(No Model.)

S. RITTY.

HARROW.

No. 377,213. Patented Jan. 31, 1888.

Fig. 1.

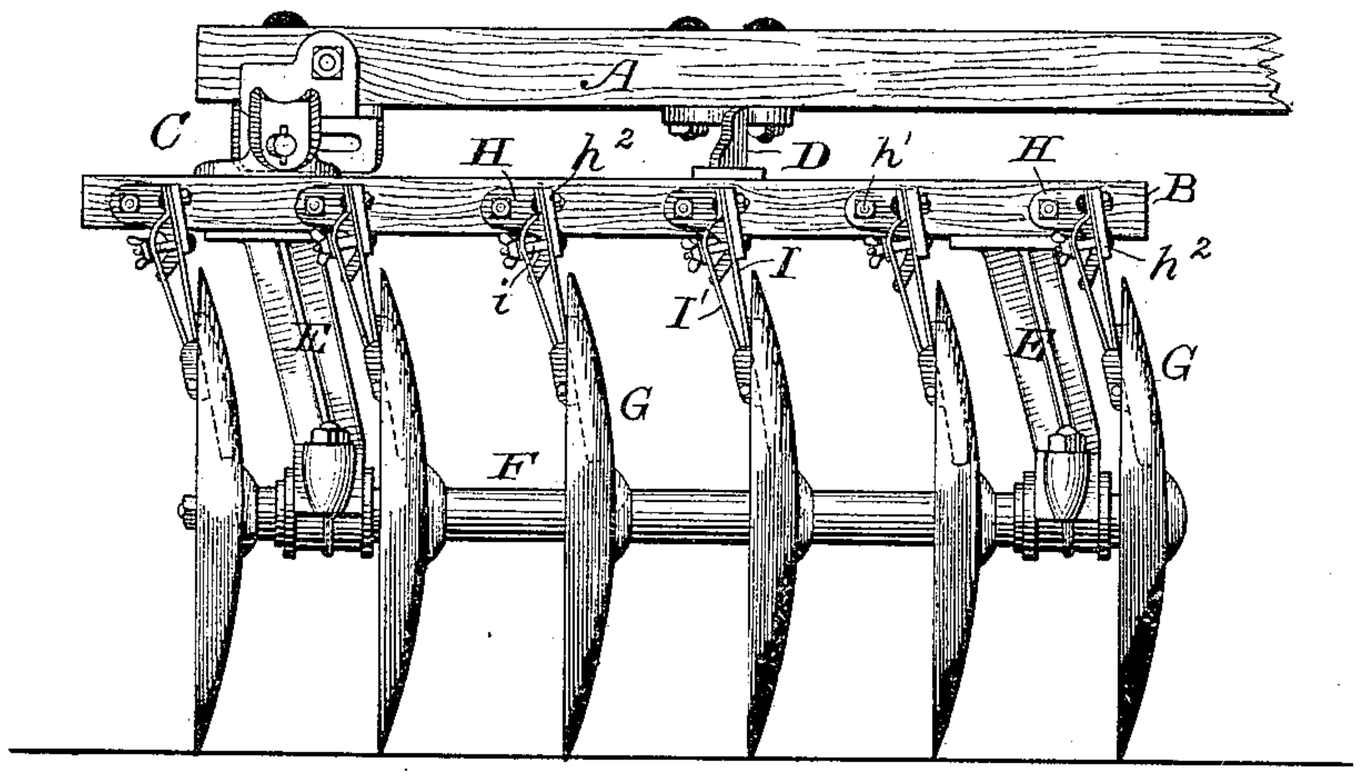


Fig. 4.

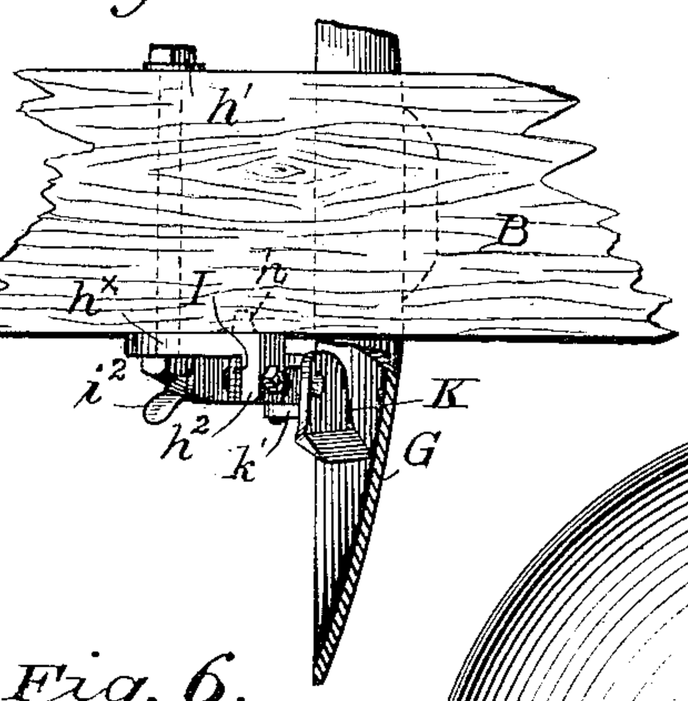


Fig. 2.

