Oct. 29, 1929. G. B. PICKOP 1,734,020

VIBRATOR TABLE

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Fig. 1.

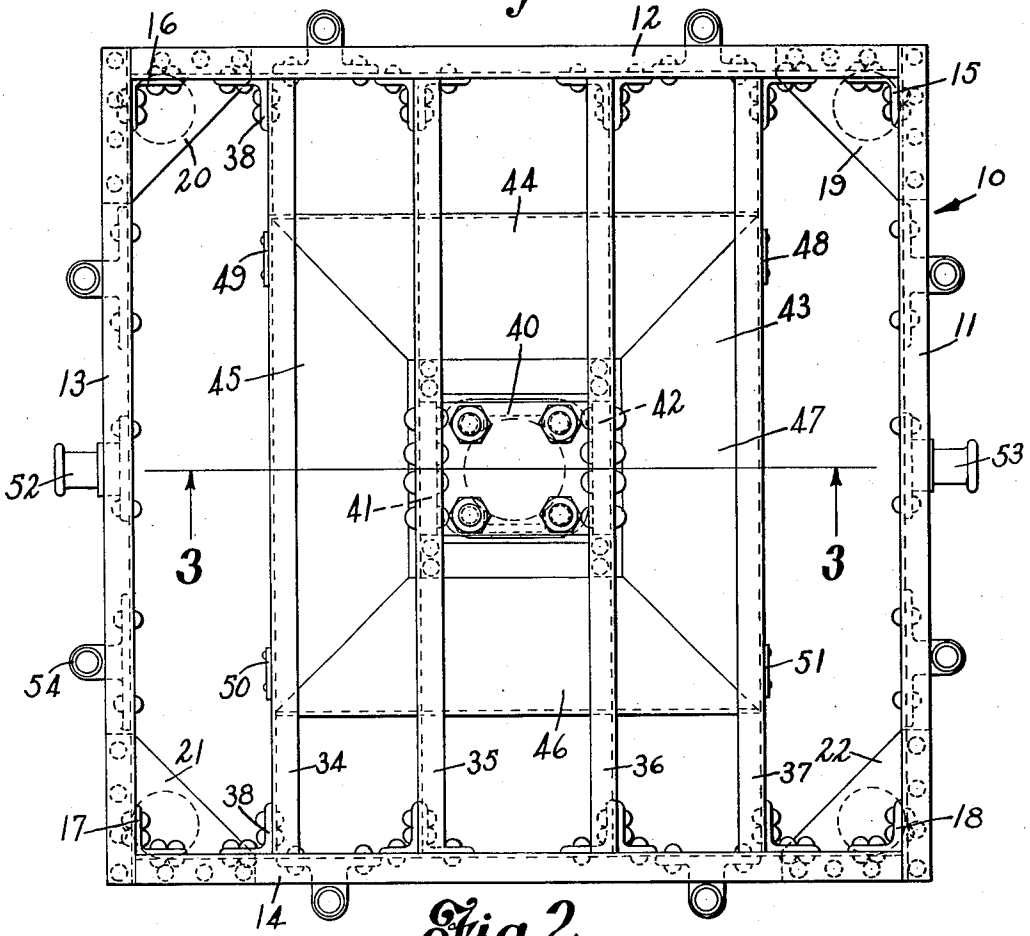
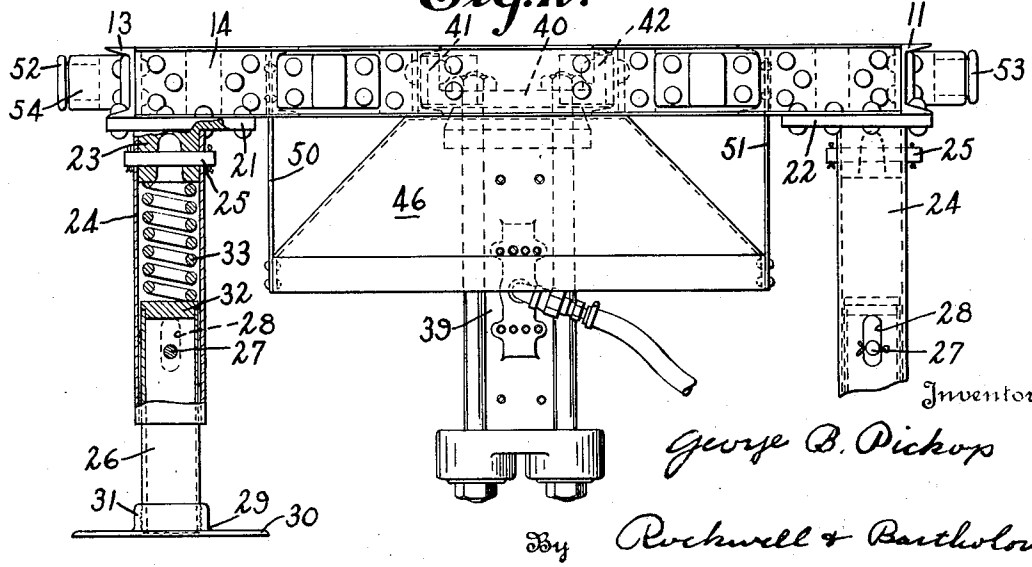


