(No Model.)

J. W. WEIR.

HARROW ATTACHMENT FOR LAND ROLLERS.

No. 400,616. Patented Apr. 2, 1889.

Fig. 1.

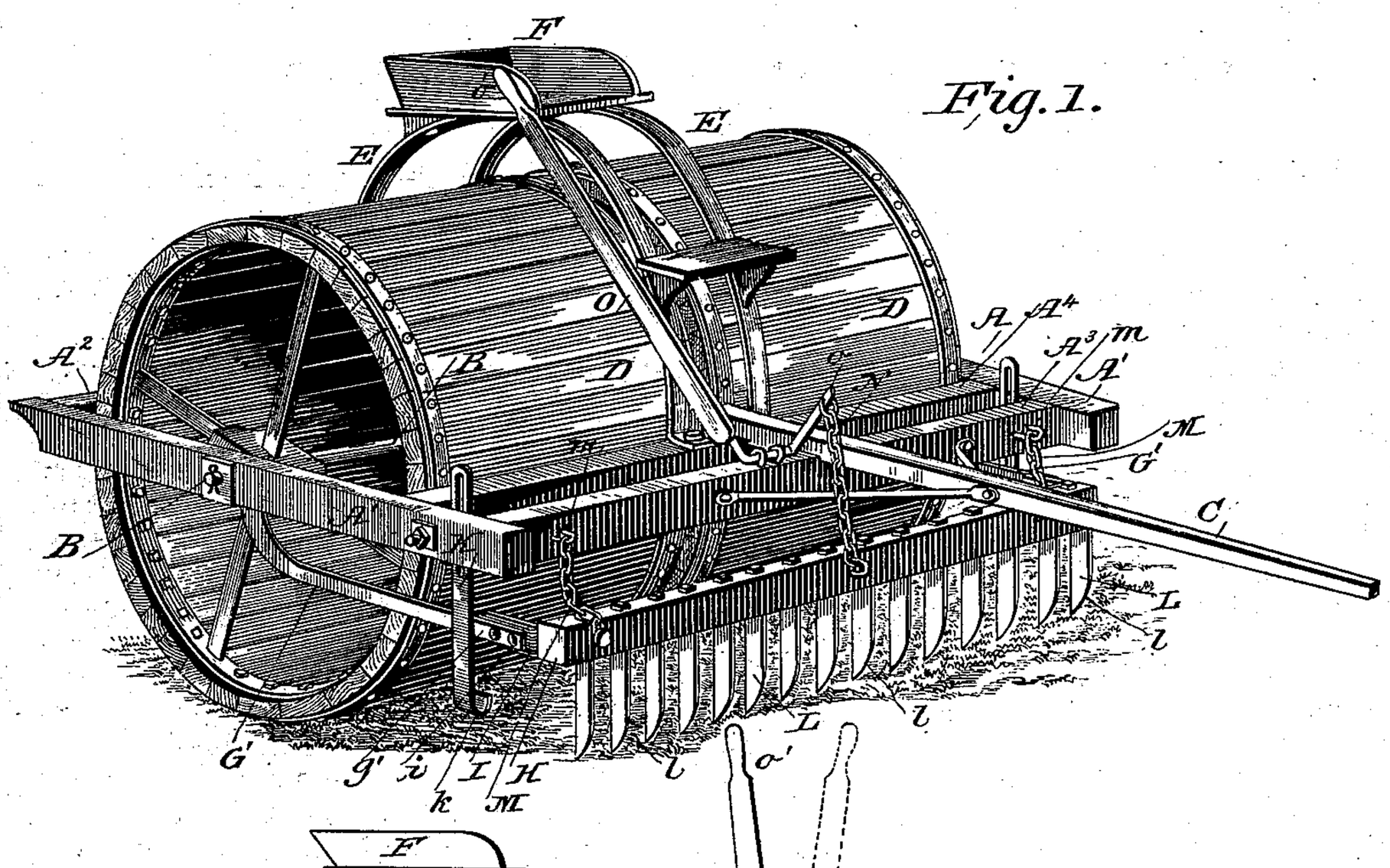

Fig. 2.

