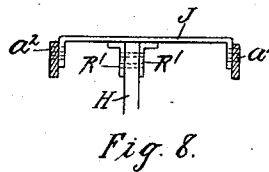
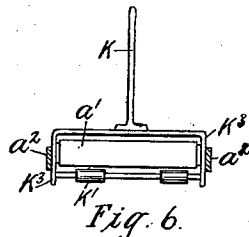
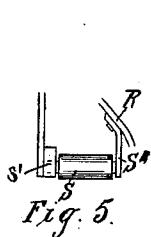
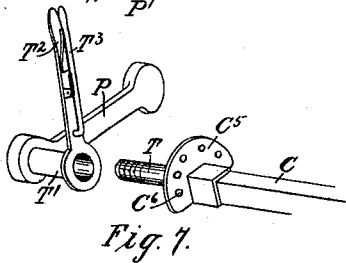
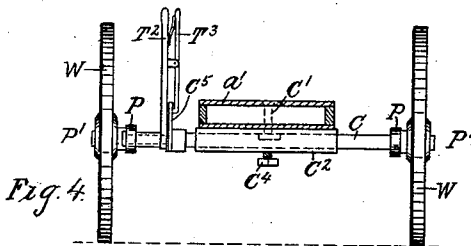
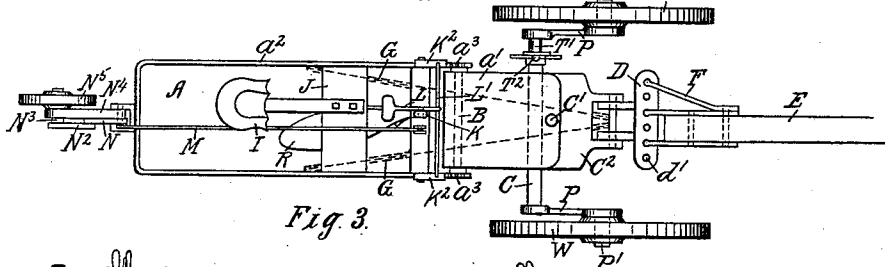
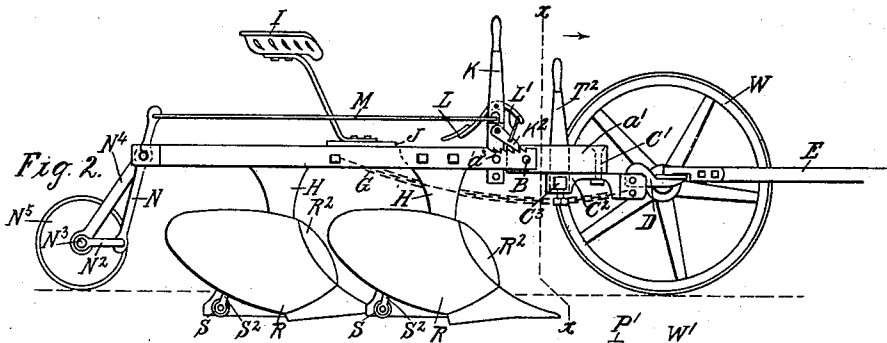
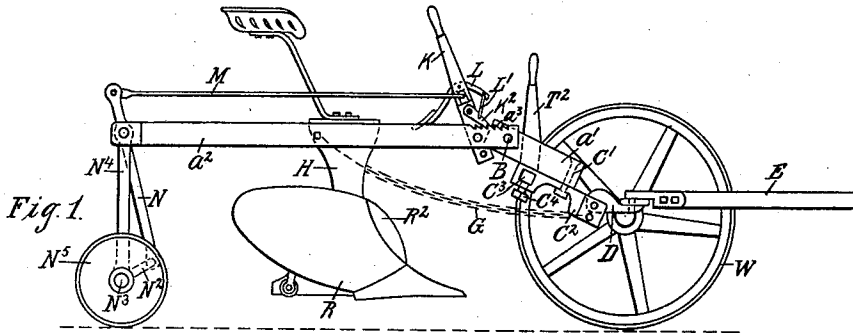


(No Model.)