Fig. 2.



Inventor

George B. Pickop

By Rockwell & Barthelow

Attorneys

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Fig. 3.

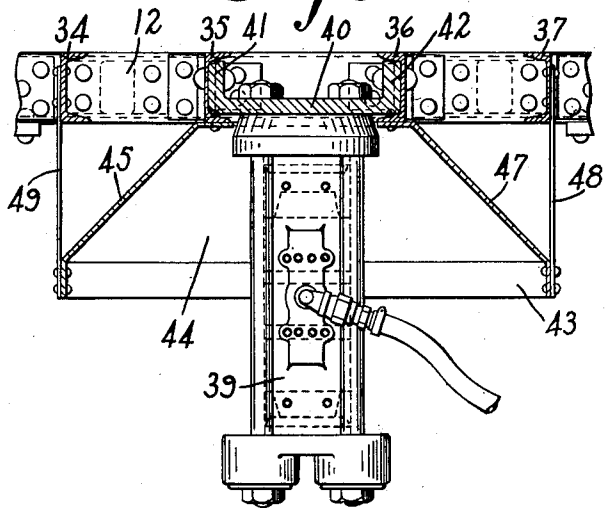
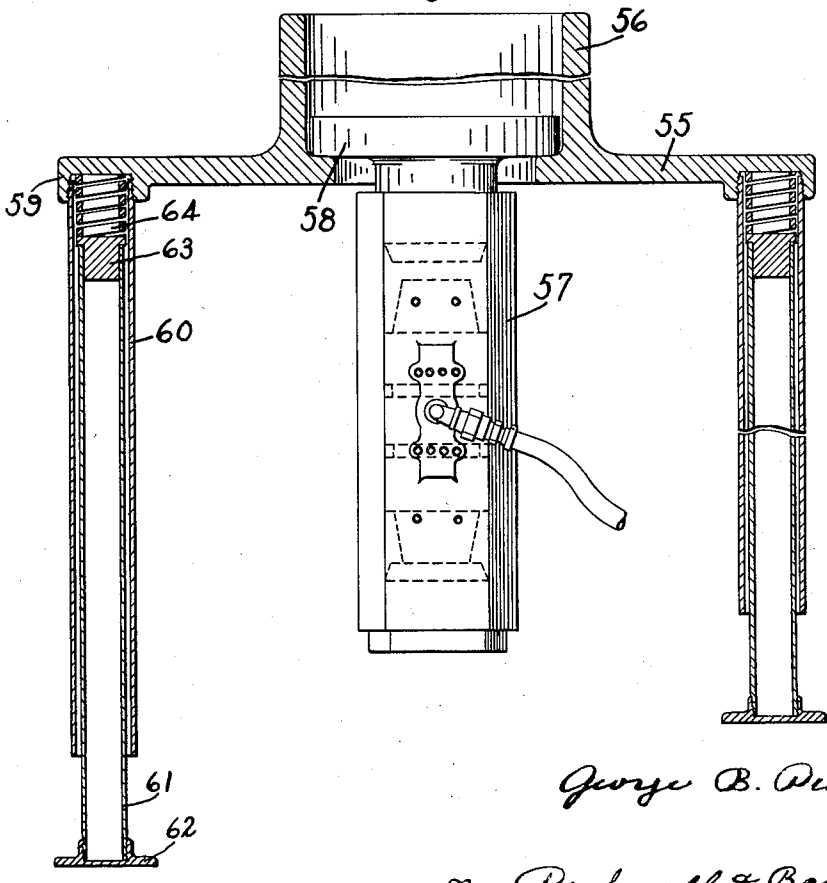


