

(No Model.)

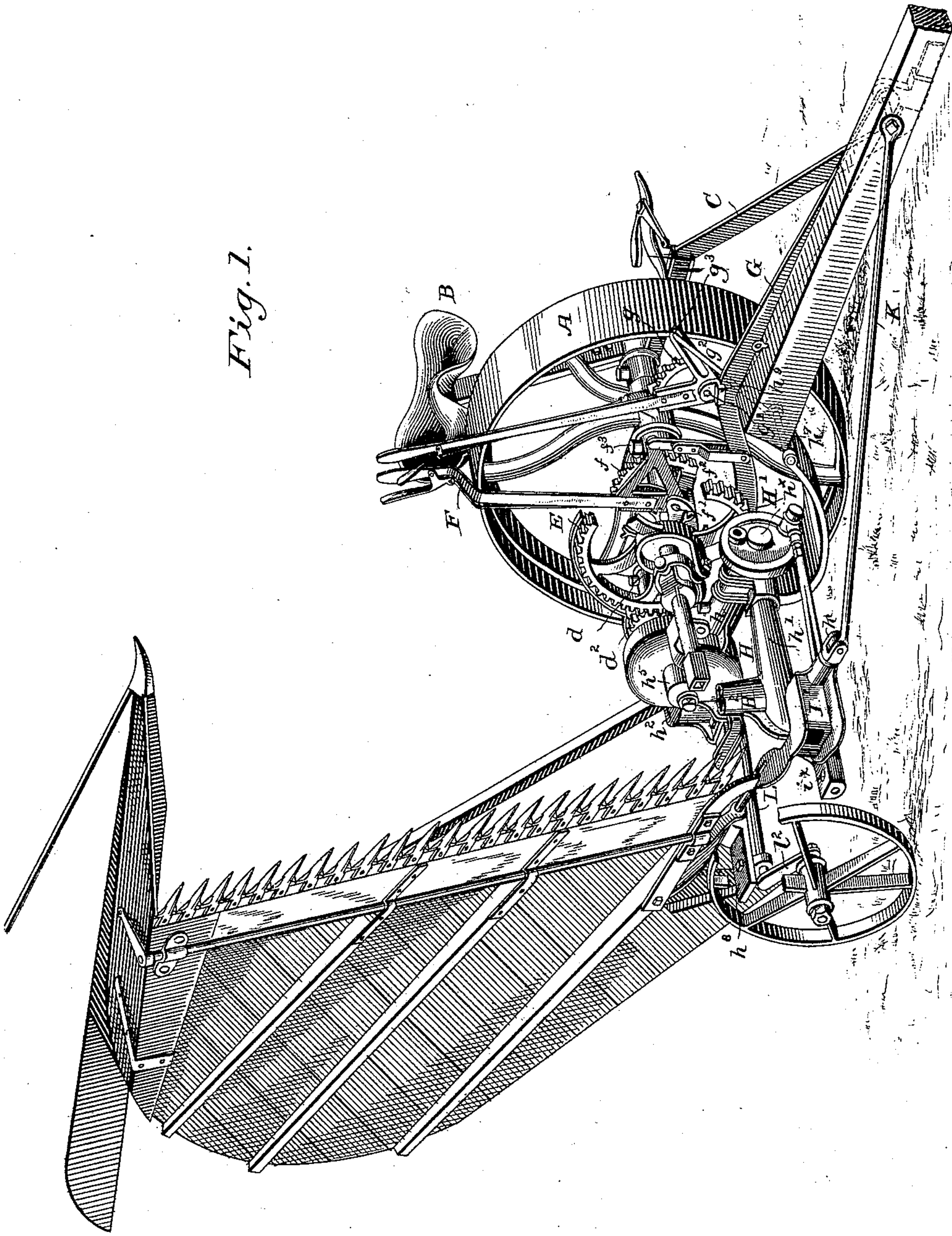
6 Sheets—Sheet 1.

H. E. PRIDMORE.
HARVESTER.

No. 407,742.

Patented July 23, 1889.

Fig. 1.



Witnesses

Wm A. Squire

Geo. W. Young.

Inventor

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By his Attorneys

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(No Model.)

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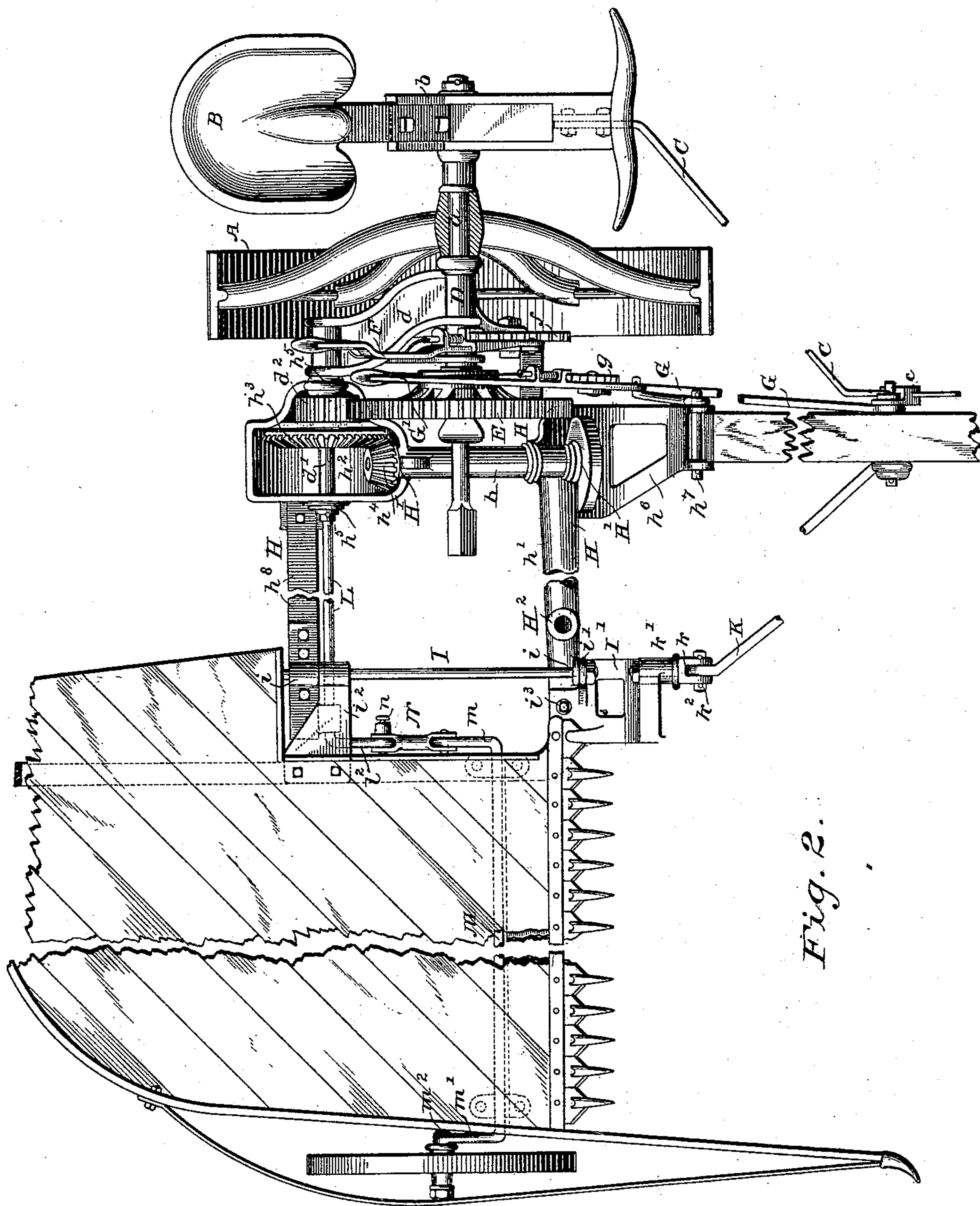


