

No. 627,415.

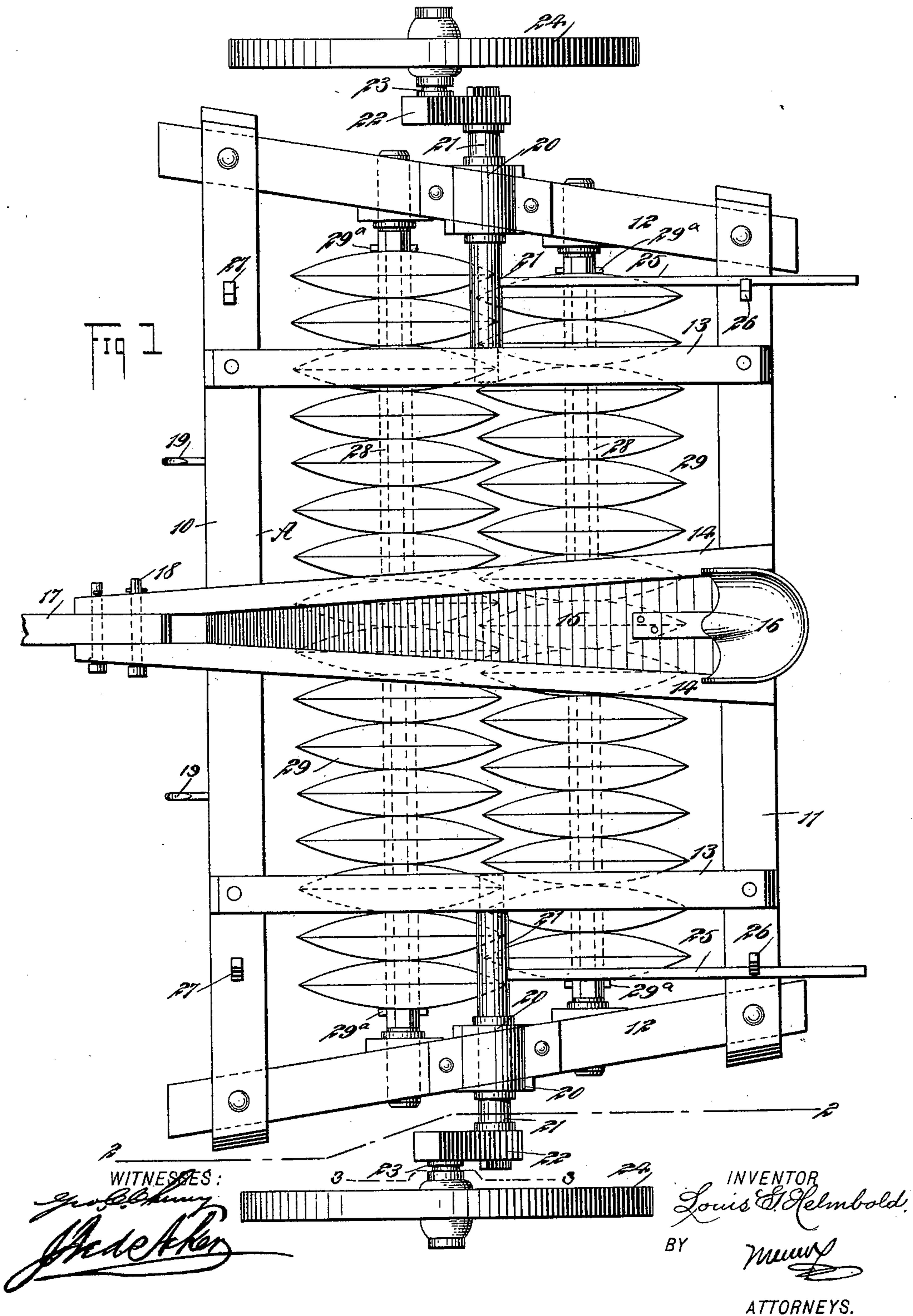
Patented June 20, 1899.