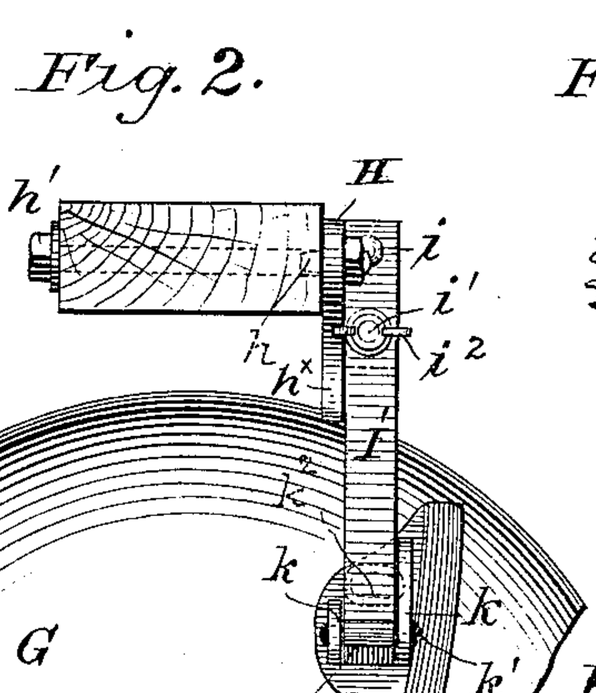


Fig. 3.

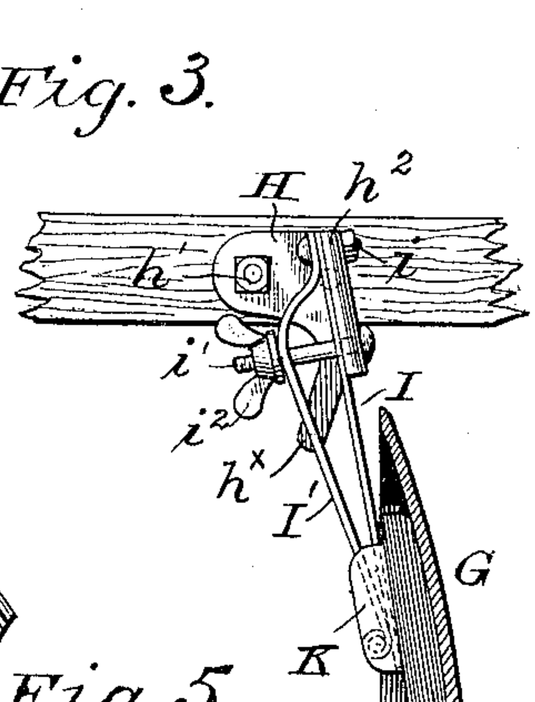


Fig. 6.

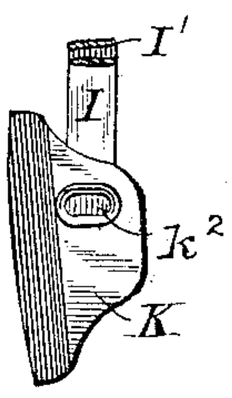
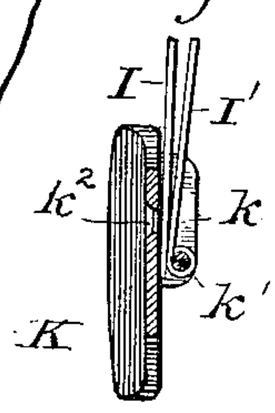


Fig. 5.



Witnesses

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HARROW.

SPECIFICATION forming part of Letters Patent No. 377,213, dated January 31, 1888.

Application filed October 17, 1887. Serial No. 252,538. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN RITTY, a citizen of the United States of America, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Harrows, of which the following is a specification.

My improvement relates to that type of harrows wherein a gang or gangs of rotary disks are employed to stir the soil; and it consists in an improved construction of the scrapers or cleaners, whereby each disk of the gang is cleared from mud and whatever clogging matter may adhere to it as it revolves.

In the drawings, Figure 1 is a rear elevation of so much of a harrow embracing a complete gang of disks embodying my invention as is sufficient to an understanding thereof. Fig. 2 is an enlarged detail in side elevation of a disk and scraper; Fig. 3, a like detail in vertical section and rear elevation; Fig. 4, a like detail in top plan and partly broken away, and Figs. 5 and 6 are special details of the scraper.

