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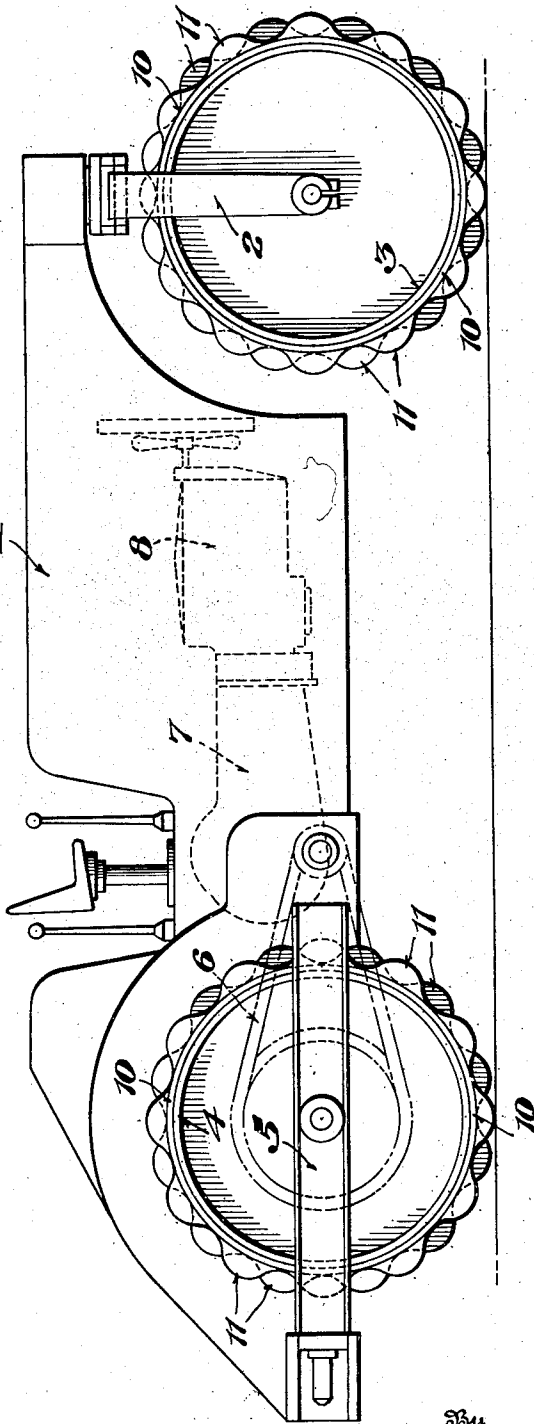
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KNEADING COMPACTION LUG FOR TAMPING ROLLERS

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2 Sheets-Sheet 1

Fig. 1.