Fig. 4.



Inventor

George B. Pickop

By Rockwell & Bartholow

Attorneys

Patented Oct. 29, 1929 1,734,020

UNITED STATES PATENT OFFICE

GEORGE B. PICKOP, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO MALLEABLE IRON FITTINGS COMPANY, OF BRANFORD, CONNECTICUT

VIBRATOR TABLE

Application filed June 15, 1929. Serial No. 371,096.

This invention relates to a vibrator table and more especially to a vibrator table suitable for use in shaking sand and castings from flasks, for packing sand or other materials or articles in containers, and for similar purposes.

Generally speaking, the invention contemplates a table-like structure having an upper work-receiving part and a vibrator attached thereto, the chief object of the invention being to provide for a more efficient vibration of the work-receiving part and thereby the work than has previously been possible.

In a more specific aspect, it is an object of the invention to provide a vibrator table having a work-receiving top which is supported in a resilient manner so that the top may vibrate more freely under the action of a vibrator attached thereto than has previously been possible.

In certain aspects, the invention relates to a vibrator table having a top which is more or less open so that sand or the like may pass freely through the top, the support for the top being such that a conveyor may be arranged under the table to carry away the sand or the like.

A further object of the invention is to provide an arrangement wherein the possibility of sand collecting in or on the parts of the table or vibrator is reduced to a minimum.

A still further object of the invention is to provide a vibrator top of the above character which is readily portable and which may be made a part of a conveyor system or readily transported by a crane or the like.

Certain objects of the invention reside in structural features to more fully appear hereinafter.

To these and other ends, the invention consists in the novel features and combination of parts to be hereinafter described and claimed.

In the drawings,

Fig. 1 is a plan view of a vibrator table according to my invention;

Fig. 2 is a front elevation of the same, partly broken away;

Fig. 3 is a cross-sectional view along line 3—3 of Fig. 1; and

Fig. 4 is an elevational view, partly in section of a modified form.

Referring to the drawings in which I have illustrated my invention by showing a preferred embodiment of the same, the reference numeral 10 indicates in general the improved vibrator table which comprises, generally speaking, a frame substantially rectangular in form and having channeled rim members 11, 12, 13 and 14 rigidly secured together, as by means of angle brackets 15, 16, 17 and 18 which are preferably riveted to the channeled members. At each of the four corners of the rim portion and riveted to the lower faces thereof are angle plates 19, 20, 21 and 22 provided with studs 23 extending downwardly therefrom, studs 23 being round in cross-section and having mounted thereon tubes 24 secured to the studs 23 by means of pins 25. Telescopically received in tubes 24 are hollow stems 26 having mounted therein pins 27 which extend through elongated axial openings 28 in tubes 24 to limit the amount of relative movement between the tubes and stems. On the lower ends of stems 26 are feet 29, having relatively flat disk-like bottoms 30 and upstanding hollow bodies 31 in which the stems are received and secured in any usual or preferred manner. Mounted in the upper ends of stems 26 are plugs 32 against which compression springs 33 abut. The opposite ends of springs 33 abut the lower faces of studs 23.

Mounted between rim parts 12 and 14 parallel to and equally spaced between rim parts 11 and 13 are rails 34, 35, 36 and 37 herein shown as being channeled and secured to the rim parts 12 and 14 by angle brackets 38.

