

Jan. 2, 1923.

1,440,498.

W. SHURTLEFF.
ELECTRIC MOTOR BASE SUPPORT.
FILED AUG. 26, 1921.

Fig. 1

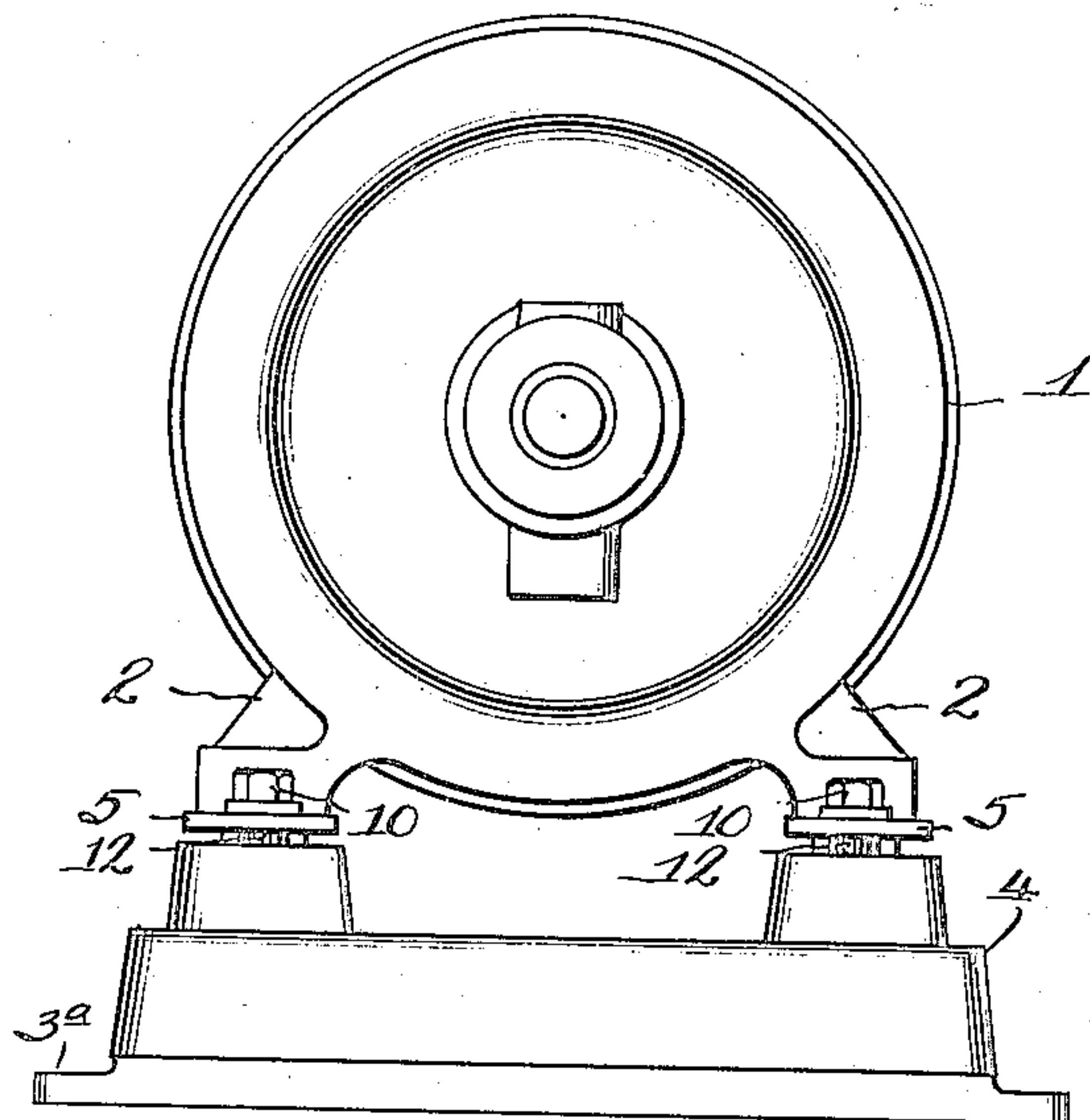


Fig. 4

