

O. HUSSEY.

Mower.

No. 25,201.

Patented Aug. 23, 1859.

Fig: 1.

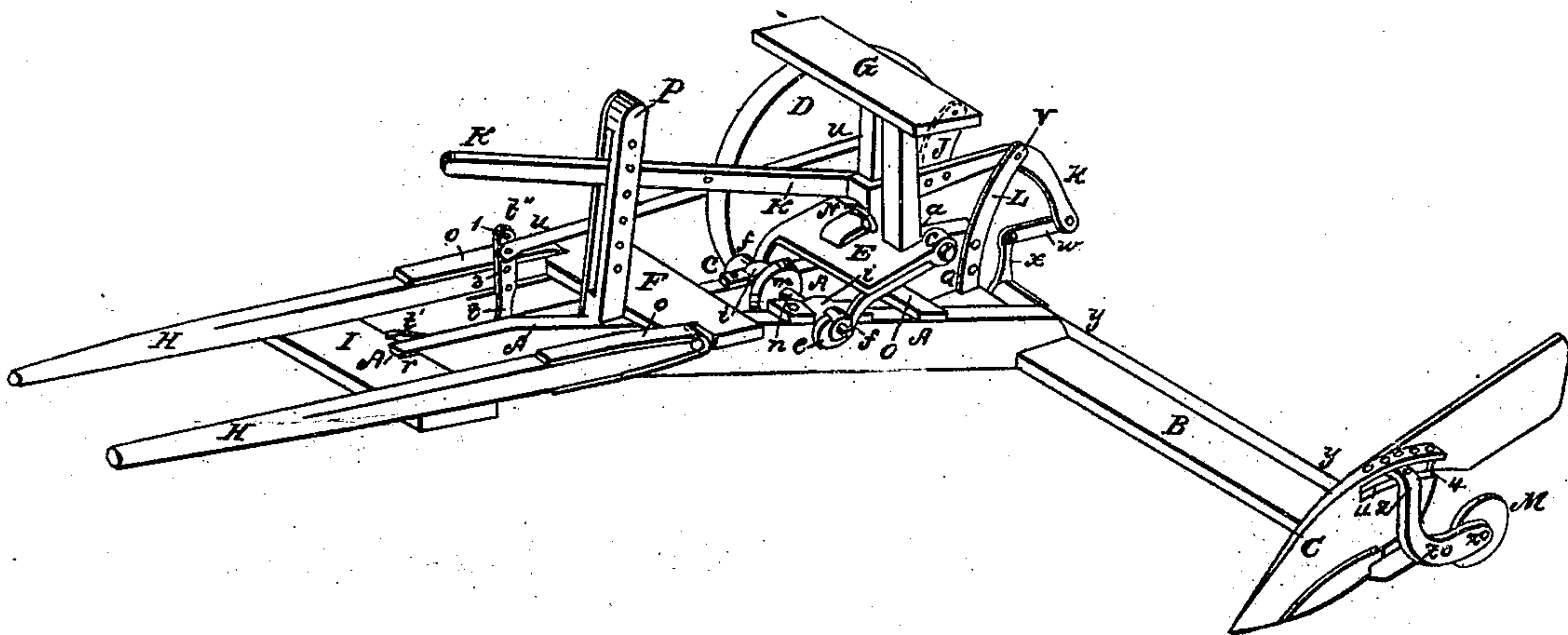
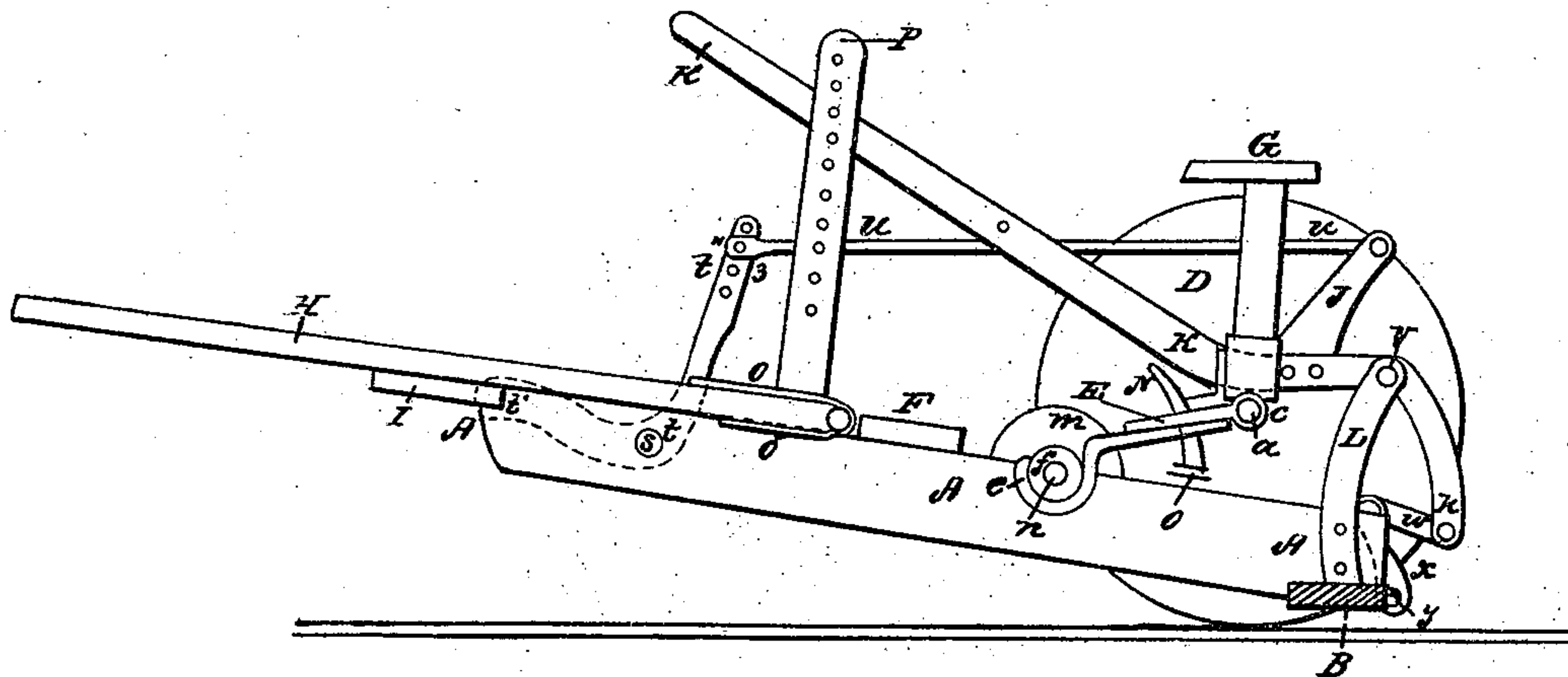


