Dec. 14, 1943. J. J. SUTER 2,336,814

ROLLING TAMPING APPARATUS

Filed March 29, 1941

Fig. 1.

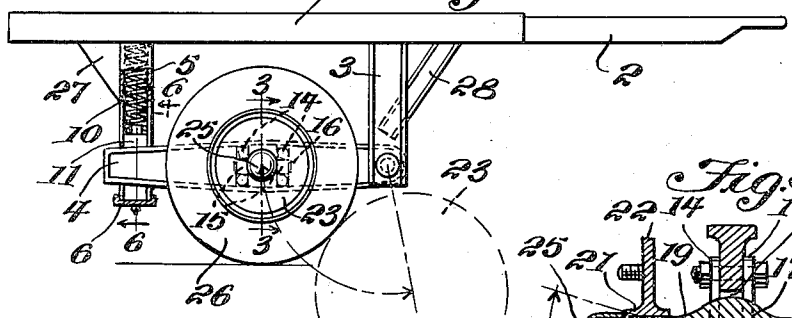


Fig. 3.

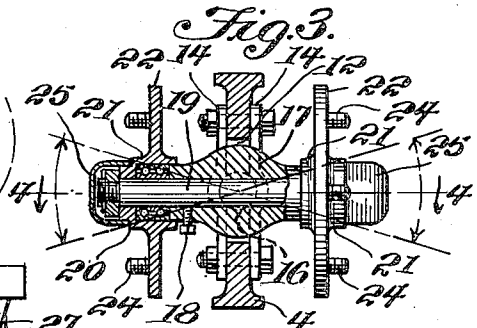
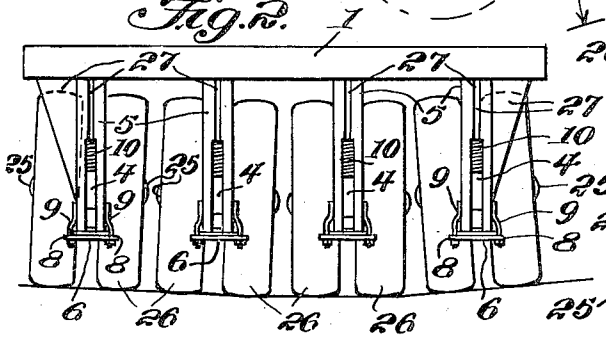


Fig. 2.



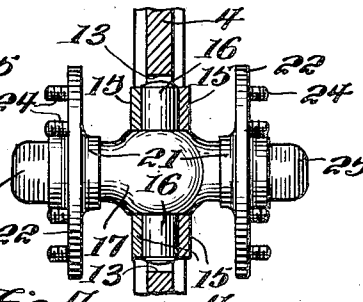


Fig. 4.

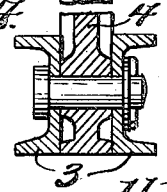


Fig. 6.

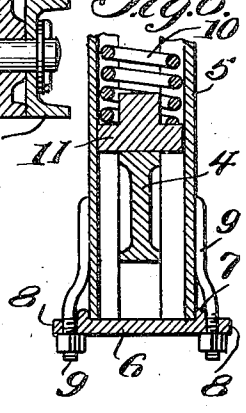
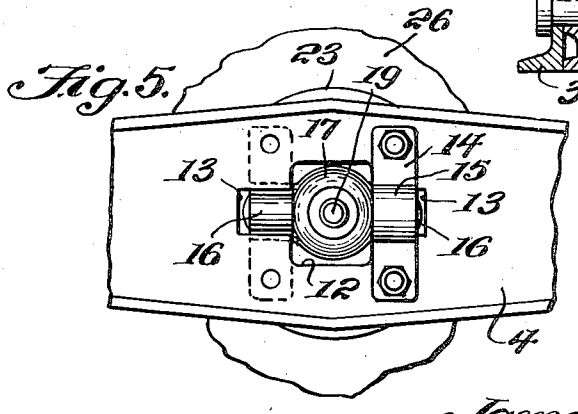


Fig. 5.



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ROLLING TAMPING APPARATUS

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Application March 29, 1941, Serial No. 385,923

2 Claims. (Cl. 94—50)

This invention relates to ground rollers for road building and the like, and its general object is to provide what I term a rolling tamper, in that it performs a combined tamping and rolling function, to form an even, firm and compact surface over the entire ground area acted upon, and which is not possible by roller apparatus now in general use, that includes a single metallic cylindrical roller or a number of parallel wheel like rollers all mounted on a single axle, while my apparatus includes a plurality of pneumatic tired wheels resiliently and independently mounted in pairs for individual movement of each pair to bring about the tamping action, as the roller is drawn along the ground.

A further object is to provide a rolling tamper in which the wheels are mounted for both a reciprocatory and oscillatory movement in a vertical plane, so as to not only bring about the tamping action, but to allow the wheels to follow the base level of the ground.

Another object is to provide an apparatus of the character set forth, that is simple in construction, inexpensive to manufacture and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a side elevation of the apparatus which forms the subject matter of the present invention, and illustrates the wheels in working position in full lines and in lowered position out of use in dotted lines.

Figure 2 is a rear view of the apparatus.