Fig. 2.

Witnesses.

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(No Model.)

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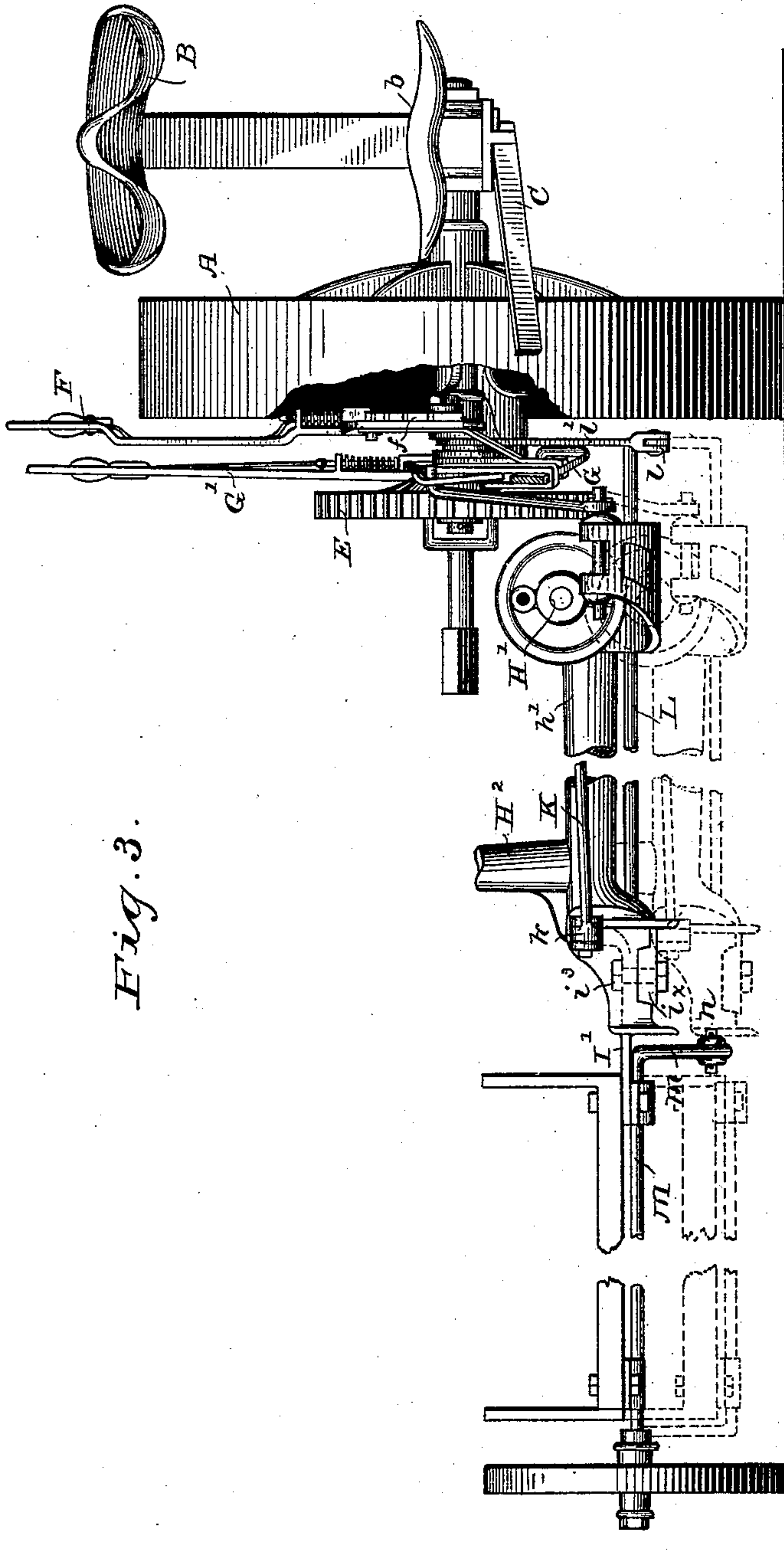


Fig. 3.

Witnesses

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(No Model.)

6 Sheets—Sheet 4.

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Fig. 4.