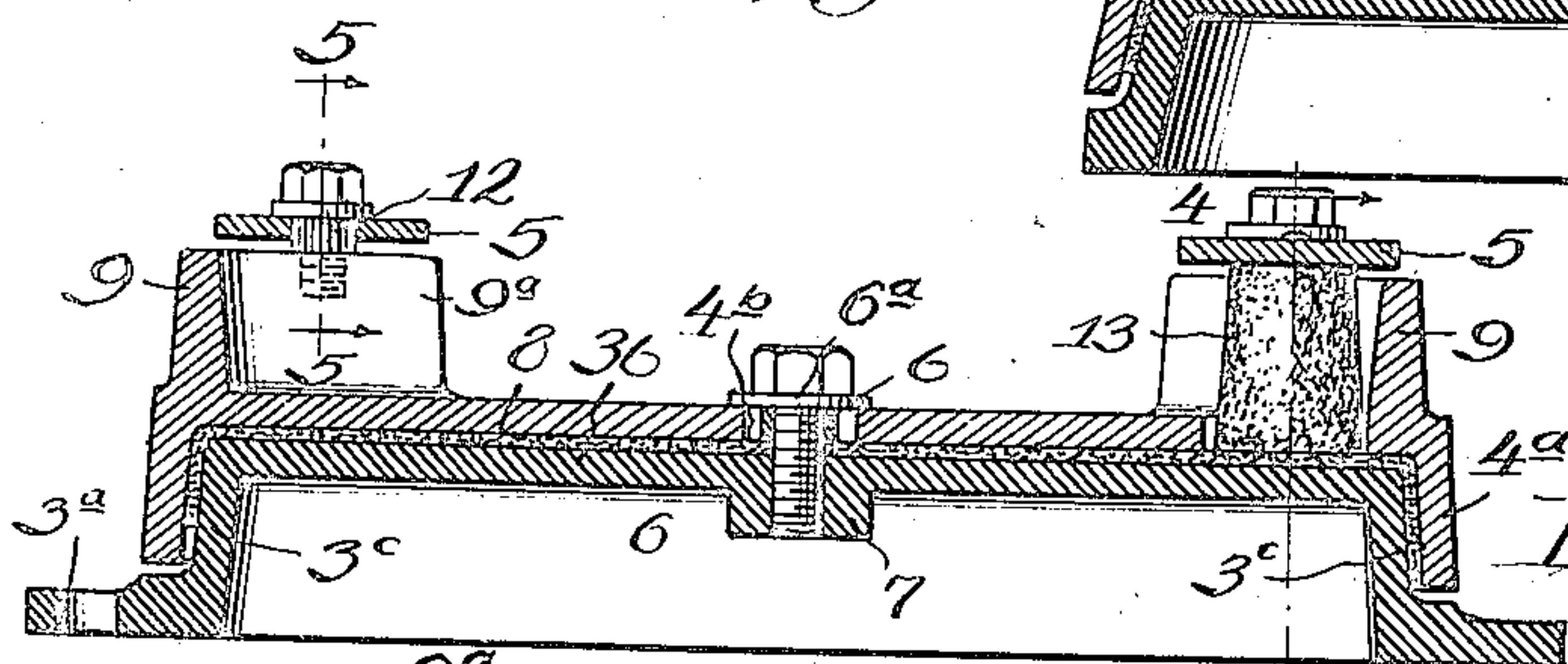
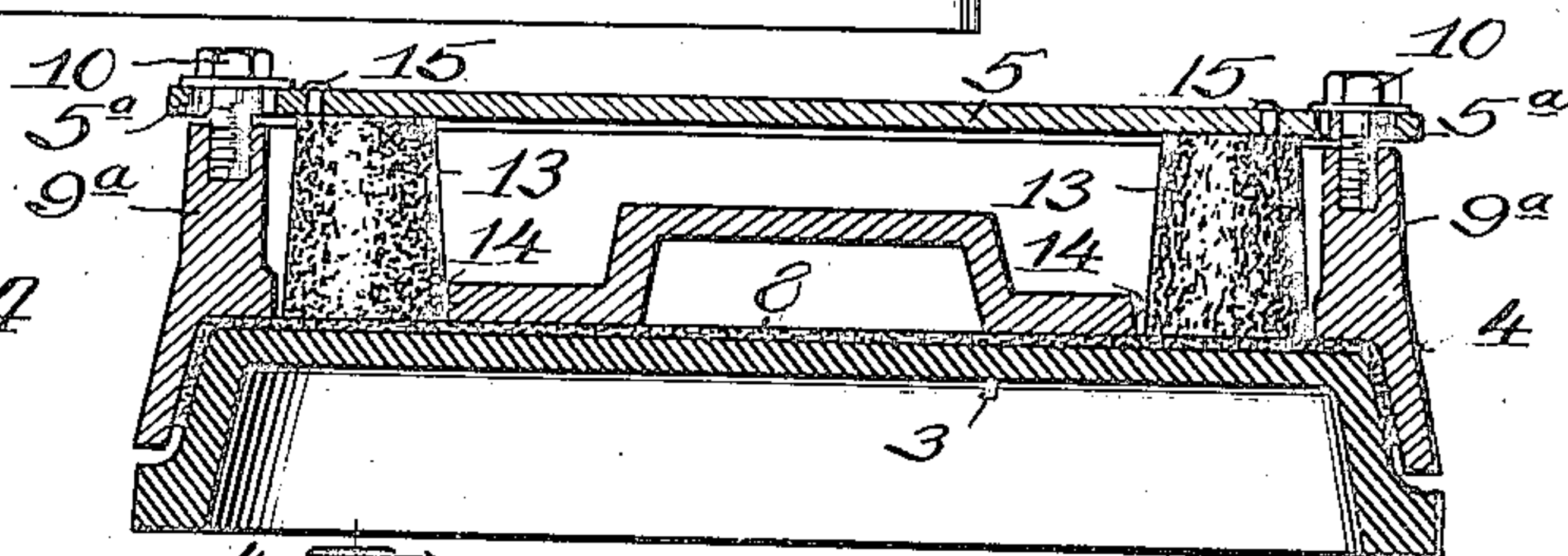


