said inwardly directed faces of the said shoes with said outer sides of said rails.

3. A support in accordance with claim 2, wherein said cross members extend beyond said shoes and have fillet welds with and at the side of each shoe remote from said rail.

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