

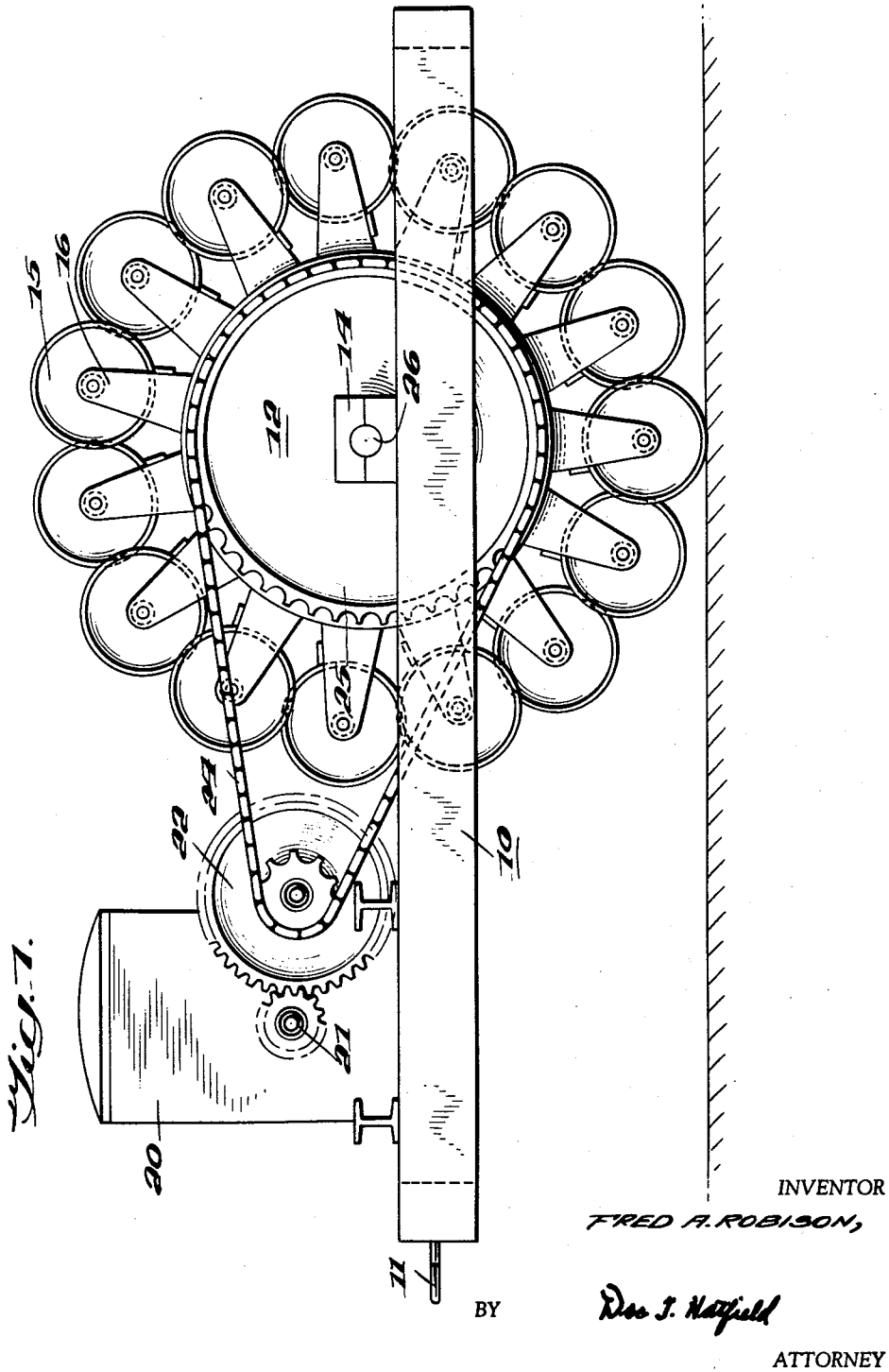
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F. A. ROBISON
EARTH TAMPING ROLLER