M. WILSON.  
PLOW.

No. 407,629.

Patented July 23, 1889.



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# UNITED STATES PATENT OFFICE.

MALCOLM WILSON, OF LONDON, ONTARIO, CANADA, ASSIGNOR TO DAVID SMITH, OF SAME PLACE.

## PLOW.

SPECIFICATION forming part of Letters Patent No. 407,629, dated July 23, 1889.

Application filed February 16, 1889. Serial No. 300,189. (No model.)

### *To all whom it may concern:*

Be it known that I, MALCOLM WILSON, a subject of the Queen of Great Britain, and a resident of the city of London, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Plows, of which the following specification, taken in connection with the accompanying drawings, forms a full, clear, and exact description.

This invention relates to improvements in plows, and particularly to improvements on a plow for which United Letters Patent No. 393,135 were granted to me on the 20th day of November, 1888; and it consists, especially, in the simple and peculiar combination of parts and the improved construction, as will be hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a side elevation of an implement embodying my invention, showing a single plow attached and the plowshare adjusted above the ground. Fig. 2 is another side elevation showing two plows attached and the plowshares adjusted in the ground for plowing. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a sectional view on the line  $xx$  of Fig. 2. Fig. 5 is an enlarged detail side elevation of the bracing and steadying roller, situated in the rear of the plow. Fig. 6 is an end view of the forked lever carrying an anti-friction roller. This view shows, in addition to the lever, an end view of the front portion of the frame and a sectional view of the rear portion of the frame. Fig. 7 is a perspective view of lever and connections for adjusting the land-wheel of the plow. Fig. 8 is an end elevation of the attachments for securing the standard of the plow to the frame of the machine. This view shows the rear portion of the frame in section.

As described in the patent previously granted to me, and hereinbefore referred to, A designates a straight jointed frame, the two parts  $a'$   $a^2$  of which are pivotally secured together on the pivot bolt or bar B, to operate in a vertical direction when required.

This invention consists of a bearing plate or block  $C^2$ , formed of steel, iron or other suitable material, on which a portion of the

front part  $a'$  of the frame rests, and to this bearing plate or block  $C^2$  this front part  $a'$  of the frame is pivotally secured by a pivot-bolt  $C'$ ; and  $C^3$  is a socket in this bearing plate or block  $C^2$ , in which the axle C is inserted, said axle C being previously fitted to said socket  $C^3$ .

P P are arms, each secured near one end to the axle C, one at each end of said axle C, and on stud pins or shafts  $P'$ , secured to or held in place in these arms P, the wheels  $W W'$  revolve perfectly free. This bearing plate or block  $C^2$ , as shown in Fig. 3, forms a broad base on which a portion of the front part  $a'$  of the frame is supported, and together with the socket  $C^3$  forms a broad connection with the axle C, as shown in Fig. 4. A strong and durable connection between the front part  $a'$  of the frame and the axle C is thus made without weakening the axle by inserting the pivot-bolt through it to pivotally secure the frame thereto. The bearing plate or block  $C^2$ , as well as the frame secured thereto, may be adjusted laterally on the axle C to adapt the draft to the implement when used with either single or double plows, and when properly adjusted these parts may be firmly held at this point by a set-screw  $C^4$ , projecting through the bearing plate or block  $C^2$  and binding on the axle C. This shaft C may be secured in the socket  $C^3$  in the bearing plate or block  $C^2$  by any other suitable securing devices, as found most suitable or convenient under the circumstances. This bearing plate or block  $C^2$  also answers the purpose of a fifth-wheel, because it forms an extended support for a portion of the front part  $a'$  of the frame to rest on to prevent the careening of said frame. This bearing plate or block  $C^2$  also forms a strong and durable device, to which the tongue E may be attached by the clevis D.

