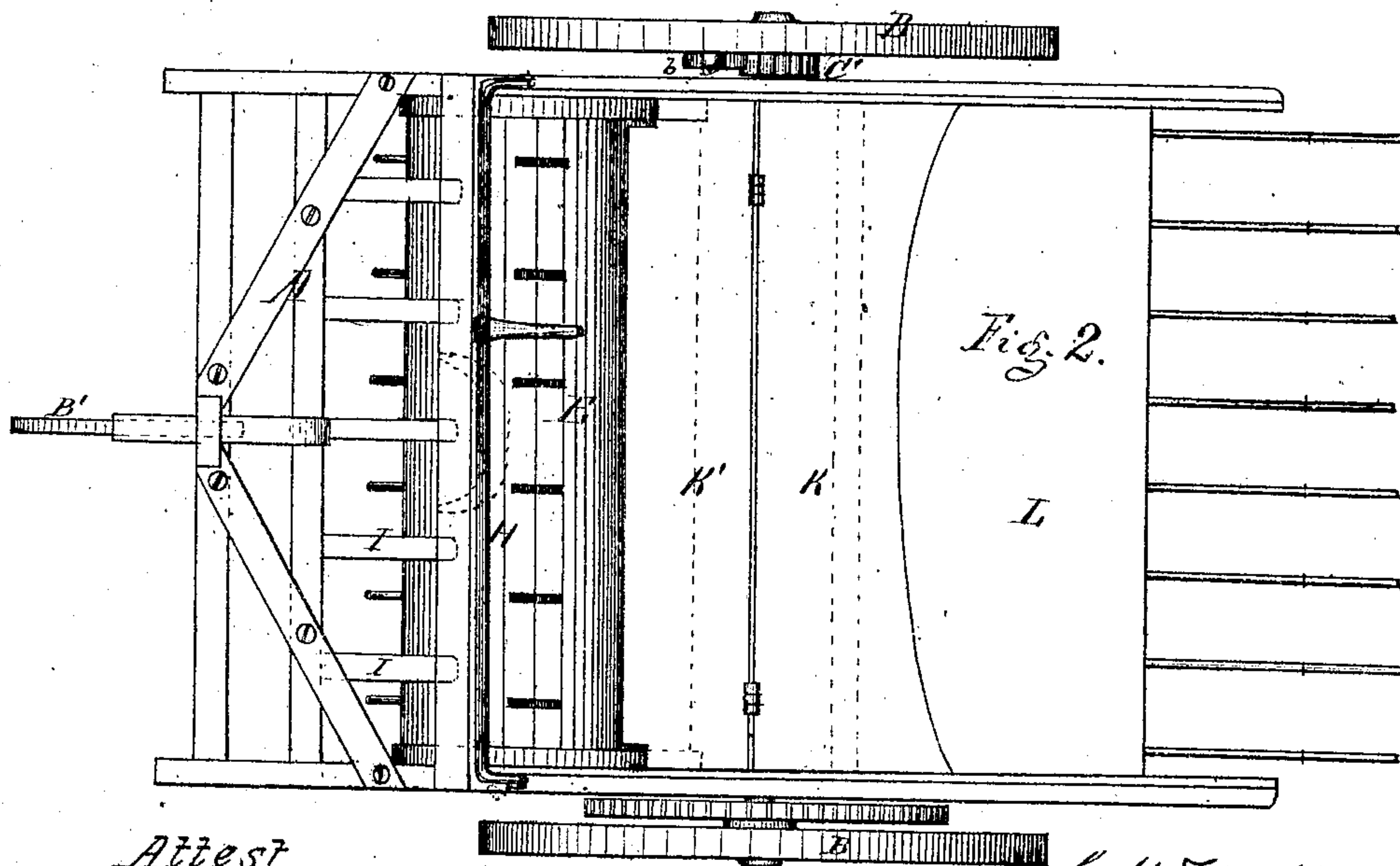
