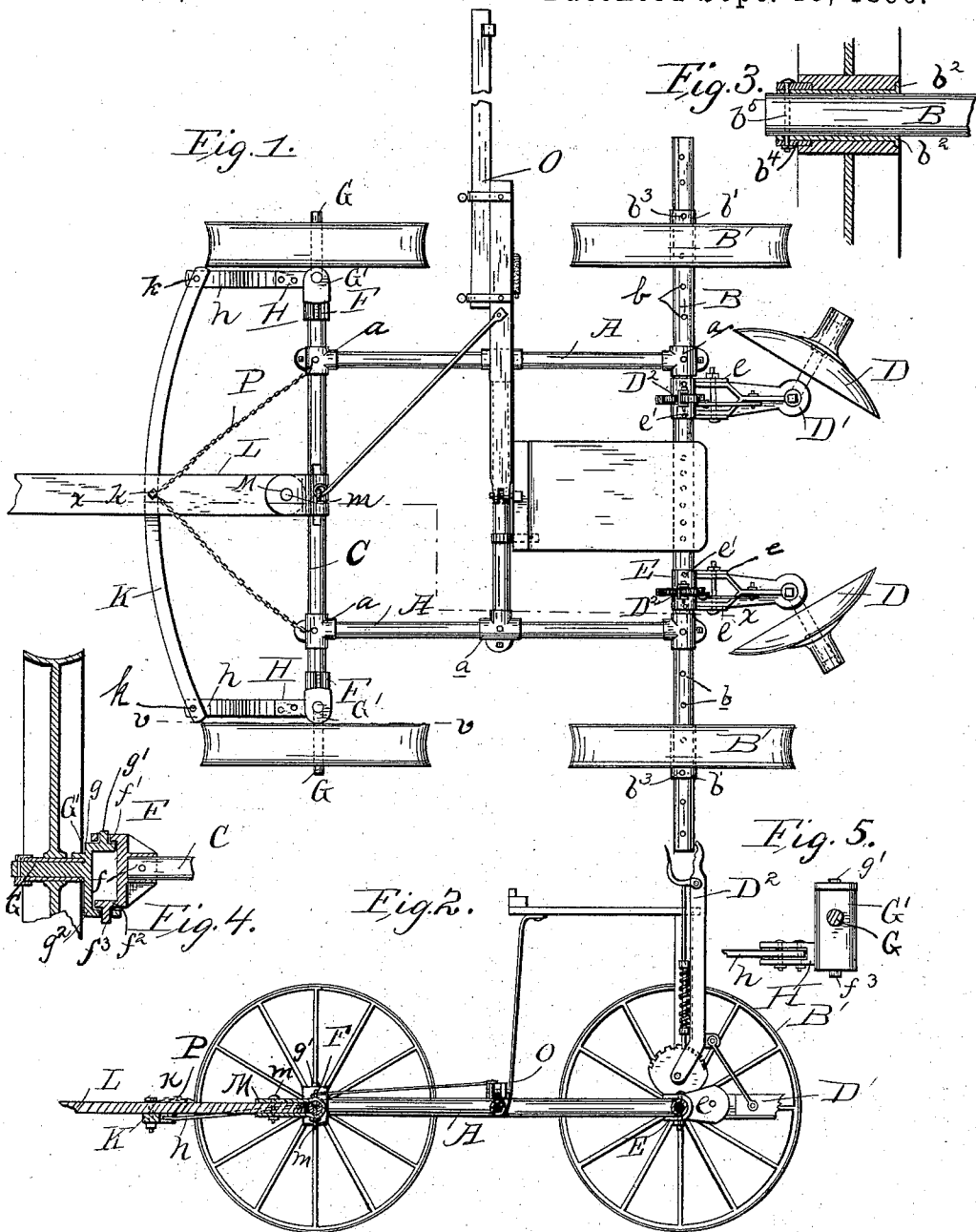


(No Model.)

A. S. LINTHICUM.
COMBINED FURROWER, MARKER, AND COVERER.

No. 567,904.

Patented Sept. 15, 1896.



Witnesses;
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UNITED STATES PATENT OFFICE.