Fig: 2.



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IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 25,201, dated August 23, 1859.

To all whom it may concern:

Be it known that I, OBED HUSSEY, of the city and county of Baltimore, and State of Maryland, have invented certain new and useful improvements in the manner of raising and lowering the cutting apparatus of reaping and mowing machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents in perspective so much of a harvesting-machine as will illustrate my invention; and Fig. 2 represents a transverse section through the finger-beam, and showing the main wheel and frame in elevation.

Similar letters of reference, where they occur in the separate figures, denote like parts of the machine in both.

Several different methods have been devised for raising and lowering the cutting apparatus of harvesting-machines for cutting a higher and a lower stubble, and for allowing the machine to pass over obstacles in its path or track without injury to the cutters. One of the modes heretofore practiced was by the use of a lever, by means of which the finger-bar is raised and lowered in a circle of which the axle of the two ground wheels or bearings is the center. So short a radius as these afford causes the cutters to point too much downward when low and too much upward when high, the correct position being nearly or quite horizontal. The usual method pursued to secure a horizontal position of the cutter in cutting at different heights from the ground is to raise and lower the machine at the ground-bearings. This is usually done by the slow process of changing the position of the axle-boxes by removing the bolts, &c. Another plan to raise and lower the cutters in a horizontal plane is by flexible connections, rack and spur-wheels, and by compound levers; but all these may be said to accomplish their object by sacrificing the general utility of the machine. The strength and rigidity of the machine must be maintained, and any addition to it that impairs its other more important functions cannot be deemed as improvements upon the machine.

My design is to obviate the use of these hitherto-devised plans for raising and lowering the

cutters in a vertical line, as they are tedious or insufficient; and my invention consists in raising and lowering the machine on the axles of the ground-bearing—that is, the main wheel at one end of the finger-bar or main frame and the truck-wheel at the other end—and to do it instantaneously at both ends of the finger-bar by a lever operated by the driver or conductor from his seat, as will be explained.

A is the main frame of the machine, and B the finger-bar connected to its rear portion. C is the outside divider or shoe. These are of the ordinary well-known construction, and need no special description.

D is the main wheel, its axle *a* being fastened to and turning with it. This axis *a* has its bearings in the boxes *cc*, which are connected to or a part of a plate, platform, or frame, E, which has upon its forward end two hook-shaped pieces, *ee*, that catch under and around two trunnions, *ff*, on the main frame A, so that the main frame and main wheel are hinged and have their motions one upon the other at these trunnions *ff*. The trunnions, for convenience, may be cast onto or with the boxes *ii*, which constitute the bearings for the journals of the shaft *n*, from which the cutters may be driven in any of the usual well-known ways, said shaft receiving its motion from a pinion, which is driven by gear on the main wheel D. The trunnions and shaft *n* being in the same line, and that line the center of hinged motion of the main wheel and its connections with the frame, either may move around that line without throwing the main wheel and pinion out of gear.

m is a bevel-gear on the shaft *n*, which may drive a bevel-pinion on the crank-shaft, to which the cutters are attached and by which they are worked.

