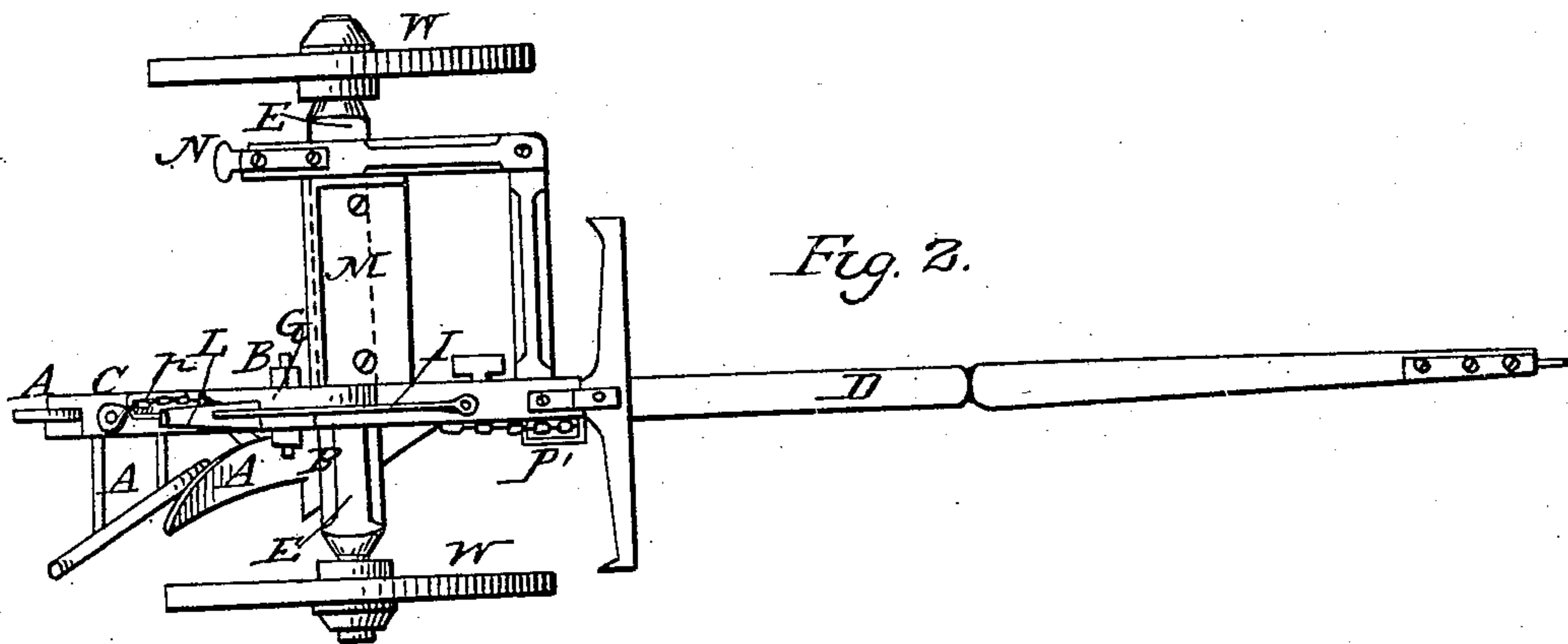
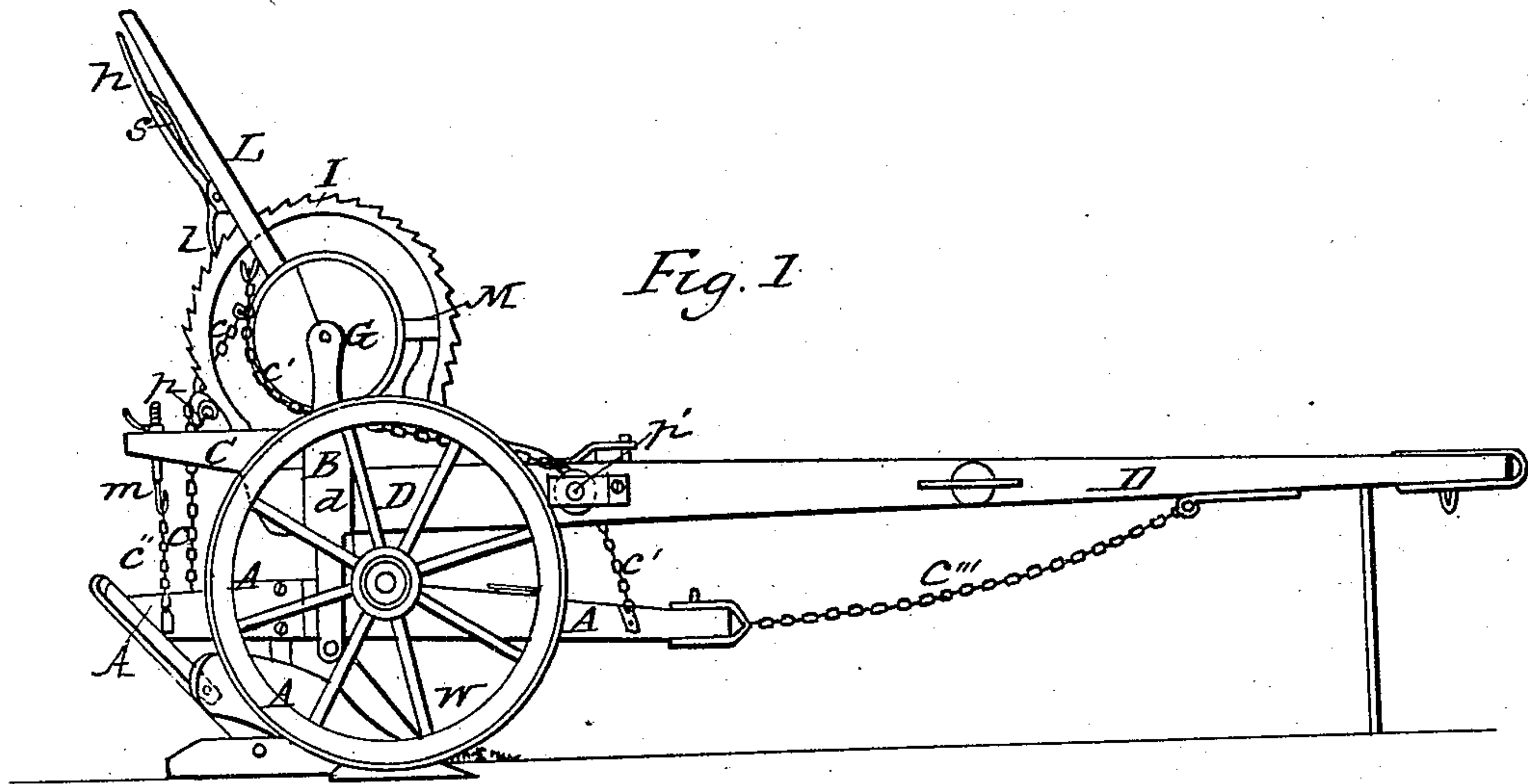


