

(Model.)

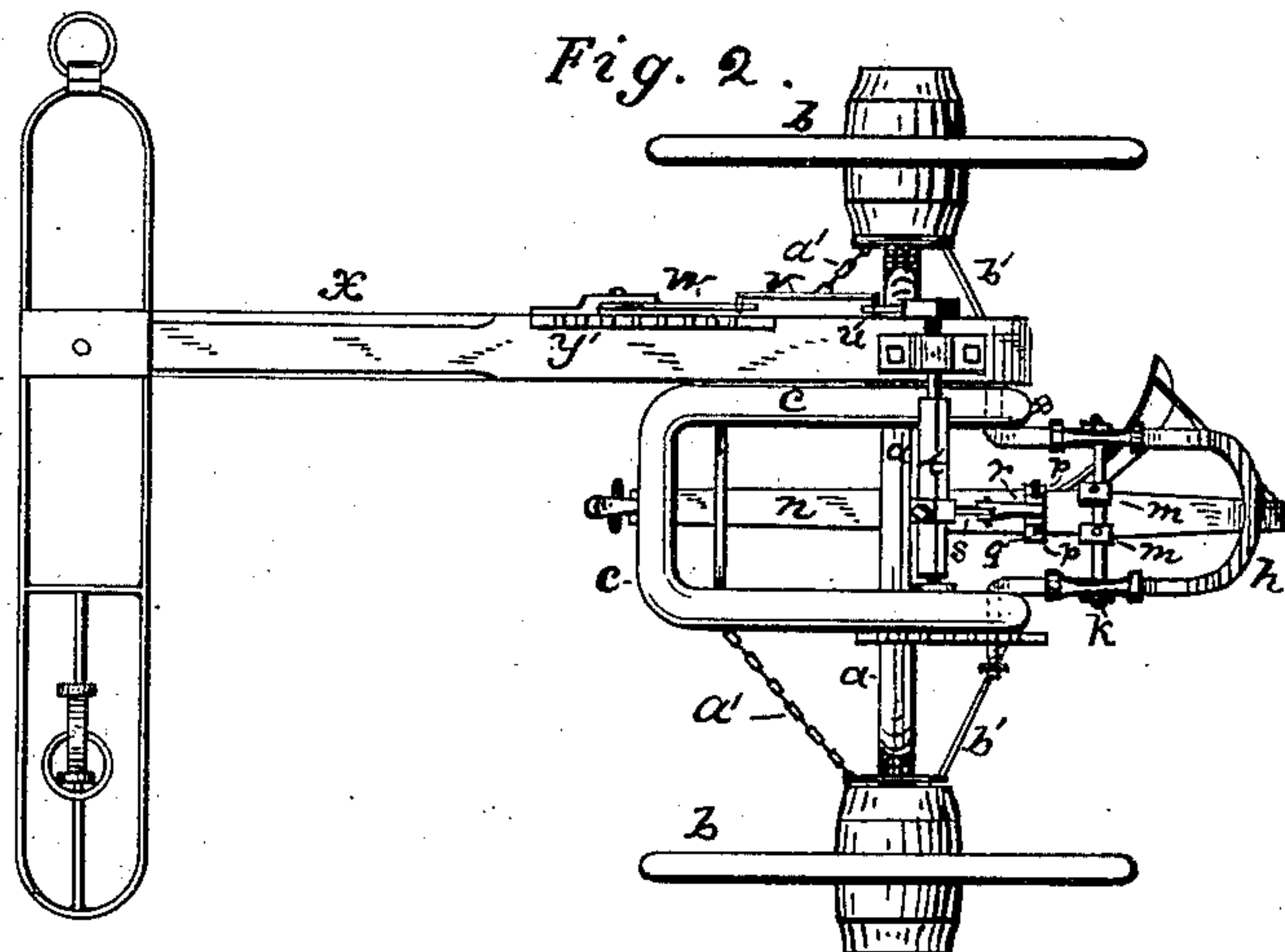