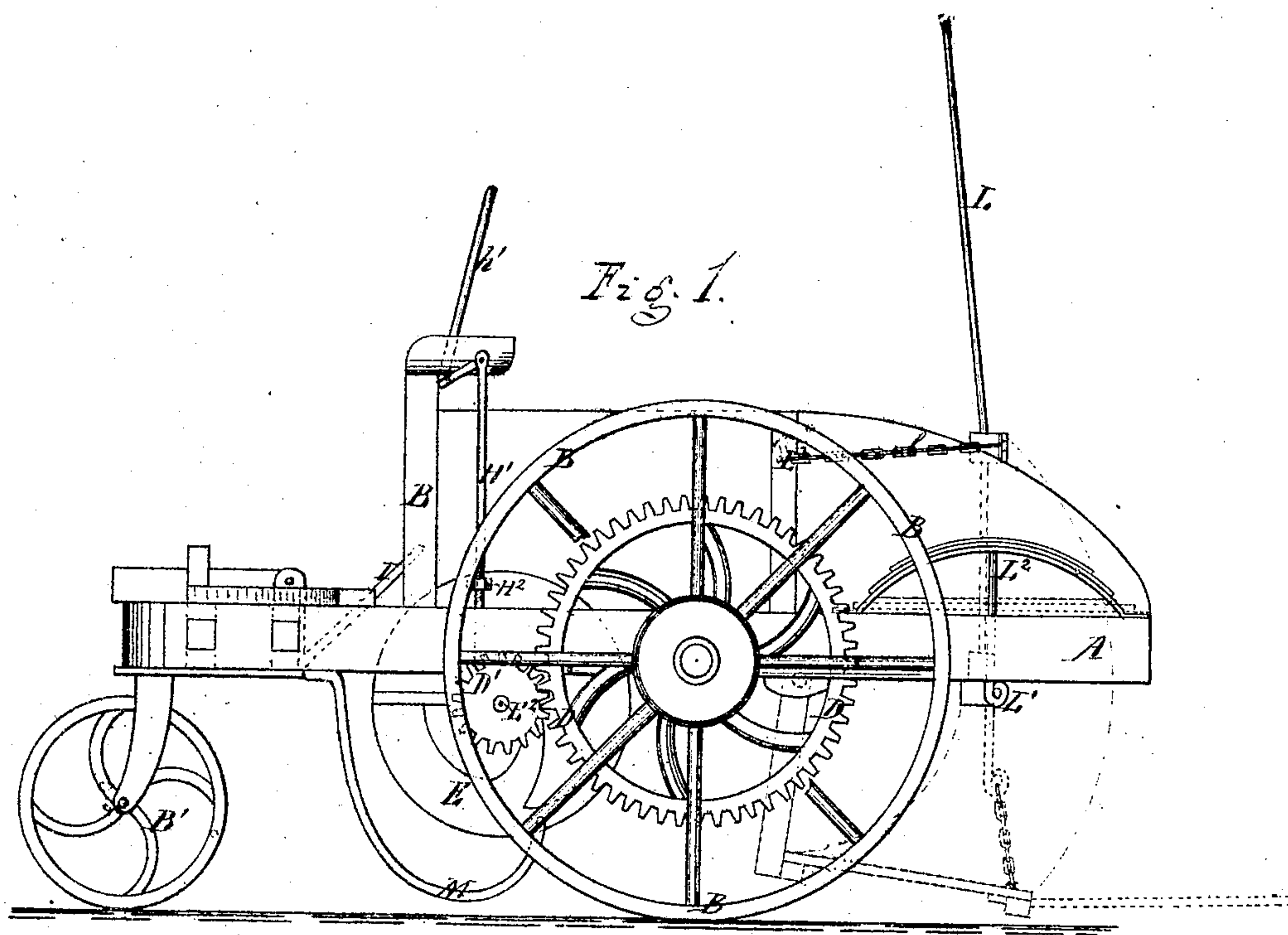


