

2 Sheets—Sheet 1.

No. 311,312.

Patented Jan. 27, 1885.

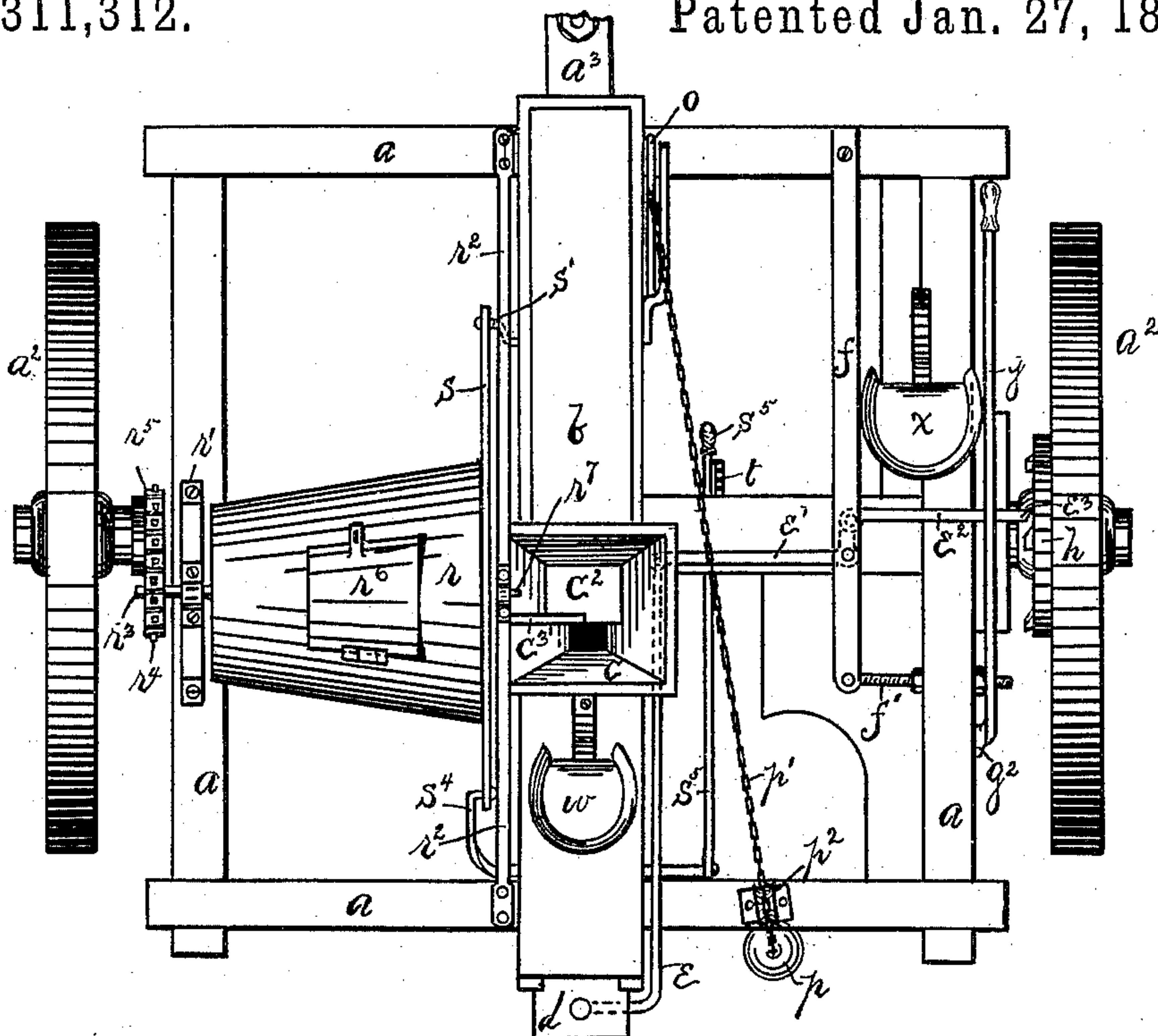
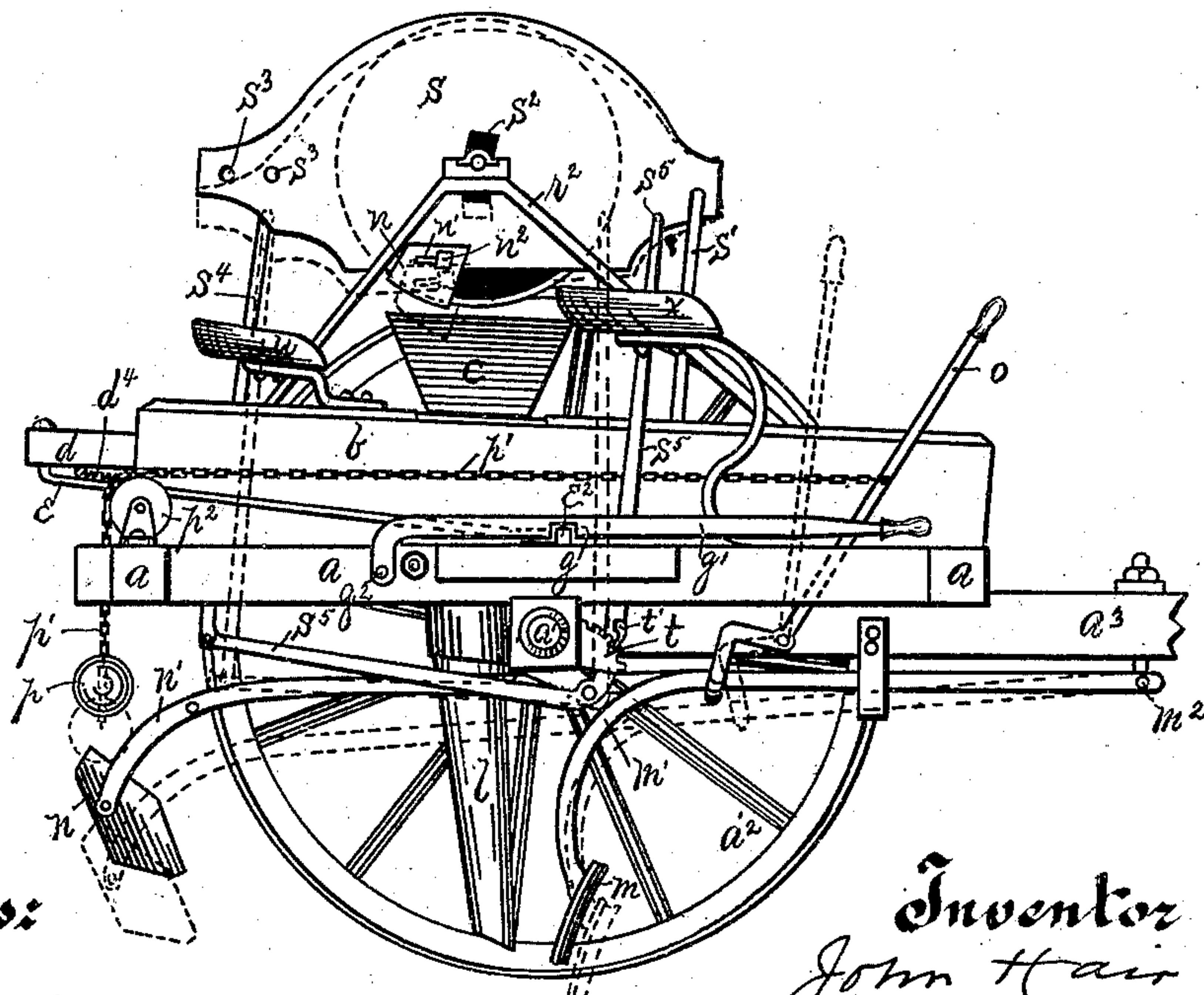


Fig. 1



F 9

Witnesses:

Otto Loddick
J. H. Marling-

Inventor
John Hair

23y W T Miller
Attorney

(No Model.)

