No. 747,453. PATENTED DEC. 22, 1903.

M. M. LOVBERG.

LAND ROLLER.

APPLICATION FILED SEPT. 29, 1903.

NO MODEL.

Fig. 1.

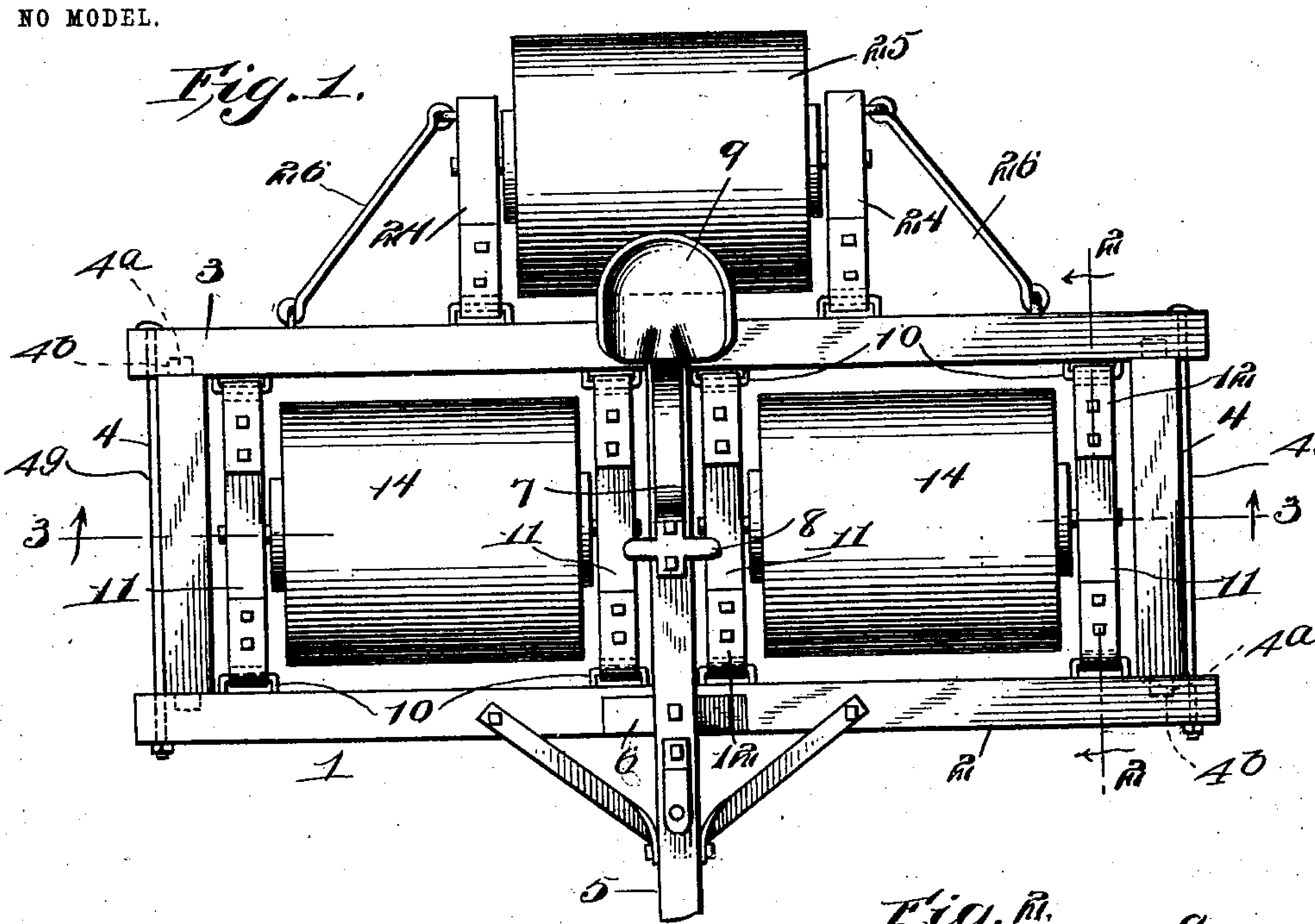


Fig. 2.