The reference numeral 39 indicates a vi-

brator which may be similar to that shown in my prior application No. 352,549, filed April 4, 1929, and which is provided with a U-shaped supporting member 40, having parallel side portions 41 and 42 by means of which the vibrator is mounted centrally of the table top between rails 35 and 36, side portions 41 and 42 being received in the channels of rails 35 and 36 and secured therein by means of rivets or the like.

The surface formed by the rim portions of the top and rails 34 to 37 inclusive, is relatively flat and horizontal and a flask or the like may be readily supported thereon. The table normally rests on feet 29, the top being resiliently supported thereon by springs 33. When the vibrator is brought into operation, the top of the table may vibrate freely owing to the resilient support given it by the springs, the sand or other parts removed from the flask or the like passing freely between the rails. The arrangement is such that a conveyor (not shown) may pass between the legs of the table to carry the sand away.

In order that sand may not reach the working parts of the vibrator, I have provided an apron 43 having in the embodiment shown four sides 44, 45, 46 and 47 forming a truncated pyramid, the upper end of the pyramid being flat and secured to rails 35 and 36 by rivets or the like, the lower ends of the apron 43 being supported by straps 48, 49, 50 and 51 riveted to the apron and to the rails 34 and 37.

Mounted on the exterior of rim parts 11 and 13 and extending outwardly from the sides of the table top are trunnions 52 and 53, by means of which the table may be carried from place to place by a crane or the like, while on each of rim parts 11, 12, 13 and 14 are spaced eyes 54 which may be used for similar purposes or to connect the table into a conveyor system for continuous transportation.

It will be understood that the bottoms or bases 30 may be placed anywhere upon the floor of a factory or foundry and that the table may be moved from place to place by a crane, the hooks of which will engage the trunnions 52 and 53. By reason of the fact that the top of the table is flat, it is adapted to be made a part of a conveyor system for example, so that articles may be drawn over the table which is interposed in the line of travel of the conveyor. In this way, articles to be vibrated may be handled in their regular course of travel and vibrated while passing over the top of the table. Also, the table is adapted to be set in a pit, or the like, so that its top is substantially flush with the floor, and in such instance, may be made a part of an industrial railway so that objects can be drawn upon the table by means of cars and vibrated upon reaching this articulated unit of the system. The sand dropping from the apron 43 may be carried away by a conveyor or the like (not shown), passing under the vibrator.

In Fig. 4 of the drawings I have shown a modification in which a relatively solid table top 55 is provided, having a hollow cylindrical part 56 in which a can or other container may be received, there being a vibrator 57 having a head 58 supported at the bottom of cylindrical part 56 and adapted to pack more efficiently any parts placed in a can or the like, when supported in the cylindrical part 56. In this form, the top 55 is provided at each of its four corners with hollow bosses 59 in which are mounted tubes 60 having telescopically received therein hollow stems 61 having at their lower ends feet 62 quite similar to feet 29, and at their upper ends plugs 63 which serve to support the top 55, through the medium of compression springs 64 received in tube 60 between top 55 and plug 63.

It will be readily understood from the above description of my invention and its mode of operation that I have provided a vibrator table in which the work receiving parts may be vibrated more freely than has previously been possible.

While I have shown a preferred embodiment of my invention, it will be understood that it is not to be limited to all the details shown, but is capable of modification and variation within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a vibrator table, a top, a casing rigidly secured to said top and having a reciprocating piston therein, legs supporting said top, and means interposed between said top and legs adapted to permit relative vibratory movement therebetween.

2. In a vibrator table, a top, a casing rigidly secured to said top and having a reciprocating piston therein, legs supporting said top, and resilient means interposed between said top and legs and adapted to permit relative vibratory movement therebetween.

3. In a vibrator table, a top, a vibrator connected to said top to vibrate the same, and means for supporting said top from a floor or the like, including a two-part leg, one of said parts being freely supported on the other for movement thereon during the vibratory movement of the top.