O. M. Terrel,
Hay Loader.

Sheet 1. 2 Sheets.

No. 101,183.

Patented Mar. 22, 1870.



Attest
A. Ruppert
C. F. Clausen

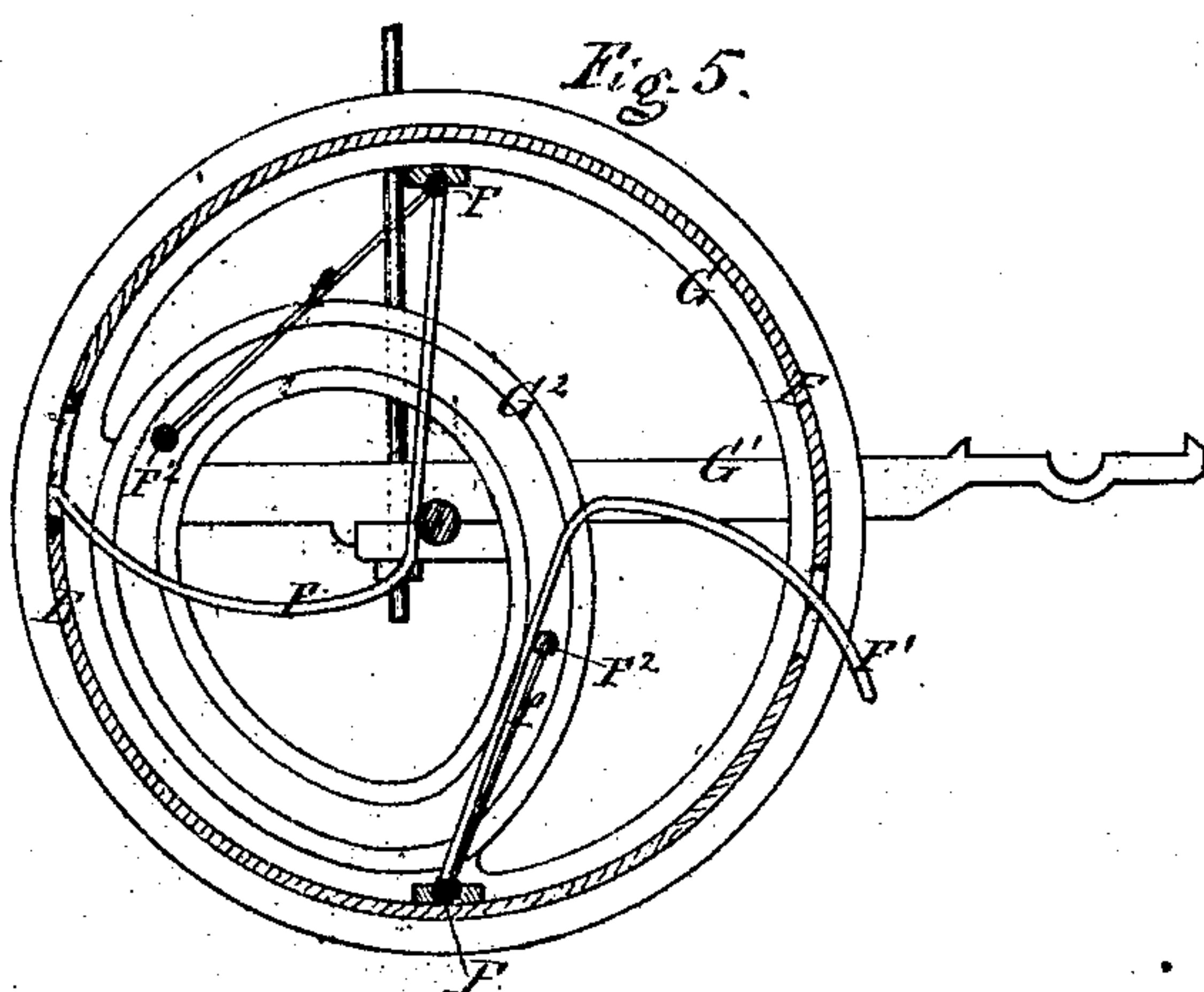
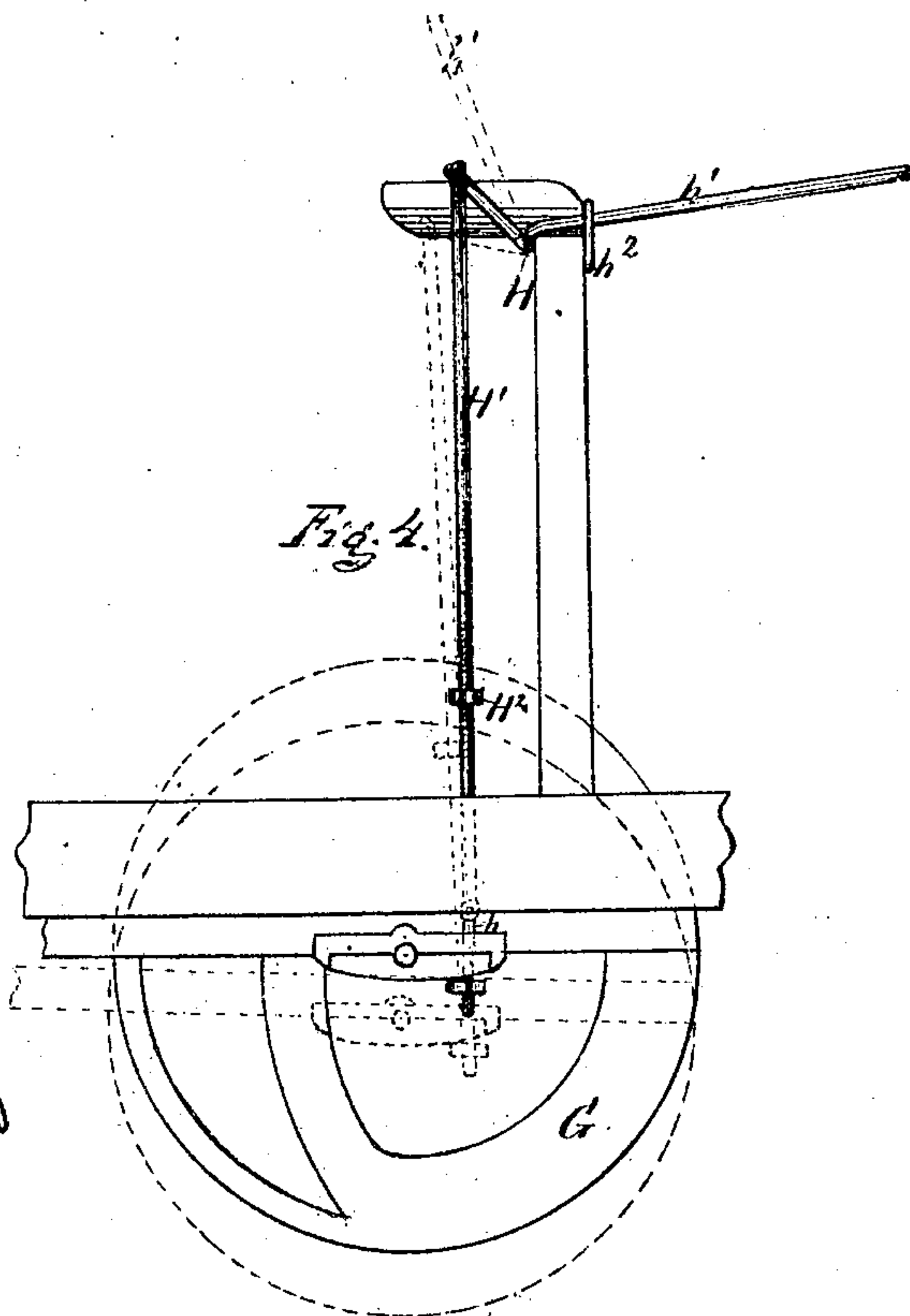