2,938,439

Filed Dec. 9, 1957

2 Sheets-Sheet 1



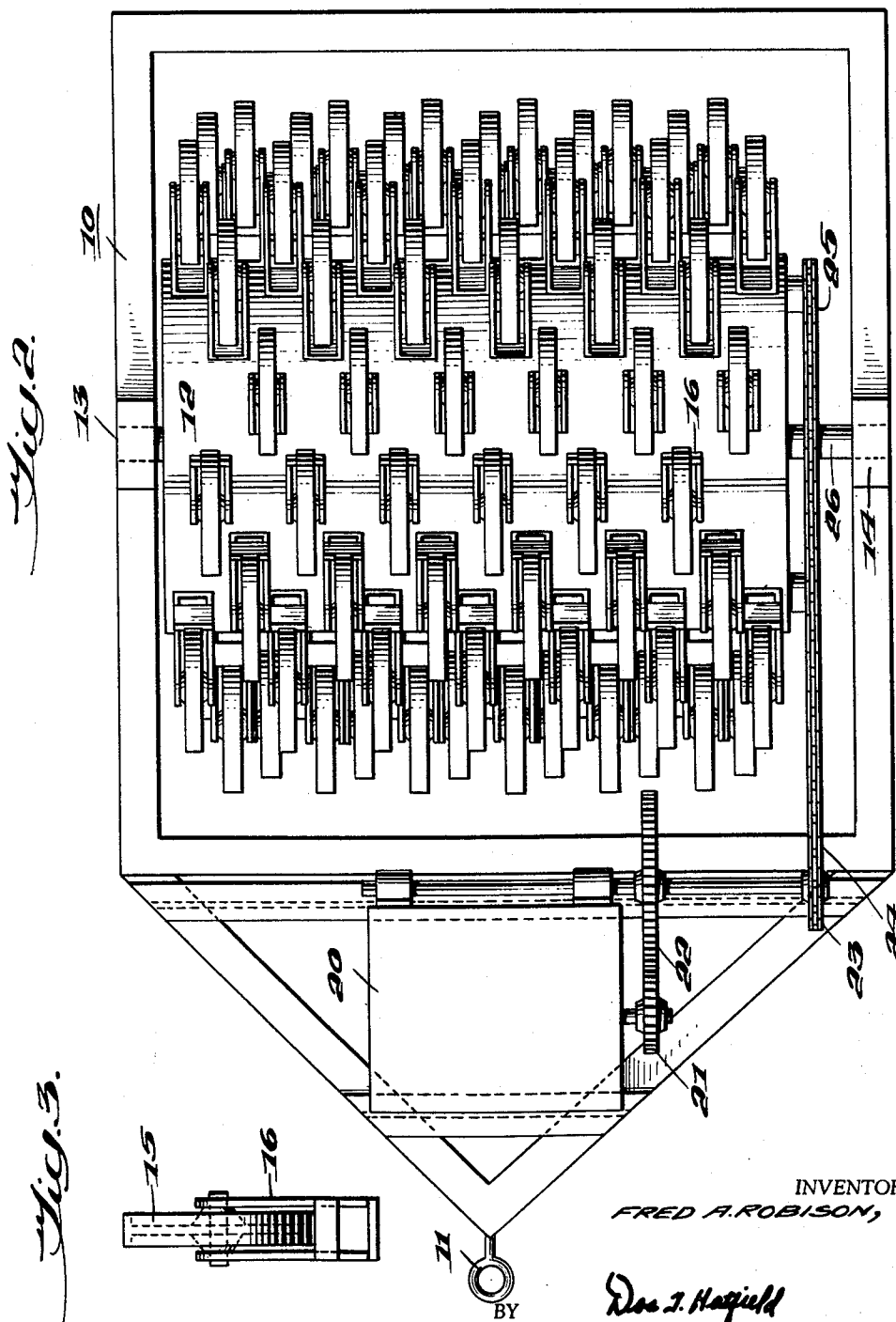
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EARTH TAMPING ROLLER

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1 Claim. (Cl. 94—50)

The present invention relates to earth working machinery and more particularly to tamping rollers for compacting loose earth surfaces.

One of the more well known types of earth tamping devices is the so-called sheep's foot roller which essentially consists of a rotatable cylindrical drum having a plurality of radial projections or "feet" extending from the cylindrical periphery of the drum to repeatedly contact and tamp the earth as the roller is moved or rolled back and forth over the surface to be compacted. The drum usually is weighted and the relatively small contacting surfaces of the projecting feet concentrate the weight in a manner to compact the surface beneath the feet. A disadvantage of this form of tamping roller is that repeated passes of the roller over the surface must be made in order to completely tamp the surface and even then the surface may require additional smooth rolling in order to produce a final smooth and compacted surface.

