2 Sheets—Sheet 1.

F. BRAMER.
Wheel-Harrow.

No. 206,218. Patented July 23, 1878.

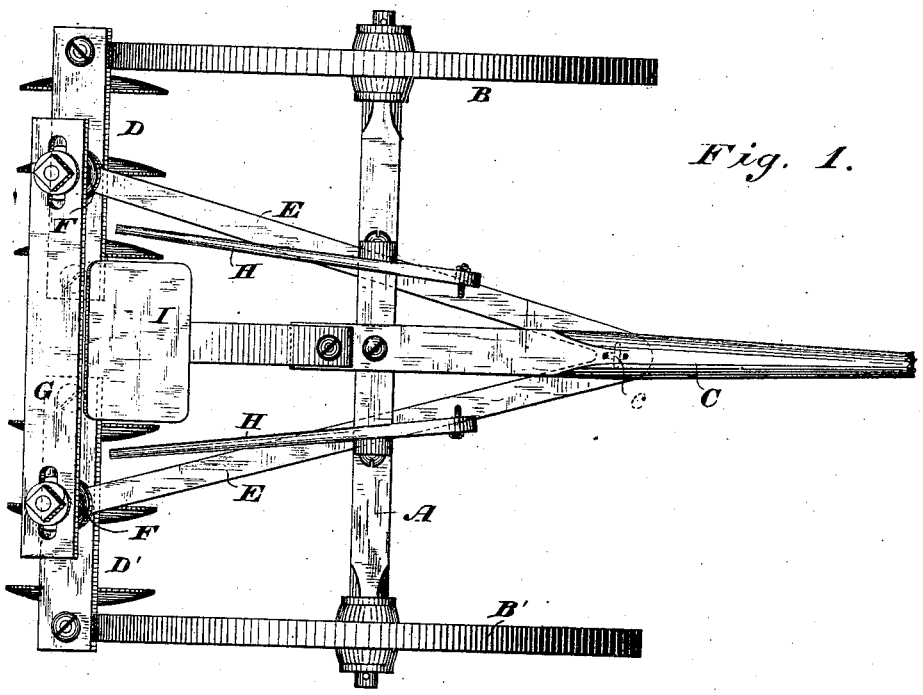

Fig. 1.

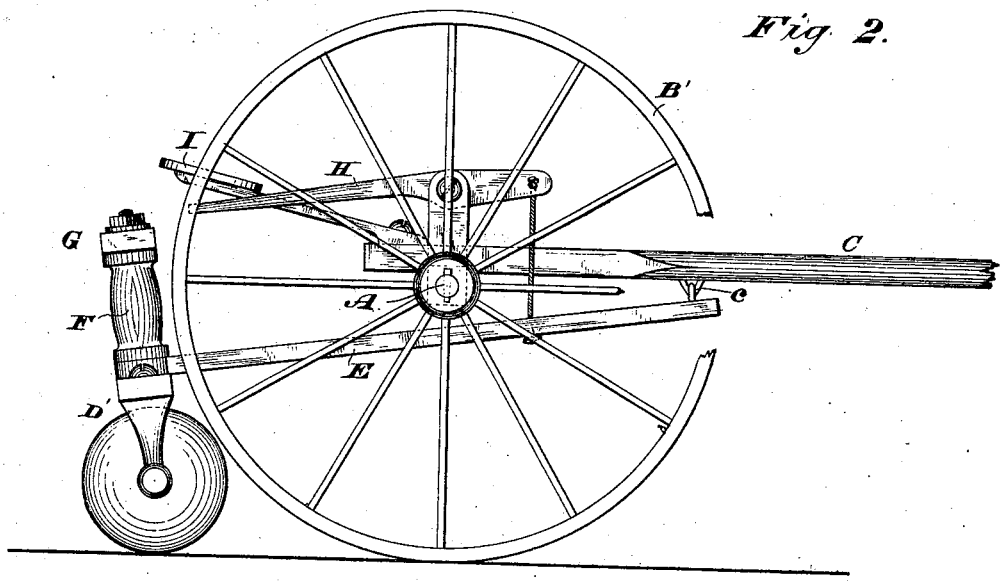

Fig. 2.

WITNESSES

Wm A Skinkle.

Geo W Breck

INVENTOR

Frank Bramer.

Bij his Attorneys

Baldwin Hopkins & Peyton

2 Sheets—Sheet 2.

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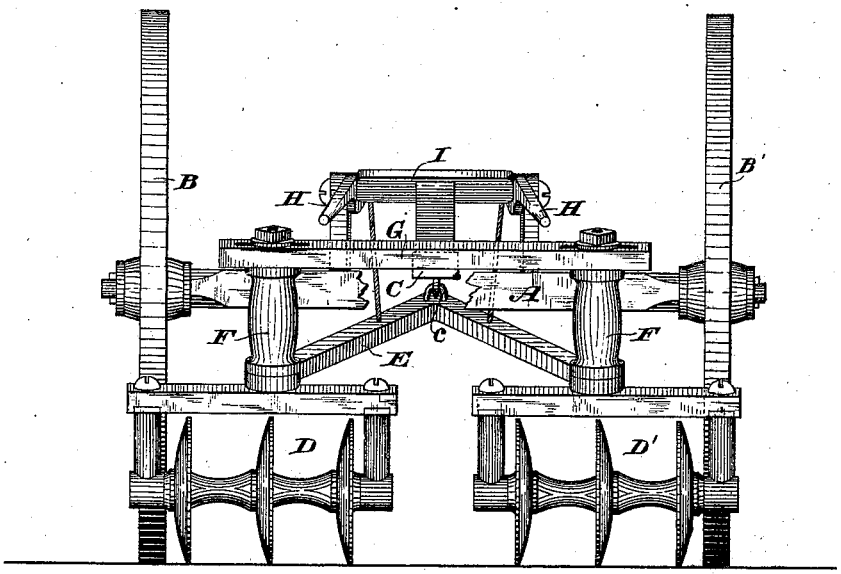
Fig 3.



