

No. 685,588.

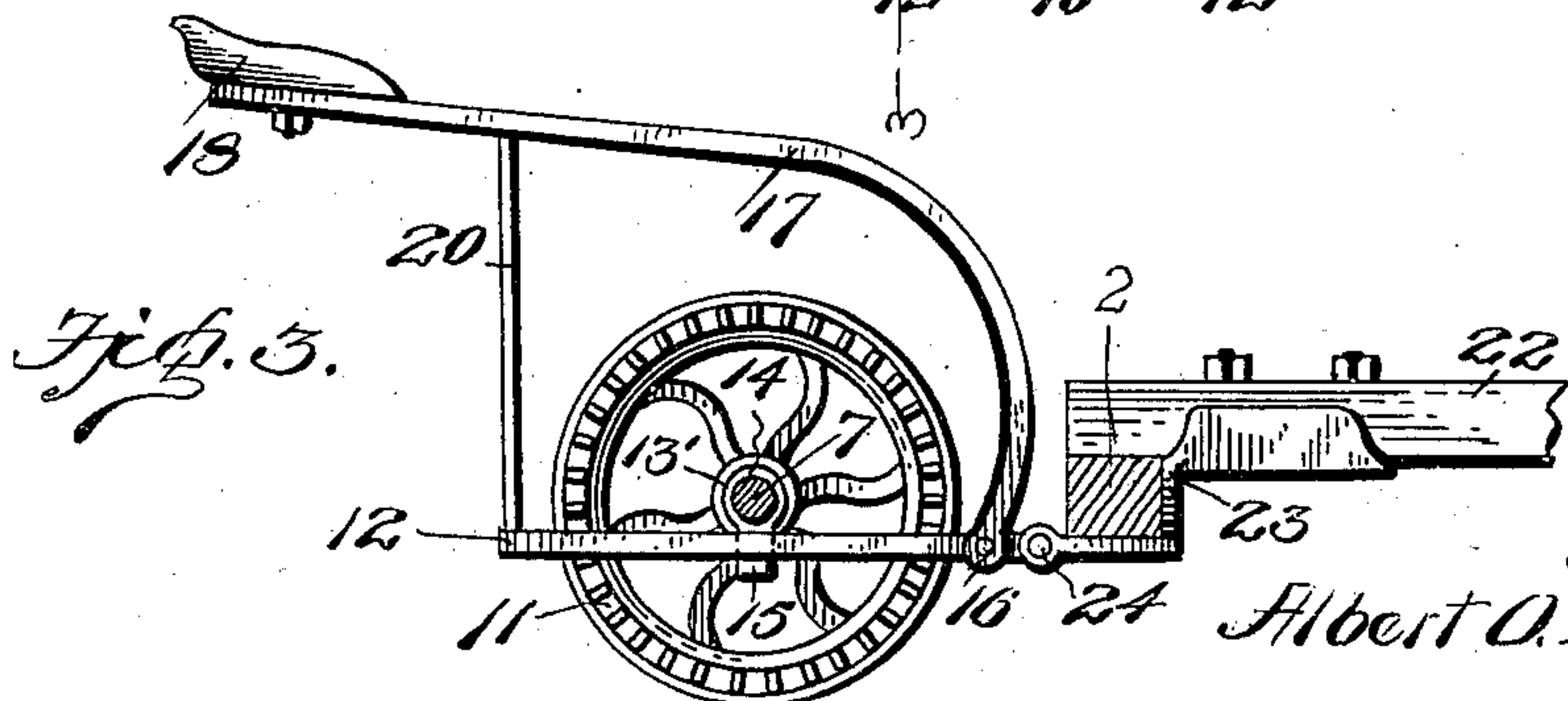