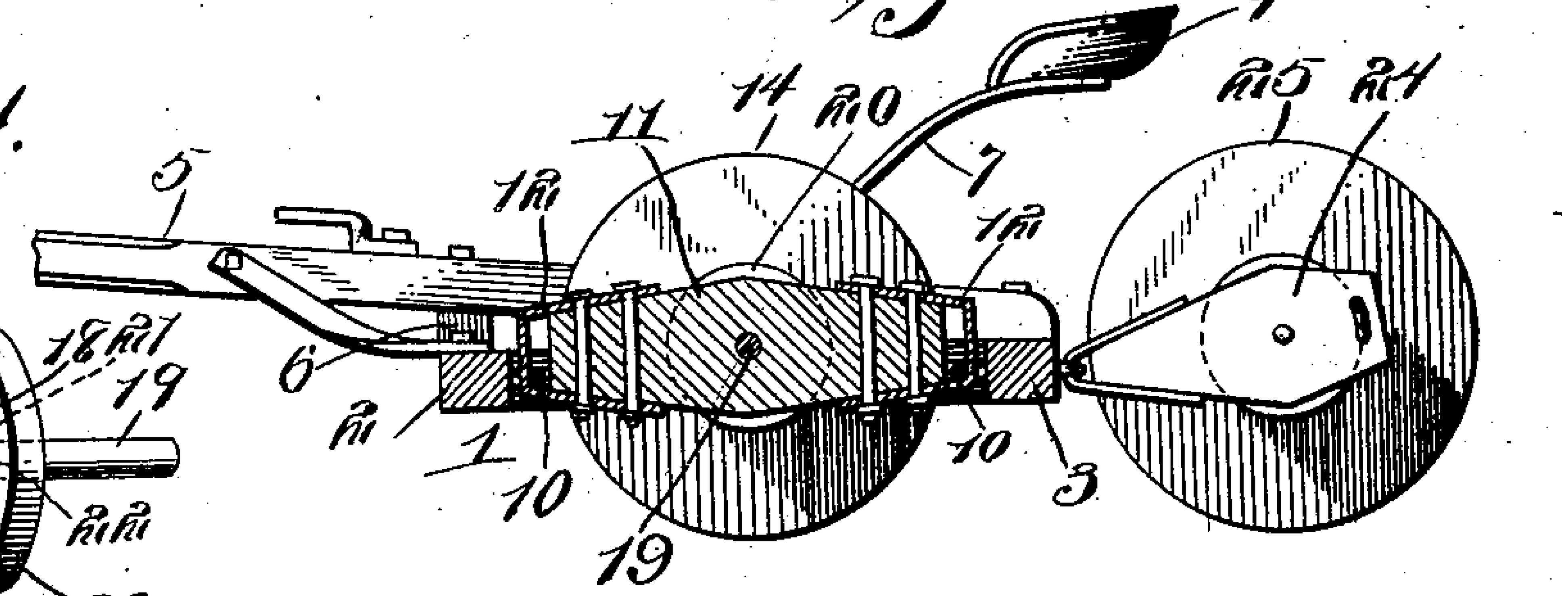


Fig. 4.

