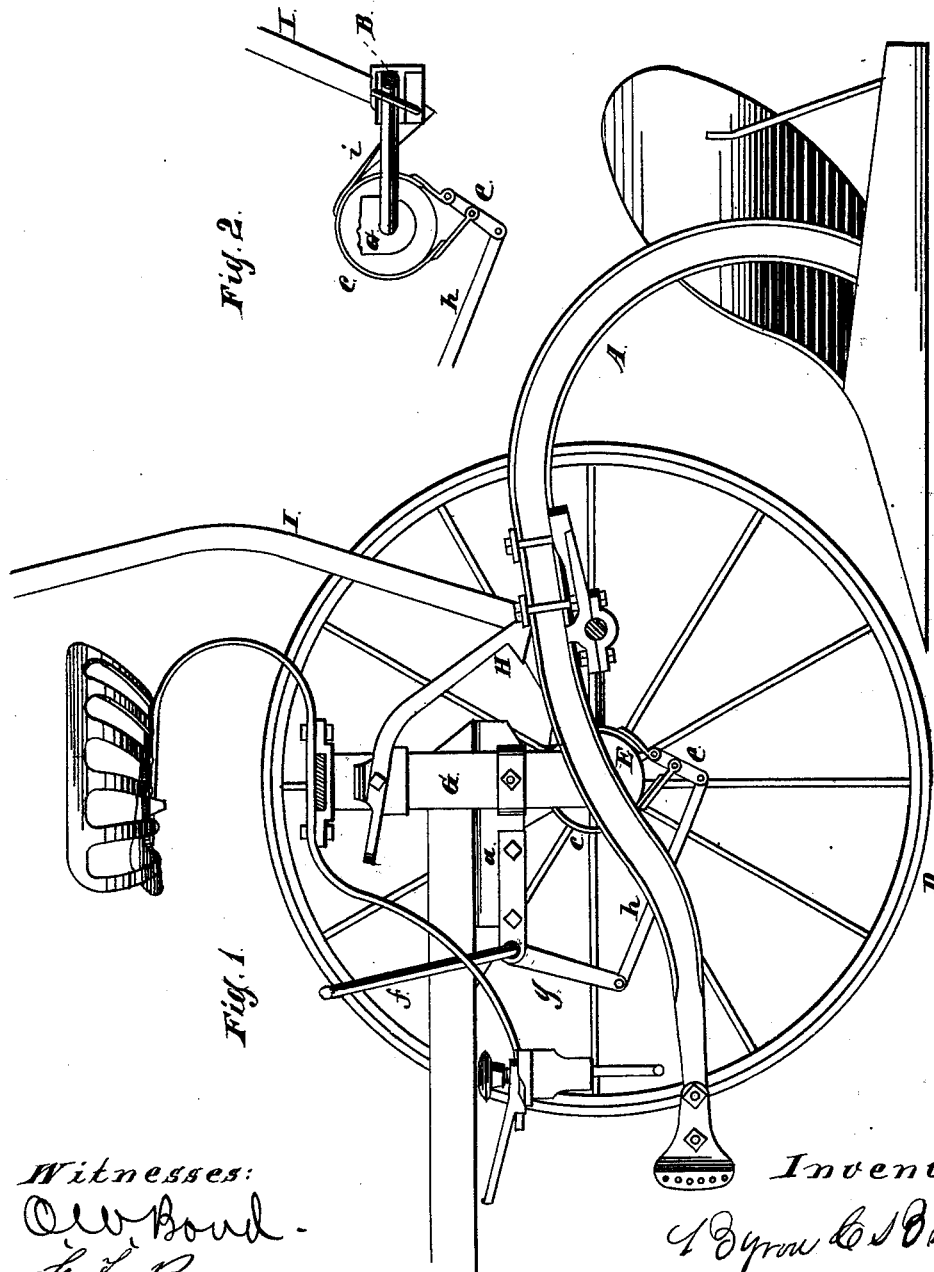


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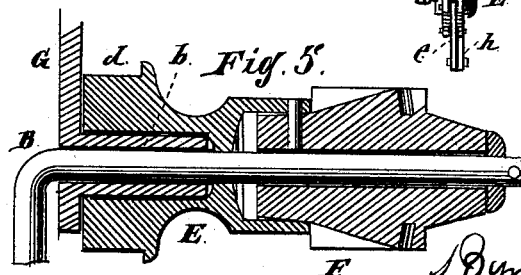
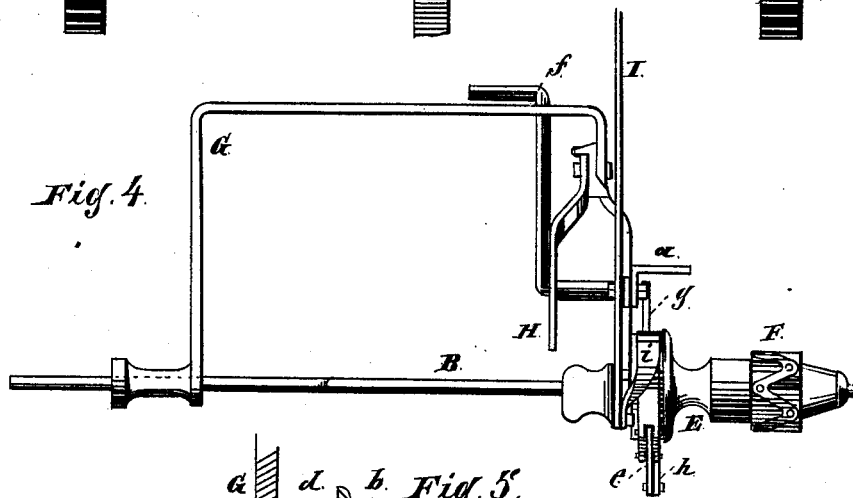
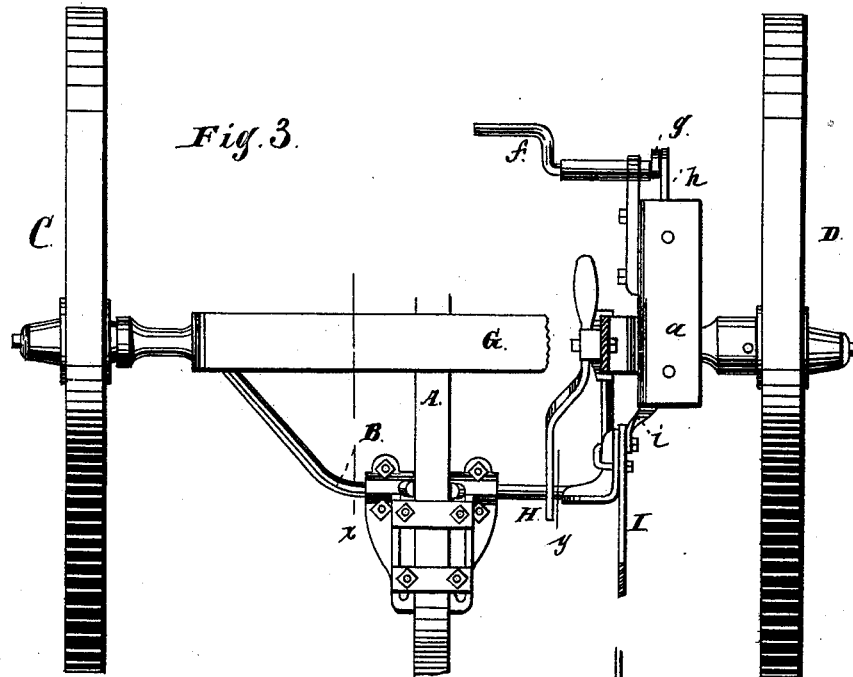
Witnesses:  
*Chas. Bond.*  
*H. L. Burns.*

Inventor:  
*Byron C. Bradley*  
*Chas. A. Hague.*

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# UNITED STATES PATENT OFFICE.

BYRON C. BRADLEY AND CHARLES A. HAGUE, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **219,800**, dated September 23, 1879; application filed April 23, 1879.

*To all whom it may concern:*

Be it known that we, BYRON C. BRADLEY and CHARLES A. HAGUE, of Chicago, Cook county, State of Illinois, have invented a new and useful Improvement in Sulky-Plows, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section taken at line *x* of Fig. 3. Fig. 2 is a detail, and is a vertical section of the parts shown, taken at *y* of Fig. 3, looking to the right. Fig. 3 is a plan or top view of the parts represented. Fig. 4 is a rear elevation of the parts represented. Fig. 5 is an enlarged detail in section.