4. In a vibrator table, a top, a vibrator connected to said top, and means for supporting said top from a floor or the like, said means including a two-part leg, one of said parts being telescopically received in the other and a spring interposed between the parts.

5. In a vibrator table, a top, a vibrator connected to said top, and means for supporting said top from a floor or the like, including a tubular member mounted on the top, a stem

mounted in said tubular member for axial movement therein, means for limiting such movement, and resilient means supporting the tubular member from the stem.

6. In a vibrator table, a top, a vibrator connected to said top, and means for supporting said top from a floor or the like comprising a tubular member mounted on the top, a stem received in said tubular member, and resilient means mounted in said tubular member between said stem and top.

7. In a vibrator table, a top, a vibrator connected to said top, and means for supporting said top from a floor or the like, said means including a tubular member mounted on the top, a stem received in said tubular member, and a spring mounted in said tubular member between the stem and top.

8. In a vibrator table, a top, a vibrator connected to said top to vibrate the same, means for supporting said top from a floor or the like, including a two-part leg, one of said parts being freely supported on the other for movement thereon during the vibratory movement of the top, and means for limiting such movement to a vertical direction.

9. In a vibrator table, a top, a vibrator connected to said top to vibrate the same, and means for supporting said top from a floor or the like, including a stem, a compression spring mounted between said stem and top, and a tube telescopically received on said spring and stem.

10. In a vibrator table, a top, a vibrator connected to said top to vibrate the same, and means for supporting said top from a floor or the like, including a stem, a compression spring mounted between said stem and top, and a tube secured to said top and telescopically received on said spring and stem, and means for limiting the movement of said stem relatively to the top.

11. In a vibrator table, a top, a vibrator attached to and suspended beneath said top, and means for supporting said top from a floor or the like, said top being provided with a number of openings through which sand or other materials may pass upon being dislodged from a container received on said top and means for protecting the vibrator from such materials.

12. In a vibrator table, a top, said top including a number of spaced horizontal rails and being open between said rails, a vibrator attached to and suspended beneath said top, and means for supporting said top from a floor or the like.

13. In a vibrator table, a top, said top comprising a number of spaced horizontal rails and being open between said rails, a vibrator suspended from between two of said spaced rails, and resilient means for supporting said top from a floor or the like.

14. In a vibrator table, a top, said top comprising a number of spaced horizontal rails, means interconnecting said rails at their ends, a vibrator suspended from between two of said rails, a plurality of legs attached to the top near the periphery thereof, and an apron secured to the top above the vibrator.

15. In a vibrator table, a top, said top being provided with a number of openings therein, a vibrator attached to said top and extending downwardly therefrom, and means for preventing sand or other materials passing through the openings from lodging on said vibrator.

16. In a vibrator table, a top, said top being provided with a number of openings therein, a vibrator attached to said top and extending downwardly therefrom, and means for preventing sand or other materials passing through the openings from lodging on said vibrator, said last-named means comprising an apron mounted on said top at the upper end of said vibrator and surrounding the latter.

17. In a vibrator table, a top, said top being provided with a number of openings therein, a vibrator attached to said top and extending downwardly therefrom, and means for preventing sand or other materials passing through the openings from lodging on said vibrator, said last-named means comprising an apron mounted on said top at the upper end of said vibrator and surrounding the latter, said apron being in the form of a truncated pyramid and having the truncated portion thereof attached to the top at the upper end of the vibrator and the walls of the apron extending downwardly and outwardly around the vibrator.

18. In a vibrator table, means for supporting the article to be vibrated, a vibrator secured to said means, an understructure to support said means, and means interposed between said understructure and said article supporting means to permit relative vibratory movement therebetween.

19. In a vibrating device, a platform for supporting the article to be vibrated, a vibrator attached to said platform and having its weight carried thereby, means to support said platform, and resilient means interposed between the support and the platform to prevent transmission of vibrations to the support.

In witness whereof, I have hereunto set my hand this 13th day of June, 1929.

GEORGE B. PICKOP.