H. J. SCHAUMLEFFEL.

VIBRATOR.

APPLICATION FILED JUNE 18, 1920.

1,397,058.

Patented Nov. 15, 1921.

2 SHEETS—SHEET 1.

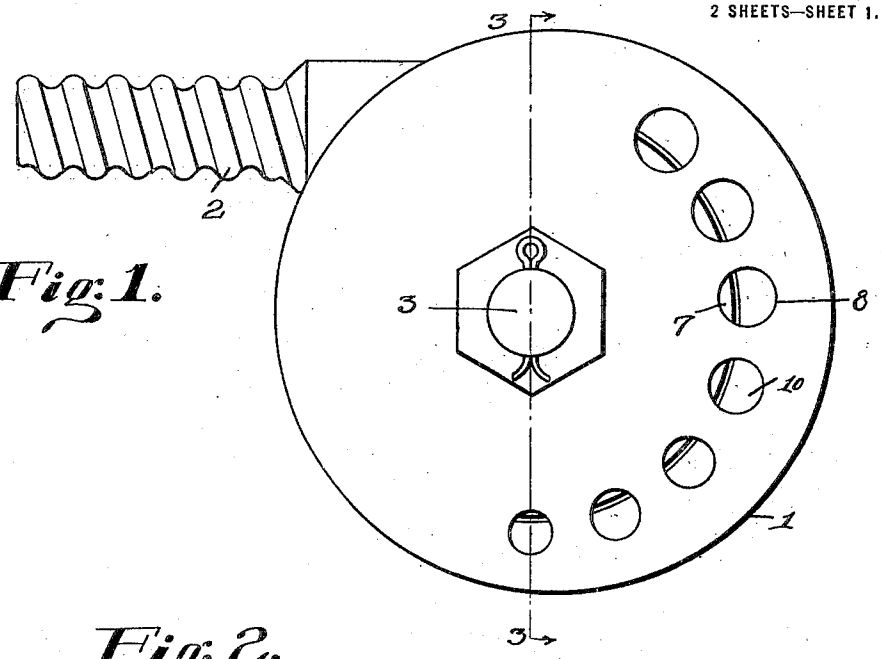
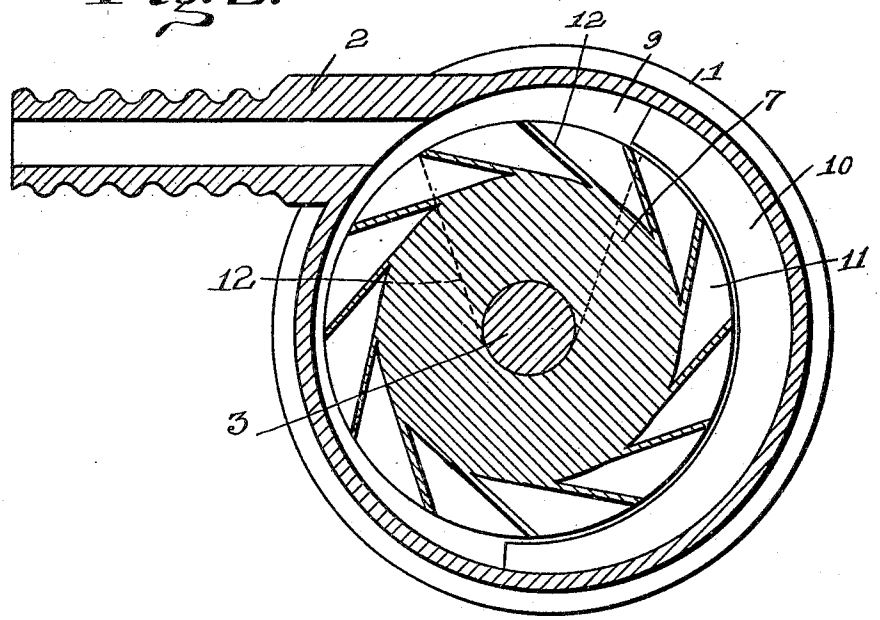


Fig. 1.

Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

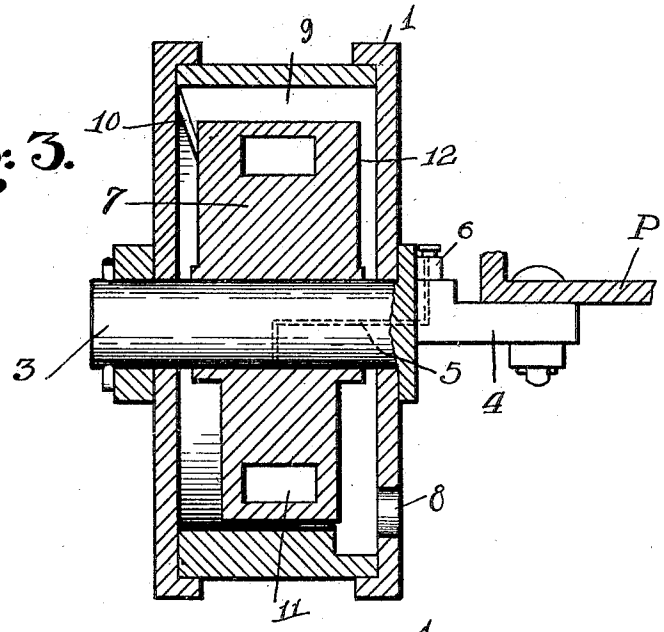
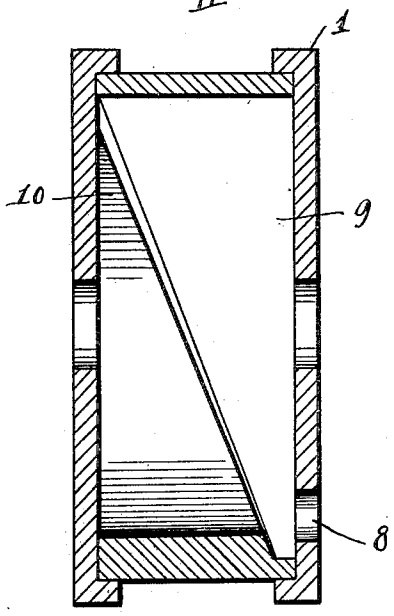


Fig. 4.



