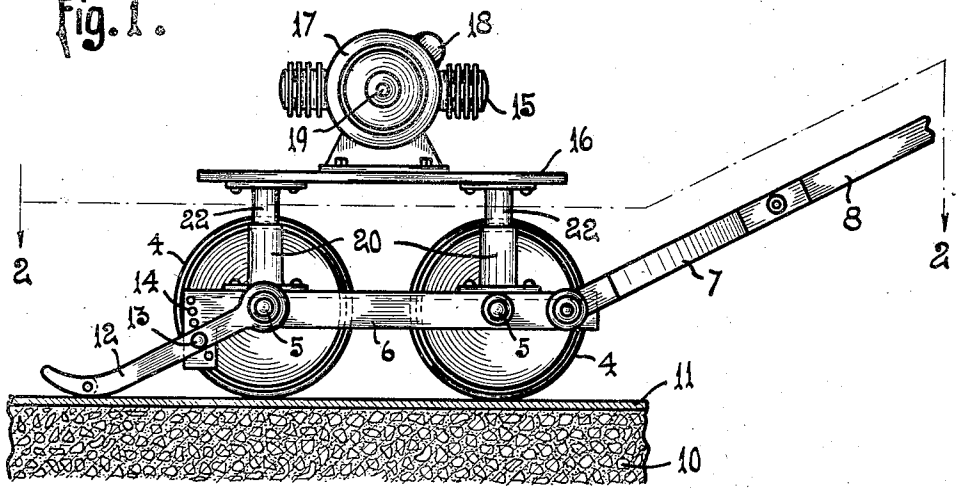
Oct. 18, 1938. J. T. KERNS 2,133,862

VIBRATING MACHINE

Filed Nov. 8, 1937

Fig. 1.



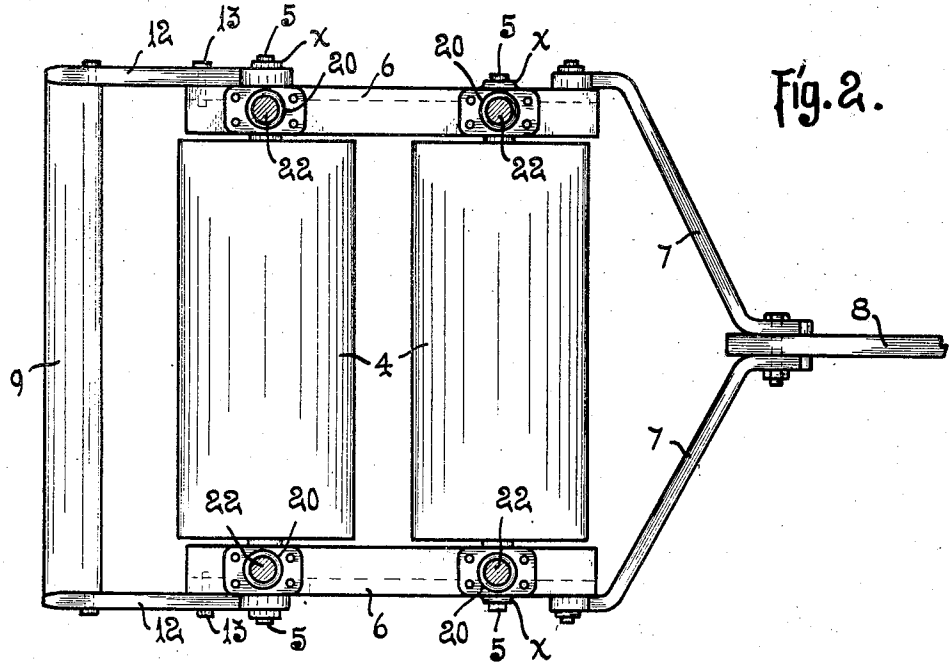


Fig. 2.

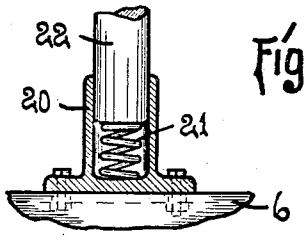


Fig. 3.

Inventor

By John T. Kerns.

Hiram A. Sturges Attorney

Patented Oct. 18, 1938

2,133,862

UNITED STATES PATENT OFFICE

2,133,862

VIBRATING MACHINE

John T. Kerns, Omaha, Nebr.

Application November 8, 1937, Serial No. 173,333

2 Claims. (Cl. 94—48)

This invention relates to a vibrating machine or roller of that class used in the construction of concrete highways, streets and areas, and has for one of its objects to provide a machine of more simple parts than ordinary.

Another object is to provide a combined vibrator and spreader, said spreader being of advantage as an aid to rapid work since the plastic material to be packed and pressed by the machine when delivered to a roadbed often has a rough undulating surface, and the spreader breaks down all hummocks and provides a comparatively level surface in advance of the rollers to avoid the formation of depressions.

