Sept. 27, 1932. F. D. PELTIER 1,879,458

SUPPORT FOR POWER DRIVEN UNITS

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Fig. 1.

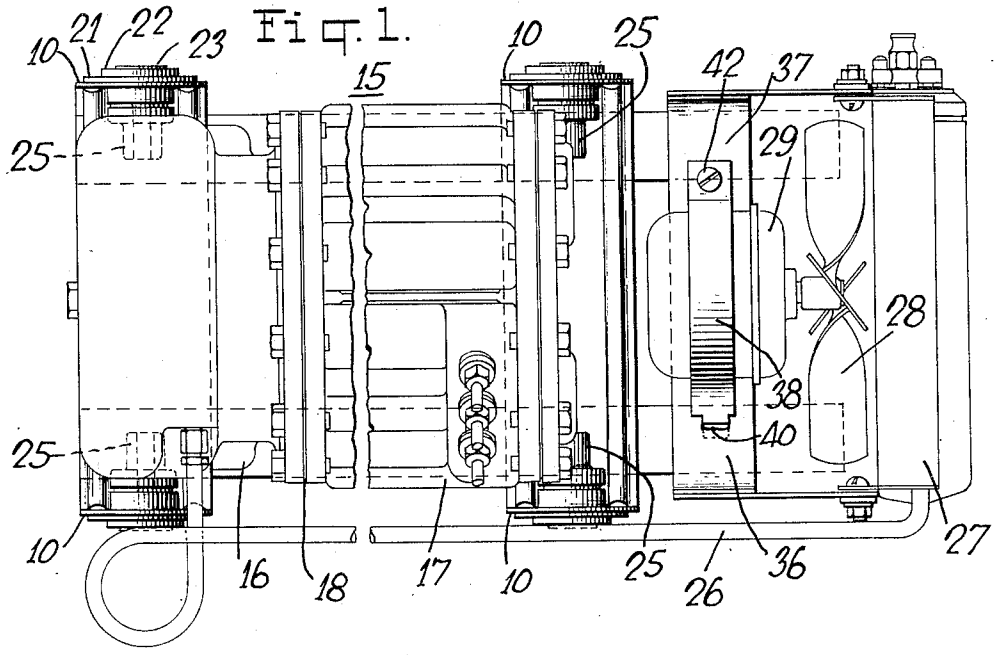
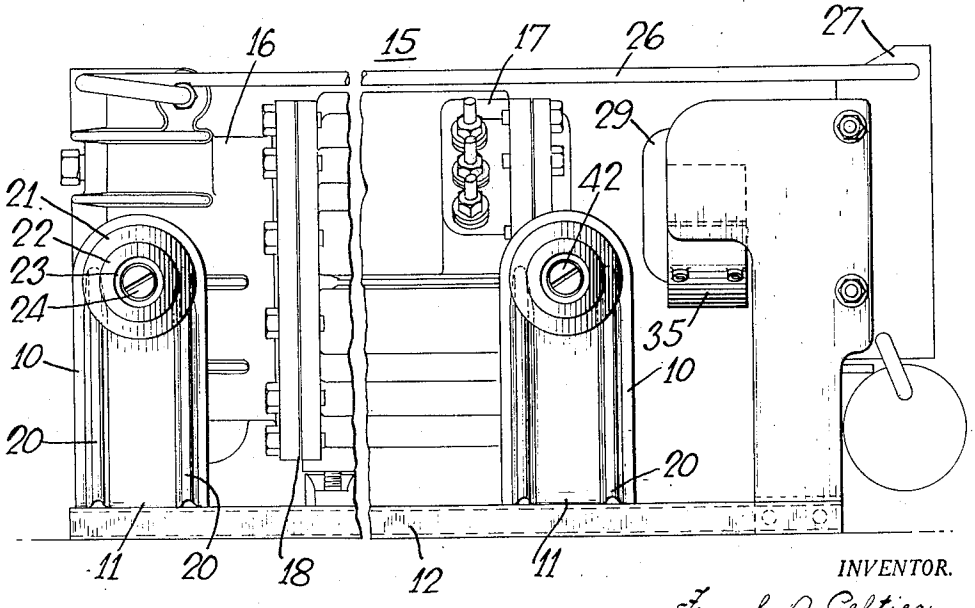


Fig. 2.



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Fig. 3.

