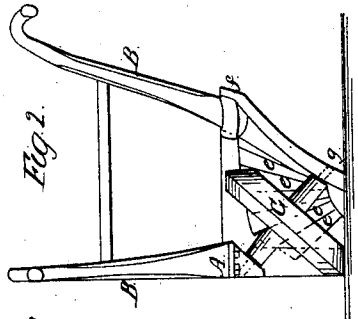
M. L. Roberts.

Plow Moldboard.

No. 62,367. Patented Feb. 26, 1867.

Fig. 2.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United States Patent Office

MATHEW L. ROBERTS, OF SMITHVILLE, CANADA.

Letters Patent No. 62,367, *dated February* 26, 1867.

IMPROVEMENTS IN PLOUGHS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MATHEW L. ROBERTS, at present residing in Smithville, in the Province of Canada, have invented a new and useful Improvement in Ploughs; and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the land-side of my improved plough; and

Figure 2 is a rear elevation thereof.

Like letters designate corresponding parts in both figures.

It is the object of my invention to lighten the draught of ploughs by reducing their friction in the furrow, and particularly on the land-side, where from the compactness of the undisturbed soil the friction and resistance are greatest; and it consists in the employment of a suitably formed roller in combination with the plough, with its axis so inclined as to both support the weight of the implement and at the same time, by pressing against the land, prevent much of the friction which usually occurs: and admits of making the plough of a skeleton form by dispensing with the land-side; and in the combination with said roller of an anti-friction mould-board consisting of a series of rollers, as hereinafter described.

As represented in the drawings, A is the beam, B B the handles, C the share, and D the standard on which the beam is secured. No land-plate is connected with this standard, which consist only of a substantial casting to which the mould-board is connected by the lock-bolt *e'*, or equivalent fastening, and by a similar one at the bottom. At the rear end of the beam I provide a roller, G, the axis of which has its bearings, one in the heel of the mould-board near the bottom line, and the other in a box hung to the under side of the beam. The angle of inclination which I consider preferable for the axis of the roller is about ninety degrees, the effect of which is to offer equal resistance to vertical and lateral pressure, and to expose but a small portion of the side face of the wheel to the land-side, and thereby avoid friction therewith to a great extent. This throws the plane of the wheel oblique to the bed of the furrow, and also to the upright side of the land from which the furrow is cut, as shown most clearly in fig. 2. The face of the wheel is formed with an angle, one plane of which traverses the bottom and the other the land-side of the furrow, the effect being to support the weight of the rear part of the plough and at the same time keep it off from the land. By this means the usual effect of the ordinary wheel plough is obtained, and the additional advantage of keeping the plough from crowding against the land, thus preventing a large amount of friction. The plough is also more easily guided, from the natural tendency of the wheel to track in the angle of the furrow. This construction and manner of applying the wheel enables the usual land-plate to be dispensed with, thus reducing the weight and consequently making the draught lighter.

In order to make the plough as completely anti-friction as possible, I construct the mould-board of a series of rollers, *e e*, which, being of a somewhat conical shape, are made to conform to the spiral form of the mould-board. They are pivoted at their upper and lower ends in bars *f g*, which form the crown and base of the mould-board. Being fitted with their sides close together the soil cannot pass between them, and as they roll in contact with the furrow, very slight friction occurs. These, in combination with the diagonal wheel G, the two pressing in opposite directions, one on the land, and the other on the furrow-slice, reduce the friction and draught to the minimum. The upper journals of the roller *e e* may be formed with shoulders slightly conical, to prevent the intrusion of dirt or gravel.

What I claim as my invention, is—

1. The friction-wheel G, having its axis inclined at an angle of ninety degrees or thereabouts, one bearing being attached to the beam, and the other to the heel of the mould-board, so that the two faces of said wheel bear against the side and bottom of the furrow with nearly equal force, in combination with the other parts of a plough, arranged and operating substantially as and for the purposes set forth.

2. I also claim constructing a plough without the land-plate or side, when the same is provided with a friction-roller or rollers, which track in the furrow angle which is cut by the share, substantially as set forth.

3. I also claim the combination of the inclined wheel G with the anti-friction mould-board, composed of the series of rollers *e e*, or their equivalent, arranged and operating substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

M. L. ROBERTS.

Witnesses:

JAY HYATT,

JAMES C. BROWN.