L. G. HELMBOLD.
HARROW FRAME.

(Application filed Jan. 31, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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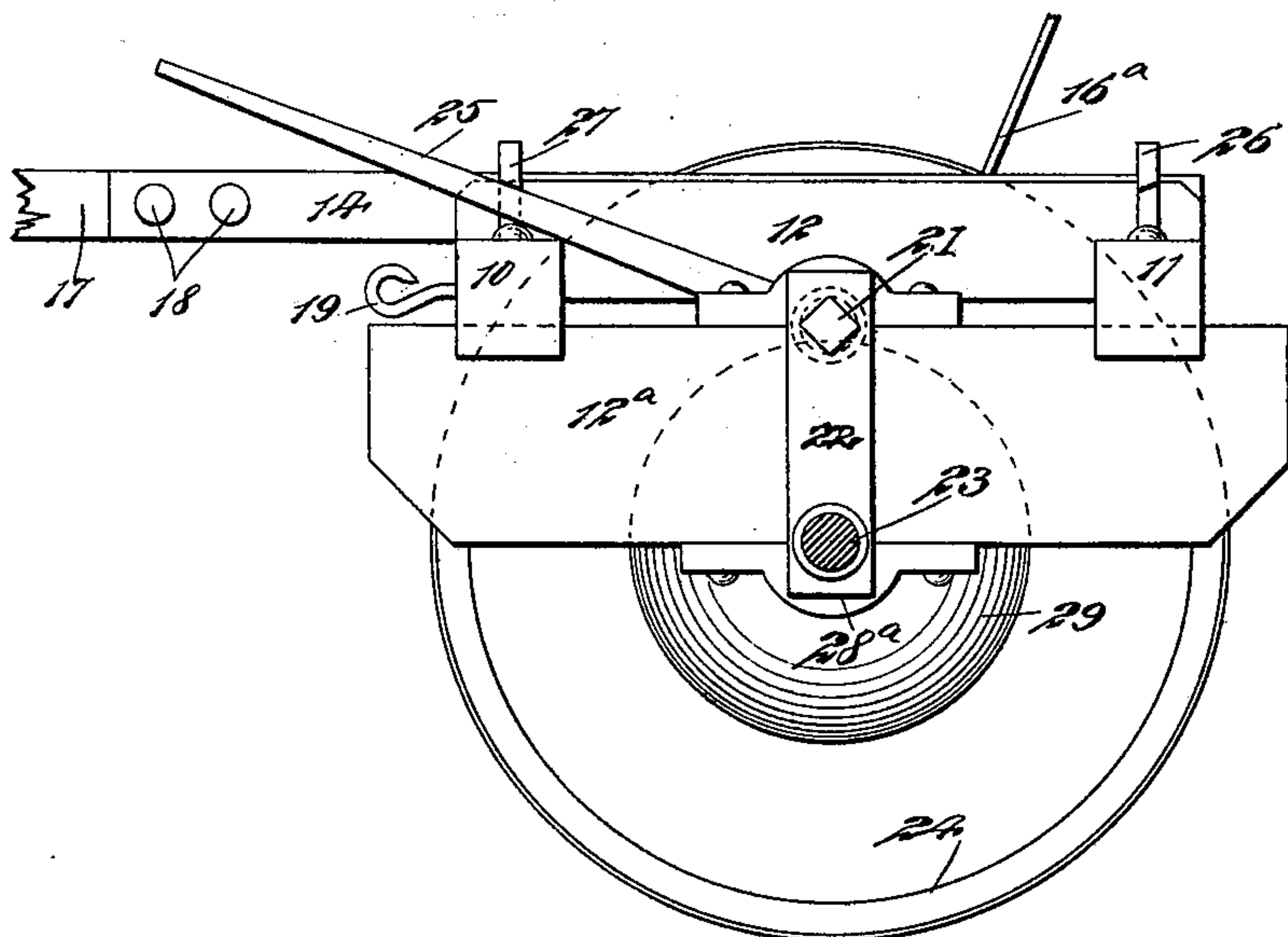