2 Sheets—Sheet 2.

J. HAIR.
POTATO PLANTER.

No. 311,312.

Patented Jan. 27, 1885.

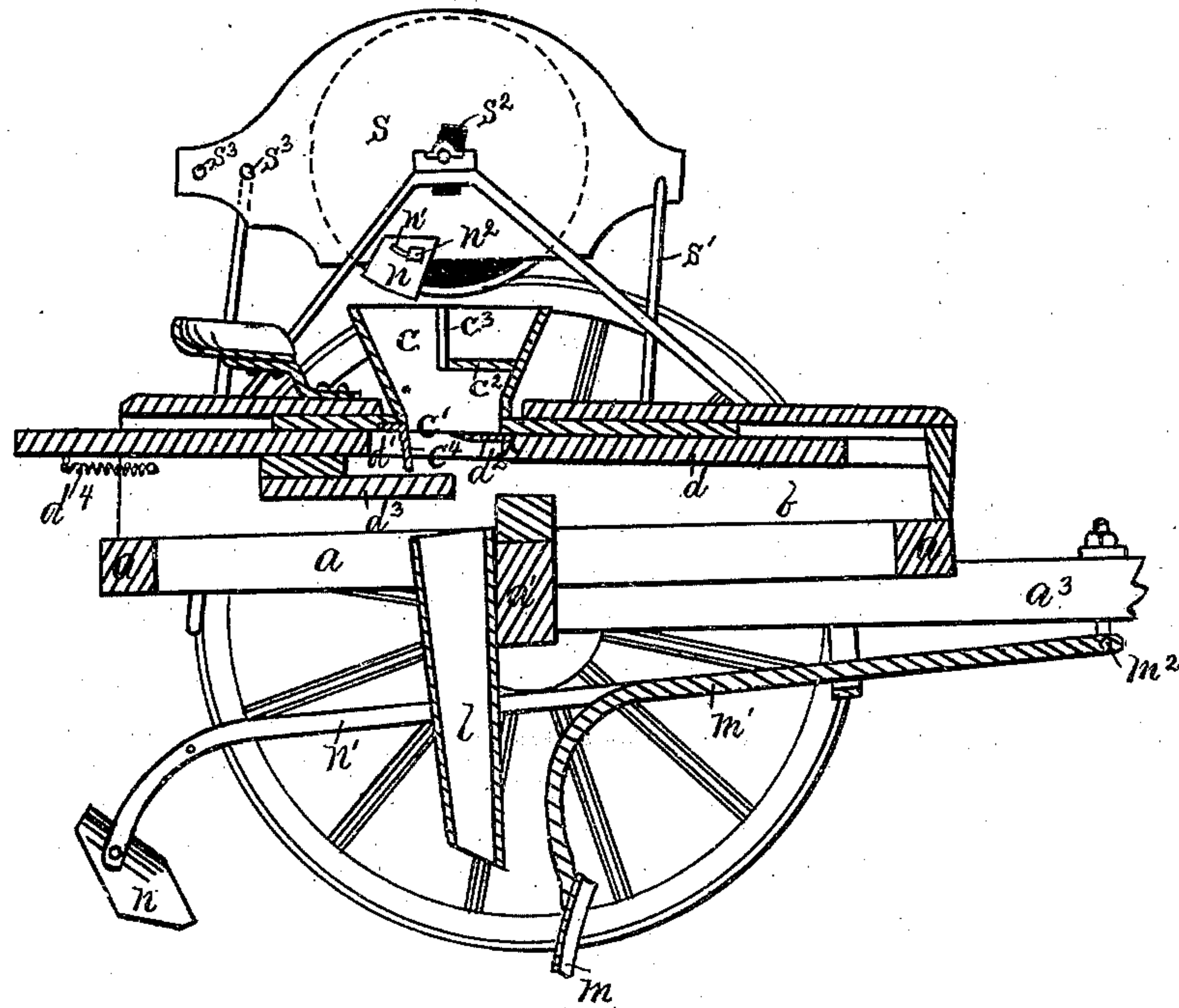


Fig 3



Fig 4

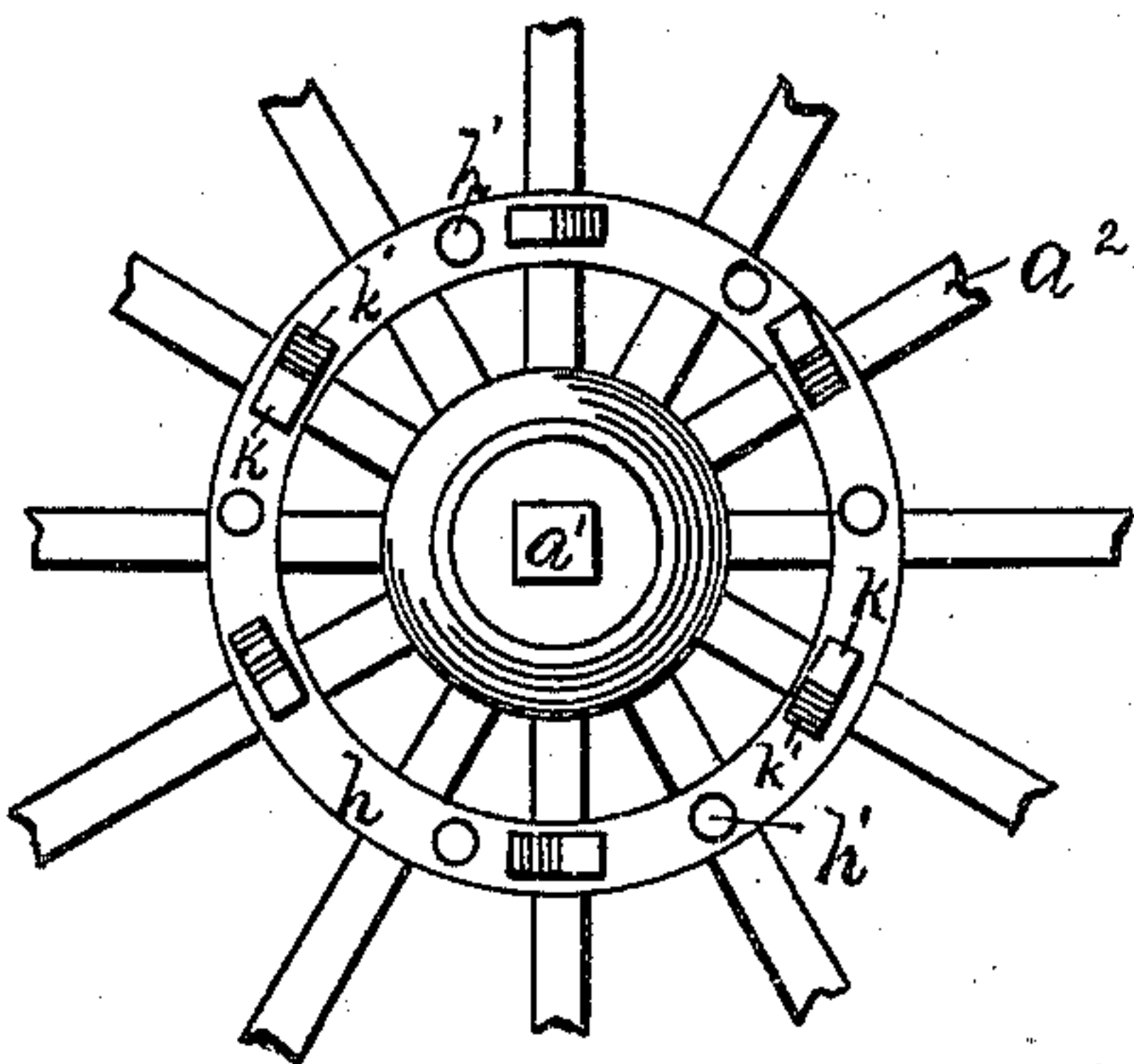


Fig 5

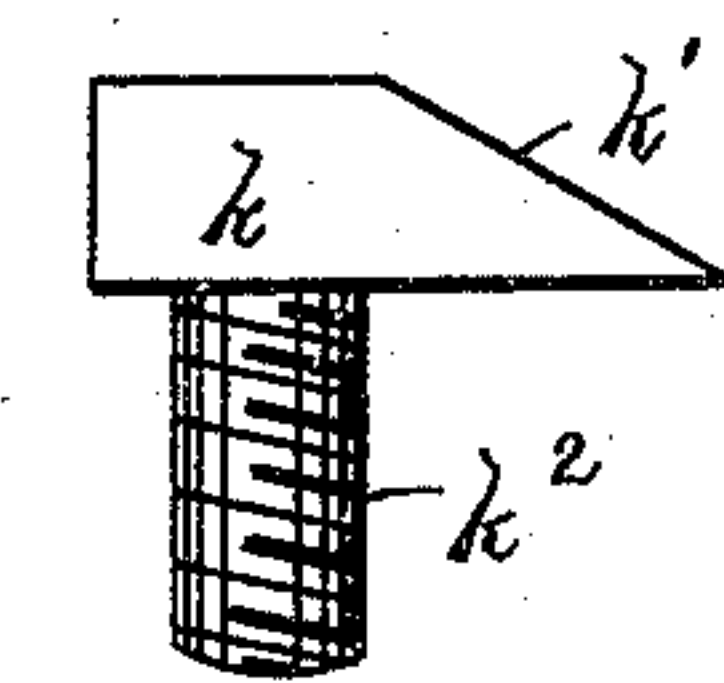


Fig 6

Witnesses:

Otto Loddvick
J. H. Marling

Inventor
John Hair
By W. T. Miller
Attorney

UNITED STATES PATENT OFFICE.

JOHN HAIR, OF CRITTENDEN, NEW YORK.

POTATO-PLANTER.

SPECIFICATION forming part of Letters Patent No. 311,312, dated January 27, 1885.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN HAIR, a citizen of the United States, residing at Crittenden, in the county of Erie and State of New York, have
5 invented certain new and useful Improvements in Potato-Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it apper-
10 tains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates more particularly to
15 that class of potato-planters which make a continuous furrow, into which the seed-potatoes are automatically dropped at intervals and covered; and to that end it consists of certain novel and improved combinations of de-
20 vices, which will be hereinafter particularly set forth and definitely claimed.

In the drawings, Figure 1 is a top plan view of the planter. Fig. 2 is a side elevation of the same with one of the wheels removed.
25 Fig. 3 is a central longitudinal section of Fig. 2, and Figs. 4, 5, and 6 are detached detail views.

Referring to the drawings, *a* is the frame which carries the operative parts, and it is
30 mounted on the axle *a'*, having at each end the wheels *a²* *a²*; and *a³* is the tongue to which the horses may be attached. This tongue is secured at the inner end to the axle *a'*.

Across the center of the frame *a* is the narrow box or chamber *b*, in the top of which is
35 located the hopper *c*, having the opening *c'* into such chamber.

Across the forward portion of the hopper *c*, and about midway between the opening *c'*
40 and the top of the hopper, is located the shelf *c²*; and *c³* is a vertical partition extending along the edge of the shelf *c²*, from one side of the hopper to about the center line of such shelf.

45 *c⁴* (see Fig. 3) is a downward extension of the rear wall of the hopper *c*.