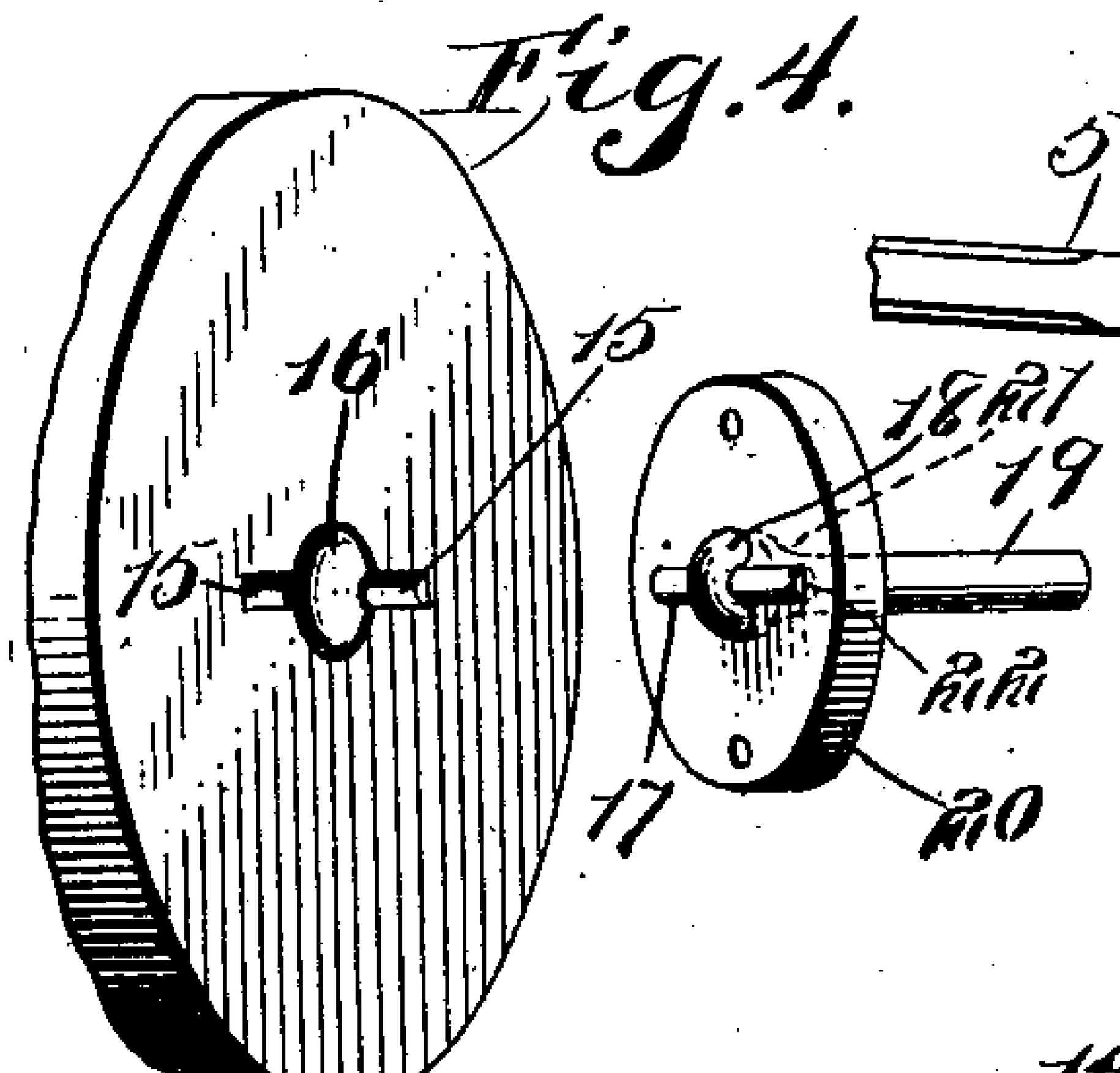
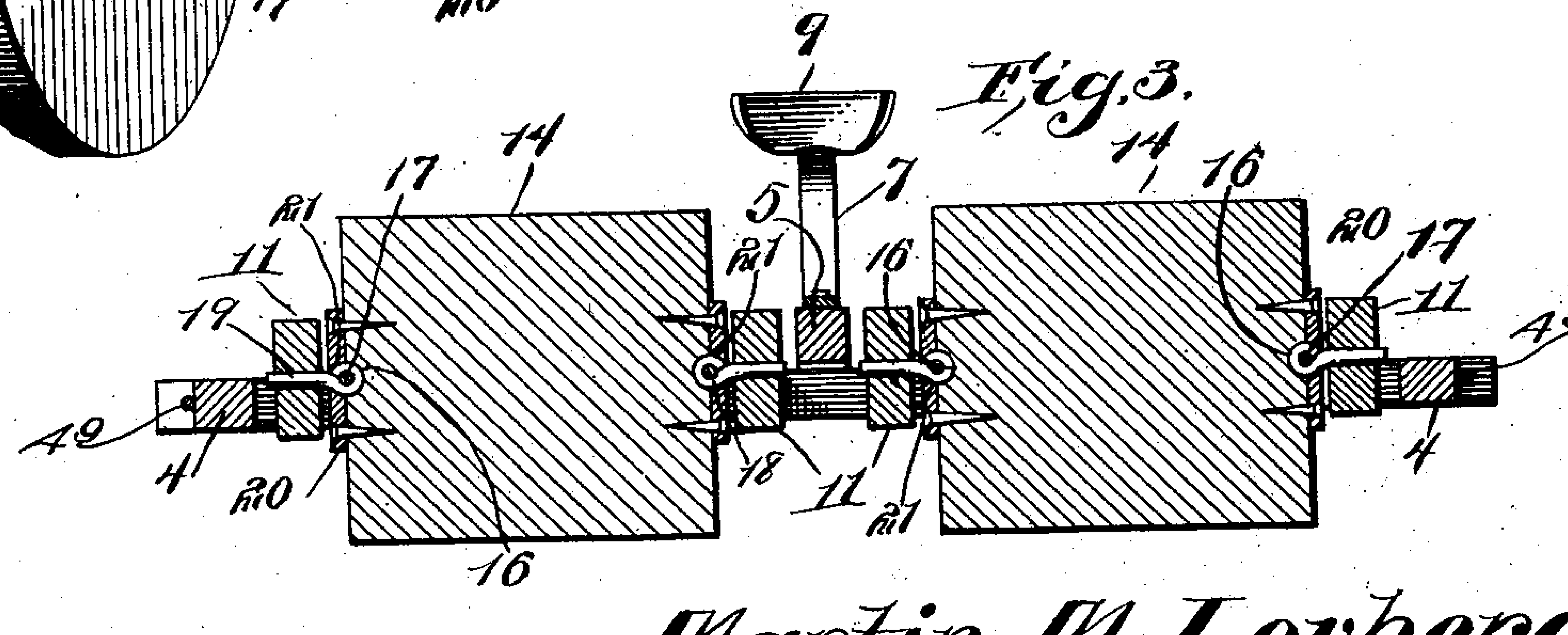