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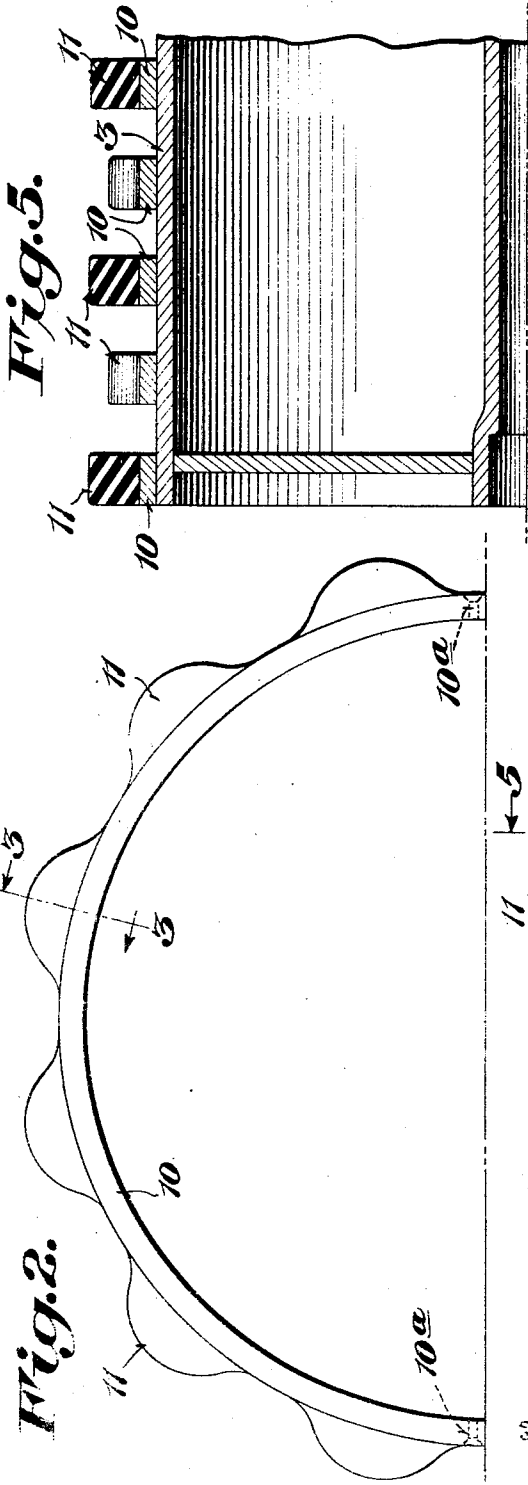
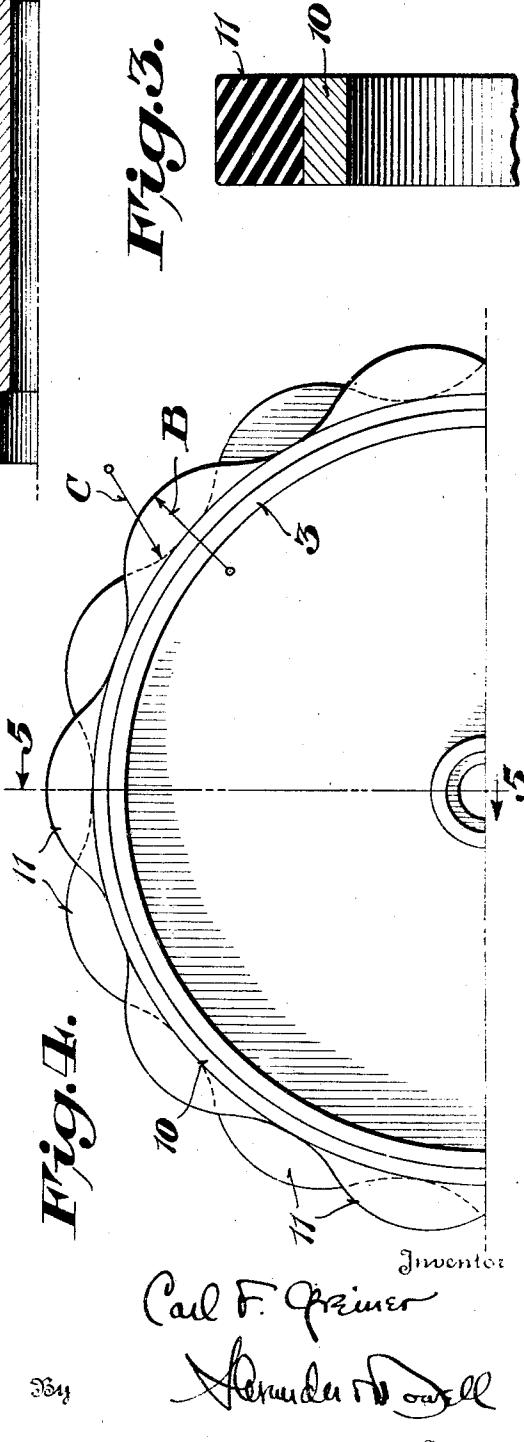
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2 Sheets-Sheet 2



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KNEADING COMPACTION LUG FOR
TAMPING ROLLERS

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8 Claims. (Cl. 94—50)

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This invention is a novel improvement in kneading compaction lugs for tamping rollers, the same being an improvement over the conventional tamping lugs heretofore used on tamping or so-called sheepfoot rollers.

Sheepfoot rollers of conventional type have been found to kick the soil, pick same up and throw the soil as the teeth leave the ground and hence it has therefore been impossible to effectively compact the top inch or more of soil layer which is being compacted.

The principal object of my present invention is to provide a new shaped lug which will enter and leave the soil without kicking or throwing same, while at the same time my new lug will penetrate to the bottom of the soil layer being compacted and will otherwise function the same as the sheepfoot tamping rollers insofar as compacting the soil layer from the bottom up is concerned, but will dispense with kicking and throwing the soil adjacent the top layer.

A further object is to provide new compaction lugs for tamping rollers which are spaced in staggered rows the same as sheepfoot tamping elements, but because of the more or less continuity of their shape or curvature, will function somewhat as continuous rings, my novel kneading compaction lugs being of undulating shape, causing the soil contact to change to alternate rings as the roll progresses, thus effecting a kneading action similar to that produced by pneumatic tires or wobble wheels.

A further object of the invention is to provide lugs of the above type which will achieve all of the tamping advantages of both conventional tamping rollers provided with sheepfoot tamping elements and pneumatic-tired tamping rollers.

I will explain the invention with reference to the accompanying drawings which illustrate one practical embodiment thereof to enable others familiar with the art to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combinations of parts, for which protection is desired.

In said drawing:

Figure 1 is a side elevation of a tamping roller provided with my novel kneading compaction lugs.

Fig. 2 is an enlarged side elevation of one semi-circular section of my kneading compaction lug.

Fig. 3 is a transverse section on the line 3—3, Fig. 2.