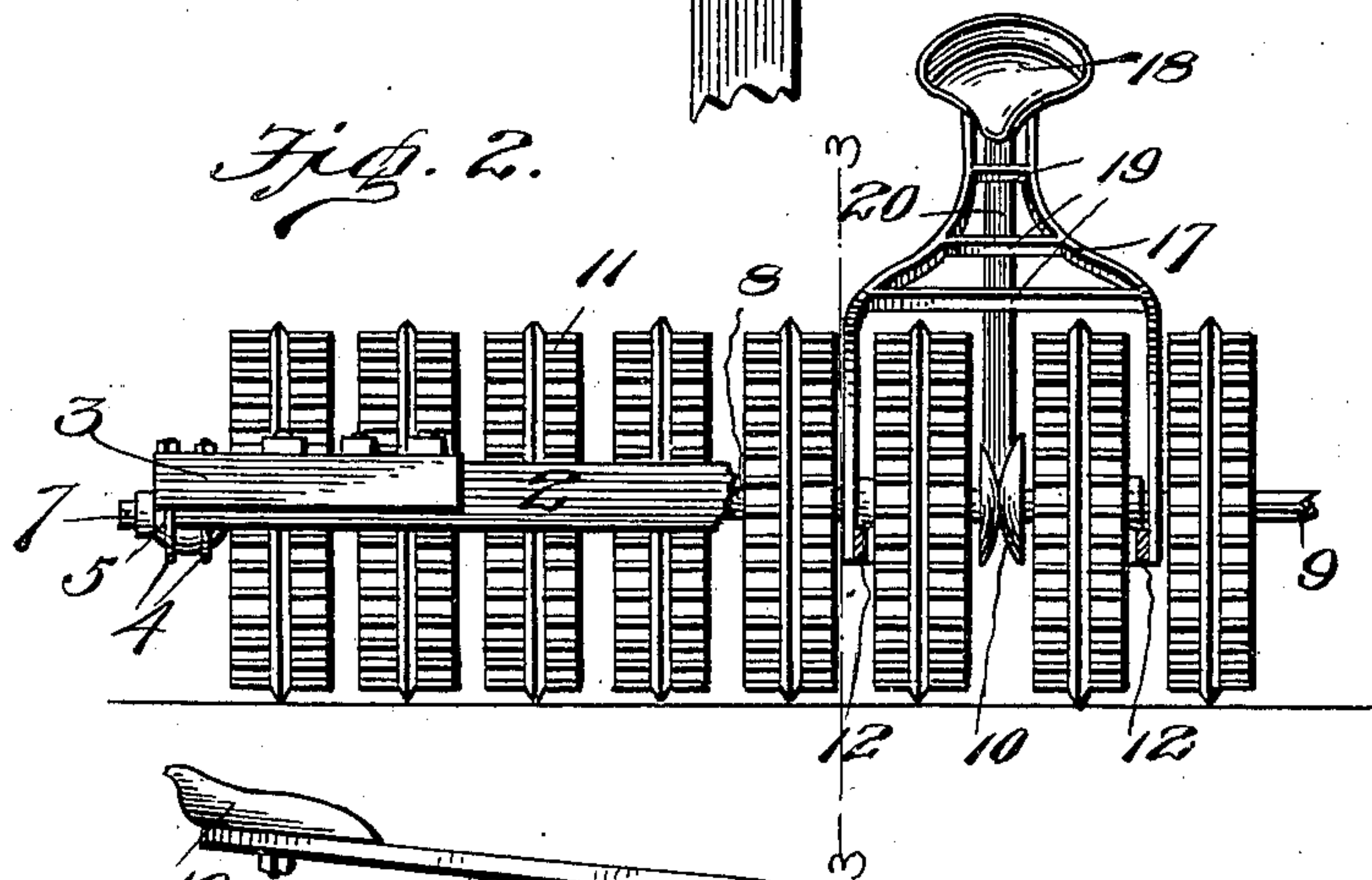