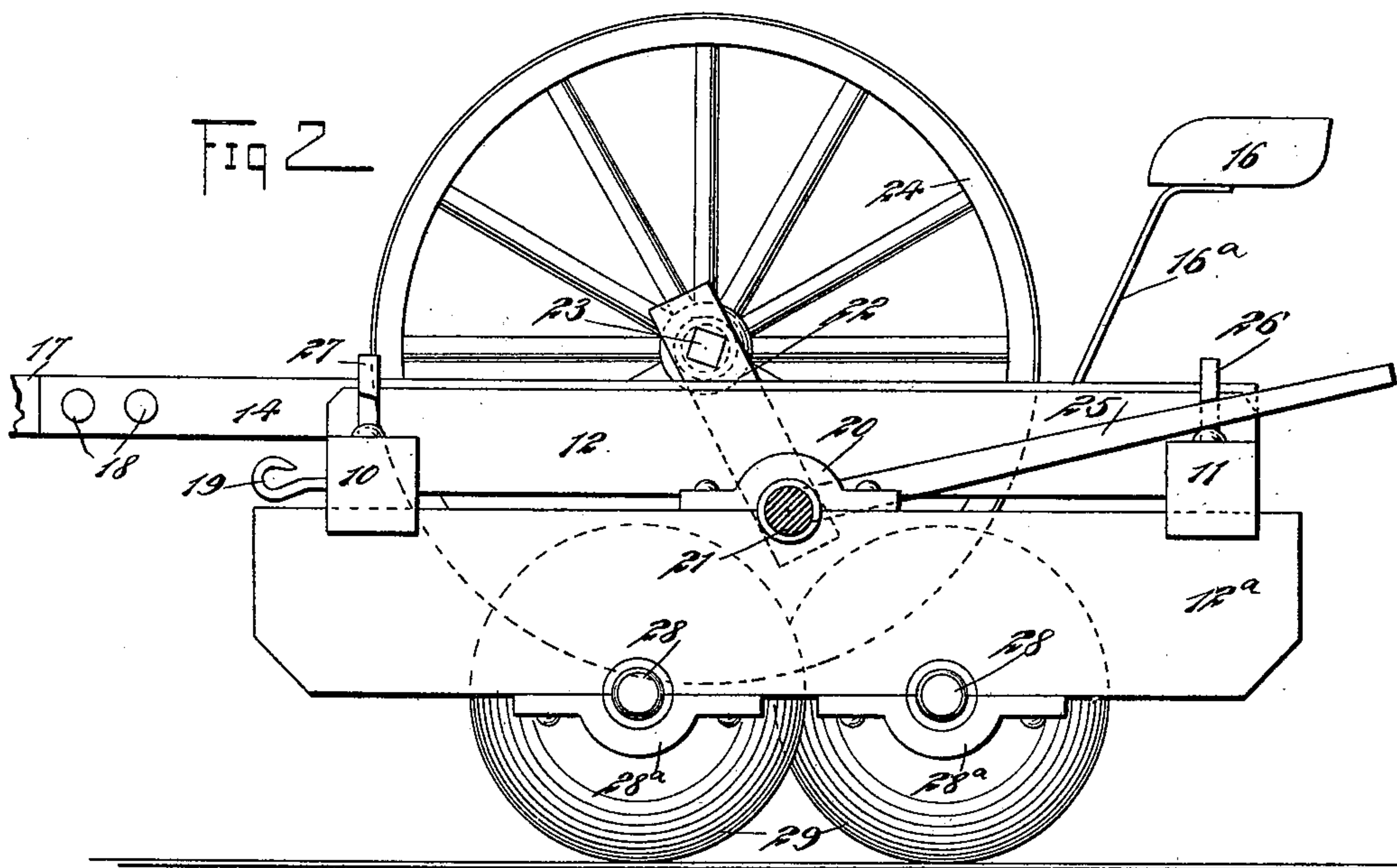
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(Application filed Jan. 31, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