WITNESSES

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INVENTOR

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By his Attorneys

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UNITED STATES PATENT OFFICE.

FRANK BRAMER, OF LITTLE FALLS, NEW YORK.

IMPROVEMENT IN WHEEL-HARROWS.

Specification forming part of Letters Patent No. **206,218**, dated July 23, 1878; application filed July 8, 1878.

To all whom it may concern:

Be it known that I, FRANK BRAMER, of Little Falls, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Wheel-Harrows, of which the following is a specification:

My invention relates to wheel-harrows of the class having wheel or disk gangs attached in sets to a draft-connection, so as to admit of a varying adjustment or relation thereto. Heretofore, so far as my knowledge extends, this adjustment has been effected and such relation has been maintained through the intervention of a hinged or adjustable connection, of such construction that while permitting the gangs to adjust themselves, or to be adjusted angularly relatively to the line of draft, both in a vertical and horizontal direction, they were yet incapable of a free lateral swing or oscillation.

It is the object of my invention to obviate this objection, and to supply this desideratum, by so combining a main frame, mounted upon wheels, with a supplementary coupling-frame hinged thereto as to allow the wheel-gangs to swing freely laterally relatively to the line of travel.

The subject-matter claimed is hereinafter specifically stated.

The accompanying drawings represent all my improvements as embodied in one machine in the best way now known to me. Obviously, however, the details of construction may be varied in various equivalent well-known ways without departing from the spirit of my invention.

Figure 1 represents a plan view, Fig. 2 a side elevation, and Fig. 3 a rear elevation, of my improved machine.

In this instance the main wheel or carrying-frame or draft-connection is shown as consisting of an axle, A, supported on two main wheels, B B′, and having a tongue, C, rigidly secured thereto, and projecting in advance thereof. Wheel-gangs D D′, of well-known construction, are connected with the carrying-frame or tongue by means of a V-shaped coupling-frame, E, and a swivel-joint, *c*, in front of the axle, a gang being connected to the rear or back end of each branch of the coupling-frame, which latter might, if desired, be hinged directly to the axle; but the construction shown is preferable, as affording greater freedom of movement.

The gangs, in this instance, are shown as connected with the coupling-frame by means of vertical standards F and through-bolts passing through the gang bars or frames, the eyes of the coupling-frames, and a cross-beam, G, connecting the two standards, thus causing the gangs to move in unison to cultivate both sides of a row without injuring the plants. Slots in the cross-beam admit of the standards being adjusted relatively to each other, and the sides of the coupling-frame might also be made adjustable relatively to each other in well-known ways to vary their distance apart. The mode of connection shown also permits the gangs to be adjusted horizontally at any desired angle to the line of draft or to each other; but these features are not claimed herein, being shown in Letters Patent for wheel-harrows No. 204,793, granted to me June 11, 1878.

By the organization shown the wheel-gangs are not only free to swing laterally, but may also be inclined laterally, so as to work on side hills, or at an angle relatively to the main axle. The wheel-gangs may also be raised and lowered relatively to the main or carrying frame.

In order that the driver may control these movements, a lifting-lever, H, is pivoted on the main frame on each side of the tongue, and hinged to the coupling-frame. The driver, who rides on a seat, I, mounted on the main frame or tongue, or on an extension thereof, can readily actuate these levers either by his hands or feet, and thus control the vertical movements of the gangs, as well as their lateral inclination. The horizontal lateral swing of the gangs under the organization shown is regulated by the action of the plows on the ground when inclined; but it might be controlled by direct-acting levers or cords and pulleys, as is customary in riding-cultivators, which latter class of machines have the movements above described.

So far as I am aware, however, I am the first ever to hinge wheel-gangs to a main frame or carriage carrying the driver, and capable of lateral play relatively thereto, the advantage of which organization is obvious, as it relieves the wheel-gangs of the weight of the driver, and enables them readily to be raised or lowered for purposes of adjustment or for trans-

portation. I am also enabled to have one set of gangs in the ground while the other is in the air, which was impossible under the old organization.

I claim as of my own invention—

1. Wheel-gangs pivoted to a wheel or carrying frame, and capable of swinging freely laterally relatively thereto, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame suspended therefrom, and the wheel-gangs mounted on the coupling-frame.

3. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the tongue, the coupling-frame pivoted in front of and crossing the axle, and the wheel-gangs mounted on the rear of the coupling-frame, whereby the gangs can swing clear of the carrying-wheels.

4. The combination, substantially as hereinbefore set forth, of the wheel or carrying frame, the coupling-frame pivoted thereto, and the wheel-gangs pivoted on the coupling-frame, whereby the gangs can swing vertically, laterally, and at an angle, as well as be adjusted relatively to the tongue.

5. The combination, substantially as herein before set forth, of the wheel or carrying frame, the coupling-frame, the wheel-gangs, and the lifting-levers on the carrying-frame, whereby the gangs may be lifted clear of the ground.

In testimony whereof I have hereunto subscribed my name.

FRANK BRAMER.

Witnesses:

SIDNEY A. LOOMIS,

WATTS T. LOOMIS.