B. W. SUTHERLEN.

Sulky Plow.

No. 76,848.

Patented April 14, 1868.



Witnesses:
S. E. Kemmer
Or A. E. Blum

Inventor:
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United States Patent Office.

B. W. SUTHERLEN, OF FREESOIL, MINNESOTA

Letters Patent No. 76,848, dated April 14, 1868.

IMPROVEMENT IN SULKY-PLOUGH.

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, B. W. SUTHERLEN, of Freesoil, in the county of Fillmore, and State of Minnesota, have invented a new and improved Plough; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side view of my invention, and

Figure 2 is a top view of the same.

The object of this invention is to enable the ploughman to ride, and at the same time hold and manage his plough in any soil as perfectly as by the old method of holding it, and with the outlay of but a small part of the labor and strength required by the old way.

Similar letters of reference indicate corresponding parts in the several figures.

In the drawings, A represents a common plough, the beam of which, directly over the point of the plough, is held between two vertical standards, B B, fixed firmly to the axle-tree of an ordinary pair of carriage-wheels. D is the draw-beam or pole of the carriage, which may be attached to the axle, E, in any convenient manner. In the drawings, I have represented the pole D as extending back above the axle, its rear end resting upon it, and the standards, B B, fixed to the projecting rear end of the pole, as shown at *d*.

