April 17, 1928. 1,666,149

S. ROSENZWEIG

MOUNTING FOR MACHINERY

Filed July 30, 1925 2 Sheets-Sheet 1

Fig. 1.

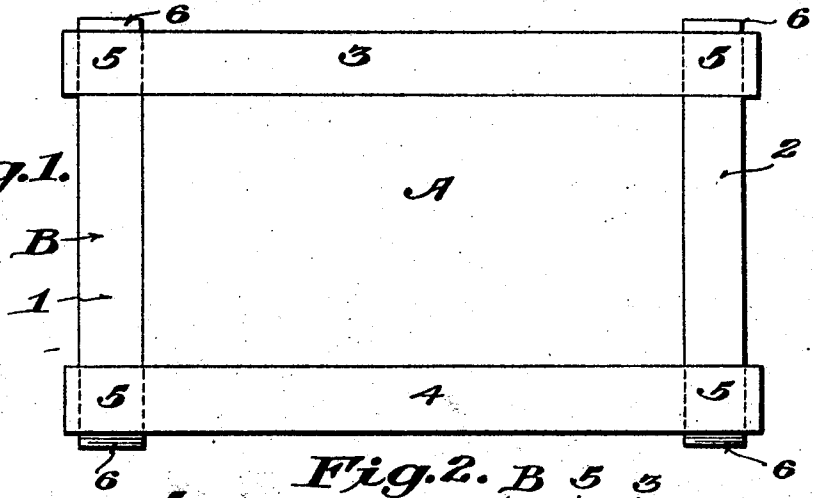


Fig. 2.

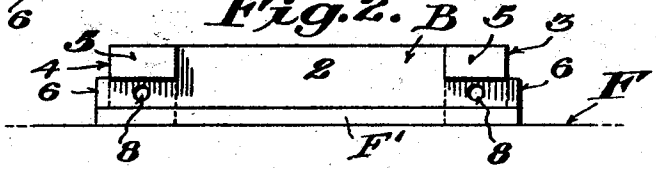


Fig. 3.

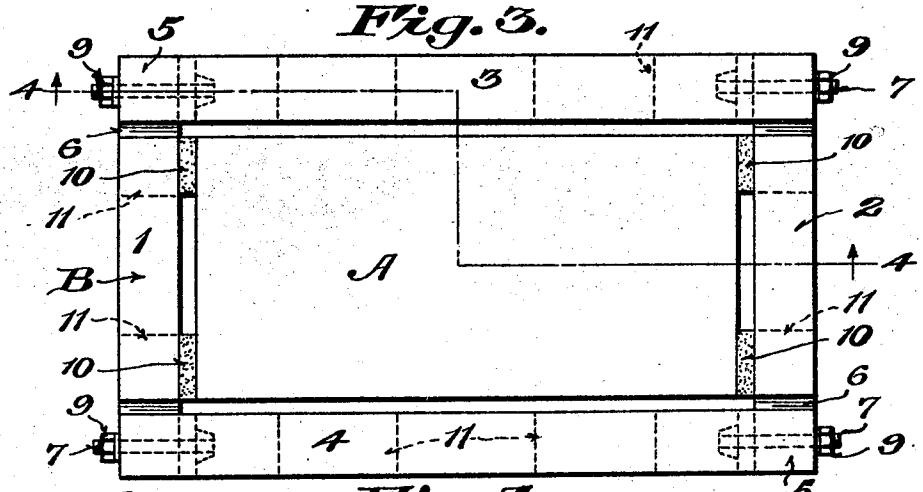
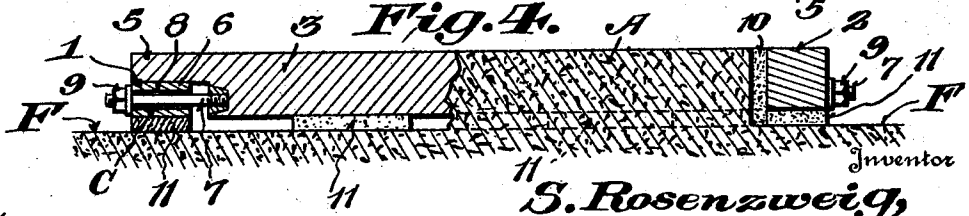


Fig. 4.