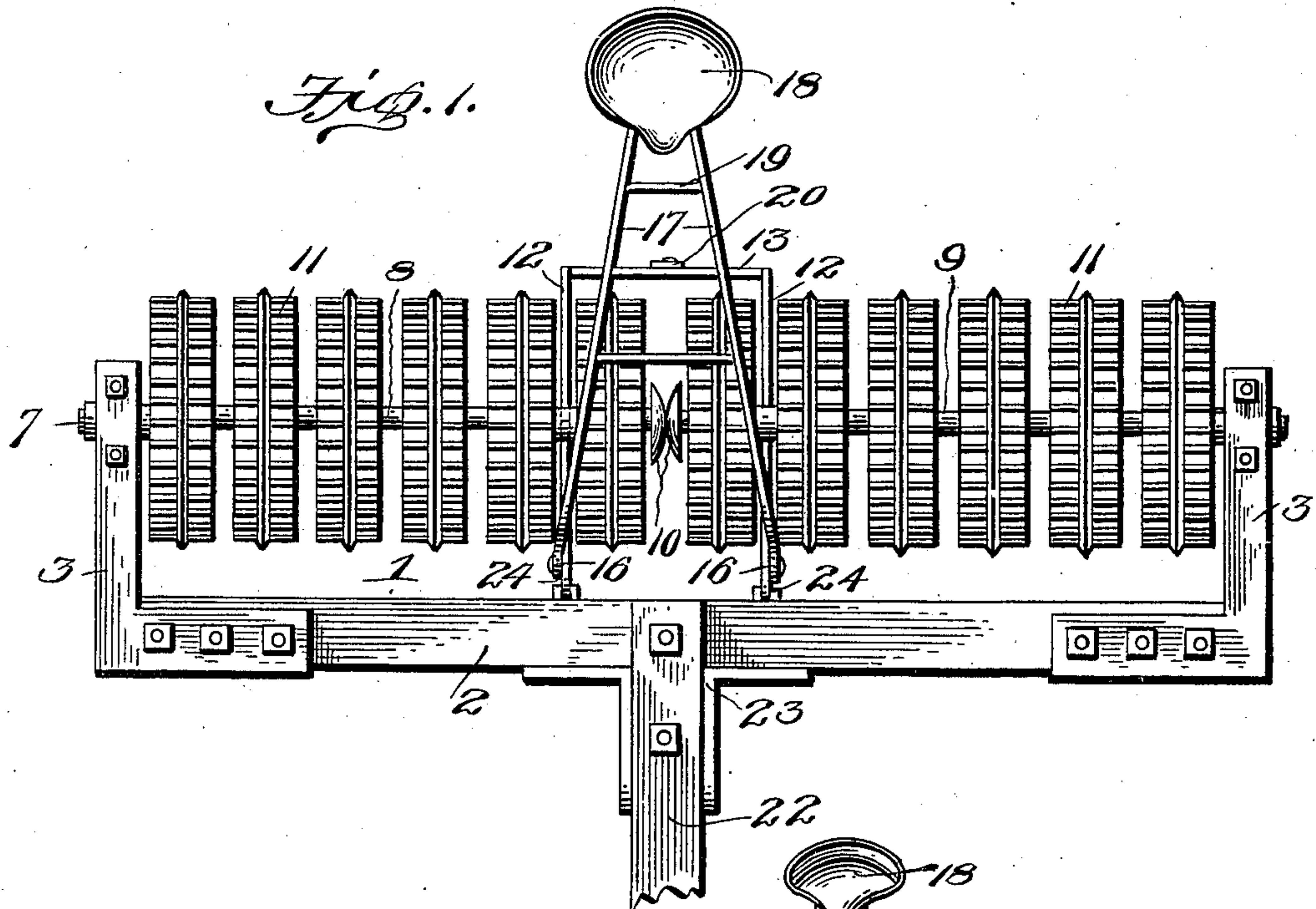
Patented Oct. 29, 1901.