On the upper side of the pole, over the axle, and between the standards, I bolt firmly a stout plate or beam, C, the rear end of which extends back a short distance further than the end of the pole D. To the rear end of this I attach a vertical pulley *p*, and to its forward end, or to the pole D, near the forward end of the beam C, I attach another vertical pulley, *p'*. Between these pulleys, I fix to the beam C a stout vertical yoke or frame, I, of iron, in shape the segment of a circle, and having its outer edge ratcheted like a circular saw cutting forward. The tops of the standards, B B, reach slightly above the centre of the circle, of which I is a segment, and serve as bearings for the journals of a stout double-pulley wheel, G, concentric with the frame I. To the upper edge of this pulley is firmly fixed the lower end of a stout lever, L, which serves to turn the pulley backward or forward, the rim of the yoke I passing through a slot in the lever, and serving as a guide and support to it. A dog, Z, kept in position by a spring, *s*, and having a handle, *h*, extending close to the handle of the lever L, is pivoted to the lever above the frame I, and operates against the teeth of the frame, thereby preventing the lever from falling back when it has been set forward.

To the left of this apparatus, I fix the driver's seat, M. N is a step, by which it can conveniently be reached from the rear of the apparatus. To the rear side of the lower end of the lever L, or to the periphery of the pulley G, I attach firmly a chain, *c*, which passes over the pulley *p*, and the lower end of which is fixed to the rear part of the plough-beam, suspending that end of the plough from the pulley G. Another chain, *c'*, passes from the foot of the lever L, around, behind, and under the pulley G, and forward over pulley *p'*, thence down to the forward end of the plough-beam, to which it is attached, suspending the plough at that end. Both ends of the plough being thus suspended by chains winding around the pulley G, and that pulley being operated by the lever L, it follows, that whenever the lever is thrown forward, the plough will be elevated bodily from the ground, and when the lever is thrown back, the plough will be lowered. The plough being raised, and the dog Z allowed to catch in the ratchet-frame I, the whole apparatus can be drawn around the field, or to any distance upon the carriage-wheels, W W, without the necessity of unshipping it and putting it in a wagon.

m is a gauge-rod, working up and down through the rear end of the beam C, by means of a screw and nut, and connected with the end of the plough by a short chain, *c''*, the object of which is to gauge the cut of the plough, independently of the lever L, and arrangement connected with it. *c'''* is a chain, running from the forward end of the plough-beam to an eye or staple near the forward end of the draw-beam, D, and acting as a draught-chain for the plough.

The plough-beam, of course, slides freely up and down between the standards B B, which only steady and guide it as it is elevated or depressed by the power applied at L. The seat, M, is so situated as to be within

easy reach of the lever, and the lever and handle *h* of the dog are so arranged that the operator, sitting in the seat, can grasp both at once in his right hand, or can take hold of the lever alone.

It is obvious that the plough itself works in the same way as the old-fashioned plough, this invention being only for the purpose of enabling the ploughman to hold, guide, and operate the instrument, without fatigue, and with the outlay of but little labor and strength. Any plough can be used in connection with it. The apparatus is simple, cheap, and easily managed. By attaching all the parts to a separate beam or plate, which may be fastened upon the axle of a common wagon, any pair of wheels about a farm, with their tongue and axle attached, may be made use of for the purpose, and afterwards be easily disconnected and restored to their legitimate use. Farmers can thus readily adapt their old wagons and ploughs to this new use, by the addition of a few simple parts, which any blacksmith and carpenter can make in a few hours.

This improved plough has been thoroughly tested, and it is found that with it a boy can easily do the work which ordinarily requires a man and a boy, thus saving, in one season, many times the cost of the instrument.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the axle *E*, standards *B B*, and plough *A*, working loosely between the standards, so as to admit of a plough of any construction being suspended by the chains *c c'*, and drawn by the chain *c''*, substantially as and for the purpose specified.
2. The frame *I*, in combination with the pulley *G* and lever *L*, substantially as and for the purpose described.
3. The combination of the lever *L*, frame *I*, pulley *G*, chains *c c'*, and plough *A*, substantially as and for the purpose specified.

B. W. SUTHERLEN.

Witnesses:

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