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Filed July 30, 1925 2 Sheets-Sheet 2

Fig. 5.

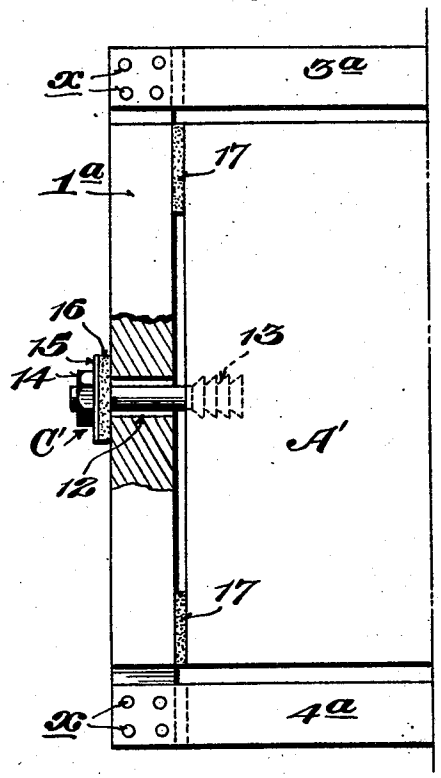


Fig. 7.

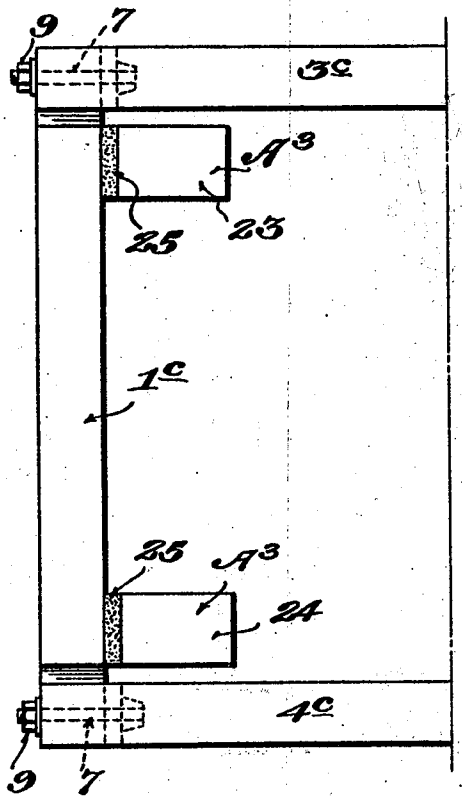
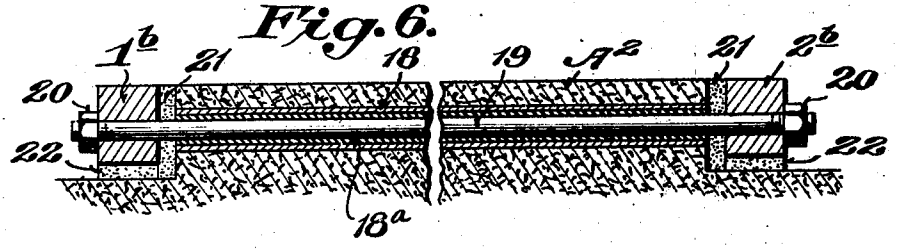


Fig. 6.



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UNITED STATES PATENT OFFICE.

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MOUNTING FOR MACHINERY.

Application filed July 30, 1925. Serial No. 47,116.

This invention relates to a mounting or bed for supporting machinery, and has particularly in view a novel construction adapted to prevent the transmission of sound or vibrations from the machinery to the building.

In the construction of modern factories it is very desirable, from an engineering as well as practical standpoint to prevent the transmission of vibrations incident to the operation of the machinery to the floor structure, and also provide for adequately absorbing the sound thereby to not only protect the building structure but make the factory or shop itself less noisy.

Accordingly, the present invention has primarily in view a simple and practical construction on which the machinery may be readily mounted not only to be held stationary, and in proper alinement with other machine units operating in conjunction therewith, but which will also facilitate the installation of the machinery in the respect that it will be easier to line up one unit with another by the employment of suitable shims preparatory to finally securing the entire piece of machinery to its foundation.