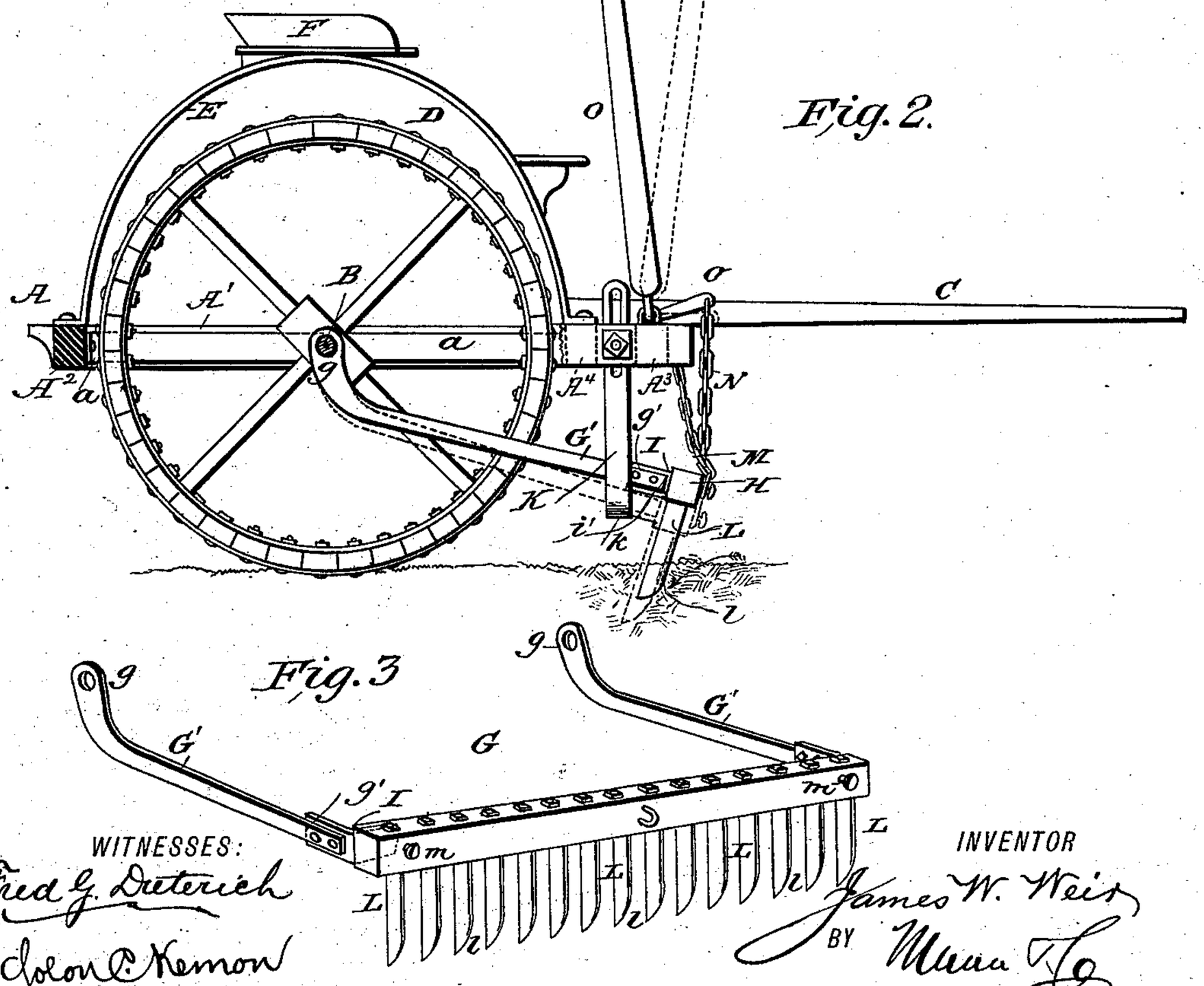

Fig. 3

WITNESSES:

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HARROW ATTACHMENT FOR LAND-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 400,616, dated April 2, 1889.

Application filed December 7, 1888. Serial No. 292,944. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. WEIR, residing at Princeton, in the county of Gibson and State of Indiana, have invented certain new and useful Improvements in Harrow Attachments for Land-Rollers, of which the following is a specification.

The object of my invention is to provide a harrow attachment for land-rollers of ordinary construction, which may be readily attached thereto, to the front of the rollers, which will pulverize the larger particles or dirt-clods, and thereby permit the roller to more effectually accomplish its purpose.

To this end my invention consists of certain novel features of construction and combination of parts, as will be hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a land-roller with my improved harrow attachment applied. Fig. 2 is a side view partly in section, and Fig. 3 is a detail perspective view of the attachment.