ASA S. LINTHICUM, OF WELLHAM'S CROSS ROADS, MARYLAND.

COMBINED FURROWER, MARKER, AND COVERER.

SPECIFICATION forming part of Letters Patent No. 567,904, dated September 15, 1896.

Application filed June 15, 1896. Serial No. 595,835. (No model.)

To all whom it may concern:

Be it known that I, ASA S. LINTHICUM, a citizen of the United States, residing at Wellham's Cross Roads, in the county of Anne Arundel and State of Maryland, have invented certain new and useful Improvements in a Combined Furrower, Marker, and Coverer; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in combined furrowers, markers, and coverers, and it is embodied in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

The object of the invention is to provide a machine of the nature above indicated which will especially be adapted for use in connection with carrying-wheels in lieu of the runners generally employed, and, further, to provide improved means for effecting a variety of adjustments of the rear wheels and furrowers or coverers. Generally in machines of this character runners are employed, the same being regarded as better than wheels, inasmuch as there is less liability of the machine slipping or sluing. Again, in the runner construction a rigid frame can be employed and bolsters and axles are dispensed with. There is, however, an objection to the "runner" form, owing to the necessary increase in draft required for its operation.

My invention is designed to overcome the objections of the runner form of machine, while retaining its desirable features, as well as those of the wheeled form; and to this end I provide a rigid frame with wheels, arranging the forward or steering wheels that they may be turned readily, so that the direction of the draft may be altered without dragging. I have also aimed to construct the machine with the fewest possible number of parts.

The above and other objects to be presently stated I accomplish by the construction illustrated in the accompanying drawings, wherein like letters of reference designate corresponding parts in the several views, and in which—

Figure 1 is a plan view of a machine. Fig. 2 is a longitudinal section on the line *xx*, Fig. 1. Fig. 3 is a section through one of the rear wheel-hubs. Fig. 4 is a section through one of the front wheel-hubs, its axle, and the coupling; and Fig. 5 is a section on the line *vv*, Fig. 1.

In the drawings, A designates the side bars of the frame, connected at their ends with the rear cross-bar B and forward cross-bar C, conveniently by the split T-joint *a*. The frame is formed of tubular cross-bars, but I do not confine myself to such material. The rear cross-bar B is of a length greater than that of the forward bar, its ends projecting beyond the side bars, and it is formed with a series of perforations *b* therein practically throughout its length. On the projecting ends of the bar B are the ground-wheels B', having the usual concaved peripheries. These wheels are loosely mounted on sleeves *b'*, having the flanges *b²* at one end and perforations *b³* through their opposite ends, arranged to register with the perforations in the bar B. The hub of each of the wheels is less in length than that of the sleeve, and over the projecting end of the latter is placed a removable collar *b⁴*, which has openings to register with those of the sleeve. By this construction the wheel is free to rotate on the sleeve, which is preferably of hard steel, and the latter may be adjusted lengthwise on the bar B. A suitable pin *b⁵* is employed to secure the sleeve in place, the same passing through the collar, sleeve, and bar B.

D designates the furrowers or coverers mounted on the arms D' and adjusted vertically by a lever D², all in a manner similar to that shown in my prior patent, No. 542,391, dated July 9, 1895.

In the present construction of bracket for supporting the arm D', I have so fashioned the same that it may be easily removed from the bar B and placed on either side of the side bar. The construction conveniently consists of a block or base E, U-shaped in cross-section, its open end presented forward and the ears *e* extending from its rear face. On this block is mounted the actuating-lever and segment,

and at opposite ends are formed apertures e' , through which suitable keys or pins are passed into and through the bar B. The inner face of the block conforms to the contour of the bar B, and thereby fits snugly thereon when in place. To remove the block, it is only necessary to remove the pins and the same is easily moved backward from the bar B and can readily be adjusted to any point desired on the bar, as, for instance, when the machine is to be used as a coverer it is only necessary to move the wheels B' inward and place the arm and blocks on the outer ends of the bar B.

