(No Model.) 3 Sheets—Sheet 1.

S. SCHRECKENGOST.

HARROW.

No. 449,592. Patented Mar. 31, 1891.

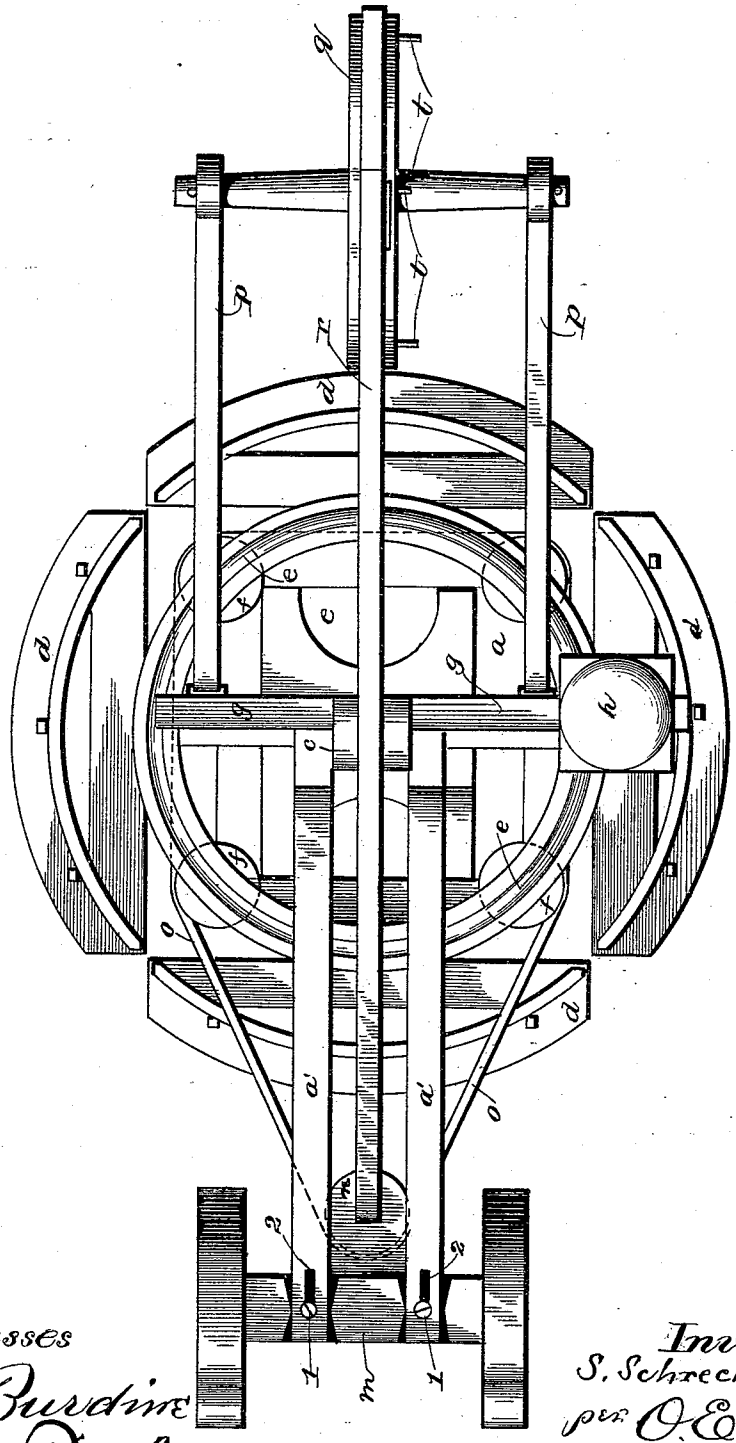

Fig. 1.

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HARROW.