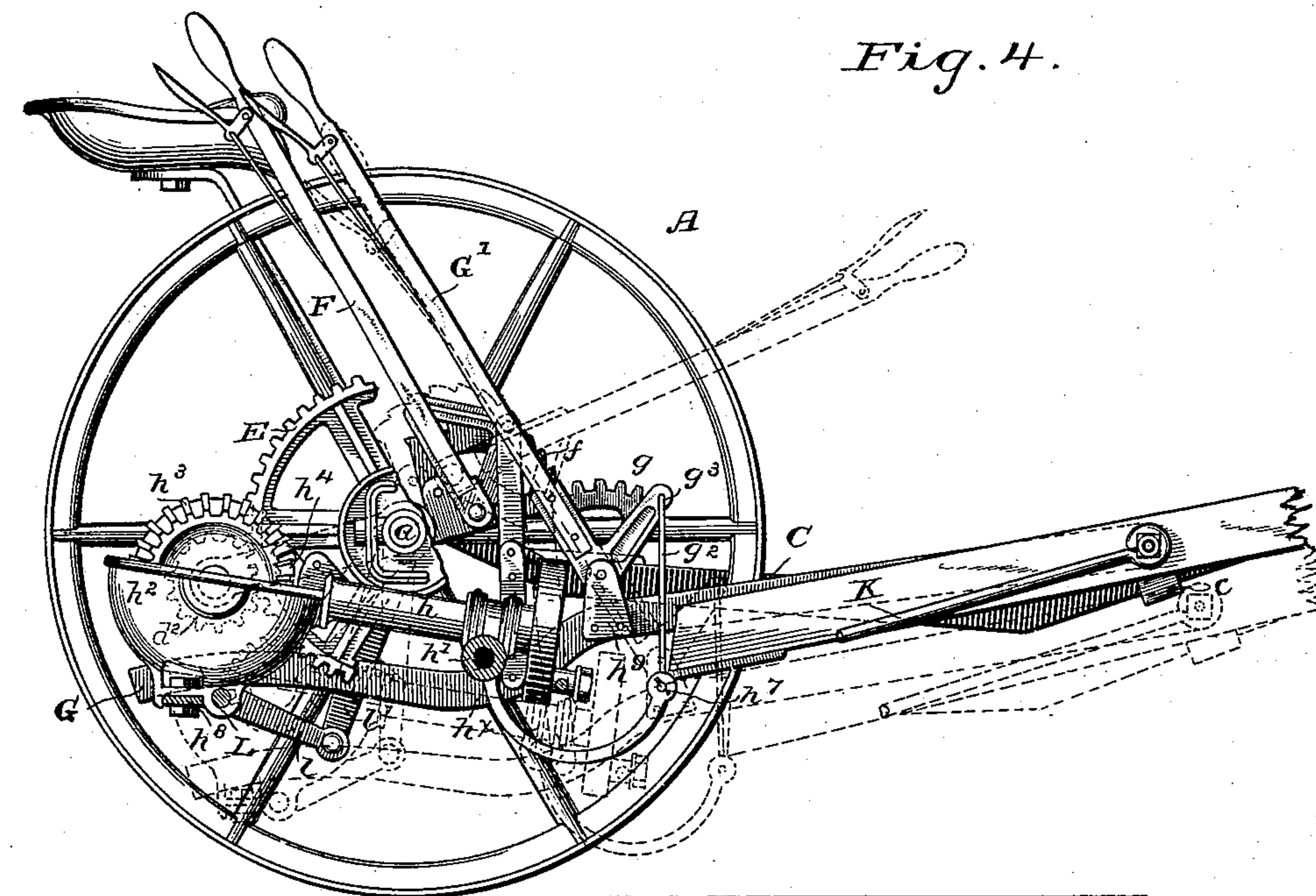
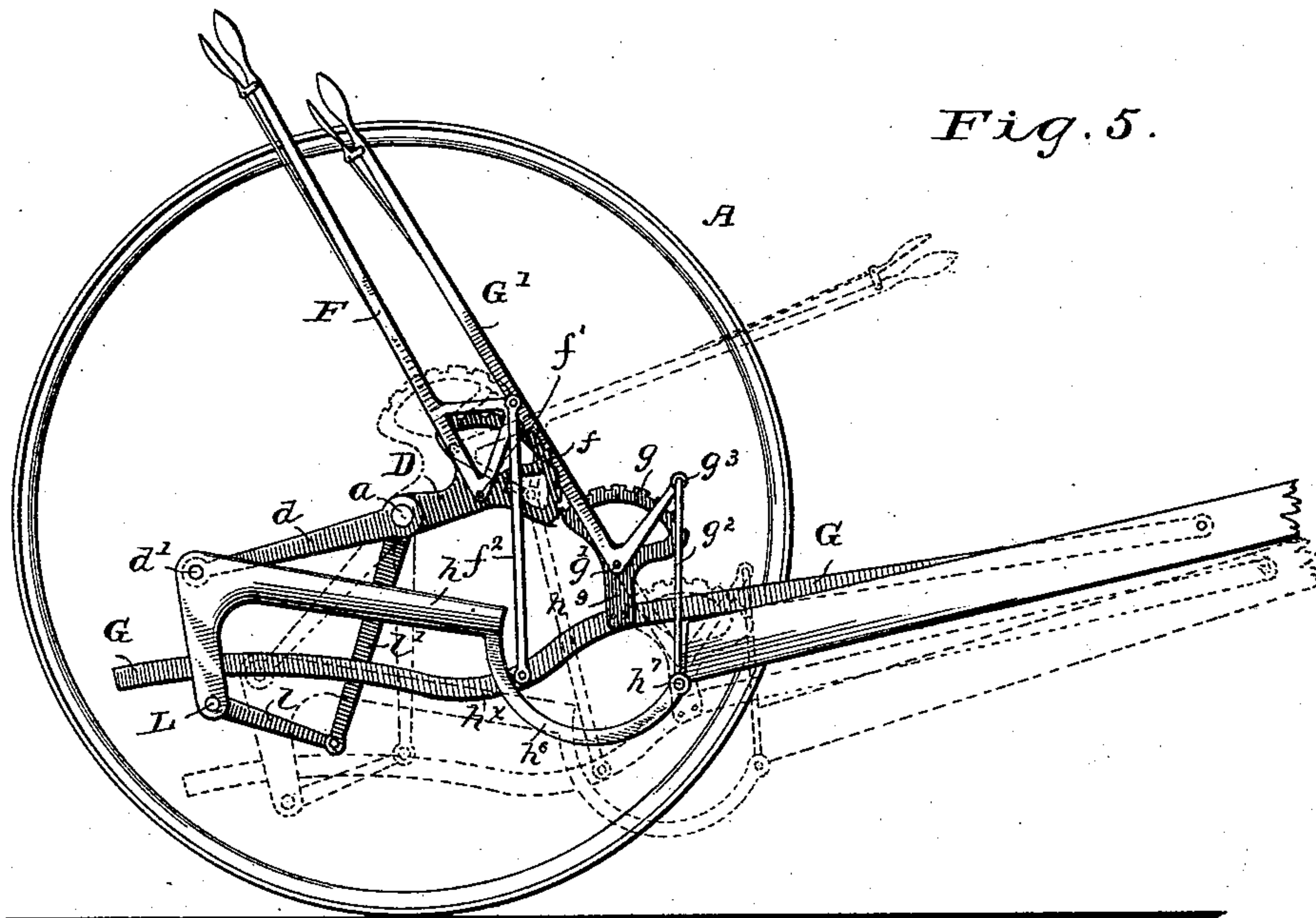


Fig. 5.



Witnesses

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(No Model.)

6 Sheets—Sheet 5.

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Fig. 6.