Fig. 3.



Witnesses
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No. 747,453. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

MARTIN M. LOVBERG, OF BLAIR, WISCONSIN.

LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 747,453, dated December 22, 1903.

Application filed September 29, 1903. Serial No. 175,066. (No model.)

To all whom it may concern:

Be it known that I, MARTIN M. LOVBERG, a citizen of the United States, residing at Blair, in the county of Trempealeau and State of Wisconsin, have invented a new and useful Land-Roller, of which the following is a specification.

This invention relates to land-rollers, and more especially to that class of land-rollers in which a plurality of independently-movable rollers are employed.

My invention has for its object to provide a roller of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency, in which each of the separate rollers shall be mounted in such a manner as to be capable of adjusting itself independently to the surface of the soil, in which there shall be a general absence of complication, thus enabling the roller to be easily manufactured at a small expense and also enabling necessary repairs to be made without skilled labor.

With these and other ends in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a land-roller constructed in accordance with the principles of my invention. Fig. 2 is a sectional view taken on the line 2 2. Fig. 3 is a transverse sectional view taken on the line 3 3. Fig. 4 is a perspective detail view showing the end of one of the rollers and the means for connecting the stub-axles therewith, the parts being separated, so that the construction may be readily understood.

Corresponding parts in the several figures are indicated by similar numerals of reference.

Referring to the drawings, 1 designates the main frame, which is composed of front and rear beams 2 and 3 and side beams 4 4, whereby the said front and rear beams are spaced.

5 designates the tongue, which is supported firmly upon the rear beam 3 and which is elevated by a supporting-block 6 upon the front beam. The tongue 5 has a seat-spring 7 and a foot-rest 8, the seat 9 being supported upon the spring in the usual manner.