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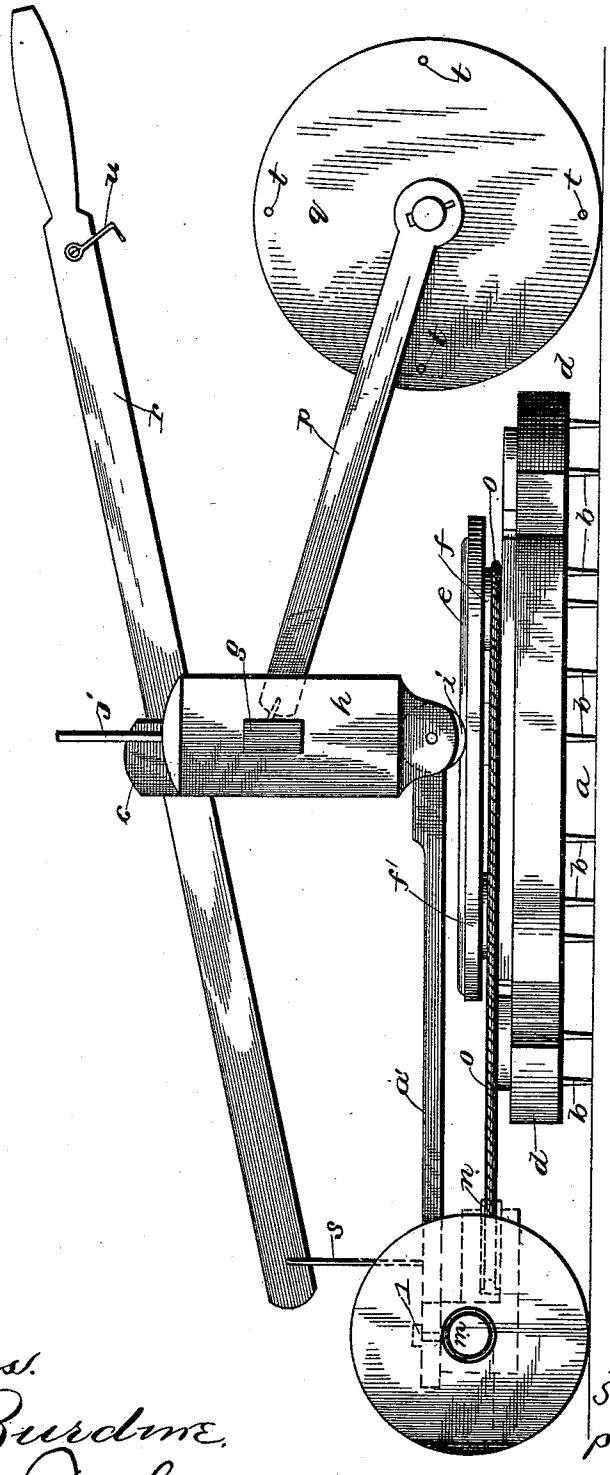

Fig 2

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(No Model.) 3 Sheets—Sheet 3.

S. SCHRECKENGOST.

HARROW.