D is a clevis formed with bolt-holes  $d'$ , and this clevis D is bolted or otherwise pivotally secured to the bearing plate or block  $C^2$ , and the bolt-holes  $d'$  therein are for the purpose of permitting the tongue E to be secured thereto, and to permit said tongue to be adjusted laterally to adapt the draft of the team to the implement when it is used either as a single or double plow.

F is a brace secured to and extending from

the clevis D to the tongue E for the purpose of rigidly bracing and firmly holding said tongue in position, particularly when turning the machine.

5 G G are chains, each of which is secured at one end to the rear part  $a^2$  of the frame. They then pass between the plow-standards H H of a double plow, or on each side of the standards H of a single plow, and the other  
10 ends of these chains G G are secured to the bearing plate or block C<sup>2</sup>. This gives a central draft from the portion  $a^2$  of the frame, and by drawing centrally direct from the frame  $a^2$ , between the plow-standards of a double  
15 plow or on each side of the standard of a single plow, gives a light and even draft and equalizes the draft between the two plows or on each side of the single plow; and these chains G G are also for the purpose of relieving  
20 the joint in the frame A and the pivotal connection between the front portion of the frame and the bearing plate or block C<sup>2</sup> from all strain.

I designates a seat for the driver, and secured to the rear portion  $a^2$  of the frame is a  
25 frame plate or brace J, to which the bar supporting the seat may be secured. This brace J also rigidly braces and strengthens the central portion  $a^2$  of the frame.

30 K is a forked lever pivoted on the rear portion  $a^2$  of the frame or other suitable support, the handle of which lever is within easy reach of the driver's seat, and in the prongs K<sup>3</sup> of this lever K an anti-friction  
35 roller K' is pivoted; and K<sup>2</sup> are dogs pivoted on the prongs or forked arms K<sup>3</sup> of this lever K, which dogs K<sup>2</sup> engage with recesses  $a^3$  in the portion  $a^2$  of the frame for the purpose  
40 of holding the lever K at the position to which it may be adjusted.

L is a trip pivoted on the lever K or other suitable support, and one end of this trip L is connected with the dogs K<sup>2</sup> by the connection L', and the other end of this trip L is in  
45 easy reach of the driver's foot, by which said trip L is operated to disengage the dogs K<sup>2</sup> from the recesses  $a^3$ , their own weight being sufficient to cause them to engage with said  
50 recesses  $a^3$  when the trip L is not operated to keep them disengaged from said recesses  $a^3$ .

M is a rod which connects the lever K with the pivotal bar N, the latter being pivoted on a pivot-bolt secured to the rear portion  $a^2$   
55 of the frame or other suitable support. The lower end of this pivotal bar N is connected by a link N<sup>2</sup> to a stud-pin N<sup>3</sup>, rigidly secured to the arm N<sup>4</sup>. This link N<sup>2</sup> has pivotal connections at each end. The arm N<sup>4</sup> is pivotally  
60 secured at one end to the portion  $a^2$  of the frame or other suitable support, and on a stud-pin rigidly secured on the other end of this arm N<sup>4</sup> the caster-wheel N<sup>5</sup> is secured to revolve perfectly free. This link N<sup>2</sup> may be  
65 secured to, and the caster-wheel N<sup>5</sup> may revolve on, studs rigidly secured to the arm N<sup>4</sup>, or secured to and revolve on a shaft or axle held in the lower part of the arm N<sup>4</sup>, as

found most suitable or convenient under the circumstances. The purpose or object of  
this lever K and these connections just mentioned is to lower the plows to the position  
70 shown in Fig. 2, or to any point between the positions shown in Figs. 1 and 2, and at the same time to adjust the portion  $a^2$  of the frame, as well as the plows secured thereto,  
75 horizontally, so that both plows will turn furrows or skim the ground the same even depth, or be raised the same even distance above the ground. As the handle of the lever K is  
80 drawn backward, the rod M, connecting the bar N with said lever K, moves the upper end of said bar N backward. This moves the lower end of said bar N and connections, together with the caster-wheel N<sup>5</sup>, forward  
85 under the rear end of the plow, to raise it at the same time the roller K' in the forked end of the lever K engages with the under side of the adjacent end of the part  $a'$  of the frame, and raises it up as well as the adjacent end of the portion  $a^2$  of the  
90 frame the same proportionate distance as the rear end thereof is raised by the bar N and connections, and when adjusted to the proper position these parts are held at that point by engaging the dogs K<sup>2</sup> with the recesses  $a^3$  in  
95 the portion  $a^2$  of the frame. This anti-friction roller K' may be secured either in the lever, as shown, or it may be secured in the front part  $a'$  of the frame and a lower cross-bar on the lever engage therewith; or both  
100 these anti-friction rollers mentioned may be used, if required.