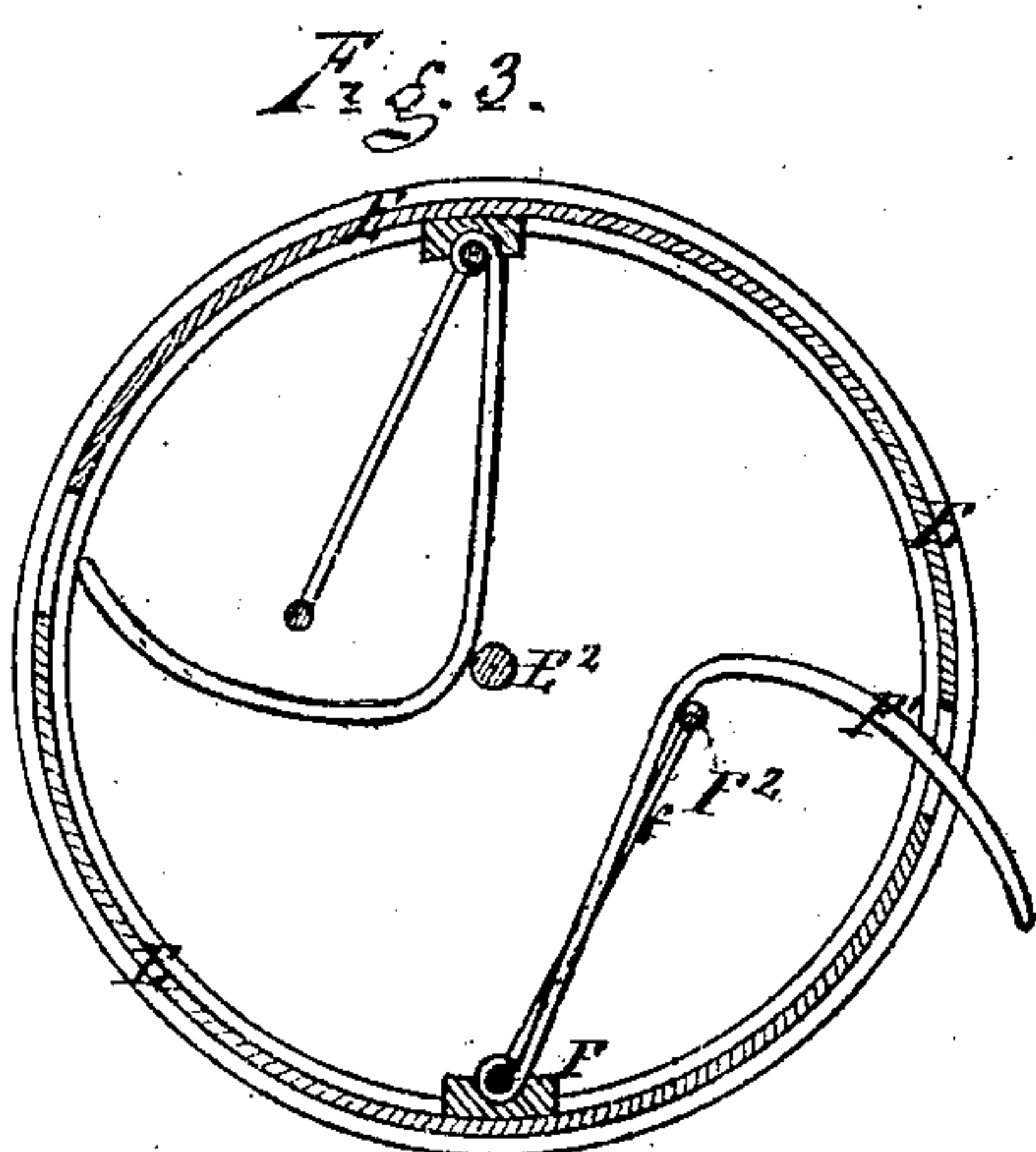
O. M. Terrel
Inventor
D. R. Bellamy & Co
Atty