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Fig. 3

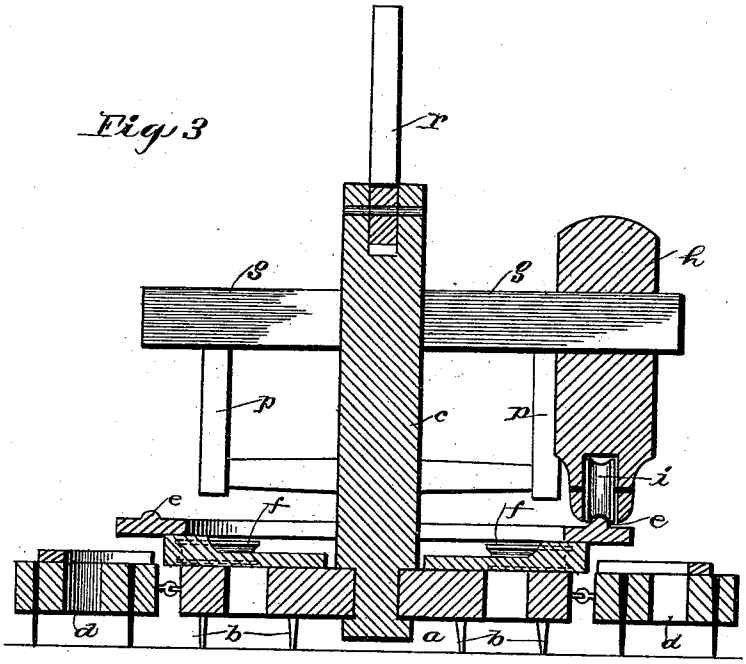
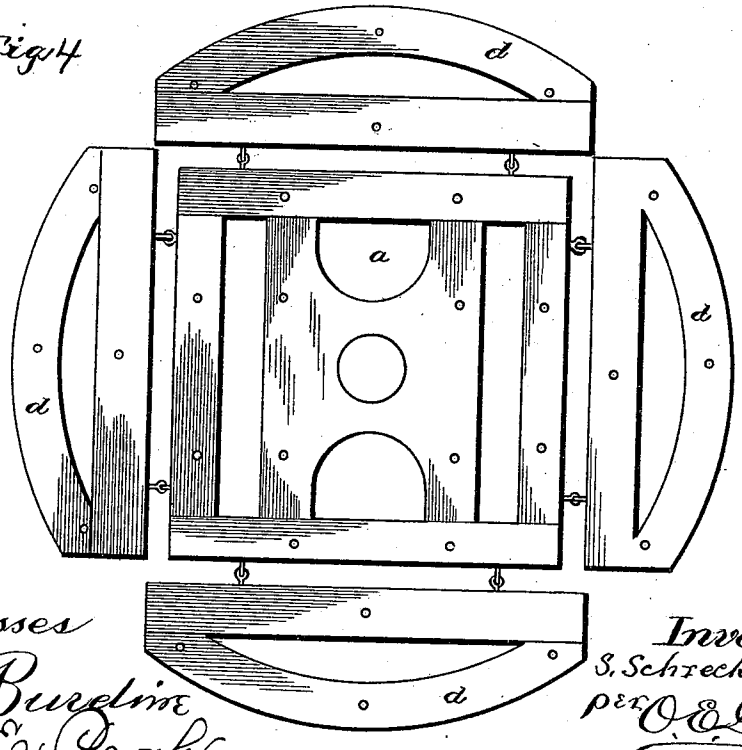


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL SCHRECKENGOST, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO CHARLES F. MOORE, OF HUNTERSVILLE, WEST VIRGINIA.

HARROW.

SPECIFICATION forming part of Letters Patent No. 449,592, dated March 31, 1891.

Application filed May 22, 1890. Serial No. 352,740. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL SCHRECKENGOST, of Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Revolving Harrows; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in rotary harrows.

The object of the invention is to provide an improved harrow of the class mentioned exceedingly cheap, simple, and durable in construction, and composed of a minimum number of strongly-arranged parts.

A further object is to provide an improved rotary harrow so constructed that the draft upon the horizontally-rotating harrow will be equal upon all sides of the same and not heavier upon one side than upon the other.

A further object is to provide the rotary or revolving harrow with front and rear wheels to prevent lateral slipping of the harrow when working upon a hillside, and to so mount said wheels that they can be raised when it is desired to draw the harrow in a different direction, and, further, to so construct and arrange the parts that an extremely effective and improved harrow is produced.

These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a top plan of the harrow. Fig. 2 is a side elevation. Fig. 3 is a cross-section. Fig. 4 is a detail plan of the harrow-section.

In the drawings, the reference-letter *a* indicates the horizontal rotary harrow disk or section provided with the teeth *b* and consisting of the central main portion centrally mounted and loosely journaled on the lower end of the vertical post *c*, and the segments *d* at their inner edges hinged to the outer edges of said central portion. These segments are provided with harrow-teeth, and are loosely hinged to allow vertical swing only, whereby the harrow will conform itself to the uneven surface of the ground and will slide up over stones or other rigid obstructions without breaking or injuring the parts.

A circular raised track *e* is located on the upper side of the central portion of the harrow-section concentric with the vertical post thereof. A suitable number of horizontal grooved pulleys *f* are arranged around the said track on the upper face of the main portion of the harrow, preferably, being located between said track and the upper face of said main portion of the harrow. If the main portion is rectangular, as here shown, four pulleys should be employed, each opposite a corner of said portion.