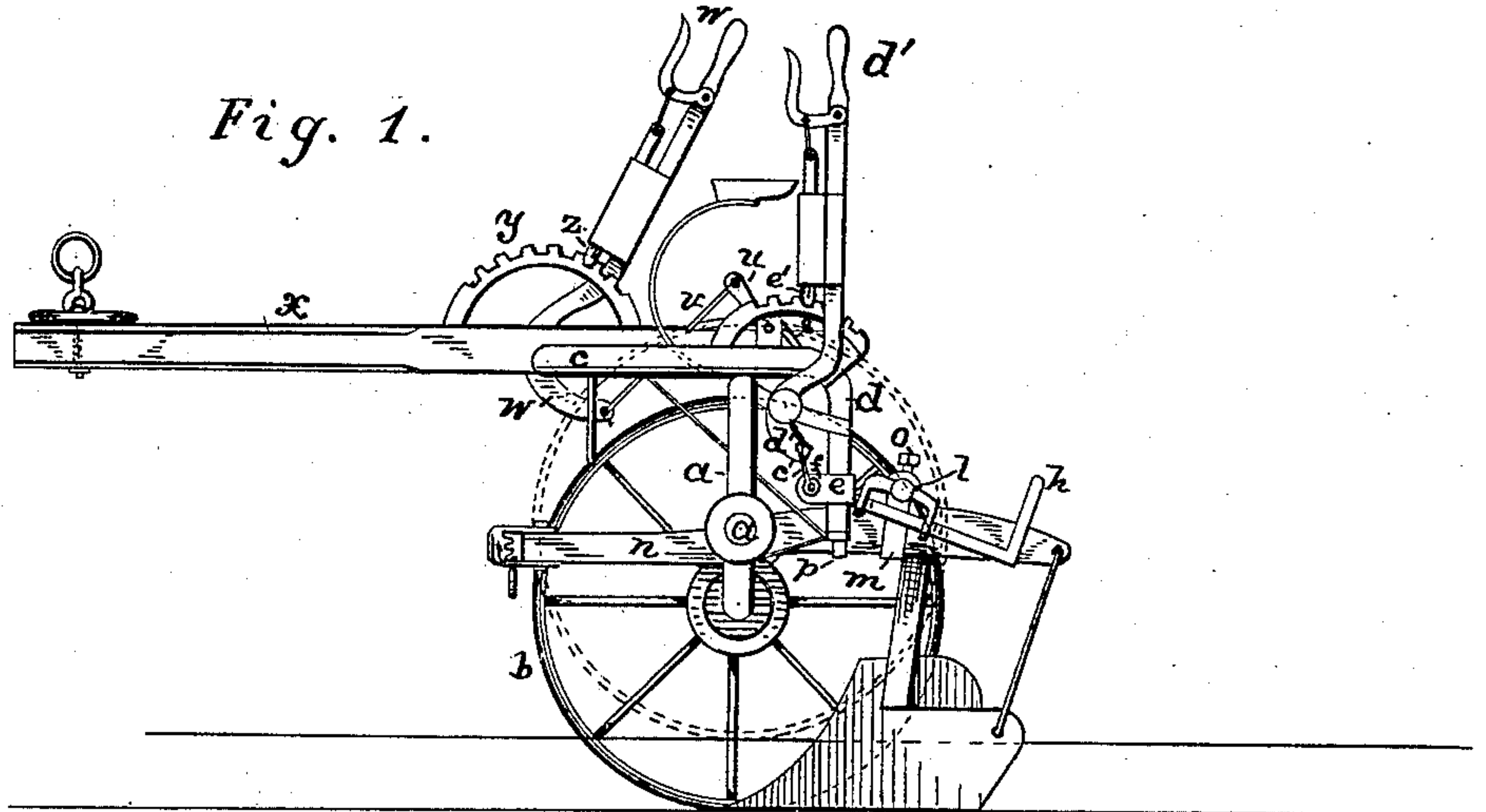
2 Sheets—Sheet 1.

