Sept. 17, 1935. C. C. CHEYNEY 2,014,466

BASE FOR STATIONARY MACHINERY

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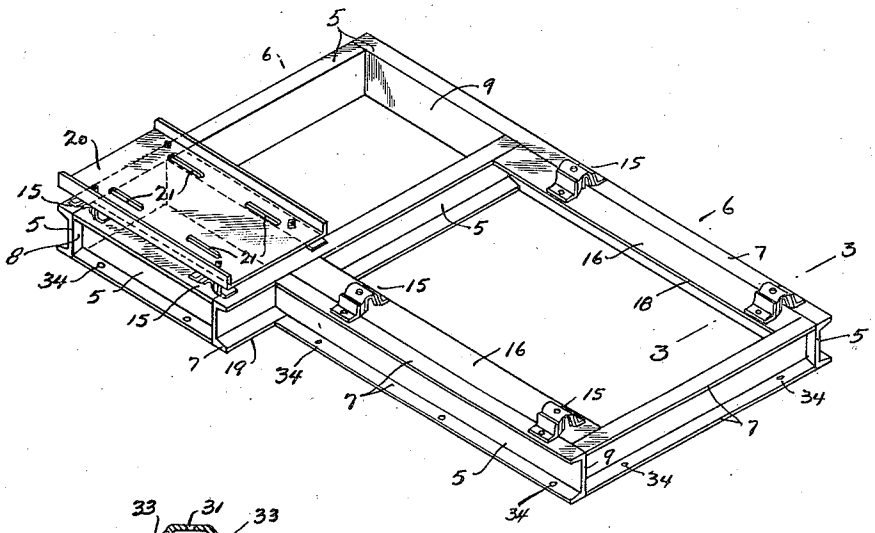


Fig. 1.

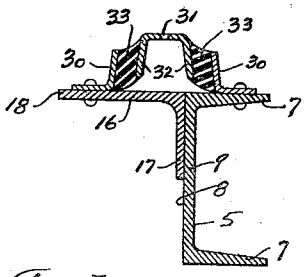


Fig. 3.

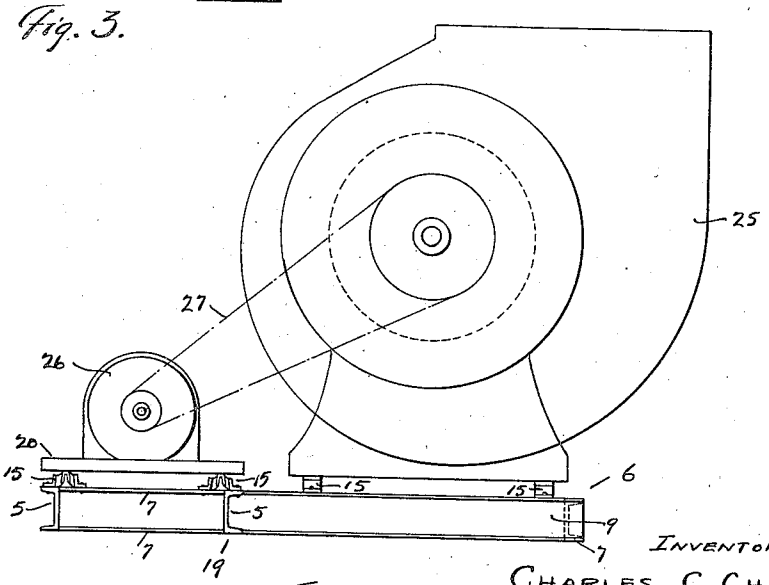


Fig. 2.

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BASE FOR STATIONARY MACHINERY

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4 Claims. (Cl. 248—22)

My invention relates in general to machinery bases and in particular to a unitary structural base for use in connection with centrifugal fans and the motive power for driving the same.

It is well known to those skilled in the art that in centrifugal fan installations, where the fan and the motor driving the same are each bolted rigidly to the foundation, there are certain noises and vibrations which, because of such rigid connection, are transferred to the foundation and thence to the building, resulting in disagreeable noises and/or vibrations.