Within the chamber *b*, and moving in grooves in the side walls thereof, is the horizontal slide
50 *d*, as clearly shown in Fig. 3.

d' is a central opening in such slide somewhat longer than the opening *c'* in the hopper,

and in such opening *d'* is removably secured the metallic blade *d²*.

d³ is a shelf depending from the under side of the slide *d* and extending forward to or
55 nearly to the edge of the metallic blade *d²*. The extension *c⁴* of the hopper *c* reaches, as will be seen in Fig. 3, nearly to the upper face of the shelf *d³*.

d⁴ is a spiral or other spring secured at one
60 end to the slide *d* and at the other end to the wall of the chamber *b*.

At the rear end of the slide *d* is secured one end of the bent rod *e*, which passes forward
65 along the side of the box *b*, and has its other end loosely pivoted to one arm of the bell-crank lever *e'*, the other arm of which is loosely pivoted in turn to the rod *e²*. The bell-crank lever
70 *e'* is pivoted to the underside of the bar *f*, whose forward end is pivoted to the front cross-piece of the frame *a*, and whose rear end is attached to the adjusting-screw *f'*, passing through the side piece of the frame *a*. The rod *e²* is held
75 loosely in the position shown in Figs. 1 and 2 by the notch *g* in the lever *g'*, pivoted in the frame *a* at *g²*. The outer end of the rod *e²* has the beveled end *e³*.

Upon the inner face of the adjacent wheel
80 *a²* is secured the ring *h*, concentric with the axle *a'*. This ring *h* is provided at regular intervals with the circular screw-threaded apertures *h'*, adapted for the reception of the spurs *k*, having the beveled sides *k'*, and screw-threaded shanks *k²*, by means of which they are firmly held in place in the holes *h'*,
85 as clearly shown in Figs. 5 and 6.

Below the opening *c'* of the hopper and attached to the axle-bar is the chute or spout *l*.

The mechanism just described in detail is
90 designed to automatically deliver the potatoes from the hopper to the furrow in the ground in a manner which will be more fully hereinafter described.

m is the furrower located upon the lower end of the curved arm *m'*, the upper end of
95 which is pivoted from the tongue *a³* at *m²*. The furrower *m* is located just in advance of the lower end of the chute *l*. One of the covers for filling up the furrow after the potatoes have been dropped is shown at *n*, and consists
100 of a blade secured to the lower end of the curved rod *n'*, the upper and forward end of

which is pivoted similarly to the furrower-rod m' . There are two of these coverers n , located one on each side of the line of the furrow, and in the rear of the chute l . A lever, o , pivoted in the side of the tongue a^3 , and having an arm, o' , extending under the rods $m' n'$, serves to lift the furrower and coverers up out of the way when necessary, such lever being returned to its normal position when released by the ball p and chain p' , passing over the pulley p^2 on the frame a .

The apparatus for feeding the potatoes to the hopper is arranged as follows:

r is a revolving drum having the shape of the frustum of a cone, and is mounted in the brackets r' and r^2 , secured upon the frame a , the larger end of the drum facing the side of the hopper c . The outer trunnion, r^3 , of the drum extends beyond the frame a , and has mounted thereon a sprocket-wheel, r^4 .

r^5 is a drive-chain passing around the wheel r^4 , and another upon the axle a' , by means of which the drum r is revolved as the planter moves.

r^6 is a door in the drum r .

s is an adjustable slide or plate working against the larger face of the drum r . Its forward end is hung in the bracket-rod s' , and the enlarged slot s^2 at its center encircles the inner trunnion, r^7 , of the drum r . The lower portion of the plate s is cut away to leave an opening in the lower part of the drum through which the potatoes may pass into the hopper. The size of this opening is adjusted as follows:

In one of the holes, $s^3 s^3$, in the rear end of plate s is loosely and removably secured the upper end of the rod s^4 , which passes down and across under the chamber b , and is loosely pivoted to the lower arm of the bent lever s^5 , which in turn is pivoted to a bracket upon the axle a' . A segmental ratchet, t , is secured to the axle close to the upper arm of the lever s^5 , and a pawl, t' , upon such arm engages with the ratchet t to secure the lever in any position. It is apparent that by moving the upper arm of the lever s^5 the plate s will be correspondingly moved and the opening in the drum r made larger or smaller, as desired. This opening may be further modified by the auxiliary plate u , provided with the slot u' , adapted for the reception of the set-screw u^2 .