E. M. CARROLL.

SULKY ATTACHMENT FOR PLOWS AND HARROWS.

No. 246,080.

Patented Aug. 23, 1881.



WITNESSES:

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John H. Kemmer

INVENTOR:

E. M. Carroll  
BY *Wm. T. L.*  
ATTORNEYS.

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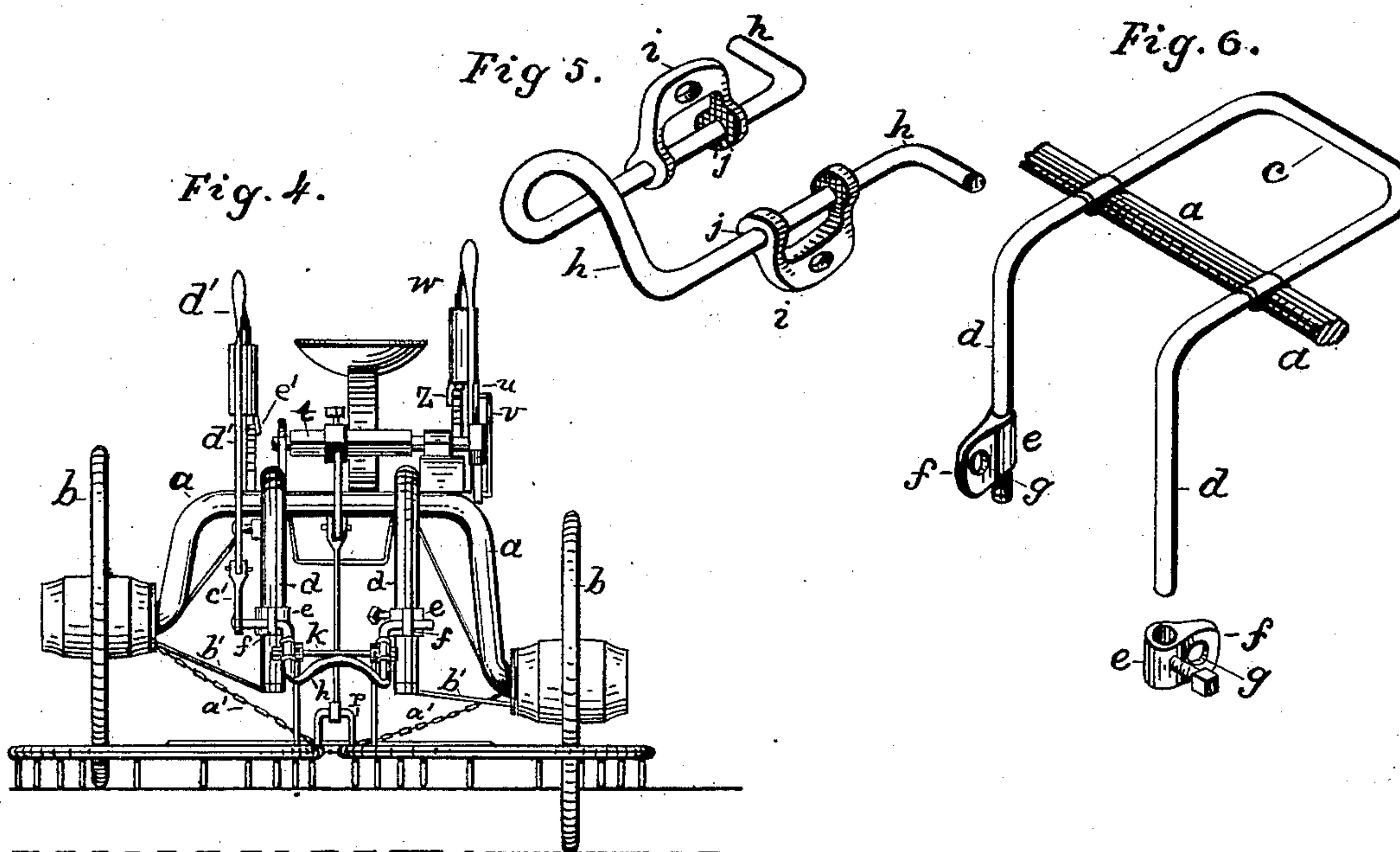
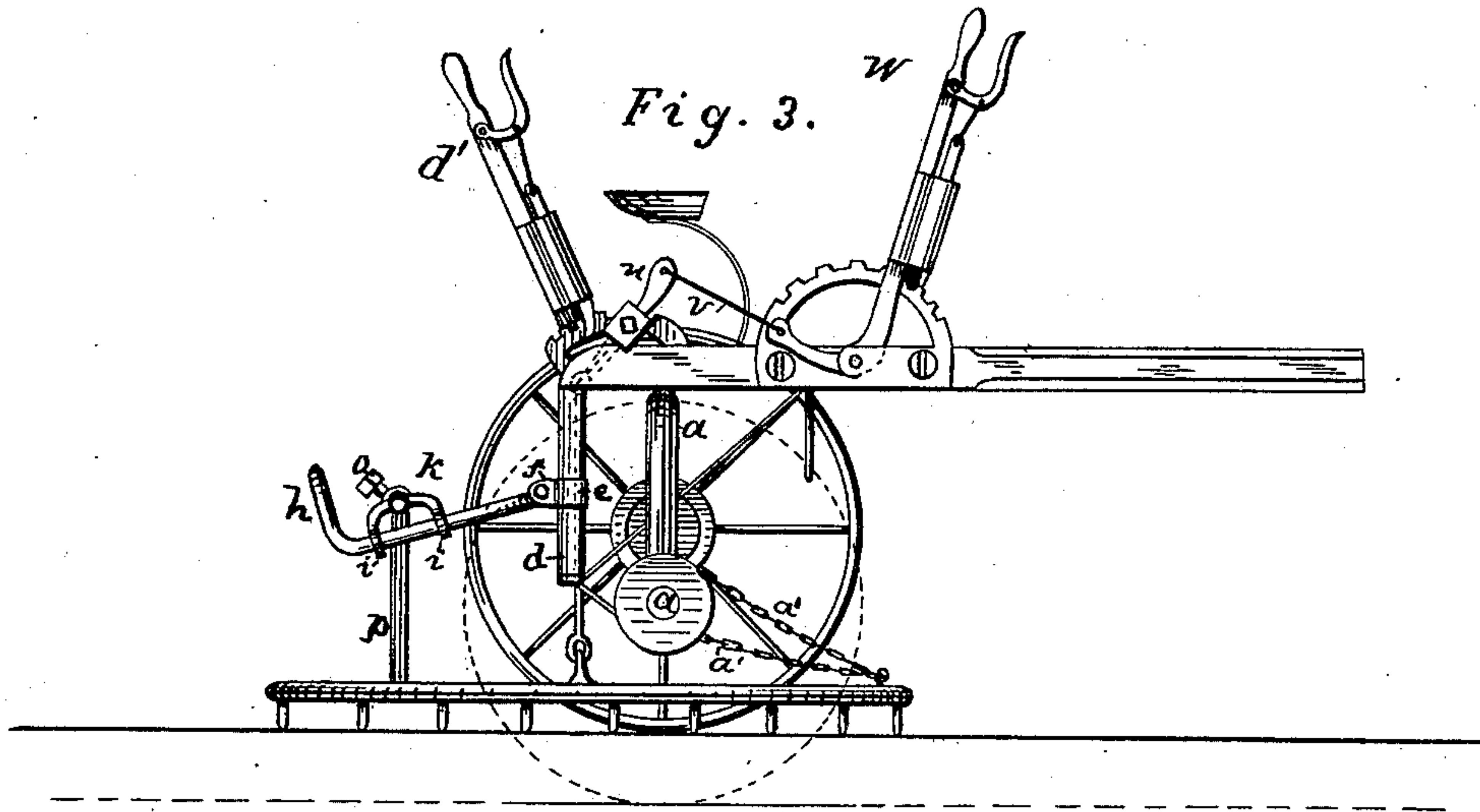
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# UNITED STATES PATENT OFFICE.