A. O. ESPE.
LAND ROLLER.

(Application filed Apr. 25, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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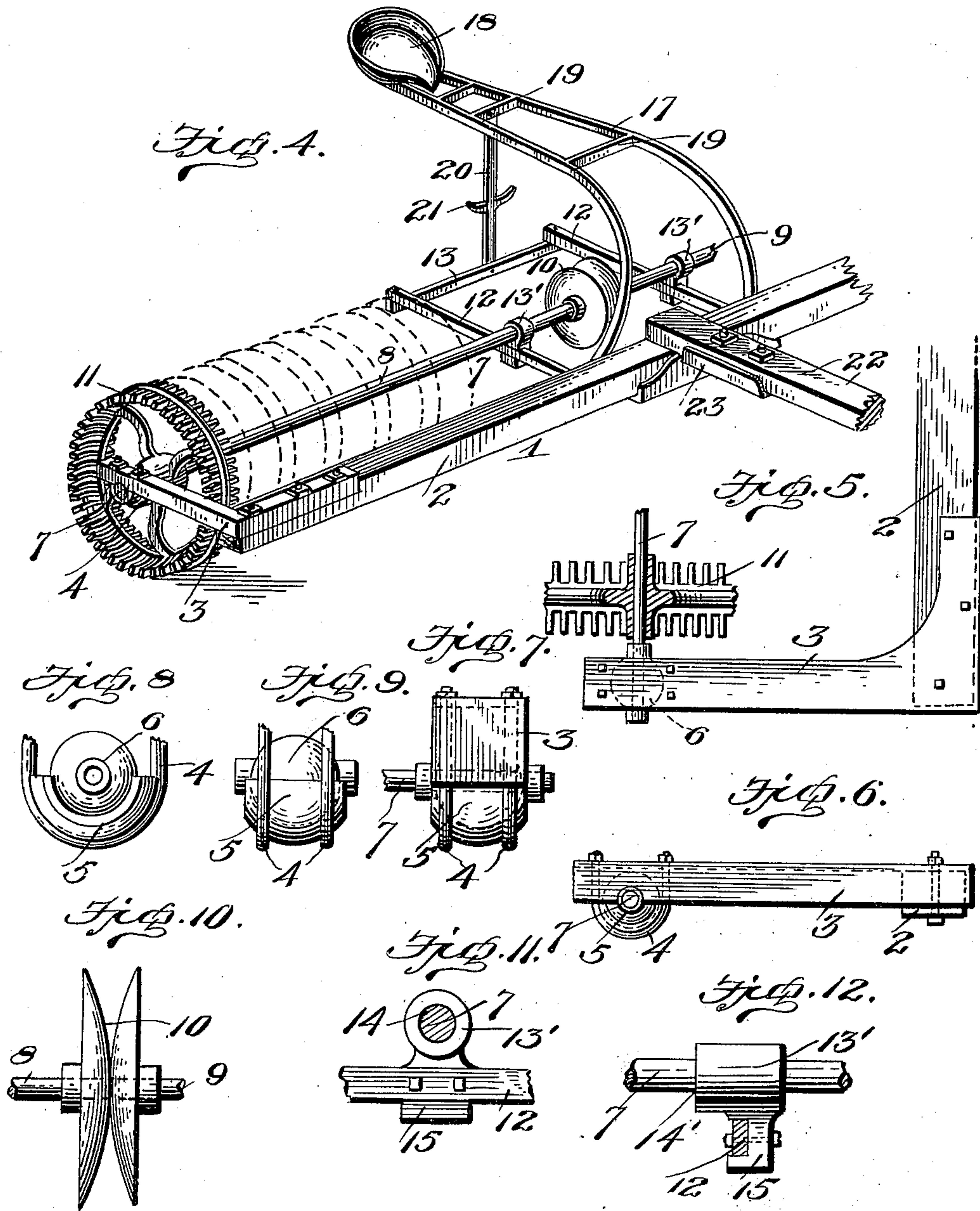
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

ALBERT O. ESPE, OF CROOKSTON, MINNESOTA.

LAND-ROLLER.

SPECIFICATION forming part of Letters Patent No. 685,588, dated October 29, 1901.

Application filed April 25, 1901. Serial No. 57,370. (No model.)

To all whom it may concern:

Be it known that I, ALBERT O. ESPE, a citizen of the United States, residing as Crookston, in the county of Polk and State of Minnesota, have invented certain new and useful Improvements in Land-Rollers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

This invention relates to improvements in land-rollers; and its object is to provide a roller of this character in which the roller-wheels are mounted so as to move freely in a
15 rigid frame, so as to adapt them to yield to compensate for irregularities of ground surface; also, to provide a construction wherein the driver's seat is so disposed as to effect a perfect balance when the driver is seated
20 therein to relieve the draft-animals of all neck weight and to adapt the roller to be drawn and manipulated with ease and facility.

With these and other minor objects in view, which will appear as the nature of the invention is better understood, the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended
30 claim.

In the accompanying drawings, Figure 1 is a top plan view of a land-roller embodying my invention. Fig. 2 is a front elevation of a portion of the same, a part of the frame being broken away to clearly disclose the construction. Fig. 3 is a vertical transverse section on the line 3 3 of Fig. 2. Fig. 4 is a perspective view of so much of the roller as is shown in Fig. 2, parts being broken away to
40 disclose the construction of the seat-supporting frame. Fig. 5 is a detail top plan view, on an enlarged scale, of one end of the roller-frame. Fig. 6 is an end view of the same. Fig. 7 is a detail view looking toward the rear end of one of the shaft-bearings. Fig. 8 is a detail side elevation of one of the shaft-bearings. Fig. 9 is a rear end view of the same. Fig. 10 is a view showing the bumper-disks upon the inner ends of the shaft-sections,
50 and Figs. 11 and 12 are respectively a side elevation and front view of one of the hangers on the said supporting-frame.