Figure 3 is a vertical sectional view taken through one of the units, and approximately on line 3—3 of Figure 1, with the wheels removed from the hub flanges.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 3, with parts in elevation.

Figure 5 is a fragmentary side view with one of the wheels and its hub removed.

Figure 6 is a sectional view taken approximately on line 6—6 of Figure 1.

Referring to the drawing in detail, the reference numeral 1 indicates a flat supporting body which may be in the form of a frame or platform, and suitably secured to the front of the body is a tongue or hitch 2 for coupling the apparatus to a tractor or truck, as will be apparent. It will be noted that the apparatus shown includes four parallel arranged identical rolling and tamping units, but the apparatus may be made in any size to include any number of units.

Each unit includes a pair of U-beam members 3 secured to and depending from the body adjacent the front thereof, with an I-beam bar 4 having one end pivotally connected between the lower ends of the members 3, while secured to and depending from the body adjacent the rear thereof is a hollow cylindrical member 5, slotted longitudinally upon diametrically opposite sides for a portion of its height from its lower end and mounted in the slot is the opposite end portion of the bar, for disposal of the bar in bridging relation between the members 3 and 5, as clearly shown in Figure 1.

The lower end of the cylindrical member 5 is closed by a cap 6 having an annular rib 7 formed thereon for fitting engagement with the cylindrical member exteriorly of the lower end thereof, as shown in Figure 6. The cap is shaped to provide diametrically opposed ears 8 having openings therein for receiving the lower ends of arms 9 that are fixed to the cylindrical member in depending relation therefrom and nuts are threaded on the arms 9 for holding the cap in closed position.

Housed within the cylindrical member is a coil spring 10 having its lower end mounted on the reduced portion of a follower bearing 11 engaged with the bar 4, as clearly shown in Figure 6. By that construction it will be obvious that the rear end of the bar is resiliently mounted to bring about the tamping action of the wheels which will be later described.

The I-beam bar increases in size from its ends to provide a relatively large central portion having a centrally disposed opening 12 therein with opposed recesses 13 extending from the sides of the opening, as best shown in Figure 5. Secured to the bar by bolt and nut connections and disposed in pairs upon diametrically opposite sides thereof are bearing brackets 14 having their bearing portions 15 bridging the recesses for cooperation with each other and which have mounted therein trunnions 16 formed on and extending from the opposite sides of an axle housing 17 for disposal of the housing through the opening 12 and for rocking movement thereof, as will be apparent upon inspection of Figure 4.

Mounted in and fixed to the axle housing by a set screw 18 is a stub axle 19 of a length to

extend beyond the opposite sides of the housing 17 and mounted on bearings 20 on the extending end portions of the axle are hubs 21 having formed thereon flanges 22 for the wheels 23, the wheels being secured to the flanges by nuts threadedly mounted on the studs 24, as will be apparent, and of course the hubs are held on the axle by nuts in the usual manner, and caps 25 are provided for the hubs. The wheels are provided with pneumatic tires 26 having relatively flat tread surfaces.

From the above description and the disclosure in the drawing, it will be obvious that as the apparatus is drawn along the ground, the wheels will be given a reciprocatory movement to bring about the tamping action thereof, in that the rear portions of the bars are resiliently mounted, and the wheels are allowed to oscillate as shown by the arrows in Figure 3, so as to follow the ground level due to the mounting of the trunnions within the bearing brackets 14.

It will be further obvious that the mounting of the bar 4 with respect to the cylindrical member makes it possible to readily remove the bar therefrom for swinging the wheels to the dotted line position of Figure 1, so as to materially facilitate repairing the tires in the event of a puncture or other damage thereto, as when the wheels are swung accordingly, ready access can be had thereto.

The cylindrical member 5 as well as the U-members are provided with suitable bracing means, 27 and 28 respectively, the bracing means being secured to their members and to the body, as best shown in Figure 1.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A rolling tamping apparatus comprising a flat body, a plurality of parallel arranged units carried by the body, each unit including a pair of U-beam members secured to and depending from adjacent the front of the body, a hollow cylindrical member secured to and depending from adjacent the rear of the body, an I-beam bar having one end pivotally secured between the lower ends of the U-beam members, said cylindrical member being slotted longitudinally upon diametrically opposite sides thereof for a portion of its height from its bottom and having the opposite end of the bar mounted in the slot to be guided thereby for swinging movement in a vertical plane, a detachable cap closing the lower end of the cylindrical member to act as a stop for said bar, a spring housed within the cylindrical member for bearing association with respect to the bar, and a pair of pneumatic tired ground engaging wheels carried by the bar midway its ends and mounted upon opposite sides thereof for oscillatory movement in a vertical plane.

2. A rolling tamping apparatus comprising a flat body, hitch means secured to the body and extending forwardly therefrom, a plurality of parallel arranged units carried by the body, each unit including a bar pivoted at one end and resiliently mounted at its opposite end for swinging movement of said bar in a vertical plane, said bar having an opening therein centrally of its ends, bearings secured upon opposite sides of the bar at the ends of the opening, an axle housing extending through the opening and mounted in the bearings for rocking movement along the length of the bar, an axle fixed within the housing and extending therethrough for disposal upon opposite sides of the bar, and pneumatic tired wheels journaled on the ends of the axle.

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