EDWIN M. CARROLL, OF PITTSFORD, MICHIGAN.

## SULKY ATTACHMENT FOR PLOWS AND HARROWS.

SPECIFICATION forming part of Letters Patent No. 246,080, dated August 23, 1881.

Application filed July 11, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, EDWIN M. CARROLL, of Pittsford, in the county of Hillsdale and State of Michigan, have invented a new and useful Improvement in Sulky Attachments for Plows and Harrows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of the left side of my improved sulky and attachment, carrying a plow, with the left wheel removed. Fig. 2 is a top view of the same with some of the parts removed. Fig. 3 is a side elevation of the right side of my improved sulky attachment, carrying a harrow, with the right wheel removed. Fig. 4 is a rear elevation of the same, and Figs. 5 and 6 are detail views.

My invention relates to sulky attachments for plows and harrows; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth.

In the accompanying drawings, *a* represents a cranked axle, having the vertical arm of the double crank on the furrow side longer than the other arm, and provided with wheels *b b*, of the usual construction.

*c* represents a sulky-frame composed of a rod bent in a rectangular form at its forward end, and having its longitudinal parallel sides bolted or otherwise secured to the horizontal part of the cranked axle. The rear ends, *d*, of the rod *c* are bent down vertically behind the axle *a*, and pass through short cylinders or eyes *e*, secured to the rear ends of reversible blocks *f*, adapted to slide on the vertical rods *d*. The forward ends of the reversible sliding blocks *f* are provided with holes *g*, for the passage of the bent ends of a plow or harrow carriage, *h*, turned up at its rear end, and having its bearings in the holes *g* of the sliding blocks *f*.

*i i* represent reversible slides provided with eyes *j* in their bent ends, through which pass the parallel longitudinal sides of the carriage *h*, the reversible slides *i i* being thus adapted to move back and forth on the parallel longitudinal sides of the carriage. The slides *i i* are provided with holes at their middle, through which passes a rock-shaft, *k*, which rock-shaft also passes through eyes *l l* in the upper ends

of uprights *m m*, the lower ends of which are bolted to the opposite sides of a plow-beam, *n*, to which a plow is secured. Holes are made in the eyes *l l* of the uprights *m*, for the passage of set-screws *o o*, by means of which the rock-shaft *k* is made fast in the eyes.

*p p* represent arms, bolted to opposite sides of the plow-beam, and provided with holes at their upper ends for the passage of a bolt, *q*, which also passes through a hole in the lower end of an adjustable link, *r*, the upper end of which is pivoted by a bolt to the downwardly-projecting arm *s*, secured to a rock-shaft, *t*, pivoted in the frame, and provided at its outer end with an arm, *u*, connected at its outer end by a rod, *v*, with the lower end of a bent lever, *w*, pivoted to the outer face of the tongue *x*, secured to the sulky-frame *c*.

*y* represents a semicircular rack secured to the outer face of the tongue, and *z* a spring-pawl of the usual construction.

By this construction it will be seen that by operating the lever *w* the plow can readily be raised bodily out of the furrow, or lowered, when desired.

*a' a'* represent adjustable chains, secured to the front end of the plow-beam and to the horizontal parts of the cranked axle, near the hubs, by means of which the sulky is drawn and kept in line with the plow.