LOUIS GOTTFRIED HELMBOLD, OF BUCYRUS, OHIO.

HARROW-FRAME.

SPECIFICATION forming part of Letters Patent No. 627,415, dated June 20, 1899.

Application filed January 31, 1899. Serial No. 704,046. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GOTTFRIED HELMBOLD, of Bucyrus, in the county of Crawford and State of Ohio, have invented a new and useful Improvement in Harrow-Frames, of which the following is a full, clear, and exact description.

The object of the invention is to provide a rigidly-constructed frame and a means whereby by supporting-wheels for the said frame may be quickly and conveniently raised from or lowered to the ground by the driver to bring the cutters in contact with the ground or elevate said cutters from the ground.

A further object of the invention is to provide a harrow of the above character that will be exceedingly simple and durable and economic in construction, and, further, to so locate the levers adapted to raise and lower the wheels that the driver of the machine may conveniently manipulate said levers, and whereby one wheel may be raised and the other wheel left in its traveling position when necessary.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved machine. Fig. 2 is a transverse section through the machine, taken practically on the line 2 2 of Fig. 1; and Fig. 3 is a section through a single form of the machine, which section is taken practically on the line 3 3, Fig. 1, but with the arm 22 thrown down into vertical position and the lever 25 thrown forward.

The frame A is a rigid frame, comprising a front beam 10, a rear beam 11, and side beams 12 and 12^a, said side beams being given an inward inclination from the front in direction of the rear, and cross-beams 13 extending between the sides from the front to the rear, one at each side of the center.

At the center of the frame A two beams 14 are transversely placed, which beams are made to converge at the front and diverge at the rear, and a platform 15 is located between these central beams, upon which platform

the driver's seat 16 is supported by a standard 16^a. The central beams 14 at their converging ends extend beyond the front of the main frame A and receive between them the rear portion of a pole or tongue 17, which pole or tongue is attached to the said central beams 14 through the medium of pins 18 or their equivalents, the pins 18 being two in number, so that the pole or tongue is held in rigid connection with the frame. The frame is also provided at each side of its center at the front with hooks 19 or like devices, to which the singletrees may be attached.

The axles 21 are two in number, one being located at each side of the main frame, and the said axles are journaled in boxes 20, located, preferably, upon the side sections 12^a of the frame and in bearings that are formed upon the under face of the cross-bars 13, adjacent to the sides of the frame. Each axle at its outer end is provided with a crank-arm 22, and each crank-arm has a spindle 23 attached to it, and on these spindles supporting-wheels 24 are mounted, adapted to travel upon the ground when the harrow is not in use.

A lever 25 is attached at one end to each of the axles 21, and the levers are adapted to be brought in engagement with keepers 26 at the rear of the main frame or with keepers 27 at the forward portion of the main frame. When the levers 25 are carried to the rear and engage with the rear keepers 26, the wheels 24 of the frame will be carried to an elevated position, as shown in Figs. 1 and 2, enabling the cultivating-disks, to be hereinafter described, to engage with the ground. When the levers 25 are carried forwardly, however, and engage with the keepers 27, as shown in Fig. 3, the supporting-wheels are brought in engagement with the ground and the frame is so elevated as to carry the cultivating-disks, above referred to, a considerable distance from the ground. When the supporting-wheels 24 are in their lower position, the machine is in proper condition to be drawn to or from the field to be harrowed.

The frame of the harrow is adapted to carry either a double set of disks 29, as shown in Figs. 1 and 2, or a single set of disks, as illustrated in Fig. 3. The cultivating-disks 29 are constructed with convexed side surfaces, so as to produce sharp or cutting peripheral

edges. When the harrow is a double one, two shafts 28 are employed, polygonal in cross-section except where they enter their bearings 28^a, said bearing portions being circular in cross-section, and the bearings 28^a are preferably secured to the lower edge of the lower portions 12^a of the sides of the main frame. The disks 29 are provided with openings at their centers, corresponding in contour to the cross-sectional contour of the shafts upon which they are mounted, and the disks are usually so placed upon the shafts that their side surface engage, although they may be separated by washers, if desired. Pins 29^a or their equivalents are located near the end portions of the shafts and in engagement with the outermost disks, thus keeping the series of disks on a shaft in suitable position. When the machine is constructed with two series of disks or with two shafts 28, the disks on the rear shaft are made to enter the spaces between the disks on the forward shaft, as shown in Fig. 1.

A machine constructed as above set forth is not only simple and economic, but it will effectually pulverize the earth over which it is passed, and when the levers 25 are carried to the rear position (shown in Figs. 1 and 2) the disks will be brought in engagement with the ground and one series of disks will effectually coöperate with the other.

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

The herein-described harrow-frame, consisting of a front and a rear beam and side beams connecting the same and converging toward the rear beam, two cross-beams secured between the front and rear beams near the middle thereof, said cross-beams converging oppositely to the side beams and carrying the driver's platform and seat between them, a pole rigidly connected between the converged ends of said beams, and two other cross-beams extending from the front beam to the rear beam and each of which is located near a side beam, the said latter beams being formed with journal-bearings for the disk-shafts, short axles journaled in bearings formed in the side beams and the adjacent cross-beams and extending from each of the latter cross-beams to the outside of the frame, a crank-arm formed on the outer end of each axle and having a spindle on its free end adapted to receive a traveling wheel, and a lever secured to each axle between a side beam and an adjacent cross-beam, as and for the purpose set forth.

LOUIS GOTTFRIED HELMBOLD.

Witnesses:

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