Fig. 4 is an enlarged side elevation of my novel

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kneading compaction lugs assembled on a portion of the roll.

Fig. 5 is a transverse section on the line 5—5, Fig. 4.

As shown in Fig. 1, the road roller is of more or less conventional type, same having a main frame 1, carrying at its front a bearing for a steering yoke 2 which carries a steering roll 3 controlled from the operator's seat in any conventional manner. At the rear of the frame 1 are drive rolls 4 mounted in swingable sub-frames 5, said rolls being driven by chains 6 from the shaft sections of differential 7, the chain running over suitable sprockets as shown, the differential 7 being operated by motor 8. The above parts are more or less conventional, and form no part of my present invention, the rolls 3—4 being preferably of smooth cylindrical shape.

As shown in Figure 2, each of my novel kneading compaction lugs for tamping rolls comprises a pair of metallic semi-circular band sections 10 of desired width, conforming with the curvature of the related roll 3 or 4, each section extending 180 degrees in length and being provided with countersunk holes 10a at its ends, as shown in Fig. 2, for the reception of retaining screws or the like, which secure the ends of the band sections 10 to its respective roll 3 or 4.

Secured to the exterior of each band section 10 is an undulating yieldable lug 11, preferably formed of solid rubber moulded to the band 10, although the lug 11 may be of non-yieldable material, such as steel, if desired. Preferably the lugs 11 are of solid rubber and where used a self-cleaning action results, due to deformation of the rubber when under load. When the load is removed, the rubber will resume its original shape, thus releasing any material which would ordinarily be retained or wedged between all-metal lugs. By reason of the contour of the lugs 11, there are no sharp corners which will catch and throw the soil.

As shown in Figs. 4 and 5, the kneading compaction lugs 10—11 are placed on the roll 3 or 4 in spaced relation and with the crests of one lug disposed opposite the troughs of adjacent lugs, to assist in the kneading action. According to my invention, the lugs 10—11 are of such shape that the tendency for soil or the like to adhere to them during operation is reduced to a minimum. This due to the full curved characteristic of the undulating outer edge of the lugs 11, as illustrated by the radii B—C (Fig. 4), and thus the soil is not kicked up nor thrown by the lug

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as the lug travels. The kneading action of alternate rows of lugs accelerates the rate of compaction and achieves all claimed advantages of pneumatic and/or wobble wheel types of rollers. Moreover, the lugs 11 are so shaped, for inherent strength, that they can safely be made of rubber.

As above stated, while the undulating lugs 11 are preferably made of solid rubber moulded to the metallic band sections 10, the undulating lugs 11 may be formed integrally with the band 10 and made of metal or other non-yieldable material.

During operation, the lugs 10-11 will penetrate to the bottom of the soil being compacted and will function exactly the same as conventional tamping feet of the sheepfoot type insofar as compacting the soil layer from the bottom up is concerned. The lugs being spaced in staggered rows, the same as tamping feet, and because of the more or less continuity of their shape, will function somewhat as continuous rings. Their undulating shape, however, causes the ground contact to change to alternate rings, during the rolling operation, thus effecting a kneading action similar to that produced by pneumatic tires or wobble wheels. Thus my novel kneading compaction lugs achieve all the advantages of conventional tamping rollers and pneumatic-tired rollers.

I do not limit my invention to the exact form shown in the drawings, for obviously changes may be made therein within the scope of the claims.

I claim:

1. In combination with a tamping roller, a plurality of pairs of semi-circular metallic band sections conforming with the curvature of the rolls and secured to the roll to form a series of spaced circumferential rings therearound; and undulating semi-circular lug members having alternating arcuate troughs and crests carried by the band sections respectively, the crests of the lugs of each ring being disposed opposite the troughs of the lugs of adjacent rings.

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2. In a combination as set forth in claim 1, said undulating lugs being formed of solid rubber molded to their respective band sections.

3. In a combination as set forth in claim 1, said crests and troughs of the lugs having substantially the same radii to provide a full curved characteristic to the undulating outer faces of the lugs.

4. In combination with a tamping roller, a plurality of undulating lug members on the roller conforming with the curvature of the roller and secured thereto to form rows in spaced circumferential relation, said lug members having alternating arcuate troughs and crests, the crests of the lugs of each row overlapping the troughs of the lugs of adjacent rows.

5. In a combination as set forth in claim 4, said undulating lugs being formed of solid rubber and secured to the said roller.

6. In a combination as set forth in claim 4, said crests and troughs of the lugs having substantially the same radii to provide a full curved characteristic to the undulating outer faces of the lugs.

7. Compaction means for the rolls of tamping rollers, comprising a metallic band curved to conform with and to be secured to the roller, and an undulating lug member carried by the band, said lug member having alternating arcuate troughs and crests.

8. In means as set forth in claim 7, said undulating lugs being formed of solid rubber molded to the band.

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