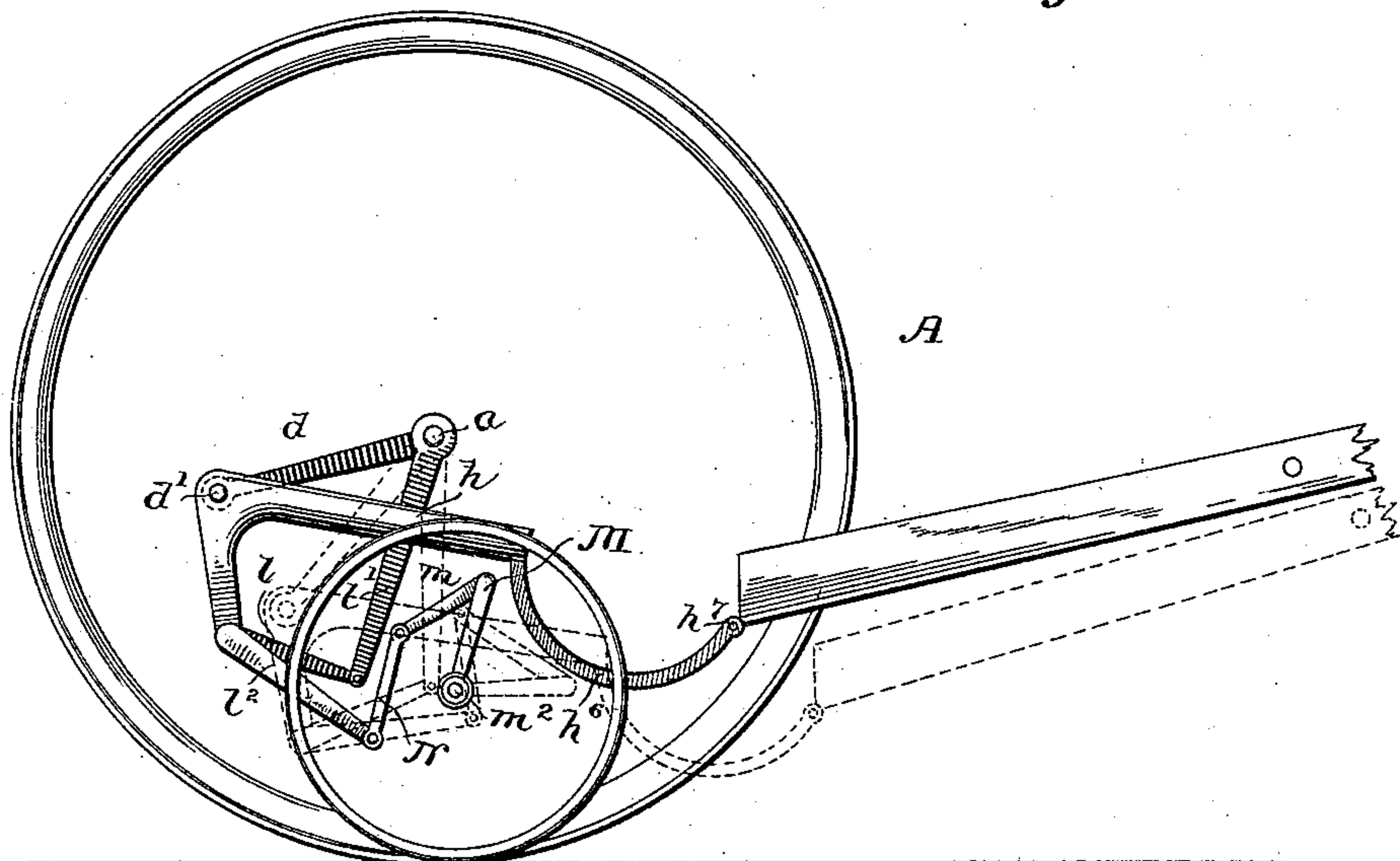
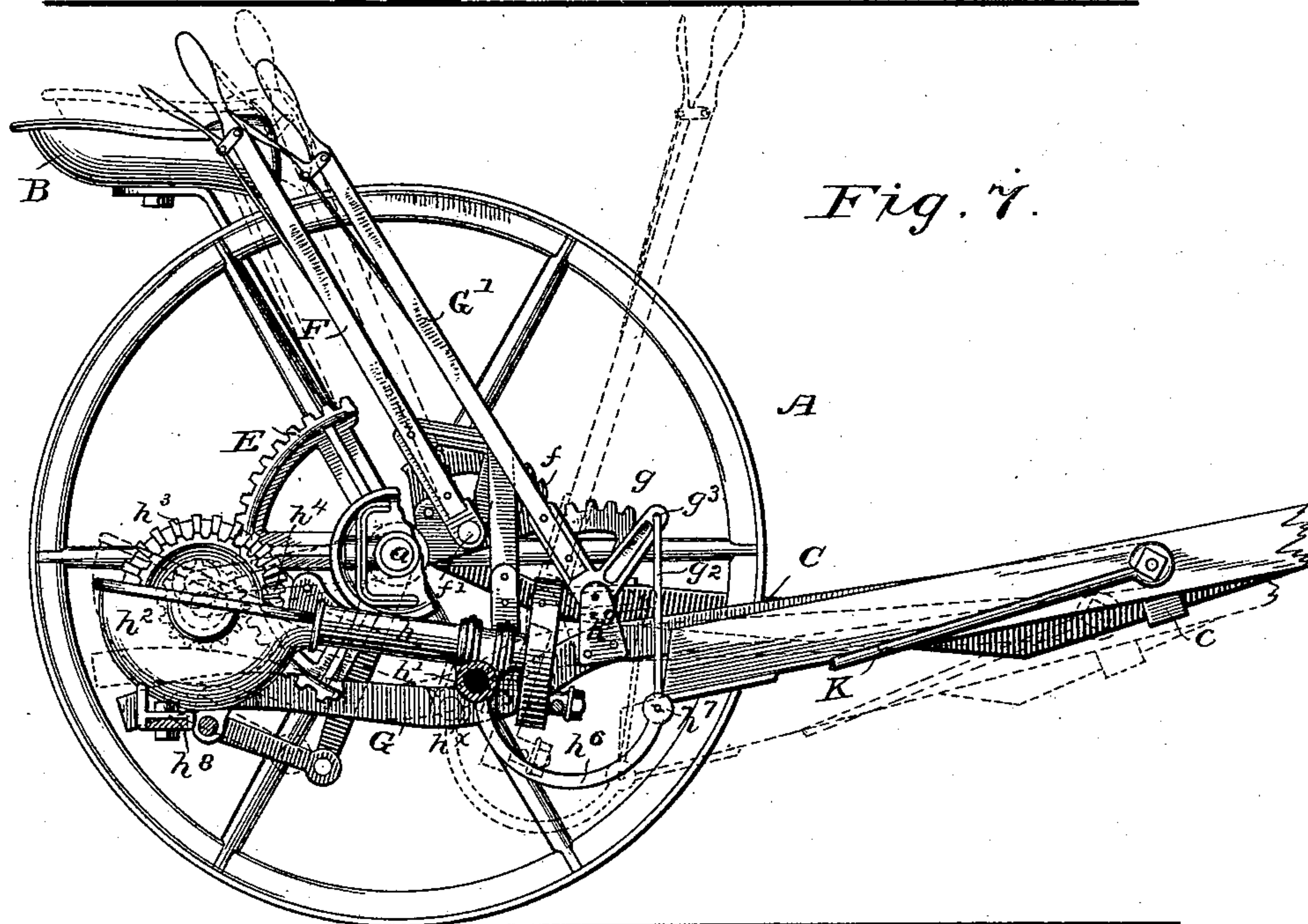


Fig. 7.