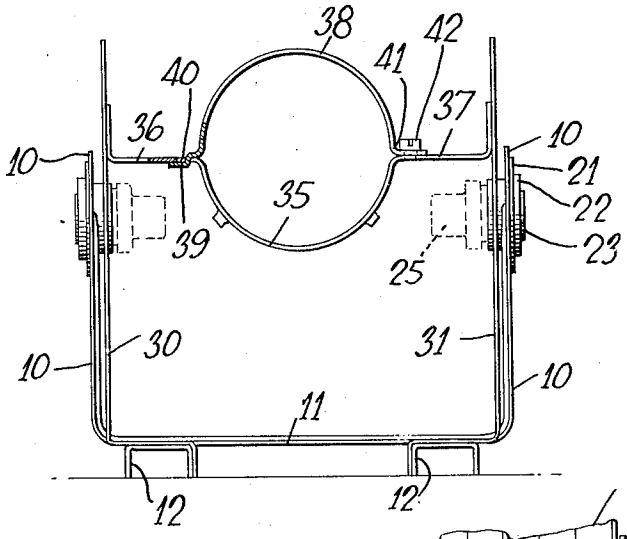


Fig. 5.

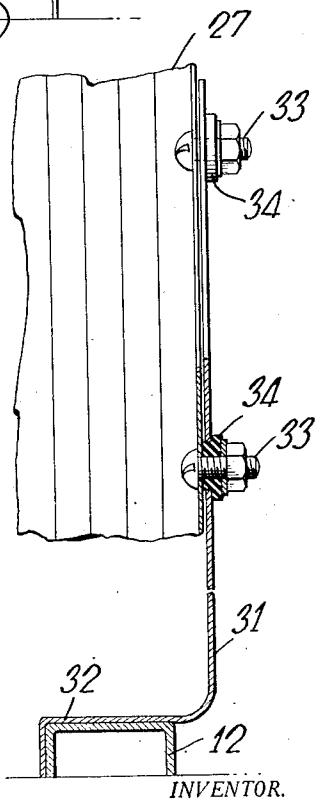
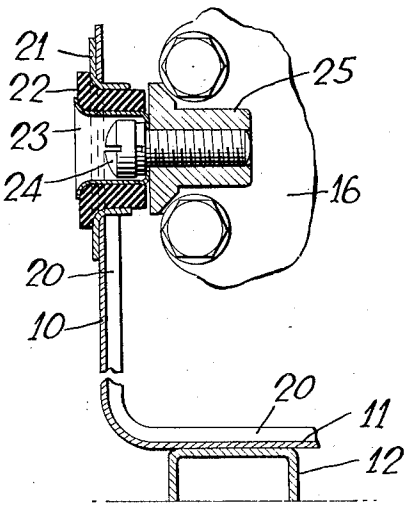


Fig. 4.



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UNITED STATES PATENT OFFICE

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SUPPORT FOR POWER DRIVEN UNITS

Application filed July 17, 1930. Serial No. 468,678.

This invention relates to supports for power driven units, and particularly to supports for motor propelled units having a tendency to generate vibrations, such for example as the motor-pump units employed in mechanical refrigeration systems of the domestic variety.

The invention has for its object generally an improved construction and arrangement of parts in supports of the character indicated, which is efficient, economical and readily manufactured.

More specifically, an object of the invention is to provide a supporting frame which is rugged and stiff, but has connections with the unit supported of a character adapted to yield and absorb substantially all vibration transmitted therethrough.

It is also an object to provide a supporting device particularly adapted to support power units, such as the motor-pump units of mechanical refrigerating systems, not only in normal operating service, but which is also adapted to support the same, when in transit or when being shipped from one part of the country to another, without injury.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combinations of elements, and arrangements of parts which will be exemplified in the constructions hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a top-plan view, part being broken away, showing a motor-pump unit of a mechanical refrigerating system provided with a support in accordance with the present invention;

Fig. 2 is a side elevation of the unit and support shown in Fig. 1;

Fig. 3 is an end elevation showing the supporting device when removed from the motor-pump unit; and

Figs. 4 and 5 are fragmentary views, mainly in section, showing details in the construction of the support shown in Fig. 3.

Referring now to the drawings, and particularly to Figs. 1 and 2, 10 denotes the upstanding legs of main U-members which have their base-portions 11 transversely disposed on and secured to one or more horizontal base-members 12. As here shown, these base-members are a pair of parallel channels disposed to have their open sides on the bottom and the webs on the top and secured to the base-portions 11 in any suitable rigid manner, for example, by so-called "spot-welding."

The main U-members, in order to be adapted to spot-welding in the assembly processes, are made from sheet-metal which has, when made up, sufficient mechanical strength and stiffness to support in operating conditions and in shipment, a power unit, such as here shown generally at 15, the pump member thereof being indicated at 16 and the motor member at 17, these members being united through the flanged-coupling 18. To this end, the main U-members are preferably stamped from sheet metal and have stiffening ribs struck-up therefrom as shown at 20 along each edge.