Fig. 3

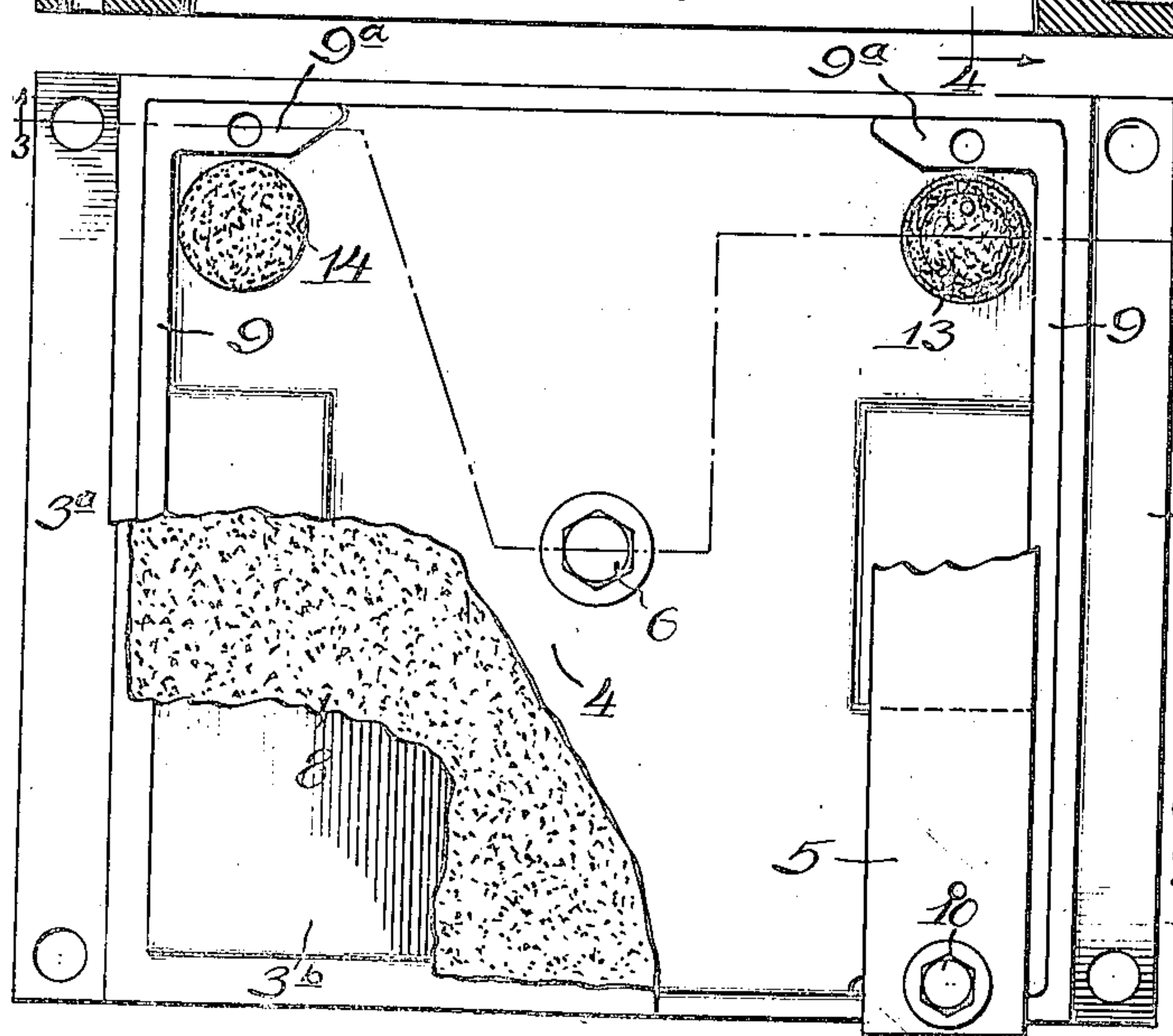


Fig. 2

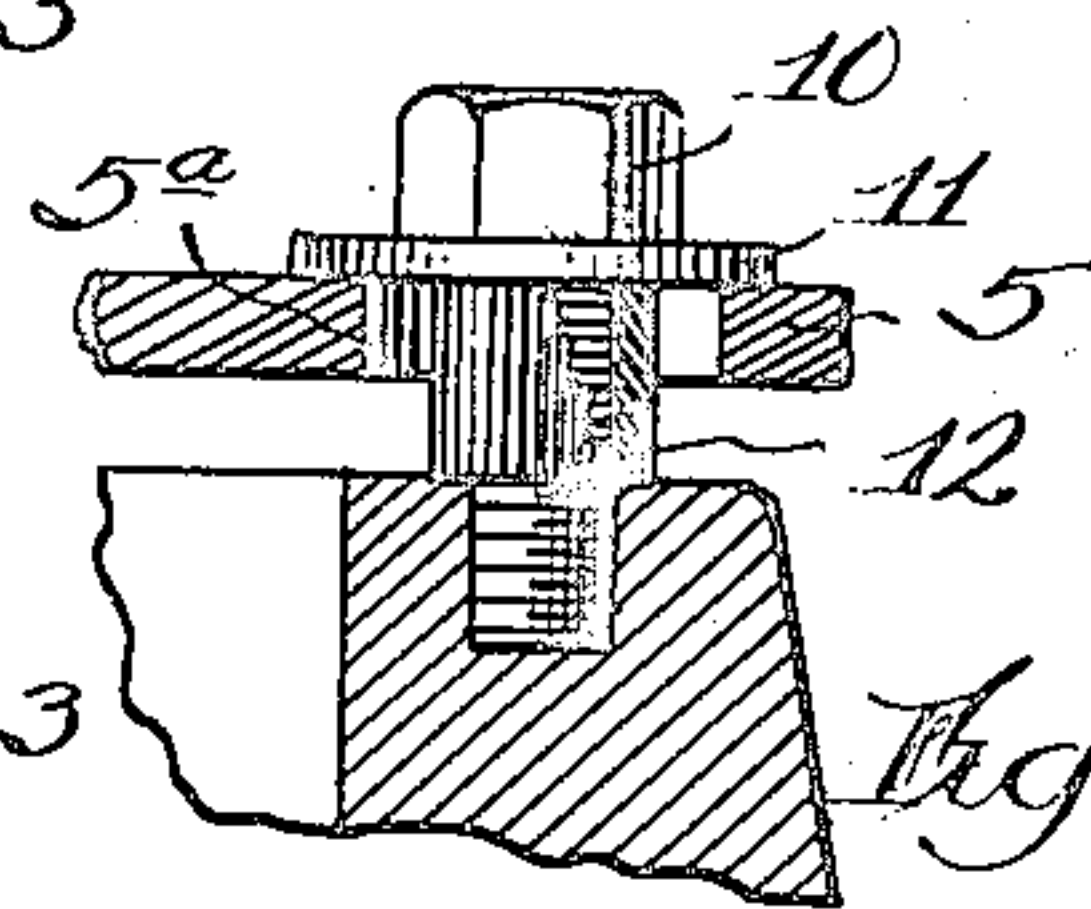


Fig. 5

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Patented Jan. 2, 1923.

1,440,498

UNITED STATES PATENT OFFICE.

WILFRED SHURTLEFF, OF MOLINE, ILLINOIS, ASSIGNOR TO MOLINE HEAT, OF
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ELECTRIC-MOTOR BASE SUPPORT.

Application filed August 26, 1921. Serial No. 495,620.

To all whom it may concern:

Be it known that I, WILFRED SHURTLEFF, a citizen of the United States, and a resident of Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Electric-Motor Base Supports, of which the following is a specification.

This invention relates to improvements in electric motor base supports, and more particularly to supports for prime movers in general, and types of machines whose operation is accompanied by considerable vibration and noise.

The object of the invention is to provide a new and useful construction for a supporting base for machines of the character described, calculated to reduce or dampen the vibrations, and to thereby promote silent operation. A base support embodying the invention is especially applicable for the mounting of motors employed for driving machinery used for household or domestic use, such as ventilating apparatus and heating devices. The common example of such a use is a motor driven ventilator installed in an auditorium, study-room or the like, where the occupants of the room would be disturbed by the constant noise attending the operation of the motor.

In the accompanying drawings a preferred embodiment of the invention is fully illustrated, the several figures being described as follows:

Fig. 1 is a view in end elevation of a typical installation including an electric motor, and the supporting base embodying the invention,

Fig. 2 is a top plan view of the base with portions broken away to more clearly show the features of construction,

Fig. 3 is a view in vertical section taken on line 3—3 of Figure 2,

Fig. 4 is also a view in vertical section taken on line 4—4 of Figure 3, and

Fig. 5 is an enlarged detailed view in vertical section taken on line 5—5 of Figure 3, showing more clearly the details of construction.

The supporting base is disclosed as providing a base or foundation for a motor 1 of typical construction and design, and consisting of legs 2 preferably arranged in pairs on each side of the central plane of said motor. The base comprises in gen-

eral a primary base plate 3, a secondary base plate 4, and a pair of horizontal bars 5—5 adapted to be bolted directly to the legs 2—2 of the motor.