The object of this invention is to provide improved devices by the use of which the plow can be raised out of the ground while in motion, and by the power of the team, which we accomplish by means of a friction-band upon the hub, or an attachment thereto of one of the wheels, which band is connected with the crank-axle, which carries the plow, by means of a rod or bar, and can be tightened upon the hub by the action of the driver, when desired, the parts being so constructed that when said band is tightened upon the hub the band will rotate for the time being with the hub, and, through the rod or bar which connects it with the crank-axle, will cause the axle to rotate with the hubs, lifting the plow out of the ground. When raised sufficiently the axle engages with a hook, and the friction-band can be released.

In the drawings, A represents a plow, which is hinged upon a crank-axle, B, which axle carries the wheels C D. *a* is an angle-iron, secured to the frame, to which iron the tongue is secured.

E may be regarded as an extension on the inside of the hub of the wheel D. As shown, it is made separate from the hub, and is connected therewith by a pin; but in practice any other suitable means may be used for connecting extension E to the hub F.

*b* is a fixed sleeve, suitably secured to the frame G, to furnish a larger axle for the extension E. *c* is a friction-band, which, except when tightened by the operator, loosely encircles the inner end, *d*, of the extension E, which is adapted to receive such band. The two ends

of this band *c* are connected to a short bar or lever, *e*, as shown in Fig. 2, and in such manner that, through the movement of such lever *e*, the band *c* can be tightened upon the part *d*. This can conveniently be done by means of a foot-lever, *f*, located so as to be easily reached by the foot of the driver, and a lever, *g*, connected with the foot-lever and a connecting bar or rod, *h*, one end of which is pivoted to the lower end of lever *e*, and the other end to the lower end of lever *g*.

*i* is a metal bar, one end of which is connected with the friction-band *c*, and the other to the crank-axle B at a point some distance from the center of rotation of such axle.

H is a hook, pivoted to the frame and arranged so as to engage with and hold up the axle when sufficiently elevated. I is a hand-lever, by means of which the driver can raise the plow, if desired, as usual.

In Fig. 1 we have shown the several parts as they are when the plow and wheels are standing on a level and not in use; but when in actual use the front end of the beam will be somewhat raised, and will be in contact with some fixed part connected with the frame, as usual.

The operation of our improvement is as follows: If the driver pushes the upper end of the foot-lever forward, the friction-band *c* will be tightened upon the part *d* of the extension E through the levers *g e* and bar *h*, and when the friction between the band and the extension is sufficient the band will move with the extension, and, carrying the bar *i* forward with it, the axle will rotate with the hubs, and the crank part of the axle will be elevated, lifting the plow out of the ground, it being understood, of course, that while this is being done the team and plow are in motion. When the plow has been sufficiently raised the hook H will engage with the axle and hold it up until the hook is released. After the hook has engaged with the axle the driver will release the foot-lever, when the band will again be loose upon the extension.

The parts which we have not described are constructed in the usual manner.

The inside of the hub might be adapted to receive the band *c*, the extension E being dispensed with, or being cast with the hub; but

it is much easier to make the extension E separate from the hub. The band might be applied to a collar secured to the hub, or upon the inside of the wheel, and the result would be the same. When the extension is used it would not be desirable to use the collar.

A chain might be used to connect the friction-band with the axle; but the bar *i* is better, because a chain might kink.

We do not limit ourselves to the exact construction and arrangement of the friction-band and operating levers and bar shown and described, as various modifications of the levers and connections might be made.

What we claim as new, and desire to secure by Letters Patent, is as follows:

1. In a sulky-plow, the friction-band *c* and a connecting bar or piece, *i*, in combination with the crank-axle and one of the hubs, or an extension thereof, for the purpose of raising the plow out of the ground, substantially as specified.

2. In a sulky-plow, the friction-band *c* and connecting-piece *i*, and the levers *e f g* and bar *h*, in combination with the axle B and one of the hubs, or an extension thereof, substantially as and for the purposes specified.

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Witnesses:

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