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UNITED STATES PATENT OFFICE.

HARRY J. SCHAUMLEFFEL, OF MARION, INDIANA.

VIBRATOR.

1,397,058. Specification of Letters Patent. Patented Nov. 15, 1921.

Application filed June 18, 1920. Serial No. 390,004.

To all whom it may concern:

Be it known that I, HARRY J. SCHAUMLEFFEL, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Vibrator, of which the following is a specification.

This invention relates to a rotary vibrator especially adapted for use in connection with patterns used in foundries, and for like purposes, one of the objects of the invention being to provide an air propelled rotor the weight of which is unevenly distributed about the axis of rotation so that, as the device rotates at a high speed it will be caused to vibrate or shift bodily, thereby to set up corresponding vibrations of the pattern to which the device is attached.

A further object is to provide means whereby the rotor will receive the full force of the propelling fluid which, immediately subsequent to its discharge against the rotor will be discharged freely from the casing or stator of the vibrator.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a side elevation of the vibrator.

Fig. 2 is a central longitudinal section therethrough.

Fig. 3 is a section on line 3—3, Fig. 1.

Fig. 4 is a section through the stator and showing the lateral air deflecting means.

Referring to the figures by characters of reference 1 designates a cylindrical stator or casing having an inlet tube 2 opening thereinto and arranged substantially tangent to the stator, this tube 2 being of any suitable construction and being adapted to be engaged by a flexible hose for conducting air or other motive fluid to the stator. A stationary bearing pin extends through the stator as indicated at 3 and is eccentrically disposed, one of the projecting ends of this pin being preferably enlarged as indicated at 4 and flattened for attachment to the match plate pattern P. An oil duct 5 extends from a cup 6 on a projecting portion of the pin 3 and opens through the periphery of the pin at a point within the stator.

Mounted for rotation on the pin 3 is a rotor 7 which is cylindrical but, being eccentrically arranged within the stator, forms a substantially crescent shaped space between the wall of the stator and the periphery of the rotor. The tube 2 opens into one end portion of this space and outlet openings 8 are formed in one side of the stator and in communication with that portion of the space 9 remote from the tube 2. For the purpose of deflecting motive fluid laterally from the space 9 to the outlets 8 an inclined shoulder 10 is provided for partly filling the space 9, this shoulder extending partly around the rotor and being inclined from one side of the stator toward the other so that the space extending between the rotor and the stator is thus gradually narrowed laterally with the result that air or other motive fluid swirling with the rotor will be deflected by the inclined shoulder 10 laterally to the openings 8.

Formed in the periphery or the rotor 7 is an annular series of V-shaped pockets 11 separated by partitions 12 arranged tangent to a circle defined by the inner ends of the pockets and these pockets are so positioned that their open outer ends will be brought successively into line with the delivery end of the tube 2 so that the current of air or other motive fluid directed into the stator will be projected into the pockets successively and thereby cause the rotor to travel at a high speed. The motive fluid, after leaving the tube 2 and giving an impulse to the rotor 7 is thrown outwardly into the space 9 and continues to swirl with the rotor and is finally deflected laterally by the inclined shoulder 10 through the openings 8.

It will be noted by referring particularly to Fig. 3 that weight is added to a portion of the rotor by thickening a segment of said rotor, as shown at 12. As the weight is thus not evenly distributed about the axis of rotation, it will be apparent that during the rapid movement of the rotor the weight will set up a bodily movement or vibration of the rotor and a corresponding movement of the stator in which it is located and as the pin 3 is fastened to the pattern, this rapid

bodily movement will set up a vibration of the pattern.

What is claimed is:

1. A vibrator including a stator having a tangential inlet and an arcuate series of lateral outlets of gradually diminished area, means for connecting the stator to an object to be vibrated, a rotor eccentrically mounted within the stator and having peripheral pockets for receiving successively the impact of motive fluid, there being a segmental space between the rotor and the stator extending from the inlet to the outlet, the width of the space gradually diminishing from the inlet to the farthermost outlet.

2. A vibrator including a stator having a tangential inlet, an eccentrically mounted rotor having peripheral impact receiving pockets, there being an arcuate space between the stator and the periphery of the rotor and extending from the inlet, there being an arcuate series of outlet openings at one side of said arcuate space, the openings being graduated inside with the largest opening nearest the inlet and the smallest opening remote from the inlet, and deflecting means within said arcuate space for directing motive fluid laterally through the outlets.

3. A vibrator including a stator having a tangential inlet and a lateral outlet, means for connecting the stator to an object to be vibrated, a rotor eccentrically mounted within the stator and having an annular series of pockets for receiving successively the impact of motive fluid, there being a space of varying width between the peripheries of the rotor and stator, and an inclined deflecting shoulder in said space and extending partly around the rotor for directing spent motive fluid to the lateral outlet.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY J. SCHAUMLEFFEL.

Witnesses:

WM. MARSHALL,

E. F. FERREE.