

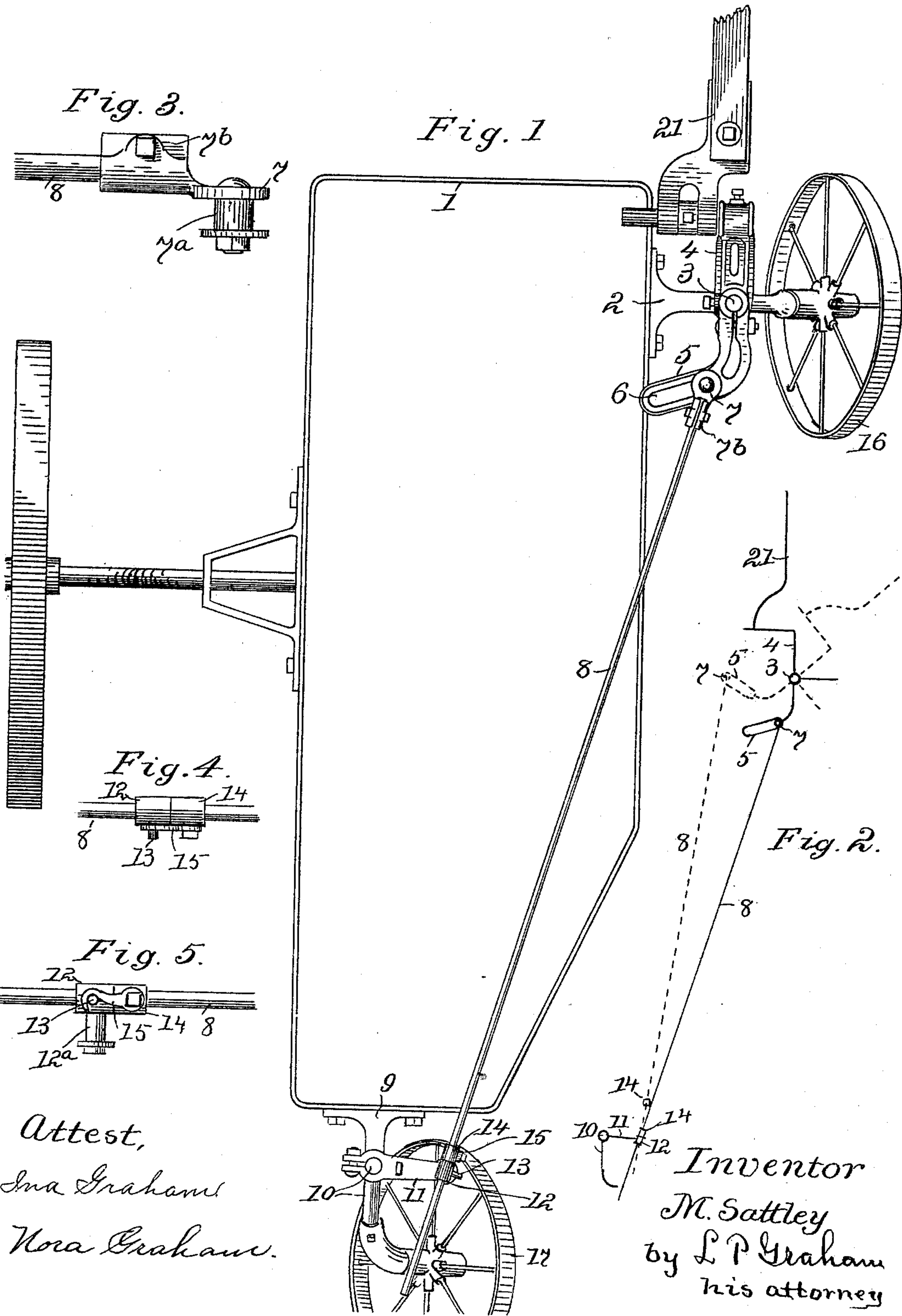
No. 619,351.

Patented Feb. 14, 1899.

M. SATTLEY.  
WHEEL PLOW.

(Application filed Oct. 29, 1898.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

MARSHALL SATTLEY, OF SPRINGFIELD, ILLINOIS, ASSIGNOR TO THE SATTLEY MANUFACTURING COMPANY, OF SAME PLACE.

## WHEEL-PLOW.

SPECIFICATION forming part of Letters Patent No. 619,351, dated February 14, 1899.

Application filed October 29, 1898. Serial No. 694,956. (No model.)

*To all whom it may concern:*

Be it known that I, MARSHALL SATTLEY, a citizen of Springfield, county of Sangamon, and State of Illinois, have invented certain new and useful Improvements in Wheel-Plows, of which the following is a specification.

This invention relates to that class of plows in which a caster-wheel bears against the vertical wall of the furrow and relieves the land-side of the plow from sliding friction. Its object is to provide means for controlling the caster-wheel from the tongue while the plow is in operation without interfering with the free swing of the tongue and to give entire freedom to the caster-wheel in turning the plow around. It is particularly applicable to gang-plows, and it is in the nature of an improvement on or extension of the caster-controlling mechanism described in application for Letters Patent of the United States, Serial No. 682,615, filed June 4, 1898, by myself and Archibald Sattley.