F is a transverse or cross piece upon the main frame, which may serve as a foot board or support for the driver or conductor who occupies the seat G.

H H are a pair of shafts or thills, into which the horse that draws the machine is hitched, though a tongue can of course be used when two horses are used abreast to draw the machine. The thills are connected to the transverse piece F by loops or straps *o*, which pass around journals on said transverse piece, and thus make what may be termed "strap-hinge

connections," which would, were it not for other appliances, to be hereinafter described, leave the thills loosely hinged to the frame, so that none of the weight of the machine could be transmitted through them (or through a tongue similarly hung) to the horse's back.

I is a brace extending across from thill to thill and having a gain, *r*, cut in it about midway of its length, into which gain the front end, *A'*, of the main frame projects, but in such manner as that said front end or point or part *A'* may freely move in a vertical line through said gain, but not in a lateral direction.

The driver's or conductor's seat *G* is supported on the rear portion of the hinged platform *E*, so as to bring his weight over or nearly over the axle of the main driving-wheel *D*, his weight, together with the leverage between the trunnions *f* and the axle *a*, tending to hold the main wheel to the ground and prevent it from slipping thereon, and also to raise up the front of the frame and relieve the horse's back.

To the forward portion of the main frame is pivoted, at *s*, a bell-crank lever, *t*, the arm *t'* of which is forked and straddles the brace *I*, and the other arm, *t''*, has a series of adjusting-holes, 1 2 3, in it; to one of which one end of a rod, *u*, is attached, the other end thereof being connected to an arm, *J*, which is fast on the lever *K*, said lever having its fulcrum at *v* in a brace, *L*, permanently attached to the main frame. The lever *K* is bent into the form shown in the drawings, and to its extreme rear portion is pivoted one end of a link, *w*, the other end of said link being connected to an arm, *x*, rigidly affixed on the end of a long shaft or axle, *y*, that is placed immediately behind the finger-bar *B*, and extends from its connection with the arm *x* to the outer end of said finger-bar, or far enough to support a small truck-wheel at that end of the machine, as follows: To the outer end of the shaft or axle *y* is rigidly affixed a two-armed lever, *z*, on one arm of which, *z'*, is hung the truck-wheel *M*, and the other arm, *z''*, has a projection upon it, which enters and moves in a circular slot or recess, 4, in the outside of the divider *C*, the said projection, as well as the margin of the recess 4, being furnished with pin-holes or their equivalents, so that when it is desirable to raise and hold up the cutters at a given height it may be readily done by simply inserting a pin through one of the adjusting-holes and through the projection on the arm *z''* of the lever *z*.

N is a guide-piece permanently attached to the cross-bar *O* of the main frame. It is curved, as represented, so as to allow the platform *E*, through a hole in which it passes, to move on

its hinges up and down, but not laterally, as any lateral movement of said platform would tend to bind or cramp the gearing.

P is another guide and brace, through a slot in which the forward end of the lever *K* passes, and in which also said lever may be held by a pin passing through one of the series of holes therein, so that while the driver or conductor from his seat may raise up the cutters at any time, yet the pin would prevent them from falling below a given height; but if the pin be removed entirely then the finger-bar would run upon or close to the ground unless raised up or held up by the driver or conductor.

It will be perceived that though the thills are hinged to the main frame, and that when supported by the horses' backs or necks the main frame can be raised or lowered, yet the thills are rigid, so far as all practical purposes are concerned, for neither the thills nor the main frame can move one on the other unless by the lever *K*, which, through its connections, makes the joint rigid until it is moved. It is obvious then that when the thills or tongue is supported by the horses, and the driver or conductor from his seat, by his foot or otherwise, presses down the lever *K*, the finger-bar *B*, throughout its entire length and instantaneously, is raised up from the ground upon its two ground-supports, *D M*, and always preserving its horizontal position, and so giving to the cutters and guards their proper position for easy work. The two ground-supports are not in the same line, one being much in rear of the other, so that in fact when the machine is raised up upon its supports the raising is done at two points and the frame could not rise in the arc of a circle, for it could not swing on the two separate raising-points, hence its preserving its horizontality under all its conditions.

Having thus fully described the nature and object of my invention, what I claim therein is—

1. The combination of the main ground-wheel, seat, and platform, when hinged to the main frame, substantially as herein described.

2. The raising and lowering of the entire frame, finger-bar, and outside divider upon the two ground-supports in a horizontal position by means of a lever and its connections therewith, operated by the driver from his seat, substantially as described; and for the purpose set forth.

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Witnesses:

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