*C. M. Terrel,
Hay Loader.*

Sheet 2. 2 Sheets

No. 101,183.

Patented Mar 22 1870.



*Attest
A. Ruppert.
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United States Patent Office.

CLARK M. TERRELL, OF OSKALOOSA, IOWA

Letters Patent No. 101,183, dated March 22, 1870.

IMPROVEMENT IN HAY-GATHERERS AND SHOCKERS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, CLARK M. TERRELL, of Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain Improvements in Combined Hay-Gatherer, Shocker, and Tedder; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation of my improved machine, showing the guiding-wheel, one of the driving-wheels, the gearing for driving the rake cylinder, and the frame-work.

Figure 2 is a plan or top view of the parts above enumerated, and of the rake-cylinder.

Figure 3 is a sectional elevation of the gathering or rake-cylinder.

Figure 4 is a sectional end elevation of so much of the machine as is necessary to the devices for raising and lowering the rake-cylinder.

Figure 5 is an elevation of one of the cylinder-heads, showing its inner side, which is constructed with a cam-shaped groove, wherein the ends of two rods are made to move by the revolution of the rake-cylinder for the purpose of retracting, at the proper point, the rake-teeth.

Corresponding letters refer to corresponding parts in the several figures.

My invention relates to improvements on a combined hay-gatherer, shocker, and tedder, for which Letters Patent of the United States were granted to me on the 17th of September, 1867.

Such improvements consist—

First, in the combination and arrangement of the cylinder-heads, retracting-rods, and rake-teeth.

Second, in the combination with the rake-cylinder of mechanism for adjusting the same vertically.

Third, in constructing the platform upon which the cut grass is delivered by the rake-cylinder with a hinged flap, in front, so that it can accommodate itself to various positions of such cylinder.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, in the drawings, represents the truck of the machine, which is mounted upon two driving-wheels, B, and a swiveling guide-wheel, B', in front.

The driving-wheels are placed loosely upon the axle C, having pawls *b* pivoted on the inner sides of their hubs, which, as the machine is drawn forward, engage with ratchet-wheels C', fastened on the axle, thereby turning the same. In backing the pawls will slip over the ratchet-wheels, and thus the axle remain stationary with reference to the driving-wheels.

A spur-wheel, D, of suitably large diameter, is secured upon the axle C, outside of the truck, gearing

into and driving a pinion, D', which latter is secured upon the elongated outer end of the rake-cylinder shaft. Thus the latter is revolved in a direction reverse to that in which the driving-wheels move in the forward motion of the machine.

E represents the rake-cylinder, which is pivoted to the axle C by means of two arms or bars formed upon the outer faces of its heads, and extending the proper distance to the rear, the position of the cylinder being in front of the axle C.

The cylinder has secured in it, one near each end, disks E¹, which are centrally perforated to receive and be secured upon the shaft E². This shaft has its bearings in boxes formed in the bars of the cylinder-heads, projecting some distance through one of them to receive the pinion D'. The periphery of the cylinder is provided with two longitudinal series of slots opposite each other, through which the rake-teeth are projected.

F F represent two rake-heads, extending from end to end of the cylinder, along opposite sides of its wall, and secured in the disks E¹.

Upon each one are pivoted teeth F¹, having substantially the forms shown in figs. 3 and 5, and corresponding in number and position with the slots in the cylinder, through which, in the revolutions of the same, they are alternately projected by their own gravity, and again retracted by means of two rods F², which are also pivoted by their arms *f* to the rake-heads.

These two rods extend through the cylinder, one within the curvature of each series of rake-teeth, and project at each end into cam grooves in the cylinder-heads.