On the ends of the front cross-bar C are fixedly secured the bearings F, consisting of castings having the inner sockets f' and the upper and lower flanges f'' , the former having an aperture therethrough and the latter having a depending lug f^3 thereon.

The front wheels are mounted on stub-axes G, which are secured to or formed a part of the bearing-brackets G', each of the latter being constructed with an upper inwardly-extending flange g , having a pin or post g' on its upper face, fitted into the aperture in the flange f' , while at the base of the bracket is a flange g^2 , having an aperture therein in which the pin or lug f^3 is seated. The ends of the flanges are properly fashioned so that an easy swinging or hinged joint is secured.

Extending forward from the brackets G' are the rigid arms H, the same being at right angles to the hubs. The outer ends of the arms have rigidly secured thereon the flat spring-sections h , which have a vertical but no lateral flexion. The forward ends of the springs are pivotally secured in the bifurcated ends of a pivoted bar K, mounted on a pin k , carried by the tongue L. The tongue L is connected to the center of the cross-bar C by a clip M, having a horizontal recess in its forward portion, in which the tongue is placed and secured by the bolt m , passing through the same and clip. The rear of the clip is formed cylindrical and hollow and is sleeved on the bar C, being held in place by any convenient means, such as pins secured on the bar.

By the above-described construction it will be seen that as the tongue moves up or down the springs on arms H will give sufficiently to permit the movement, and as the tongue is swung to either side the front wheels will be simultaneously and equally moved, while the sliding of the back wheels is prevented by the rigid frame and construction of the wheels. To limit the movement of the tongue, chains P are employed.

The marking attachment O is, generally speaking, similar to that shown in my former patent, the same being mounted on a central cross-bar of the frame.

I am aware that various changes of the construction and arrangement of parts can be made and substituted for those shown and

described without departing from the nature and purpose of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a machine of the character described, the combination with a rigid frame, of laterally-adjustable wheels on the rear of the frame, furrowers detachably secured to the rear of the frame, front wheels hinged independently to the frame, and means connected with the front wheels for moving the same simultaneously, substantially as described.

2. In a machine of the character described, the combination with a rigid frame, of wheels on the rear thereof, adjustable furrowers on the rear of the frame, wheels independently hinged to the forward end of the rigid frame, a tongue and a connection between the tongue and forward wheels for moving the wheels simultaneously, substantially as described.

3. In a machine of the character described, the combination with a frame, of furrowers or the like adjustably secured to the rear thereof, wheels on the rear of the frame, wheels independently hinged to the forward part of the frame, spring-arms on the hinged connection, a tongue, and a connection between the tongue and arms for moving the latter simultaneously, substantially as described.

4. The combination with a rigid frame, of wheels on the rear thereof, adjustable furrowers or the like on the rear of the frame, wheels independently hinged to the forward end of the rigid frame, arms extending out from the hinged member, a tongue, a cross-bar pivoted on the tongue, and a yielding connection between the cross-bar and arms, substantially as described.

5. The combination with a rigid frame having a rear cross-bar extending beyond the sides thereof, of wheels on the outer ends of the rear cross-bar, means for adjusting the wheels on the bar, coverers or the like on the rear cross-bar, U-shaped blocks fitted over the cross-bar, and to which the coverers are connected, means for adjustably securing the blocks in different positions on the cross-bar, and forward wheels pivotally connected to the frame, substantially as described.

6. The combination with a frame having a rear cross-bar, of wheels, flanged sleeves loosely mounted on the cross-bar and on which the wheels are mounted, collars removable on the sleeves for retaining the wheels on the sleeves means for locking the sleeves and collars in adjusted positions, and coverers or the like secured to the cross-bar, substantially as described.

7. The combination with a frame, of wheels and disks adjustably secured on the rear thereof, boxes on the front of the frame having flanges thereon formed respectively with an aperture and a lug, front wheels, stub-

axles on which the same are mounted, brackets on the stub-axles having flanges formed respectively with an aperture and pin, with which the like features of the box engage,
5 rigid arms on the brackets, and a connection between the arms and the draft-pole, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ASA S. LINTHICUM.

Witnesses:

CHAS. LINTHICUM,
WM. H. JONES.