The inner sides of the front and rear beams 2 and 3 are provided each with a plurality of staples 10, which are disposed in pairs in alinement with each other, four pairs of these staples being shown in the drawings hereto annexed. Cross-pieces 11, four in number, are provided at their ends with yokes 12, which are suitably and permanently secured upon said cross-pieces and which have sliding connection with the staples 10, thus enabling the cross-pieces to have free and unobstructed movement vertically. These cross-pieces are provided with bearings for the axles of the rollers 14, which latter (two in number) are each journaled in a pair of the vertically-movable cross-bars, the two pairs of which are supported by the four pairs of staples, as before described. The axles of the rollers may be of any suitable construction, according to the material of which the rollers are constructed and to the general structure of the rollers themselves. In the accompanying drawings I have shown wooden rollers provided at their ends with transverse recesses 15 and central depressions or cups 16. In the recesses 15 are placed short stems or rods 17, which are engaged by eyes 18, formed upon the inner ends of the stub-axles 19. To secure the latter in position, disks 20, having central perforations 21, are provided, the inner sides of said disks having shallow recesses 22 for the accommodation of the rods 17. These disks are secured to the ends of the roller by means of screws, bolts, or other suitable means, whereby they will be held securely in position, the stub-axles 19 projecting through the perforations 21 and engaging the bearings in the cross-pieces 11. It will be readily understood that in this manner a very flexible connection is secured, which enables the cross-pieces 11, in which the rollers have their bearings, to move independently of each other, so that the ends of each roller are freely and independently movable and enabled to adapt themselves to the surface of the soil.

To the rear frame-beam 3 are hingedly connected a pair of movable bearing-pieces 24, affording bearings for a roller 25, which cov-

ers the space between the two front rollers. The stub-axles of said rear roller are connected flexibly with the latter in the same manner as the stub-axles 19 are connected with the rollers 14, so that perfect freedom of movement may be had by the said rear roller. The rear ends of the supporting-pieces or bearing-pieces 24 are connected with the rear frame-piece 3 by means of link-rods 26 in order to insure strength of attachment without interfering with the freedom of movement of the parts.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. It is of course well known that sectional land-rollers have heretofore been in general use; also that rollers comprising a pair of suitably-mounted front rollers have been followed by a tracking-roller covering the lap or gap between the two front rollers. By my invention, however, I provide a land-rolling device in which the several rollers are freely movable independently of each other and with the utmost degree of flexibility without the use of complicated joints or couplings which are sometimes used in devices of this class and which greatly tend to increase the cost thereof without securing any better results.

In putting together the frame, which has been described as the "main" frame, I prefer that the ends of the side beams 4 be provided with rabbets 4^a, engaging mortices 4^b in front and rear beams 2 and 3. The latter, which are thus spaced apart by the side pieces 4, are connected by means of a screw-threaded rod or bolt 4^g, whereby a very durable construction is attained, while at the same time the frame may be readily knocked down when required for shipment or other purposes.

Having thus described my invention, I claim—

1. In a land-roller, a rectangular frame, staples upon the inner sides of the front and rear beams of said frame, bearing-blocks, yokes at the ends of said blocks engaging said staples, and a roller between each pair of bearing-blocks having spindles engaging the latter.

2. In a land-roller, the combination with a frame, of a plurality of pairs of bearing-blocks provided with yokes at the ends thereof, and staples upon the frame engaged by the said yokes.

3. In a land-roller, a frame, a plurality of pairs of vertically-movable independent bearing-blocks, a roller for each pair of blocks, stub-axles flexibly connected with the ends of the rollers and engaging the said bearing-blocks.

4. In a land-roller, a plurality of independently-movable rollers, stub-axles connected flexibly with each of said rollers, and independently-movable bearing-blocks engaged by the flexible stub-axles of said rollers.

5. In a land-roller, a rotary element provided at its ends with shallow recesses and centrally-disposed depressions, centrally-perforated disks having recesses alining with those in the ends of the rollers, rods disposed in said recesses, stub-axles extending through the central perforations in the disks and having eyes engaging the rods, and means for securing the disks upon the ends of the rollers.

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

MARTIN M. LOVBERG.

Witnesses:
A. B. PETERSON,
S. STEFFENSON.