In the operation of the planter just described the seed-potatoes are placed in the drum r by means of the door r^6 , the opening in such drum having been previously adjusted by means of lever s^5 and connecting mechanism operating upon the slide s . A boy is placed upon the seat w , secured to the box b in the rear of the hopper c , to push the potatoes from the shelf e^2 into the lower part of the hopper. When the planter is started by the driver, who occupies the seat x , the drum r is caused to revolve, and the potatoes are gradually shaken out through the opening therein and fall upon the shelf e^2 in the hopper c and in front of the partition c^3 . While the potatoes are being

delivered in this manner to the hopper the right hand wheel of the planter in revolving causes one of the beveled spurs k to strike the beveled end of the rod e^2 , which pushes such rod inwardly, thereby moving the bell-crank lever e' , which in turn pushes back the rod e , and with it the slide d in the chamber b . As this slide moves back the metallic blade d^2 closes the opening e' in the hopper c and prevents the further fall of the potatoes, and at the same time those which have fallen upon the lower shelf, d^3 , are pushed off therefrom by the extension e^4 as the shelf d^3 recedes with the slide d . The falling potatoes then enter the chute l , from which they fall into the furrow made by the furrower m , and are covered up by the coverers n , which throw back the displaced earth into the furrow. After the rod e^2 has passed the spur k , the slide d , by means of the spring d^4 , can be thrown back into its normal position, thus reopening the hopper until the rod e^2 meets the next spur k , when the same operation is repeated. It will be noticed that the spur k , being short, keeps the hopper closed only a very short space of time, its action being rapid and effective. By varying the number of the spurs k the number of hills to each revolution of the wheel can be correspondingly regulated, and, as the beveled end e^3 of the rod e^2 wears away by constant friction with the spurs, such rod can be advanced the necessary distance to insure proper contact by adjusting the screw-bolt f' , which moves the bar f , to which the rod e^2 and lever e' are attached.

To throw the rod e^2 out of operative engagement with the spurs k , it is only necessary for the driver to lift the lever g' , thus disengaging the notch g from rod e^2 , which can then be easily turned aside. The furrowers and coverers can also be simultaneously lifted and held in such position by the driver by means of the lever o when it is desired to suspend their operation while the planter is in motion.

I claim—

1. In a potato-planter, as a means of feeding the potatoes to the hopper, the pivoted drum r , provided with the pivoted adjustable slide s and auxiliary adjustable slide u , the drum being revolved from the axle of the carriage, substantially as shown and described.

2. In a potato-planter, the combination, with the revolving drum r and its pivoted adjustable slide s , of the rod s^4 , the bent lever s^5 , and pawl and ratchet $t t'$, substantially as shown and described.

3. In a potato-planter, the combination, with the bell-crank lever e' and the sliding rod e^2 , of the pivoted bar f and adjusting-screw f' , by means of which the sliding rod e^2 can be adjusted with relation to the spurs $k k'$, substantially as shown and described.

4. In a potato-planter, the combination, with the slide d , the spring d^4 , secured at one

end to the slide and at the other end to the
box *b*, the rod *e*, the bell-crank lever *e'*, the
sliding rod *e²*, with beveled end *e³*, and the
beveled spurs *k k'* upon the wheel, of the piv-
5 oted bar *f*, and adjusting-screw *f'*, substan-
tially as shown and described.

In testimony whereof I have signed my name

to this specification in the presence of two sub-
scribing witnesses.

JOHN HAIR.

Witnesses:

OTTO HODDICK,
W. T. MILLER.