Witnesses

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Parsons & Parsons

(No Model.)

6 Sheets—Sheet 6.

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No. 407,742.

Patented July 23, 1889.

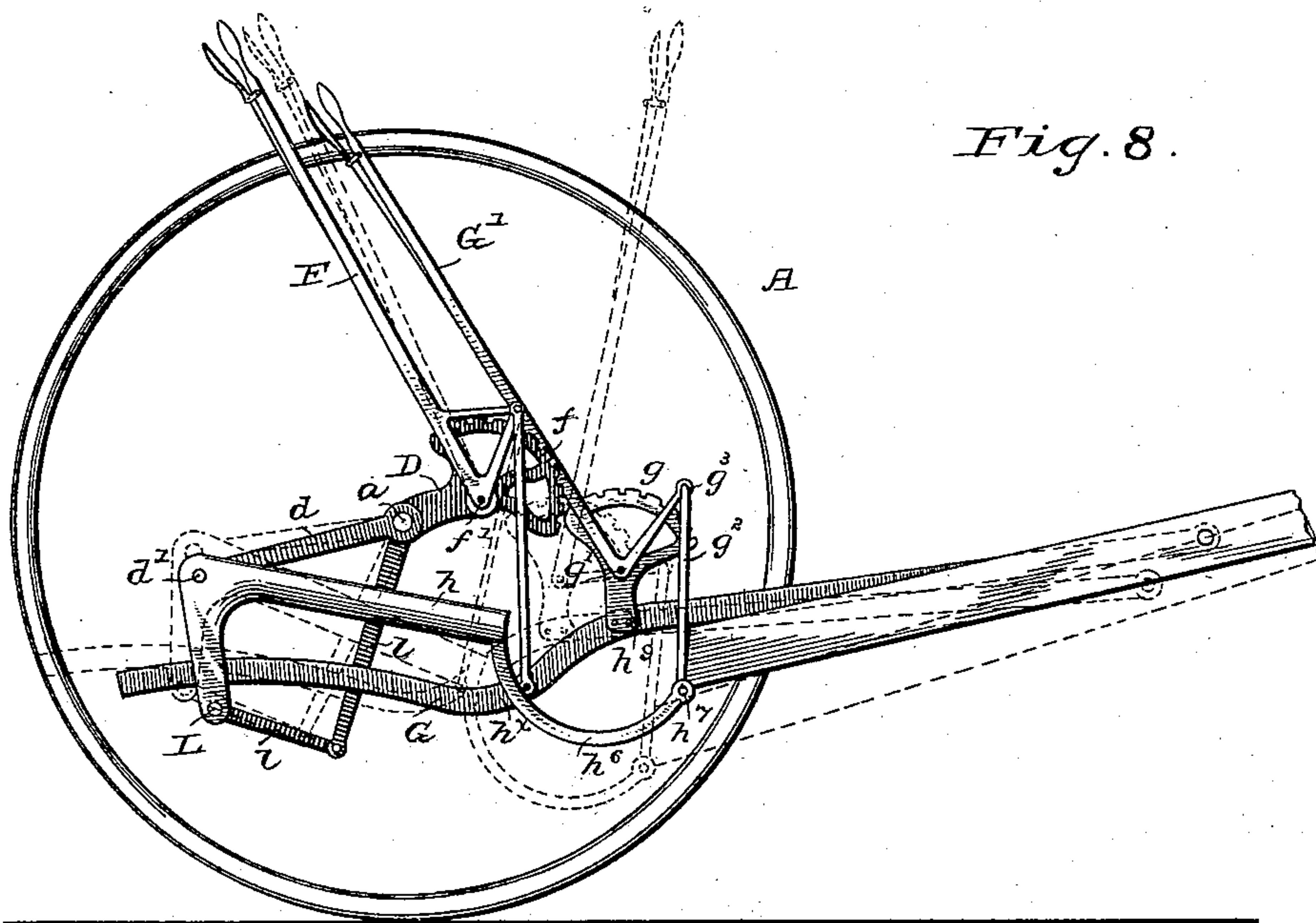


Fig. 8.