The primary base plate 3 is a rectangular shaped member of cast metal provided with flanges 3^a—3^a along two sides thereof, and thru which bolts or screws extend for the purpose of anchoring the same in desired position. The major portion of the primary plate is elevated above the plane of the flanges 3^a—3^a providing a raised top wall 3^b of rectangular shape, surrounded by vertical walls 3^c slightly tapered or beveled.

The secondary plate 4 comprises a flat wall of rectangular shape, surrounded by depending flanges 4^a thereby forming a downwardly facing depression of substantially the same dimensions as the elevated portion of the primary plate 3. The secondary plate is designed to fit over or nest with the primary plate, and to be connected thereto by means of a cap screw 6 extending thru an enlarged aperture 4^b at the center of the secondary plate 4, and to be anchored in a boss 7 at a corresponding point in the primary plate 3. As clearly shown in Figure 3, the screw 6 is preferably spaced from the secondary plate by means of a washer 6^a surrounding the shank thereof. Between the primary and secondary plates is interposed a layer of cushioning material 8 such as felt, leather, or like material, the margins of said layer extending beyond the opposed horizontal surfaces of the plates, and downwardly between the vertical surfaces thereof.

Along two sides of the secondary plate 4 extend upright walls 9—9 which terminate at each corner in short transverse wall extensions 9^a—9^a of somewhat increased thickness. Extending parallel with and immediately above the walls 9—9 are the bars 5—5 heretofore referred to, these bars being preferably pieces of relatively thin bar stock cut to the desired length. At the ends of each bar 5 are provided apertures or bolt holes 5^a, and somewhat larger in size than the diameter of the cap screws such as would ordinarily be used. These cap screws 10—10 extend downwardly through the apertures 5^a—5^a, and are anchored in the wall extensions 9^a—9^a by the provision of the usual tapped holes therein. As clearly shown in

Figure 5, the head of each cap screw 10 is separated from the surface of the bar 5 by means of a washer 11. Furthermore, contact between the shank of each screw 10 and said bars is permitted by applying to each shank a collar 12 preferably of resilient material such as rubber. As before suggested, the legs 2 of the motor are bolted securely to the bars 5—5, each bar having direct connection with each pair of legs 2—2 on opposite sides of the central plane of the motor.

Again referring to the connection between the bars 5—5 and the secondary plate 4, it is to be observed that said bars do not rest upon the wall extensions 9^a—9^a of the secondary plate 4, but are spaced a short distance above the same, so that in the absence of additional supporting means, this connection would be obviously loose so that the bars would be free to move by reason of the enlarged apertures 5^a thru which the screws 10 extend.

Located at each corner of the secondary plates 4 are columns or posts 13 preferably constructed of some yieldable material such as cork, or like substance, these columns engaging at their upper ends beneath the bars 5—5 adjacent the extremities thereof. The height of these columns is such that they support the ends of each bar 5—5 slightly above the upper edges of the walls 9 of the secondary plate 4, and prevent contact therewith. In other words, they are calculated to remove the weight of the motor from the secondary plate and to support the same upon the member upon which the base of the columns rest. In this instance, the columns 13 rest upon the primary plate 3, this arrangement being effected by the provision of apertures 14 in the secondary plate 4, with the result that the base of the columns 13 rest upon the primary plate 3 with the intermediate layer of cushioning material 8 separating them. The columns or posts 13 are supported loosely in place, being retained within the apertures 14, and serving in the nature of supporting sockets, altho it is preferred to secure them to the bars 5—5 by means of small nails 15 driven into the top of the posts and engaging holes drilled thru the bar.