Also the invention includes a new system of operation, whereby the soft material may be pressed and leveled uniformly and at lesser expense than usual, this feature including the use of a flexible covering or carpet, such as wire-cloth upon which the machine may roll. In instances when the ingredients at the surface are in free plastic condition the wire-cloth is used and the rollers operate to press the material downwardly into the layer of broken rock which forms the base of the pavement and at that time the spreader is not used.

The invention consists of the new and useful construction, combination and arrangement of parts as described and claimed herein, and as illustrated in the drawing, it being understood that changes may be made in form, size, proportions and minor details, said changes being within the scope of the invention as claimed.

In the drawing, Fig. 1 is a view of the machine in side elevation, the handle being broken away.

Fig. 2 is a plan view of the lower part of the machine, the section being on line 2—2 of Fig. 1.

Fig. 3 is a sectional detail showing one of the resiliently mounted plungers.

Referring now to the drawing for a more particular description, numerals 4 indicate a pair of parallel rollers, each being provided axially at its ends with a pair of trunnions 5 which are journalled in a pair of yokes 6, said yokes being connected, in part, by the arms 7 of the handle 8, and in part by a spreader-member 9. Also the opposed yokes 6 are relatively connected since washers x are preferably mounted on the trunnions, and the yokes together with the parts mentioned provide a frame approximately rectangular in plan of strong construction, adapted to adequately sustain all stresses while the machine is rolled back and forth for pressing the soft mixture, such as sand, water and cement, downwardly into the lower mass of crushed rock 10 shown in Fig. 1, said operation also causing the material to become packed and solidified.

However, in order that depressions will not be formed by action of the rollers while moving on soft surface-material, a flexible covering, preferably of wire-cloth 11 is provided, upon which the rollers move, said wire-cloth permitting free movement thereon of the machine but furnishing sufficient resistance to prevent objectionable pockets or depressions, so that a smooth, uniform surface for a highway may be attained.

In some instances however, the cover 11 may be dispensed with, these instances being when the surface ingredients are of lesser liquid consistency, and also the spreader is used to advantage when the ingredients dumped upon the base 10 has rough surfaces.

The spreader-member may be adjusted so that it will be maintained at greater or lesser distances from the ground. The arms 12 of member 9 are swingably mounted on the trunnions of the front roller 4 and may be secured in stationary relation with the yokes 6 by use of keepers 13 which may engage in any selected apertures 14 of the yokes.

When it is desired that the spreader-member is not to be used an adjustment may be made to maintain it in non-operative position, the keepers engaging in the uppermost apertures.

To provide for vibration of the rollers 4, a gasoline motor 15 is mounted on a platform 16, said motor being provided with a balance wheel 17 provided on its periphery with a projection 18 operating as a weight-member to cause the balance to rotate "off center" from the shaft 19 of the motor. However this abnormal condition or peripheral weight-member 18 and also the wheel 17 in some instances may be omitted if desired for the reason that ordinary vibration is normally produced on account of action of gasoline motors.

In order that the vibration may be applied effectively to the rollers so that the soft ingredients will be forced downwardly to fill the spaces between and around the pieces of rock forming the base 10 of the concrete pavement, vertical supports are provided for the platform to be described. At 20 are indicated a plurality of sockets arranged in pairs at the ends of the rollers and mounted on the yokes in the vertical planes of the axes of said rollers, each socket containing a helical spring 21 as shown in Fig. 3. A plurality of plunger-members or stub shafts 22 slidably engage in the sockets and are secured to the platform.

As thus described it will be noted that vibration will be delivered uniformly to the rollers, one reason for this feature being that the center of gravity carried by the platform is in line with the center of gravity carried by the yokes.

As described, the pair of parallel, opposed, connected yokes and pair of rollers journalled therein may be considered to be the base-assembly of the machine; also its center of gravity is approximately midway between the rollers, and since the center of gravity of the platform and motor thereon is disposed approximately in vertical alignment with that of the base-assembly the desired vibration of the element **15** will be directed practically and uniformly to the rollers.

I claim as my invention—

1. In a machine for the purposes described, a base assembly including a pair of opposed, parallel, relatively connected yokes and a pair of parallel cylindrical rollers having trunnions journalled in said yokes, a platform disposed above with its center of gravity normally in line, vertically, with the center of gravity of the base assembly, a plurality of upright supporting members each resiliently mounted on a yoke at the end of a roller and secured to the platform, and a gasoline motor on the platform to cause vibration of the supporting-members and yokes to cause vibration of said rollers.

2. In a machine for the purposes described, a pair of opposed, parallel yokes each provided with a pair of socket-members, helical springs in the socket-members, a pair of parallel cylindrical rollers disposed side by side and having journalled bearings at their ends in said yokes, a horizontal platform above the rollers, a plurality of plunger-members secured to the platform slidably mounted in the socket-members and normally engaging said springs, and a vibratory motor on the platform for directing vibration to said rollers.

JOHN T. KERNS.