The upper ends of each of the legs 10 of the main U-members are provided with openings in which are disposed rigid supporting bushings 21, each of which have nested within the same a yielding bushing 22 and a second inner rigid bushing 23. This construction is readily seen in Fig. 4 where it is seen that the inner rigid bushing carries the end of a supporting screw 24, which engages with a supporting socket or lug 25 formed on the power members to be supported. As here shown, the closed ends of the casing of the pump member 16 have hubs cast thereon at diametrically opposite points which are formed and bored as indicated in Fig. 1 to have sockets 25, while the removable head of the motor member may with advantage be provided with integral socket members 25, as indicated in Fig. 1; a portion thereof being shown in Fig. 4.

The supporting frame provided by the union of the base members 12 and the U-mem-

ber 10 is a rigid structure when spot-welded together and provides a four-point suspension for a horizontal power unit which is relatively yieldable, but in a state of rest furnishes substantially rigid support for the unit.

The yielding bushings are made of any suitable material which has inherent resilience and yet is substantially dead-beat or has a natural period of vibration far removed from that of the vibration which may be transmitted to and from the same by the running of the power unit. Bushings of soft India rubber are suitable for the purpose, the employment of rigid bushings in nested relation therewith serving to save the India rubber bushing from concentrated stresses and from wear and tear immediately on its parts.

The frame which thus supports the motor-pump unit may with advantage be provided with supplementary supporting means for supporting auxiliary devices that are operatively associated with the motor-pump unit, whereby the same becomes a single operating unit with the motor and pump members. As shown in Figs. 1 and 2, the motor-pump unit has an outlet conduit 26 leading to a condenser 27 that is air-cooled by a fan 28; this latter being driven by a second motor 29 that is preferably disposed between the condenser and the main motor member, so that the air blown over the condenser may first be drawn over the main motor-casing to produce a cooling effect.

The motor 29 and the condenser 27 are also preferably supported from the main frame in this arrangement and to this end the base-members 12 are shown as prolonged from under the motor-pump unit 15 and have upright members 30 and 31 secured thereto near the end, which upright members somewhat resemble inverted L's, the lower ends of which are preferably bent about and secured to the base members 12 in any suitable manner adapted to attain rigidity, for example, as shown at 32 in Fig. 5, where they are indicated as spot-welded thereto. The upstanding straight edge of these inverted L's is adapted to have perforations at two or more points for receiving engaging members from the radiator, such for example as bolts 33 which are preferably secured therein in a non-vibratory manner, for example, by means of the use of a yielding bushing 34, similar in character to that at 22, which is employed for the support of the power unit.

The over-hung members of the L's serve as anchor members from which is suspended a supporting means, preferably in the form of a cradle 35, for the motor 29. This cradle is formed from a strip having a central depressed arcuate portion with arms 36 and 37 upturned at the ends that are secured to overhang portions of the L's; this securing being accomplished in any suitable manner, for example, by spot-welding. A second arcuate member 38 has a tang 39 engaging with a perforation 40 in a flat portion of the member 35 so that its free end 41 may be secured to and clamped down on another portion of the member 35, by any suitable means, for example, by the bolt shown at 42.

When the member 38 is clamped upon the member 35, it is adapted to hold the motor 29 securely in place. The motor-pump unit and its associated radiator are thus supported by the same main frame in a manner adapted to suppress vibration by the use of the yielding supporting bushings, here disclosed.

Motor-pump units supported by the supporting device of the present invention when employed in mechanical refrigerating systems of the domestic variety are substantially noiseless when in operation and transmit substantially no vibration to the refrigerator box when mounted therein and in operation.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. A supporting device for a fan motor and condenser comprising longitudinal base members, opposed uprights secured on said base members having forwardly projecting portions provided with spaced perforations and rear portions provided with a transverse cradle, said fan motor being supported by said cradle, a strap securing said motor in said cradle, fastening elements disposed in said spaced perforations and connecting said condenser and spaced uprights, and cushioning means in the perforations about said fastening elements whereby said condenser will be resiliently mounted upon said uprights.

2. A supporting device for a fan motor and condenser comprising a base, uprights secured in opposed relation on said base and having forwardly projecting portions, a transverse motor supporting cradle carried by the rear portions of said uprights, means for securing said motor in said cradle, and means for resiliently supporting said condenser in the forwardly projecting portions of said uprights.

In testimony whereof I affix my signature.

FRANK D. PELTIER.