A horizontal cross-bar *g* is secured to the post *c* near its upper end, so as to extend above the harrow-section transversely to the line of draft. One end of this cross-bar extends loosely through a horizontal slot in a large weight *h*, by which the weight is secured. At its lower end this weight is provided with a small grooved wheel *i*, journaled therein and running on the circular track *e*, so that the weight is supported by said track and harrow-section, and causes one side of the same to more heavily engage the ground than the opposite side, thereby causing the harrow-section to rotate as the harrow is drawn forward. The weight *h* is provided with a vertical pin *j*, upon which weights can be slipped to increase or decrease the pressure on the harrow-section.

A pair of horizontal beams *a'*, extending forwardly in front of the harrow at their rear ends, are pivoted to the lower portion of post *c* to allow vertical swing, and at their front ends are loosely confined to the front two-wheeled truck by means of headed screws or pins 1, passing through longitudinal slots 2 in the front ends of said beams into the axle *m* of the truck, so that the truck has a limited movement in the line of draft independent of the said beams and the harrow. The horses are attached by suitable means to this truck, and the truck is pro-

vided with a horizontal grooved wheel, pulley, or roller n, located approximately in the same horizontal plane as the corresponding pulleys f of the harrow-section, and a strong endless flexible draft-connection o, such as a chain, cable, &c., passes around said pulley n and the pulleys f, so that the entire draft is equally distributed upon all sides of the harrow through the medium of said draft-connection from the forward truck. The flexibility of this draft-connection and the series of rollers around the upper portion of the harrow-section admit the free rotation of said section while the draft is equally upon both sides of the same.

A pair of links p are pivoted at their front ends to opposite ends, respectively, of the cross-bar g to allow vertical swing of their free ends, which ends extend rearwardly in the line of draft and have a narrow wheel q mounted between their ends. This wheel, in connection with the front two-wheeled truck, holds the harrow to its course and prevents it from slipping or shifting laterally when at work, particularly upon a hillside. A long lever r is fulcrumed between its ends on the upper end of the post c to rock vertically, and at its front end it is secured to the front draft-truck by connection s, as shown, and formed into a handle at its rear end and provided with a downwardly-extending spring or other catch u, adapted to engage one of the lateral pins t of the wheel q. This lever is so constructed and arranged that when its handle end is drawn down, so that its catch u engages one of said lateral pins t, the forward draft-truck and the rear wheel will both be lifted from the ground and held balanced from the ground by the lever and post c. By this means the device can be easily turned by the horses to proceed in any direction, the truck, rear wheel, and lever swinging with the central post. When the parts are turned in the direction desired, the catch u is released from a pin t and the parts drop to their normal positions.

It is evident that various changes might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself to the precise construction herein set forth.

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

1. A horizontal rotary harrow-section and a front draft-truck therefor, in combination with the flexible draft-connection connecting said truck and harrow-section and passing loosely around said section to allow rotation thereof and so that the draft is evenly distributed thereon.

2. The rotary harrow-section, and the vertical post upon which the same rotates, in combination with the front draft-truck connected to said post to allow independent movement in line of draft, and the flexible endless draft-connection from said truck to the rotary harrow-section, as set forth.

3. The truck having a horizontal pulley, and the rotary harrow-section having a series of horizontal pulleys around the upper portion thereof, in combination with the endless flexible draft-connection passing around the pulleys of said truck and harrow, substantially as described.

4. A horizontal rotary harrow-section and a front draft-truck, in combination with the endless flexible draft-connection connecting said truck and harrow and passing around the harrow-section, substantially as and for the purpose set forth.

5. The rotary harrow-section and the vertical post in which it is journaled, in combination with the front truck and rear wheel, both attached to said post, and the lever mounted on said post to raise said truck and rear wheel, substantially as described.

6. In combination, the rotary harrow-section, the vertical post to which the same is mounted, the front draft-truck connected to said post to allow vertical swing, the rear guiding-wheel loosely connected to said post to allow vertical swing, and the lever fulcrumed on said post and connected to the front truck and provided with means for connection with said rear wheel and arranged to lift the truck and wheel from the ground.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

SAMUEL SCHRECKENGOST.

Witnesses:
WILLIAM H. ROBERSON,
ONESIME GUAY.