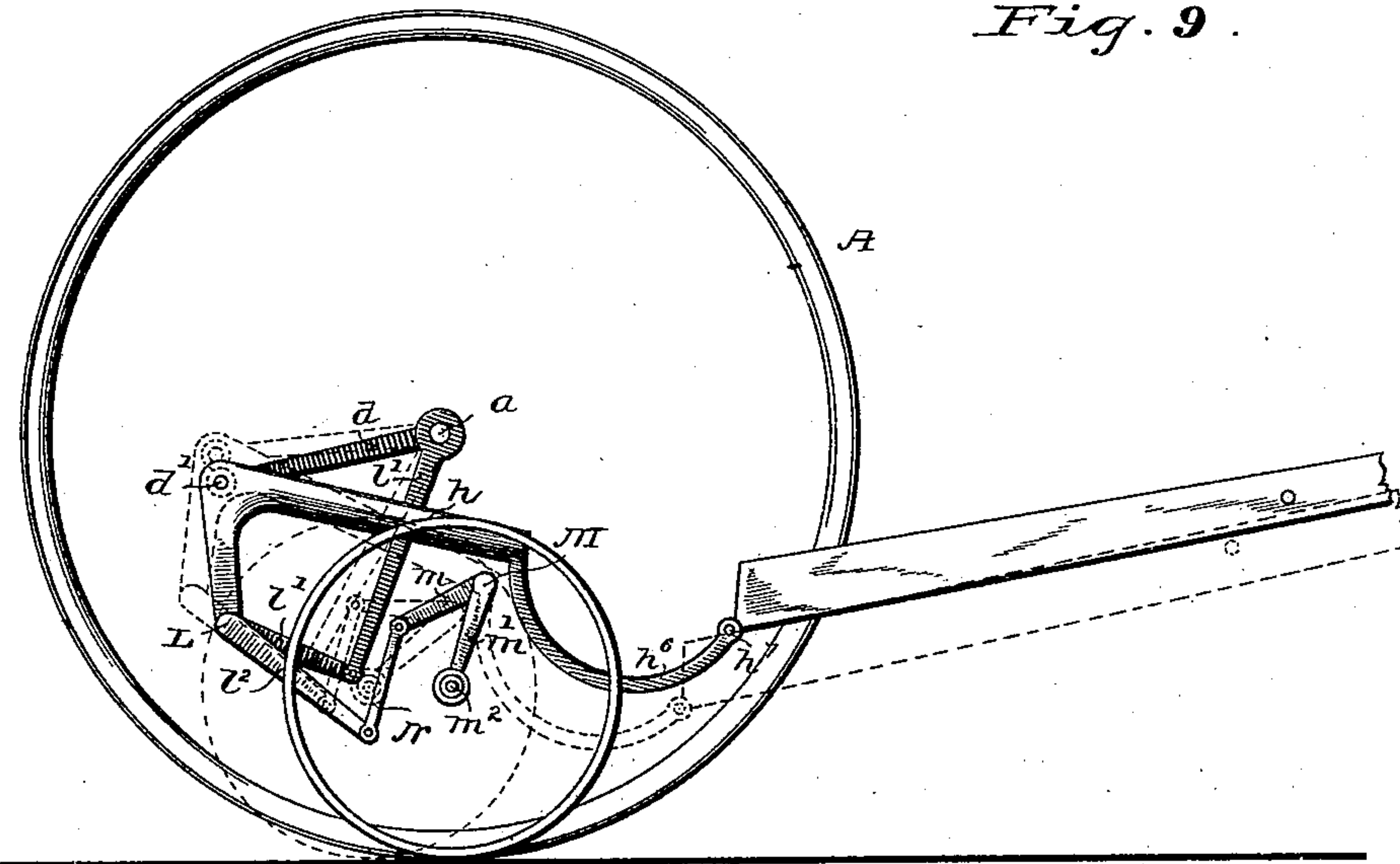


Fig. 9.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY E. PRIDMORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCORMICK HARVESTING MACHINE COMPANY, OF SAME PLACE.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 407,742, dated July 23, 1889.

Application filed August 12, 1885. Renewed October 8, 1887. Serial No. 251,823. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. PRIDMORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

Reissued Letters Patent of the United States were granted August 26, 1884, No. 10,515, to the McCormick Harvesting Machine Company, as my assignee, for an improvement in that type of harvesters generally known as "one-wheel" harvesters—that is, having a single main or driving wheel at the stubble side, while a quadrant or rectangular platform suspended from this wheel at said side is on the other side supported by a grain-wheel or caster—and a sweep-rake or other gaveling device is employed to remove the grain at regular or appropriate intervals. The machine described in said reissued Letters Patent has a platform rigid throughout its length and so mounted that it is rigidly in line with the axle of the main wheel at all times, although it may be adjusted up and down or tipped upon the line between the two carrying-wheels. Consequently in transportation from one field to another the gates and bridges, if there should be any, through or over which it passes must necessarily be selected with reference to the space between the main wheel and the driver's seat, located outside of said wheel on one side and the grain-wheel on the other side, and should a team be met on the road one or the other of the wheels must be run into the ditch in turning out, endangering the machine.

My present invention relates to improvements upon this machine intended to obviate such objections as above noted and enable it to be reduced into a small compass for transportation; and to this end I form a joint between the platform and the gear-frame, which upon releasing a bolt enables said platform to be turned into a vertical or past a vertical position and provide means whereby the grain-wheel may be transferred to and secured beneath said gear-frame outside of the joint or adjacent to the joint.

The invention consists, further, in dividing the crank-shaft which supports the grain-

wheel and placing each section out of line with the other, with cranks at their adjacent ends connected by a link, whereby the rocking of the inner shaft will rock the outer and adjust the grain-wheel; in so constructing the cranks on the grain side of each of said sections that the grain-wheel carried upon the outer crank may be removed therefrom and applied to the inner when the platform is folded up and the harvester is to be transported; in hinging said platform to the inner or gear frame by means of a pivot-rod, and combining therewith a tongue-hound connected with the inner shoe of the platform by a swivel-bolt in line with or in axial prolongation of said pivot-rod; in prolonging one or both arms of the gear-frame beneath the platform and connecting the two by a bolt, whereby the platform is made ready for use; in forming the main frame-bar with reverse curves, the crests or apexes of which serve as points for the application of the lifting and tipping forces, and in various other combinations and details of construction hereinafter set forth and claimed.

In the drawings, Figure 1 is a perspective view of a machine embodying my invention with the platform folded and the grain-wheel applied at the stubble end of the gear-frame ready for the road; Fig. 2, a top plan view of said machine with the platform down and bolted to the gear-frame in rigid extension therewith and the grain-wheel in place outside of the divider; Fig. 3, a front elevation with the parts arranged as in the preceding figure and the lowest vertical adjustment indicated in dotted lines; Fig. 4, an elevation from the grain side with the platform removed and the gear-frame partly in section to show the construction of said frame and of the main frame-bar and explain the vertical adjustment; Figs. 5 and 6, diagrammatic or skeleton elevations from said side with the platform and gearing omitted to more clearly expose the outline of the gear-frame and main frame-bar and arrangement and action of the raising, lowering, and tipping instrumentalities relatively thereto; and Figs. 7, 8, and 9, elevations corresponding, respectively, to each of the three preceding, to further illustrate the construction and arrangement of said

parts and to explain the action and effect thereof in the tipping adjustment.

A is the main wheel; a , the main axle, upon which this wheel is mounted and to which it is usually keyed; B, the seat supported upon a bracket b , sleeved to said axle outside of the main wheel, or on the stubble side thereof, and C a brace rigid with said support or bracket and extending therefrom to a pendulum guide or keeper c , secured to the tongue by the hound-bolt, whereby this brace is made not only to support the seat and cause it to follow the adjustment of the tongue, but also acts as the outer hound to said tongue. Upon the inner end of the axle is sleeved a bracket-casting D, having a rearwardly-extending radius-arm d , secured to the prime-pinion shaft d' , carrying the prime pinion d^2 , which meshes with the main gear E, mounted on the axle outside of the bracket-casting and driven therefrom by a one-way clutch. In front of the axle the casting has a vertical segment-rack f for the raising and lowering and supporting lever F, pivoted at f' , concentric with said rack and having the link f^2 depending from its crank-arm f^3 to a connection with the frame-bar. This frame-bar G extends from a pivotal connection with the draft-tongue at the point where the hound-bolt passes through the same to a keeper at the rear of the gear-frame, and upon this bar is mounted a segment g , into which the tipping-lever G' , pivoted at g' to said bar, latches, and a link g^2 from the crank-arm g^3 of said lever depends therefrom to a connection with the gear-frame at or adjacent to the joint between said frame and the tongue.