It is to be observed that the motor has direct connection only with the parallel bars 5—5, these in turn having loose connection at their ends with the secondary plate 4, the nature of this connection being such as to prevent the bars from being displaced. The weight of the motor, however, is transmitted directly to the posts 13—13, which in turn rest upon the primary base plate 3, and not upon the secondary plate 4. Thus it will be seen that the vibration due to high speed of rotation of the motor is not transmitted directly to either of the base plates thru the medium of bolts or other fastening mem-

bers, but indirectly thru the yieldable and resilient members; namely, the cork columns 13—13, and the rubber collars 12. Furthermore, any vibration transmitted to the secondary plate 4 by reason of its connection with the bars 5—5 is absorbed and dampened by the layer of cushioning material 8 separating the two plates. The manifest result secured is that of eliminating the transmission of the vibration to the metal base, and consequently the noise that is ordinarily present as a result of the vibrations being transmitted not only to the supporting base, but the foundation on which the base rests.

Having fully described the structure, the advantages and uses of the same, I claim as my invention:

1. A motor supporting base, comprising a primary base plate, a secondary base plate cushioned upon said primary plate, means for loosely anchoring a motor to said secondary plate, a supporting member of yieldable material resting upon said primary plate, and supporting the motor out of vertical bearing engagement with said secondary plate.

2. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary base plate, an intermediate layer of cushioning material interposed between said plates, intermediate connecting members for loosely anchoring a motor to said secondary plate, and columns of yieldable material resting upon said primary plate and engaging beneath said motor and supporting the same out of supporting contact with said secondary plate.

3. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary plate and separated therefrom by an intermediate layer of cushioning material, a member secured to the motor and loosely connected to said secondary plate, and vertically disposed posts of yieldable material supporting said member from direct contact with said secondary plate and resting on said primary plate.

4. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary base plate, an intermediate layer of cushioning material interposed between said plates, members fixed to said motor and loosely connected to said secondary plate and a column of yieldable material supporting the weight of said motor and connecting members, and resting at its base on said primary plate.

5. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary plate and separated therefrom by an intermediate layer of cushioning material, bars fixed to said motor and loosely connected at their ends with said secondary plate, and columns of yieldable material supporting the ends of

said bars out of direct contact with said secondary plate and resting on said primary plate.

5 6. A motor supporting base comprising a primary base plate having an elevated portion, a secondary base plate having a complementary depression whereby the latter nests with said primary plate, an intermediate layer of cushioning material interposed
10 between said plates, means for loosely connecting the motor to said secondary plate, and columns of yieldable material disposed at various points on said primary plate and supporting the weight of said motor.

15 7. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary plate and separated therefrom by an intermediate layer of cushioning material, means for loosely
20 connecting a motor to said secondary plate, and columns of yieldable material supporting the weight of said motor, said secondary plate being provided with apertures permitting said columns to rest upon said primary
25 plate.

8. A motor supporting base comprising a rectangular primary base plate, a secondary plate fitting over said primary plate, a layer of cushion material separating said
30 plates, a pair of parallel bars fixed to legs of a motor, and loosely bolted at their ends to each corner of said secondary base plate, and columns of yieldable material adjacent

said corners engaging beneath and supporting said bars, and resting upon said primary 35 base plate, thru apertures formed in said secondary plate.

9. A motor supporting base comprising a primary base plate, a secondary base plate resting upon said primary plate, a cushion- 40 ing member separating said plates, means for anchoring a motor to said secondary plates and yieldable supporting members resting upon said primary plate, and supporting said motor out of supporting en- 45 gagement with said secondary plate.

10. A motor supporting base comprising a primary base plate having an elevated central portion, a secondary plate provided with a corresponding depression, whereby 50 said plates are capable of nesting together, a layer of cushioning material separating said plates, parallel bars secured to the motor, bolts passing through enlarged holes at the ends of said bars and anchored at 55 the corners of said secondary plate, collars of yieldable material mounted on said bolts, and columns of yieldable material supporting the ends of said bars, and resting on said primary plate, and within apertures 60 formed in said secondary plate.

In witness whereof, I hereunto subscribe my name this 22nd day of August, A. D., 1921.

WILFRED SHURTLEFF.