Referring now more particularly to the drawings, the numeral 1 represents the frame of the roller, which comprises in its construction three parts—to wit, a front bar or beam
55 2, preferably of wood, and two angle-iron end pieces 3, bolted or otherwise secured to said bar. To the rear ends of the rearwardly-projecting arm of each of the said angle-iron
60 end pieces are secured U-shaped hangers or supports 4, in each of which is mounted a cup or socket 5, which receives a ball or spherical head 6, mounted upon the ends of the roller-shaft 7. This shaft is divided, being composed of corresponding alined sections 8 and 9, each of which is provided at its outer end with a ball or spherical head 6, as described, and at its inner end with a bumper head or disk 10, the two bumper-disks upon
70 the said inner ends of the shaft-sections being arranged to abut, as shown in Fig. 10, and having convex meeting faces which adapt them to ride freely upon one another in the independent movement of said shaft-sections.
75 The roller-wheels 11 are mounted upon the shaft-sections at equal distances apart, and by the described construction it will be readily understood that all endwise thrust will be taken up by the bumper-disks 10 and that
80 as the roller-wheels pass over an irregular surface or encounter obstructions each shaft-section may yield or tilt upwardly on its ball-bearing connection with the frame, thus enabling the wheels to maintain a close contact
85 with the ground and to ride over obstructions without injury thereto or to the shaft or frame. By this means the use of a complicated construction of cushion-frame is avoided and freedom of action of the parts most liable to
90 injury—to wit, the shaft and wheels—insured, so as to relieve them from all injurious shocks and concussions.

Upon the center of the frame is arranged the seat-supporting and draft-connecting
95 frame, the same consisting of a pair of side bars 12, extending from front to rear and connected at their rear ends by a cross-bar 13. These side bars 12 are supported from the shaft-sections by hangers 13', each of which
100 has a socket or eye 14, which receives the shaft, and an angular bracket 15, in which the side bar 12 is received and to which it is secured by means of bolts or other suitable

fastening devices, as clearly shown in Figs. 11 and 12. By this manner of mounting the seat-supporting frame said frame is adapted to rock or oscillate upon the shaft, so as to maintain its position at all times and to exert under the weight of the rider an effective balancing action to relieve the draft animal or animals of all neck weight. To the front portions of the side bars 12 are pivoted, as at 10 16, the lower front ends of the seat-supporting arms 17, which arms curve upwardly and rearwardly from their point of connection with the bars 12 and extend rearwardly beyond the cross-bar 13 and have mounted upon their rear ends the driver's seat 18. The arms are suitably connected and braced by transverse braces 19 and are supported by a standard 20, rising from the said cross-bar 13, to which standard the foot-rests 21 are secured. The seat 18 is thus disposed in such manner that the weight of the driver is thrown upon one side of the center of the frame in rear of the shaft 7, whereby the complete balancing of the forward portion of the frame and draft attachments is insured, thus preventing the same from falling upon the neck of the draft-animals. The jointed connection of the seat-supporting frame with the main frame permits said seat-supporting 30 frame to swing or oscillate to compensate for irregularities in the pull of the draft-animals and also allows the main frame to have independent motion to compensate for irregularities of surface of the ground over which the roller-wheels pass.

The tongue 22 is provided at its rear end with coupling-pieces 23, which are hinged or pivoted at 24 to the front ends of the side

bars 12 of the seat-supporting frame, whereby they are adapted to swing to have a limited 40 vertical play.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of my invention will be readily understood, and it 45 will be seen that it provides a land-roller which embodies desirable advantages in point of simplicity, durability, and the mode of mounting the several parts thereof to insure ease of action and the absence of vibration, 50 whereby a high degree of flexibility in the connection of the several parts is secured.

Changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the 55 advantages thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is— 60

In a land-roller, the combination of a main frame, a divided shaft, U-shaped hangers upon the ends of the frame, cups supported by said hangers, balls upon the outer ends of the axle-sections and seated in said sockets, 65 roller-wheels upon the axle-sections, and bumper-disks upon the inner ends of said axle-sections, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 70

ALBERT O. ESPE.

Witnesses:

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