As thus far described, the machine does not essentially differ from that made the subject of my before-mentioned patent, except in respect to the outline of the frame-bar and the relations thereto of the lifting and tilting apparatus, as will be presently explained. In said former patent the sills of the platform were brought close up to the main wheel and constituted the gear-frame—that is, they afforded the supporting-base for the metal brackets or bearings carrying the prime-pinion shaft and for the rake-standard, sufficient space for these instrumentalities of course being left between the platform proper and the wheel, and also a point of support for a metal bracket bolted to the front sill, practically in line with the crank-shaft, to receive the pivot-bolt of the hinged tongue. I now, however, replace the inner ends of these sills by a metal frame consisting of a casting H, having one sleeve-arm h , parallel with the main wheel or in line with the advance of the machine, and constituting the bearing for the cutter crank-shaft H' , which it incloses, and another arm h' , also tubular for strength and lightness, at right angles with the first and occupying the place of the front sill in the former construction. This second arm has near its outer end a standard H^2 , for the support of the rake-cam, while the first or longi-

tudinal arm has at its rear a box h^2 , which receives the prime pinion and the bevel-wheel h^3 , connected therewith, and also the bevel-pinion h^4 , on the rear end of the crank-shaft, intermeshing with and driven by said bevel-wheel. Ears h^5 , rising from the side of this box, support the prime-pinion shaft, while a web or bracket h^6 , integral with said casting, extends from the front of the frame in line with the crank-shaft, and receives at its forward end the pivot-pin h^7 of the tongue, being bent down, as shown, to admit the wrist-wheel. To an offset from the side of the box, and near the bottom thereof, is riveted an arm or bar h^8 , of wrought metal, (though it may be cast integral, if desired, or formed of malleable cast-iron,) parallel with the front arm of the casting and occupying substantially the place of the rear sill in the former construction. This metal frame thus forms a low-down rectangular gear-frame suspended from the main axle and entirely beneath it at practically the level of the platform, to which it is to be connected, as presently described.

The frame-bar, as already intimated, is pivoted to the tongue by the hound-bolt and plays in a keeper at the rear of the gear-frame; but instead of being practically straight, as in my former construction, it is curved, as shown, to form a sort of arch or bridge h^9 at the point where it supports the segment for the tilting-lever and an inverted arch h^* where the link from the lifting-lever is pivoted to it, thus securing greater strength or resistance with the same metal or the same strength with less metal and weight.

Near the outer ends of the lateral bars of the metal frame are ears i to receive a rod I, parallel with the side of the main wheel, and a lug i' , rising from the inner shoe I' , secured to the finger-bar and platform, extends up alongside the front ear and also receives said rod, while a strap or offset i^2 from said platform embraces the rod alongside the ear on the rear bar of the gear-frame, permitting the platform to hinge upon said rod and to be turned up to or past a position at right angles with said frame. The front bar of this gear-frame is extended beyond the pivotal connection, as at i^x , and a bolt i^3 , passing through said extension, clamps the shoe, and consequently the platform, rigidly to the frame, making a stiff platform for use.

The hound K, which connects the shoe with the tongue, is jointed to said shoe by a universal pin-coupling or swivel k , having its main pivot k' in line with the rod upon which the platform hinges and the transverse pivot k^2 in line with the hinge-joint between the draft-tongue and gear-frame, so that no strain shall be brought upon said hound whenever the platform is folded for transportation, or when it is raised or lowered or tilted by the appropriate levers while the machine is in operation.

A crank-shaft L is carried in bearings beneath and alongside the rear bar of the gear-

frame, and the crank l at its inner end is connected by a link l' with the main axle, as in the machine upon which this is an improvement, while the crank l^2 at its outer end is link-connected with a similar crank m on a second crank-shaft M , running beneath the platform a short distance behind the finger-bar, and carrying at its outer end a crank m' , receiving a detachable stub-axle m^2 for the support of the grain-wheel.

The link N , which connects the adjacent cranks of the two shafts or shaft-sections, is preferably secured to the crank on the inner shaft by a spring-pin n , which can be readily withdrawn to uncouple the link, but will always remain attached thereto, and the stub-axle is so formed, and secured by nuts to its cranks in such manner that it may be readily removed and with the grain-wheel applied to the crank on the inner shaft whenever the link is uncoupled therefrom. Thus whenever it is intended to remove the machine from one field to another or take it along the road from or to the house the link will be uncoupled from the crank l^2 at the platform end of the gear-frame, the grain-wheel detached from the crank alongside the divider, the bolt which clamps the finger-bar stiffly to the gear-frame will be removed, the platform folded up and secured by a stay-rod extending to any appropriate part of the frame, and the grain-wheel will then be mounted upon the crank l^2 and serve as a carrying-wheel at that side of the gear-frame.

I do not intend to limit myself to the specific means of communicating motion from the inner section of the subtending crank-shaft to the other, nor to the employment of the other novel elements of my invention in connection with a gear-frame and frame-bar of the precise construction and outline described alone, nor to the use of a double pin-joint as the universal coupling between the hound and inner shoe, since in the last case a ball-and-socket joint is a full equivalent; but What I claim is—

1. The combination, substantially as hereinafore set forth, of the main wheel, the platform, the rectangular gear-frame suspended from the main axle inside the main wheel at practically the level of the platform, the rake-standard located upon and near the outer end of the front lateral arm of said frame, the hinge-joints connecting the platform-frame both to the front and to the rear lateral arms of said gear-frame, and the extension of the front arm beyond the hinge, lapping the inner shoe fixed to said platform-frame, and adapted to receive a bolt passing through said extension and shoe to clamp the platform rigidly to the gear-frame.

2. The combination, substantially as hereinafore set forth, of the main wheel, the platform, the intermediate or gear frame hinged to said platform and adapted to receive a bolt which holds the frame and platform rigidly together, the bracket-casting and its radius-

arm connecting the main axle with the rear inner corner of the gear-frame, the hinged tongue, the frame-bar pivoted to the tongue and entering a keeper at the rear of the gear-frame, and the lifting and tilting levers, respectively, supporting the frame-bar from the bracket and the front of the gear-frame from the frame-bar.

3. The combination, substantially as hereinafore set forth, of the main wheel, the platform, the intermediate or gear frame suspended from the main wheel and adapted to receive a fastening which holds said frame and platform rigidly together, the hinge-connection between the platform and gear-frame, the divided crank-shaft supporting the grain-wheel at its outer end and link-connected to the main axle at its inner, and means for transmitting motion from one section to the other.

4. The combination, substantially as hereinafore set forth, of the main wheel, the platform, the intermediate or gear frame suspended from the main wheel and having an extension of its front frame-bar adapted to receive a fastening to secure it rigidly to the platform, the hinge-connection between the platform and intermediate frame, the divided crank-shaft supporting the grain-wheel at its outer end, and the link connecting the cranks at the adjacent ends of the sections of said shaft.