A represents the draft-beam of the harrow, and B the harrow-head connected to said draft-beam at the outer end by means of a double hinge-joint, C, and near the inner end by a runner, D, which permits it to swing back and forth upon its joint and also to fall vertically from the position shown in the drawings. Hangers E from this head, near each end, afford bearings for a shaft, F, whereon are supported the rotary disks G in any convenient manner, allowing them to turn independently or as a body. As thus far described the harrow does not or need not differ materially from others heretofore used. For the purpose, however, of cleaning the disks I employ scrapers or cleaners constructed as follows:

An angle-bracket, H, having a dowel-pin, *h*, and bolt-hole, or, it may be, having two bolt-holes and no dowel-pin, is applied to the rear face of the harrow-head above each disk, the dowel-pin taking into a socket made in the wooden head and the bolt-hole receiving a long bolt, *h'*, which passes through the head and secures the bracket. A spur, $h^{\times}$, projects downward and laterally from the body part of the bracket for a purpose presently explained. The outstanding flange h^2 of the bracket affords a seat for a long and straight or nearly straight plate-spring, I, and has two bolt-holes, whereby the spring is secured, as presently explained. A second plate-spring, I', is laid over the first, but is curved, so that at its upper end it lies flat upon the inner one until it passes the first bolt-hole in the flange, when the two are secured by a short bolt, *i*. Then it curves sharply outward away from the inner spring for a short distance until opposite the second or lower bolt-hole, there receiving a long bolt, *i'*, screw-threaded and provided with a thumb-nut, whereby the outer spring may be pressed or adjusted in tension toward the inner. From this point it becomes practically straight, converging toward the inner spring to its end. The lower end of this curved spring is turned upon itself to form a sleeve-bearing, i^3, slightly short of the end of the inner spring.

The scraper-blade K has the usual edge, and has two elongated lugs, *k*, of such width apart as to receive the plate-springs from the bracket snugly between them, and a pivot-pin, *k'*, extending from one lug to the other, passes through the bearing in the outer spring, and thereby serves as the sole means of attachment between said scraper and the springs and of support from the bracket. As thus constructed the scraper-blade is enabled to hinge or swing upon its pivot parallel with the springs, but is prevented by the lugs from swiveling or moving transversely thereto, and the freedom with which it can swing on said pivot may be determined by screwing up or letting out the thumb-nut, and thereby increasing or decreasing the pressure of the springs upon the scraper, since when the thumb-nut is screwed up and the adjusting-bolt shortened the inner spring will be relatively drawn toward the other, and its lower end, which projects beyond the other and between it and the body of the scraper-blade, acting against the lower end of the outer spring as a fulcrum, will be forced down upon said body with greater stress.

The revolution of the harrow-disks will tend to carry the scraper-blade and springs forward and wrench the latter from their fastenings to the bracket. To prevent this is the office of the spur from the latter, which, projecting downward and laterally from the bracket, comes in contact with the forward edges of the springs and receives their thrust below the harrow-head.

In order to prevent mud and débris packing

in between the scraper-blade and the springs on the upper side as the blade swings away from the springs, and finally interfering with the freedom of its action, an opening, k^2, is made through the body of the blade at a point adjacent to the pivot and where the springs depart but little from the body of the blade, so that whatever material may enter at the top may fall out or be forced out through this opening in the subsequent action of the device.

I claim—

1. The combination, substantially as hereinbefore set forth, with the harrow-head and harrow-disk, of a plate-spring connected to the harrow-head and a scraper-blade pivoted to the lower end of the plate-spring.

2. The combination, substantially as hereinbefore set forth, of the angle-bracket affixed to the harrow-head, the harrow-disk, the scraper-blade, the inner plate-spring affixed to said angle-bracket and resting upon the body of the blade, and the outer curved plate-spring secured to a flange from said angle-bracket and its lower end pivoted to the blade.

3. The combination, substantially as hereinbefore set forth, of the harrow-head, the angle-bracket affixed thereto, the harrow-disk, the scraper-blade with its lugs, the straight plate-spring secured to a flange from the angle-bracket and resting at its lower end between said lugs, and the curved plate-spring secured to said flange and having its lower end pivoted between said lugs, and the adjusting-bolt connecting said plate-springs with the angle-bracket.

4. The combination, substantially as hereinbefore set forth, with the two plate-springs depending from the rear of the harrow-head and with the harrow-disk, of the scraper-blade, its lugs or flanges embracing the lower ends of said springs, the pivot-bolt connecting said blade with the lower end of the outer plate-spring, and the opening through the body of the blade beneath said springs.

5. The scraper herein described, consisting of the angle-bracket with its spur, the plate-springs, the inner one of which is straight or nearly straight and the outer one curved, as set forth, the adjusting-bolt and its thumb-nut, and the scraper-blade pivoted to the lower end of the outer spring and confining said springs between its lugs, all as set forth.

SEBASTIAN RITTY.

Witnesses:

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