A further object of the invention is to provide a construction which permits of the use of a minimum amount of insulating or vibration absorbing material, thereby effecting economy in that respect.

With these and other objects in view which will appear to those familiar with the art as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a plan view illustrating the manner of placing the mounting.

Figure 2 is a side elevation of the construction shown in Fig. 1.

Figure 3 is a top plan view of the completed mounting ready for use.

Figure 4 is a detail cross sectional view taken on the line 4—4 of Fig. 3.

Figure 5 is a detail plan view illustrating a modification of the means for holding the bed frame to the anchoring or foundation element.

Figure 6 is a detail sectional view illustrating a further modified means for holding the rectangular bed frame to the anchoring abutment foundation.

Figure 7 is a detail plan view illustrating a modified form of anchoring element.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying the present invention into effect it is proposed to provide a construction which lends itself to many different types of installations due to novel principles of construction which may be followed in mounting machines of various size and weight in buildings of different construction, thereby offering to the architect or builder a selection of the type of foundation to be used, and also greatly facilitating the installation of the individual units to insure accuracy of alinement and other advantages.

In its general aspect the invention comprises a primary anchoring element or foundation which is preferably a fixed or rigid part of the floor structure of the building, but may assume several forms as will presently appear. For example, in the construction shown in Figures 1 to 6 inclusive, the anchoring abutment or foundation is designated generally as A and is preferably formed by a block of concrete made integral with the floor of the building. The said foundation A may be formed if desired by using the rectangular wooden bed-frame B before the same is assembled to have the machinery mounted thereon, thereby using the elements or members of the bed-frame as a form prior to using them as a base for mounting the machinery.

Referring to Fig. 1, it will be observed that the said bed-frame B preferably consists of the end timbers or sills 1 and 2 and the side timbers 3 and 4 each of which are preferably mortised at their ends to provide the overlapping portions 5 and 6. In originally assembling these members the same are preferably mortised and shouldered to a sufficient degree to permit the extremities thereof to overlap and project beyond one another for a distance equivalent to the desired amount of space to be left between the bed-frame in its final set-up and the sides of the foundation element A.

Therefore, it will be understood that in erecting the present mounting the sills 1, 2, 3 and 4 may be laid on the floor F or on a filler frame F′ corresponding to the thick-

ness of the insulation slabs to be used, thereby to form the bed-frame in the manner shown in Figs. 1 and 2. This arrangement thus provides a mold for receiving the concrete which forms the anchoring foundation A. After the concrete has been poured and set sufficiently the timbers may be removed and readjusted or reset to the position shown in Fig. 3 from which it will be observed that the same are spaced from the sides of the anchoring foundation A so that the corner extremities of each of the sill members come into registering relation.

The above arrangement permits of the use of suitable means for fastening or securing the end corners of the sills 1, 2, 3 and 4 together, said means being designated broadly as C and in the example shown in Figs. 3 and 4 preferably comprising an expansion bolt 7 anchored in the still 3 and passing through an opening 8 in the sill 1 thereby to receive a holding nut and washer 9 to draw the sill members 1 and 3 tightly against the anti-vibration blocks or slabs 10 which are arranged between the vertical sides of the foundation A and the inner vertical sides of the sill members or timbers 1, 2, 3 and 4. Also it will be observed that the timbers forming the sills 1, 2, 3 and 4 may rest upon the horizontal absorbing slabs or plates 11 arranged between the undersides of the sills and the floor F.

The sound and vibration absorbing slabs 10 and 11 may be of the type shown in U. S. Patent No. 971,369, or an insulation unit commercially known to the trade as "Korfund", and are sufficiently resilient to permit of the effective clamping of the sill members to the permanent foundation so as to prevent movement of the machinery which is bolted directly to an exposed face or faces of the wood timbers which constitute the sills 1, 2, 3 and 4.

As will be observed from Fig. 3 it is unnecessary to use the elements 10 between the side sills 3 and 4 and the foundation A, a space being left thereby to prevent the transmission of vibrations to the concrete foundation.