5. The combination, substantially as hereinafore set forth, with a platform and a frame intermediate between it and the main wheel, to which frame it is hinged, of a divided crank-shaft running beneath the platform, having the ends of each section cranked, and the outer crank of each section adapted, the one and the other, to receive a grain-wheel, a link connecting the adjacent cranks of the two sections, and a grain-wheel fitted to be applied to either of the two outer cranks of the sections.

6. The combination, substantially as hereinafore set forth, of the main wheel, the platform, the gear-frame intermediate between the main wheel and the platform, the hinge-joint between the platform and outer end of said frame, the draft-tongue, and a hound connecting the inner shoe with the tongue and swivel-jointed to said inner shoe on the same axis as the hinge between the platform and frame.

7. The combination, substantially as hereinafore set forth, of a main wheel, a platform, an intermediate frame, a draft-tongue hinged to said intermediate frame, a hinge between the platform and the intermediate frame parallel with the main wheel, and a hound connecting the inner shoe with the draft-tongue and universally jointed to said inner shoe in line with the axes of the hinges between the platform and frame and tongue and frame.

8. The combination, substantially as hereinafore set forth, of a main wheel, a plat-

form, an intermediate frame, a draft-tongue hinged to said intermediate frame, a hinge between the platform and intermediate frame parallel with the main wheel, a hound connecting the inner shoe with the draft-tongue, a swivel-bolt between the hound and inner shoe in line with the platform-hinge, and a pin-joint between said hound and bolt in line with the tongue-hinge.

9. The combination, substantially as here-
inbefore set forth, of the main wheel, the
main axle, the platform, the intermediate
frame suspended from the main axle, the
hinge between the platform and the interme-
diate frame, the extension of the front arm,
said frame adapted to receive a fastening
to hold the platform rigid, the divided crank-
shaft running beneath the frame and plat-
form, the radius-bar connecting the crank
at the stubble end of the inner section of
said shaft with the main axle, the link con-
necting the crank at the outer end of said
section with a crank on the inner end of the
second or outer section, and the grain-wheel
mounted on the crank at the divider end of
said outer section.

10. The combination, substantially as here-
inbefore set forth, with the main wheel, the
platform, and the intermediate frame, of the
divided crank-shaft running underneath the
platform and adjacent frame, the link con-
necting the adjacent cranks of the two shaft-
sections and the spring-pin to said link,
whereby it may be readily applied to or de-
tached from the crank on the inner section
to permit the grain-wheel to be transferred
thereto when the platform is folded.

11. The combination, substantially as here-
inbefore set forth, with the main wheel, of
the platform and gear-frame suspended from
the main axle, and the hinged tongue, the
frame-bar pivoted to said tongue and enter-
ing a keeper at the rear of the gear-frame
and having the reverse curves or arches de-
scribed, and the lifting and tilting levers ar-
ranged to apply their strains at or near the
apexes of said curves.

12. The combination, substantially as here-
inbefore set forth, of the bracket-casting on
the main axle, the lever pivoted thereto, the
frame-bar pivoted to the draft-tongue and
extending to a keeper at the rear of the in-
ner platform or gear-frame and having an
inverted arch, and the link depending from
said lever and connected at or near the apex
of said arch.

13. The combination, substantially as here-
inbefore set forth, of the bracket-casting on
the main axle supporting the inner end of
the platform and gear-frame, the frame-bar
pivoted to the draft-tongue and extending to
a keeper at the rear of the gear-frame and
formed with an upright curve or arch, the
segment and tilting-lever mounted at the
apex of said arch, and the link extending
from said lever to a hinge-connection at the
front of the gear-frame.

14. The combination, substantially as here-
inbefore set forth, of the bracket-casting on
the main axle supporting the inner platform
or gear-frame, the lever pivoted thereto, the
link depending from said lever, the frame-
bar pivoted to the draft-tongue and extend-
ing to a keeper at the rear of the gear-frame
and formed with reverse curves, the link de-
pending from the tilting-lever to the apex of
the inverted curve of said bar, the tilting-le-
ver and its segment mounted at the apex of
the upright curve, and the link depending
from said lever to a connection with the front
of the frame.

15. The frame-casting composed of the lon-
gitudinal sleeve for the reception of the
crank-shaft and the transverse hollow arm in-
tegral therewith to form the front bar of the
frame.

16. The frame-casting composed of the lon-
gitudinal sleeve for the reception of the
crank-shaft, the box integral therewith at the
rear end for the prime pinion and bevel-gear-
ing which drive said shaft, and the hollow
transverse arm at the front of said sleeve and
integral therewith for the support of the fin-
ger-bar.

17. The frame-casting composed of the lon-
gitudinal sleeve for the reception of the
crank-shaft, with the forward - extending
bracket, to which the draft-tongue is hinged,
and the transverse hollow arm for the sup-
port of the finger-bar.

18. The frame-casting composed of the lon-
gitudinal sleeve for the reception of the
crank-shaft, and the transverse hollow arm
supporting the finger-bar and having the
rake-standard rising therefrom and integral
therewith.

19. The combination, substantially as here-
inbefore set forth, of the hollow sleeve for
the crank-shaft, the front transverse arm cast
integral therewith and formed hollow, the
integral rake-standard rising from said arm,
the bracket for the draft-tongue hinge, also
integral with said casting, and the wrought-
metal bar riveted to an ear from the rear end
of said casting and extending parallel with
the front or hollow arm.

20. The combination, substantially as here-
inbefore set forth, of the hollow sleeve for
the crank-shaft, the box for the prime pinion
and bevel-gearing, the front transverse arm
formed hollow and with the rake-standard
thereon, and the bracket for the draft-tongue,
all cast in one piece, and the wrought-metal
bar riveted to an ear from said casting ad-
jacent to the box and extending parallel with
the front arm.

21. The combination, substantially as here-
inbefore set forth, of the main wheel, the
main axle, the supporting-bracket mounted
on said axle, the prime-pinon shaft entering
a radius-arm from said bracket, the hinged
draft-tongue, the frame-bar, the platform, the
levers on the bracket and frame-bar to lift
and to tilt the platform, the metal interme-

5 diate frame formed as described and having its front arm or bar adapted to receive a stiffening-bolt, whereby it is connected to the finger-bar, the pivot-rod extending between the two arms of said frame and forming the hinge for the platform, the divided crank-shaft running underneath said frame and platform, the radius-bar connecting the axle and crank on the stubble end of the inner section of said

shaft, the grain-wheel supported on the crank io at the divider end of the outer section, and the link connecting the cranks at the adjacent ends of said sections.

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Witnesses:

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