It is a principal object of the present invention to provide an improved tamping roller mechanism that will produce a smooth and compacted surface with a minimum of rolling.

Another object of the invention is to provide an improved powered tamping roller which requires a minimum of rolling to compact a surface and is more efficient in operation with a resultant saving in power required for its operation.

A feature of the invention is the provision of a towing frame on which is mounted a cylindrical roller drum having a plurality of freely rotatable tamping rollers disposed in spaced relation on the cylindrical periphery of the drum in a manner to contact and tamp or compact a surface to be tamped as the roller is rolled thereover. In order to obtain uniform and thorough coverage the tamping rollers are preferably disposed in a plurality of rows parallel to the axis of the drum with the members of each row spaced from each other and staggered relative to the members of adjacent rows. Also, in order to bring successive rows of the freely rotatable tamping rollers into contact with the surface to be compacted, a motor is carried by the frame and may be connected to rotate the drum in either direction at variably controlled speeds.

Further objects, features and the attending advantages of the invention will be apparent with reference to the following specification and drawings in which:

Fig. 1 is a side elevational view of the tamping roller mechanism of the invention;

Fig. 2 is a top plan view similar to Fig. 1, and

Fig. 3 is a detail view of one of the tamping rollers and its supporting frame.

Referring to the drawings, the roller tamping mechanism of the invention is carried on a supporting frame generally shown at 10 having a draw-bar coupling 11 for attachment to a tractor, truck or other towing vehicle. A cylindrical drum 12 is rotatably journaled at 13 and 14 on the frame 10 with the axis of the drum at right

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angles to the path of movement of the frame 10 when towed by the towing vehicle (not shown).

A plurality of tamping rollers such as the one shown at 15 are freely rotatably carried in respective fork members 16 which are secured at spaced points on the cylindrical periphery of the drum 12 in a manner such that the axes of rotation for all of the tamping rollers 15 are generally parallel to the axis of rotation of the drum. It will be noted that the spacing of the tamping rollers 15 is such as to arrange a plurality of tamping rollers spaced from each other in each of a plurality of parallel rows around the cylindrical periphery of the drum and parallel to the drum axis. Also, it will be noted that the tamping rollers of each row are spaced from each other in a manner to stagger the tamping rollers of adjacent rows relative to each other and the total number of rows and members is preferably chosen so that a single revolution of the drum will bring successive different compacting tamping rollers into contact with different portions of the surface to be tamped. Although a particular number of rows and tamping members and a given relative size of the members and drum are shown, it should be understood that this invention is not limited to these parameters since it is obvious that different arrangements may be made.

It should also be understood that each of the tamping rollers 15 may be formed of any suitable material such as steel or the like and may have variegated peripheral surfaces with or without rubber treads and even may be formed of pneumatic tires or the like. Also, the drum 12 may be arranged in any suitable manner to be filled with water or sand to thereby increase the weight of the tamping mechanism.

Since each of the tamping rollers is freely rotatable such as shown at 15, it may be desirable to positively rotate the drum 12 as the frame 10 is moved over the surface to be tamped. For this purpose, a motor 20 including a conventional clutch and transmission with reverse (not shown) is mounted on the frame 10 and coupled by spur gears 21 and 22, sprocket gear 23, sprocket chain 24 and sprocket gear 25 to the axle shaft 26 of the drum 12. By suitable operation of the motor 20 and its transmission, the tamping drum 12 may be caused to rotate at any desired speed in either direction as the frame 10 is moved over the surface to be compacted. In this connection it is pointed out that the drum 12 may be rotated at much greater peripheral speed than the movement of the frame 10 across the surface to be compacted and thus a thorough compacting of the surface may be obtained with a minimum of passes of the mechanism over the surface.

Various modifications may be made within the spirit of the invention and the scope of the appended claim.

What is claimed is:

55 An earth tamping roller mechanism comprising a weighted drum, a plurality of spaced rows of rollers supported on and extending outwardly from the periphery of said drum with the individual rollers of successive rows positioned in staggered relationship, a frame supported on said drum, and means on said frame to rotate said drum.

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