The arms P, which are secured at one end to the axle C as well as the axle bearing plate or block C<sup>2</sup>, and the whole of the front  
105 part  $a'$  of the frame, are not raised horizontally, but are inclined from the pivot-bar B to the studs P', which are pivotally secured in the hubs of the wheels W.

The standards H of the plows R may be  
110 bolted or otherwise secured to the part  $a^2$  of the frame of the machine when the double plows are used; but the standard H of a plow, when the single plow is used, is preferably bolted or otherwise secured between the clips  
115 R', rigidly secured to a frame plate or brace J, and the latter rigidly secured to the part  $a^2$  of the frame.

R<sup>2</sup> is a cutter rigidly secured to or formed integral with and projecting forward from  
120 the landside of the plows R. Its duty is to cut an incision in the soil and separate the furrow-slice therefrom, which furrow-slice is to be cut below by the share and turned over by the mold-board.  
125

S designates a horizontal brace-roller, secured in the heel or rear part of the plows R, for the purpose of lightening the draft, steadying the plows, and also for the purpose of  
130 bracing and rigidly holding the mold-board in place when pressing against and turning over the furrow-slice. This roller is secured in place at one end by a casting S', bolted or otherwise secured to the landside of the plow,

and is held in place at the other end by a bracket S<sup>2</sup>, suspended from and secured to the mold-board of the plow, as shown in Fig. 5.

5 T is a portion of the axle C, which is circular in cross-section, and which is fitted to and inserted in the tube T', rigidly secured to or forming part of the arm P, and this reduced portion T of the axle is held in and  
10 prevented from becoming detached from the arm P by a nut screwed on the outer screw-threaded end of said reduced portion T of the axle C beyond the tube T' and arm P, and T<sup>2</sup> is a lever rigidly secured on the tube  
15 T', and pivoted on this lever T<sup>2</sup> is a spring-actuated dog T<sup>3</sup>, as shown particularly in Fig. 7, and C<sup>5</sup> is a plate or segment rigidly secured to or forming part of the axle C, and in this  
20 plate C<sup>5</sup> recesses C<sup>6</sup> are formed, to which the dog T<sup>3</sup> is fitted, and this lever T<sup>2</sup> is adjusted in proper position on the tube T', so that the dog T<sup>3</sup> will engage with the recesses C<sup>6</sup>. This lever T<sup>2</sup> is for the purpose of adjusting the  
25 land-wheel W', to bring the frame of the machine level when the furrow-wheel W is traveling in the furrow, and also to adjust the land-wheel W', to bring the frame of the machine level again when the furrow-wheel is on the land out of the furrow. By adjusting  
30 this lever T<sup>2</sup> backward the land-wheel is raised and the frame lowered, and by adjusting this lever T<sup>2</sup> forward the land-wheel is lowered and the frame raised.

This implement is adjusted to any class of  
35 plowing with either single or double plows, as follows: When the lever K and connections are adjusted to the position shown in Fig. 1, the plows are adjusted clear above the ground to avoid obstructions when traveling along  
40 the road or from one field to another, and when the lever K and connections are adjusted to the position shown in Fig. 2 the plows are adjusted in the ground for plowing. To adjust the plow to any position for deep  
45 or shallow plowing, or to adjust the plows clear above the ground, all that is necessary for the operator to do is to grasp the handle of the lever K and press his foot on the trip  
50 L to disengage the dogs K<sup>2</sup> from the recesses a<sup>3</sup>, and by moving the lever K backward or forward the part a<sup>2</sup> of the frame to which the plows R are attached is raised or lowered, respectively. When the plows are at the required  
55 point in or above the ground, they are held at that position by removing the pressure of the foot from the trip L and permitting the dogs K<sup>2</sup> to engage with the recesses a<sup>3</sup> in the part a<sup>2</sup> of the frame.