In the drawings forming part of this specification, Figure 1 is a plan of the frame and wheels of a gang-plow, showing my invention applied thereto. Fig. 2 is a diagram illustrating the mode of operation of the caster-controlling mechanism. Figs. 3, 4, and 5 are details of the caster-controlling mechanism, Fig. 3 being a side elevation of the forward end of the connecting-rod, Fig. 4 being a plan of a portion of the rear end of the connecting-rod, and Fig. 5 being a side elevation of such rear portion of the rod and illustrating the means employed to control the caster-wheel while backing the plow.

The frame 1 of the plow may be of any suitable construction. It has a bracket 2 secured to one of its sides, near its front end, and in such bracket is journaled the vertical portion 3 of the shaft of the tongue-controlled wheel 16. An arm 4 is fixed on the upper end of shaft 3 at approximately right angles with the sidewise extension of the shaft throughout the greater portion of its length. The tongue 21 is connected with the forward extension of arm 4 in a manner permitting vertical swing and precluding independent horizontal motion. The rear end 5 of the arm is turned inward from the body portion at an angle slightly greater than a right angle and

it is slotted, as shown at 6. A bracket 9 is fastened to the rear end of the frame, and the vertical portion of shaft 10 of caster-wheel 17 is journaled in the bracket. An arm 11 is fixed on the upper end of shaft 10 and is extended at approximately right angles with the rearward-extended portion of the shaft. A collar 12 has a vertical stem 12<sup>a</sup>, as shown in Fig. 5, that journals in the extended end of arm 11, and connecting-rod 8 extends through such collar and connects with the slotted portion 5 of arm 4. A collar 14 is fixed adjustably on shaft 8 immediately in front of collar 12, and its function is to regulate the operative length of the connecting-rod. The slot of extension 5 of arm 4 is so disposed that when the plow is in operative position the forward end of the rod bears against the end of the slot nearest shaft 3 and rests directly between the shaft 3 and the collar 12 on the swinging arm 11. Under these circumstances the rear caster-wheel is held against swing that would tend to throw the land sides of the plows against the vertical walls of the furrows to an undesirable extent, and the tongue is entirely free to swing sidewise with the ordinary motion of the team. The shaft 3 stands well to one side of shaft 10 and the connecting-rod extends obliquely across the frame. When the tongue is turned to the left or across the front end of the frame, the arm 4 is swung away from arm 11 with sufficient rapidity to give the rear caster-wheel the desired extent of independent swing by drawing collar 14 from collar 12; but when the tongue is swung in the opposite direction the slotted end of arm 4 is moved toward the path of the swinging end of arm 11 to some extent and the caster-wheel is not relieved so quickly as in the former instance. To meet this condition is the function of the slotted extension of the arm, and as soon as the slot is swung past a line at right angles with the connecting-rod the connection of the rod with the slotted extension slides to the far end of the slot, thus gaining some advantage in rapidity of travel and is thenceforth moved faster on account of its greater distance from the pivot of the arm. This result is illustrated in Fig. 2, where it is seen that the shifting of the rod to the end of the slot farthest from the pivot of the arm has increased the travel of collar 14



and given greater freedom to the rear caster-wheel. In this diagram the collar 14 is represented as moving away from collar 12 in order to better illustrate the travel of the connecting-rod; but as a matter of fact the arm 11 would swing forward as fast as permitted during the initial movement of the tongue at least and would force the connection of the rod to the far end of the slot. After a turn of the plow is completed the rear caster-wheel will be forced against the vertical wall of the furrow by the action of the plows, and in tending to conform to the sidewise pressure of the plows it will force the connecting-rod back to the end of the slot next to the pivot of the arm, as shown in Fig. 1. The connecting-rod is preferably connected with the slot of the arm by means of a plate 7, which has a downward-extended pin 7<sup>a</sup>, passing through the slot. The plate 7 has a clamp portion 7<sup>b</sup>, that is made to closely embrace the forward end of the connecting-rod.

It is a matter of some indifference in what manner the connecting-rod is connected with arm 11 so long as it exerts pressure against forward motion of the swinging end of the arm when the plow is in operative position and leaves the arm free to swing in turning the plow around; but the construction shown in Figs. 4 and 5 is preferred. In these figures the collar 12 is shown with a laterally-projecting pin 13, and a hook 15 is shown pivoted on the set-screw of collar 14. Ordinarily the hook 15 hangs loose on the set-screw; but when it is desired to back the plow the hook is made to engage the pin, as shown, and the

rear caster-wheel is completely controlled by the tongue against independent motion in both directions.

What I claim is—

1. A controller for the rear caster-wheel of a plow, comprising a horizontal arm fixed on the vertical pivot of the caster-wheel and extended sidewise, a tongue pivoted to swing horizontally, an arm extending from the tongue toward the arm of the caster-wheel when the plow is in operative position and having a sidewise extension at its rear end, and a strut-brace interposed between the two arms and connected slidably with the sidewise extension of the arm of the tongue, substantially as described.

2. A controller for the rear caster-wheel of a plow, comprising a horizontal arm fixed on the vertical pivot of the caster-wheel and extended sidewise, a tongue pivoted to swing horizontally, an arm extending from the tongue toward the arm of the caster-wheel when the plow is in operative position and having a vertically-slotted sidewise extension at its rear end and a strut-brace connected pivotally with the arm of the caster-wheel and connected slidably with the slotted sidewise extension of the arm of the tongue, substantially as described.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

MARSHALL SATTLEY.

Witnesses:

STUART BROWN,  
SAMUEL E. PRATHER.