G G represent two disks or heads which cover the ends of the rake-cylinder. Bars G¹ are formed upon them, running diametrically across their outer faces, and, extending beyond them to the rear the proper distance, are pivoted to the axle, for which purpose they have seats formed in them near their outer ends, so that they can receive such axle and be held thereto by means of caps in the usual manner. Seats can also be formed in these bars in the center of the heads to receive the cylinder-shaft, which is retained therein by caps secured to the bars, as shown.

The inner surface of the cylinder-heads is constructed with an eccentric cam-groove, G² into which the ends of the rods F² project. The position and formation of these cam-grooves, and the arrangement of the rods F² therein, is such that in the revolutions of the cylinder, its heads with the cam-grooves, of course being stationary, one of these rods shall be gradually forced toward the center of the cylinder as the rake-teeth upon which it is to operate rise above the ground, entirely retracting such teeth into the cylinder by the time their outer ends are in a vertical line with the axis, and thus holding them until they have passed

below the platform; at the same time the other rod is forced outward against the wall of the cylinder, permitting the rake-teeth upon which it operates, and which are by this time below the platform, to again project through the slots in the cylinder, which they will do by their gravity alone.

H represents a rock-shaft placed in bearing on top of the machine, extending entirely across the same. Its ends are cranked in a horizontal direction, and connected by means of two connecting-rods H^1 to eye-bolts h , which are secured in the bars G^1 of the cylinder-heads, serving at the same time to secure one end of the caps covering the cylinder-shaft.

The rack-shaft H is provided with a hand-lever h^1 , secured upon it near the driver's seat, by which it can be turned and the rake-cylinder raised or lowered.

A hook, h^2 , fastened on the frame may be placed over it when it is desired to hold the cylinder in an elevated position.

The connecting-rods pass through slots in the side beams of the truck, and they are on this part provided with screw-threads, and nuts H^2 put on them, impinging upon the upper surface of the beams. By changing the position of these nuts the rake-cylinder can be stationed at any desired elevation.

I I represent a series of slats or fingers, which are secured to a cross-bar of the truck of the machine, in front of the rake-cylinder, overhanging the same, as shown, their office being to prevent the cut grass which has been elevated by the rakes to roll back.

K represents the platform upon which the cut grass is delivered by the rake-cylinder. Its front end is provided with a hinged flap, K' , resting upon the cylinder, and rising and falling with the same. This platform is to be so arranged on the truck that it can be turned up or entirely removed when the machine is to be used as a tedder.

The front end of the flap consists in a piece of sheet metal, so that it can lay close on the cylinder, and thus prevent the hay from becoming choked at this point.

L represents the shocker platform, which is to be constructed substantially as shown in the drawings. It is pivoted at its front end to the truck, and its rear end, from which the teeth project, is hung by chains l to eye-bolts L^1 , which pass through and are guided in the side beams of the truck, and are actuated by springs L^2 in the manner set forth in my said former Letters Patent. When traveling with the machine from one field to another the shocker platform is detached from the eye-bolts L^1 , and turned up to the position shown in fig. 1, in which position it is held by attaching its chains to hooks L^3 on the sides of the truck.

M M are two metallic bands, which serve to separate the hay which is being raised by the rake-cylinder from that remaining on the ground, and to prevent the hay from clogging the gearing.

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the grooved cylinder-heads G, the pivoted rake-teeth F^1 , and retracting-rods F^2 , substantially as and for the purpose set forth.

2. The arrangement of the rake-cylinder E, connecting-rods H^1 , nuts H^2 , and cranked rock-shaft H, as a consequence of which the position of such cylinder vertically can be determined, and it be allowed to rise above such determined point in case it meets with any obstruction which makes such movement necessary.

3. The combination of the platform K and flap K' with the vertically-adjustable rake-cylinder E, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARK M. TERRELL.

Witnesses:

WILLIAM MATTISON,
JOHN WHITE.