After the first furrow is formed the furrow-wheel W travels in this furrow to gage the width of the adjacent furrows; but this inclines the frame of the machine to the furrow-wheel side. The frame, however, may be  
60 instantly brought level again by grasping the lever T<sup>2</sup> and disengaging the dog T<sup>3</sup> from the recesses C<sup>6</sup> in the plate C<sup>5</sup>. This permits

the landside of the frame to be lowered level with the furrow-wheel side, and the landside of the frame is held in this position by engaging the dog T<sup>3</sup> with the recesses C<sup>6</sup> in the  
70 plate C<sup>5</sup> again.

Having thus described my invention, I claim—

1. The bearing plate or block C<sup>2</sup>, having socket C<sup>3</sup>, formed therein, in combination with  
75 the frame A and axle C, and means for securing them together, substantially as shown and described, and for the purpose specified.

2. The combination of the jointed frame A, the bearing plate or block C<sup>2</sup>, pivotally secured thereto, the chains G G, the lever K,  
80 the anti-friction roller K', rod M, pivotal bar N, link N<sup>2</sup>, arm N<sup>4</sup>, and caster-wheel N<sup>5</sup>, substantially as shown and described, and for the purpose set forth.

3. The combination, with the frame A, of the lever K, anti-friction roller K', rod M, pivotal bar N, link N<sup>2</sup>, arm N<sup>4</sup>, and caster-wheel N<sup>5</sup>, revolving on bearings secured to or  
85 in the arm N<sup>4</sup>, substantially as shown and described, and for the purpose specified.

4. The combination of the bearing plate or block C<sup>2</sup>, jointed to frame A, lever K, and anti-friction roller K', in combination with  
90 the rod M, pivotal bar N, link N<sup>2</sup>, arm N<sup>4</sup>, and caster-wheel N<sup>5</sup>, substantially as shown and described, and for the purpose specified.

5. The combination of the jointed frame A, having recesses a<sup>3</sup> therein, lever K, anti-friction roller K', dogs K<sup>2</sup>, trip L, and connection L', substantially as shown and described,  
100 and for the purpose specified.

6. The combination of the jointed frame A, the bearing plate or block C<sup>2</sup>, the chains G G, the standards H, plows R, cutters R<sup>2</sup>,  
105 the lever K, the anti-friction roller K', rod M, pivotal bar N, link N<sup>2</sup>, arm N<sup>4</sup>, and caster-wheel N<sup>5</sup>, substantially as and for the purpose set forth.

7. The combination of the jointed frame A, bearing plate or block C<sup>2</sup>, axle C, secured in socket C<sup>3</sup> in the bearing C<sup>2</sup>, and a portion  
110 T of the axle C formed round in cross-section, the tube T', lever T<sup>2</sup>, spring-actuated dog T<sup>3</sup>, arm P, and segment C<sup>5</sup>, having perforations C<sup>6</sup> formed therein, and the wheels W W', substantially as shown and described, and for the purpose set forth.

8. The combination of the jointed frame A, bearing plate or block C<sup>2</sup>, axle C, chains G G, standards H, plows R, cutter R<sup>2</sup>, bracket  
120 S<sup>2</sup>, casting S', bracing-roller S, lever K, anti-friction roller K', rod M, pivotal bar N, link N<sup>2</sup>, arm N<sup>4</sup>, and caster-wheel N<sup>5</sup>, substantially as shown and described, and for the purpose specified.

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

MALCOLM WILSON.

Witnesses:

P. J. EDMUNDS,  
A. EDMUNDS.