In the drawings, A indicates the roller-frame, which consists of the side beams, A′ A′, the end beams, A^2 A^3, and the cross-beam A^4.

C indicates the draft-pole, which is secured on the top of the beams A^3 A^4 and is securely braced to the front beam, A^4, as shown. A transverse shaft or axle, B, is journaled in the side beams centrally between the beams A^2 A^4, upon which are mounted the rollers D D, one to each side of the center bar, *a*, which forms a support for the axle B.

E E denote curved metallic bars, which are fastened at one end to the beam A^4, curved over the rollers D, and have their opposite ends secured to the end beam, A^2, said bars forming a support for the driver's seat F.

G indicates the harrow attachment (shown in detail in Fig. 3 of the drawings,) which consists of two carrier-arms, G′ G′, journaled at their upper ends, *g*, upon the axle B between the side beams and the outer ends of the rollers D D. These arms are extended forward and downward to a point below the front beam, A^3, and have connected at their extended ends the harrow-bar H, said connection consisting of angle-plates I, secured one at each rear end of the bar H, and having rearwardly-projecting arms *i*, which are securely bolted to the ends *g′* of the arms G, as clearly shown in the drawings.

Adjustable brackets K are secured to the inside of the side beams near the front beam, the lower ends of which are turned upward and form seats *k*, in which the arms G rest when they are moved to their lowermost limit.

The harrow-bar H is provided with a series of downwardly-projecting harrow-teeth, L, the front edges of which are curved and sharpened, as at *l*. The bar H is also supported from the front beam by chain-connections M, which are secured at one end to said bar and at their opposite end to hooks *m* on the beam A^3, and a central chain, N, which is secured to the bar, the free end of which is connected to the crank-arm *o* of a bell-crank lever, O, journaled upon the upper side of the beam A^3, as shown, the handle-bar *o′* of which extends within convenient reach of the driver. By thus attaching the forward end of said attachment to the frame and lever the same may be readily lifted out of operative position when it is desired to transport the roller to or from the field. When the harrow-bar is lowered to the position shown in full lines in Fig. 2 of the drawings, the cutting-edges of the teeth L will enter the soil a slight distance below the surface. Now, as the machine is moved forward, the soil pressing against the curved edges of the teeth will (owing to the peculiar attachment of the harrow device to the frame) force the said teeth deeper into the soil, as shown in dotted lines in said figure, such downward movement being limited by the adjustment of the brackets K. By this arrangement it will be observed that the harrow-teeth, instead of rising up over hard clods, as is the case with most of the similar devices now in use, will cut through the same and effectually break them. While it is preferred to use my attachment with a roller-frame of the construction shown, it is manifest that the same may be used with any suitable land-roller frame without departing from the principle of my invention.

From the foregoing description, taken in connection with the drawings, the operation and advantages of my invention will be readily understood.

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

1. The combination, with the main frame A, the axle B, journaled therein, the rollers D, mounted on said axle, arched bars E, secured to the frame and extended over the rollers D, and the driver's seat F, mounted on said bars over the rollers, of the harrow attachment G, disposed below the frame in advance of the rollers D, said attachment consisting of the harrow-bar H, provided with depending harrow-teeth, carrier-arms G′ G′, secured to said bar, extended rearwardly and journaled on the axle B, as shown, a flexible connection, N, secured at one end to the bar, and a bell-crank lever, O, mounted at its lower end on the front beam of the frame, its crank end connected with the flexible connection N, its handle portion extended upward in close proximity to the driver's seat, all arranged substantially as and for the purpose described.

2. The combination, with the frame A, the axle B, the rollers D, mounted thereon, and the adjustable stops K, secured to the frame, as shown, of the harrow attachment G, disposed below the frame and in advance of the rollers, said attachment consisting of a transverse bar, H, having depending harrow-teeth, carrier-arms G′, secured to said bar and adapted to rest in the stops *k* and extending upwardly and rearwardly, the upper ends, *g*, of which are journaled upon the axle B, as shown, and a flexible connection between the harrow-bar and the front end of the frame, substantially as and for the purposes described.

3. The herein-described attachment for land-rollers, consisting of the transverse bar H, provided with depending harrow-teeth having curved and sharpened front edges, angle-plate connections I, secured one at each end of said bar to the rear side thereof, and carrier-arms G′ G′, the lower ends, *g′*, thereof secured to the arms *i* of the plates I, all arranged substantially as and for the purpose hereinbefore described.

his
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mark

Witnesses:
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