Furthermore, when each of the elements of such a combination; namely, the fan and the motor, is separably attached to their respective foundations, care must be exercised and considerable time spent in accurately setting the foundation bolts in the foundations and then aligning them when the apparatus is to be secured in place upon such foundation.

One of the principal objects of my invention has been to provide a standardized, one-piece, ready-made base for the support of a fan and a motor which can be conveniently made in a shop with its anchor bolt holes so accurately spaced and positioned that there will be no uncertainty in the alignment of the apparatus which it is designed to carry.

Another object has been to provide such a base with cushioning elements whereby noise of vibration of either the fan or the motor is dampened and synchronism of vibration of the fan or motor and their foundations and/or the building superstructure is thereby reduced and/or destroyed.

Moreover, my invention provides a unitary base such as can be properly set and leveled in one operation for both the motor and the fan which permits convenient and easy embedding of the base in floors of various kinds as, for instance, cement or asphalt, either flush with the level of the floor, or otherwise, as desired.

Furthermore, my invention is inexpensive to manufacture, and is of such a nature that it may be used on old or new installations with equal ease and efficiency.

The above objects and advantages have been accomplished by the device shown in the accompanying drawing, of which:

Fig. 1 is a perspective view of one type of base.

Fig. 2 is a side elevation, showing in diagram a fan and motor in place thereof.

Fig. 3 is an enlarged, fragmentary, sectional view, taken on line 3—3 of Fig. 1.

My base may be made from structural steel of any suitable cross section, but as shown in the drawing, I prefer to use members 5 made of channel-iron cross-section. The members bounding the outside of the frame of the base 6 are preferably so positioned as to have the legs 7 thereof extended toward the outside, thus leaving the surfaces 8 of the webs 9 toward the inside.

A plurality of cushioning units 15 are employed, and along those channel-iron members which are to support these cushioning elements, I preferably provide angle-iron members 16. The leg 17 of each angle-iron member is secured by suitable means to the inner face 8 of its coacting channel-iron member in such position that the leg 18 of the angle-iron member will come flush with the top surface of the top leg 7 of the channel-iron member, whereby the supporting surface for the cushioning elements will be made sufficiently wide. The channel-iron members may be secured together by any suitable means, as for instance by welding, or they may be fastened if desired by means of brackets at the corners (not shown) fastened in place by bolts or rivets.

Under my invention there will be a number of forms of base for the accommodation of certain standard forms of installations. In the form shown in the drawing, as illustrative of the invention, the base is provided with a projecting portion 19. Carried partly by this projecting portion and partly by the base proper is a motor plate 20. This plate is secured to the base by means of cushioning elements 15 and it is provided with suitable slots 21, whereby the motor supported by such plate may be adjusted in position on the plate so as to properly adjust the tension of the belt connecting it with the fan being driven thereby.

In Fig. 2 I have shown diagrammatically a fan 25 mounted upon the base 6 and a motor 26 mounted upon the plate 20 and connected to the fan by means of a belt 27. As shown in Fig. 2, the fan is supported by a number of cushioning elements 15 and is, therefore, insulated from the base 6.

Any suitable cushioning element may be used in my invention, but I prefer to use the one shown in the drawing, which comprises two interspaced angle-irons 30 between which is arranged an inverted U-shaped member 31, the depending legs 32 of which are in interspaced relation with the upstanding legs of the angle-irons. Rubber 33 is disposed between the angles and the legs 32 of the inverted U-shaped member 31, and this rubber is vulcanized to both parts of the cushioning element.

The lower legs 7 of the channel-iron members 5

may be provided with suitable bolt holes 34, whereby the frame may be fastened in place. As hereinbefore pointed out, if desired, my base is of a nature that it may be embedded in place in a cement floor either flush with the top surface of the floor, or otherwise, as desired.