Fig. 5 of the invention illustrates a further modified form of sill clamping and holding means C'. In this arrangement the side sills 3^a and 4^a and the end sill 1^a together with the end sill 2^a, (not shown), may be employed in the same manner to construct the concrete foundation A'. In this arrangement, however, the end sill 1^a is provided with an opening 12 thereby to receive an anchoring bolt 13 which is embedded in the concrete foundation A' and projects through the opening 12 to receive the nut 14 which presses the washer 15 against an anti-vibration washer 16 of "Korfund" or the like. Anti-vibration absorbing slabs or inserts 17 are used between the relatively adjustable sill and the foundation thereby to permit the entire rectangular frame to be firmly clamped to the foundation A'. In order to securely connect the sills 1^a, 3^a and 4^a after they have been properly set, the same may be fastened together at the corners by the spikes x as shown.

Fig. 6 illustrates another modification wherein the concrete foundation A^2 is formed with an opening at the time it is built, the said opening being made by using a pipe 18 or other mold which is larger than the tie bolt 19 which extends throughout the opening and receives the clamping nuts 20 at opposite ends thereof thereby to clamp the end sills 1^b and 2^b against the insulating slabs 21 and 22. In this arrangement the bolt 19 does not contact directly with the foundation A^2 because of its smaller diameter, and if desired an insulating bushing 18^a can be employed about the bolt without departing from the spirit of the invention.

Referring to Fig. 7 it will be observed that a modified form of foundation A^3 is provided. In this form the foundation may comprise separate blocks or upstanding vertical piers 23 and 24 as distinguished from the solid rectangular foundation A shown in Fig. 1, etc. In this form of the invention it is still proposed to employ the relatively adjustable end sill members 1^c and 2^d (not shown) as well as the relatively stationary sills 3^c and 4^c. Any suitable and convenient type of clamping means for the adjustable members 1^c and 2^c may be employed for clamping or pressing the same against the insulating slabs 25 which in turn bear against the piers 23 and 24. An example of the clamping means adapted for use in connection with this form of construction is shown to be that employed in Fig. 3.

From the foregoing it will be apparent that the present construction provides a mounting for machinery which essentially includes in its organization a permanent foundation or anchoring element A which is preferably a part of the building, and may be a rectangular slab or spaced upstanding posts or piers sunk in the floor, and either of which provide a firm anchorage for a rectangular frame which may under some circumstances be used as a form, and later as a base to which the machinery is attached. In all cases, however, the base preferably includes relatively fixed or stationary sill members, for example 3 and 4, and relatively adjustable sill members, for example 1 and 2, which permit of clamping the entire structure to the permanent foundation or anchorage. This construction not only permits of economical use of insulating material, but also makes it possible to line up one piece of machinery with another by the aid of shims of different thickness. Briefly, a distinctive

feature of the invention is to insulate all parts of the rectangular frame which contact with a permanent part of the building, either by the use of insulating inserts or leaving a space between the frame and the building part so that noise and vibration will not be transmitted thereto.

In connection with the sill members 1, 2, 3 and 4 it may be pointed out that while in the example shown the sill members 3 and 4 are relatively fixed or stationary, nevertheless these sill members may also be made adjustable and insulating material used between them and the anchoring element, without departing from the spirit or scope of the invention. That is true because, as previously indicated, a distinctive feature of the invention resides in the provision of utilizing a permanent building part as an anchorage for a machine or tool carrying timber element which is insulated from the anchorage by means of a sound absorbing unit of cork or its equivalent.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art. and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:

1. A mounting for machinery comprising a building part, a frame surrounding said building part and spaced therefrom, sound and vibration insulating elements adapted to be interposed between said frame and said building part and also between said frame and the floor of the building, and means for clamping certain parts only of said frame against the insulating material positioned between the frame and said building part.

2. A mounting for machinery comprising a frame consisting of a plurality of timbers, a permanent building part adapted to be surrounded by said timbers, means for insulating the timbers from the floor of the building and also from the permanent building part, and means for drawing certain of said timbers toward said permanent building part.

3. A machinery mounting comprising in combination with the floor having a permanent foundation, a plurality of timbers adapted to form a frame, means for adjustably assembling the timbers to provide the frame for carrying the machinery, said timbers being arranged in spaced relation to the foundation, and insulating elements interposed at spaced intervals between the floor of the building and the timbers and also between the vertical sides of the foundation and the timbers.

In testimony whereof I hereunto affix my signature.

SIEGFRIED ROSENZWEIG.