*b' b'* represent braces extending from the lower ends of the vertical rods *d d* to the axle at the ends of the hubs, forming a continuous connection from the front end of the beam to the plow-carriage. In order to level or wing the plow when one wheel is higher than the other, I employ the following devices:

To the outer bent end of the carriage *h*, on the left side of the sulky-frame, is secured an adjustable link, *c'*, pivoted at its upper end by a bolt to a bent lever, *d'*, pivoted in the sulky-frame, and provided with a spring-pawl, *e'*, adapted to engage with a semicircular rack secured to the sulky-frame. In winging the plow a set-screw is passed through one side of the eye or short cylinder *e* on the right side of the sulky-frame, to hold the block *f* on the right side of the sulky-frame fast on its vertical rod *d*. The lever *d'* is then operated and a lateral or side movement is given the plow in the direction of the wheel which is lowest,



It will be observed that I can secure a harrow to the carriage as well as a plow, by bolting the lower ends of the uprights *m m p* to a harrow-frame and attaching the chains *a' a'* to the front end of the harrow-frame, which gives the same control to the harrow as to the plow before described.

The horses in this construction are secured to the outer end of the plow-beam, to which the power is directly applied, an adjustable neck-yoke for the horses being secured to the outer end of the tongue.

By this construction it will be seen that the plow or harrow is pivoted to its carriage and held to its work, and that the carriage is so hinged to the frame and to the plow-beam that the wheels can readily pass over obstructions in their path without raising the plow from the furrow, which thereby gives a uniform depth of furrow.

It will further be seen that in my construction plows of different lengths of beam and heights of standard can readily be attached to the sulky-frame, as the sliding blocks *f* and *i* are reversible.

In the drawings we have represented a plow-beam of medium length.

If it were desired to attach a plow to the sulky-frame having a greater length of beam, the sliding blocks *f* would be reversed with their points to the rear, to which the carriage is pivoted, and by this reversion of the sliding blocks *f* a plow having a beam of greater length could readily be secured to the sulky-frame.

If the plow-standard of the plow to be attached is of less height than the medium height, the rock-shaft *k* is withdrawn from the holes in the slides *i i*, and the latter are turned downward through an arc of one hundred and eighty degrees, and the rock-shaft again inserted in the holes in the reversible slides and through

the eyes in the uprights *m m*, the link *r* being also adjustable.

I claim as my invention—

1. The combination, with the sulky-frame *c*, provided with the vertical rods *d*, of the reversible blocks *f* and carriage *h*, pivoted in said blocks, whereby plows having beams of different lengths can be attached to the sulky-frame, substantially as described.

2. The combination, with the carriage *h*, of the reversible slides *i*, provided with eyes *j* and rock-shaft *k*, whereby plows of different heights of standard can be attached to the carriage, substantially as described, and for the purpose set forth.

3. The combination, with a plow-beam or harrow-frame provided with the uprights *m p* and sulky-frame *c*, having vertical rods *d d*, of the carriage *h*, pivoted in the reversible sliding blocks *f*, reversible slides *i*, rock-shafts *k t*, link *r*, arm *u*, rod *v*, and bent lever *w*, substantially as described, and for the purpose set forth.

4. The combination, with a plow-beam provided with the uprights *m m* and adjustable chains *a' a'*, and the sulky-frame *c*, having vertical rods *d*, of the carriage *h* and reversible sliding blocks *f*, substantially as described, and for the purpose set forth.

5. The combination, with a plow-beam provided with the uprights *m m* and adjustable chains *a' a'*, and the sulky-frame *c*, having vertical rods *d*, of the carriage *h*, pivoted in the sliding blocks *f*, a set-screw passing through a hole in the right-hand sliding block *f*, adjustable link *c'*, and bent lever *d'*, substantially as described, and for the purpose set forth.

E. M. CARROLL.

Witnesses:

SOLON C. KEMON,  
CHAS. A. PETTIT.