By means of my invention, the anchor bolt holes for the machinery are accurately predetermined and so spaced that little if any adjustment is necessary when the machinery is mounted and secured upon the base.

While I have shown this invention as applied to a motor and a fan, it obviously may be employed for the installation of any other type or types of standardized machinery, and the same benefits and advantages will accrue when applied to any such other types. One of the outstanding advantages of the invention is that it can be made at a factory for use with any standardized type of stationary machinery and shipped therefrom to the place of use ready for such machinery to be installed thereon with a minimum amount of labor while accurately preserving the proper setting and relationship of the pieces of machinery so installed. If the parts of my invention are built for detachable union, the complete invention may be shipped knocked down and later accurately and conveniently assembled on the job, thus reducing the space necessary for shipment and the cost of such shipment while still preserving all the advantages above set forth.

From the foregoing it will be obvious that by means of my invention, the transfer of metallic noise and vibration to correlated operating machines is eliminated and a quiet, satisfying operation results.

Obviously, some modifications of the details herein shown and described may be made without departing from the spirit of my invention or the scope of the appended claims, and I do not, therefore, wish to be limited to the exact embodiment herein shown and described, the form shown being merely a preferred embodiment thereof.

Having thus described my invention, what I claim is:

1. An article of manufacture comprising a fabricated, self-contained, unitary base structure having a main rectangular base portion for a centrifugal, housed fan, an offset supplemental rectangular base portion for a motor for the fan, a group of cushioning elements carried by and rigidly secured to one of the base portions for resiliently supporting the fan, a motor plate for the motor, and a group of cushioning elements carried by and rigidly secured to the other base portion for resiliently supporting the motor plate; the motor plate being slotted so that the motor may be adjustably positioned thereon, the cushioning elements being so located on the base structure that when the fan and motor are placed in position they will be in proper alignment.

2. An article of manufacture comprising a fabricated, self-contained, rectangular, unitary base structure having a main rectangular base portion for a piece of stationary machinery and an offset rectangular base portion for a cooperating piece of stationary machinery, each of the four sides of said base being formed of channel-iron sections, an angle-iron secured to the flat sides of each of two opposite channel-iron sections, an independent group of cushioning elements for each piece of machinery, mounted upon and rigidly secured to the united channel-iron and angle-iron sections, the cushioning elements being so located on the base that when the machinery is mounted upon the cushioning elements it will be resiliently supported, each cushioning element comprising two outer, interspaced angle portions adapted to be secured to the base structure, an inner, inverted, U-shaped portion located between and in interspaced relation with the outer portions, and resilient means uniting the outer portions with the inner portions.

3. An article of manufacture comprising a fabricated, self-contained, rectangular, unitary base structure having a base portion for a piece of stationary machinery and a base portion for a cooperating piece of stationary machinery, all of the four sides of said base structure being formed of channel iron, such channel iron sides being so positioned that their flanges are in horizontal planes, an angle iron secured to the web of each of two opposite channel iron sides and being so positioned that one of its legs lies in a horizontal plane and is substantially flush with the top flange of the channel iron to which it is secured, and means carried by the base structure and permanently secured to the top flanges of the channel iron sides and angle irons for forming a connection with the pieces of machinery to be mounted thereon.

4. An article of manufacture comprising a fabricated, self-contained, rectangular, unitary base structure, all of the four sides of said base structure being formed of channel iron, such channel iron sides being so positioned that their flanges are in horizontal planes, an angle iron secured to the web of each of two opposite channel iron sides and being so positioned that one of its legs lies in a horizontal plane and is substantially flush with the top flange of the channel iron to which it is secured, said base having a main rectangular base portion for a piece of stationary machinery, an offset supplemental rectangular base portion for a cooperating piece of machinery and an independent group of cushioning elements for each piece of machinery, the cushioning elements being permanently secured to the top flanges of the channel and angle irons of the two base sections and so located on the base structure that when the two pieces of machinery are mounted upon these elements the machinery will register therewith and be resiliently supported thereby.

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