(No Model.)

W. H. HALL.

HORSE HAY RAKE.

No. 256,893. Patented Apr. 25, 1882.

Fig. 1.

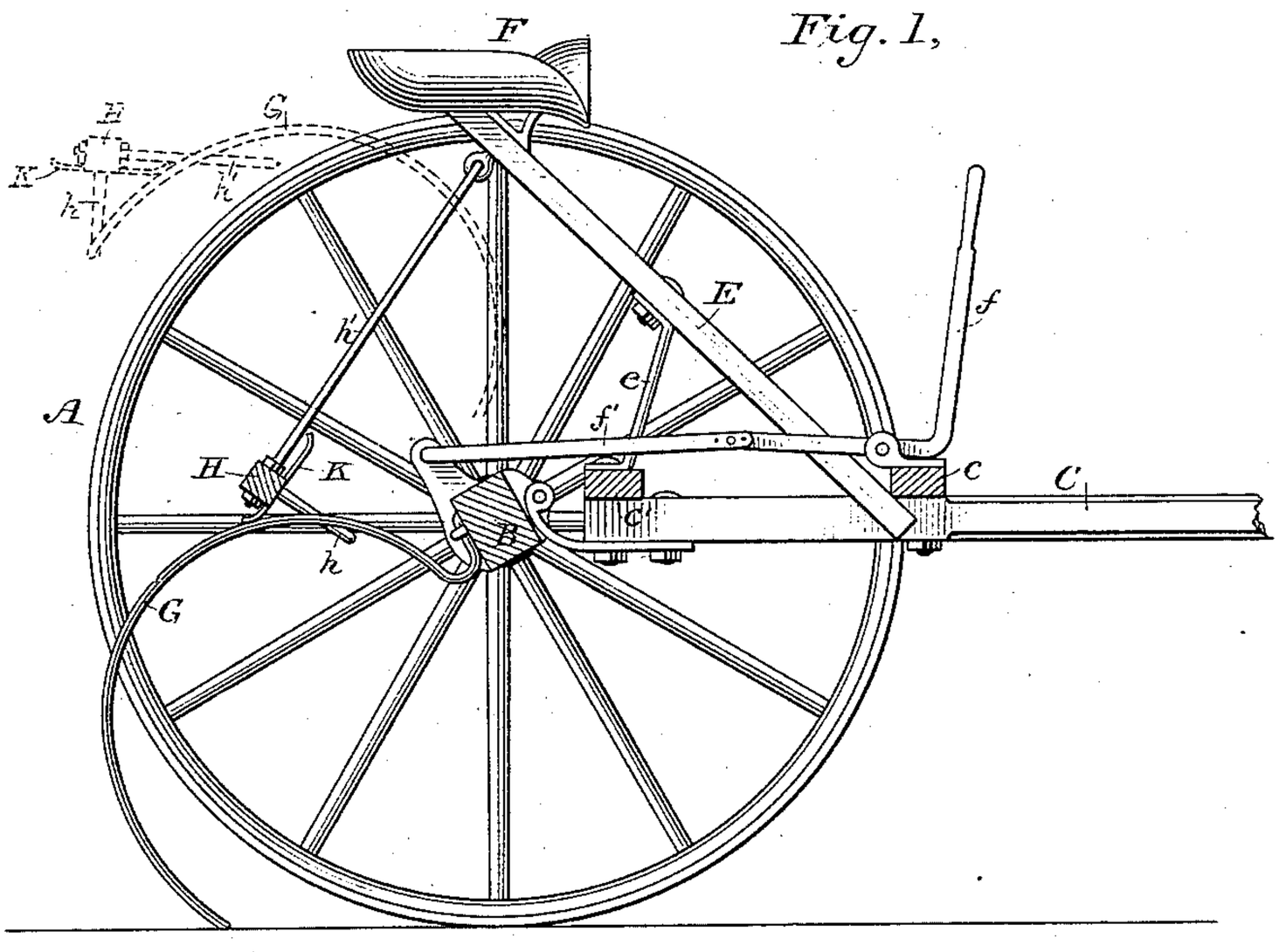
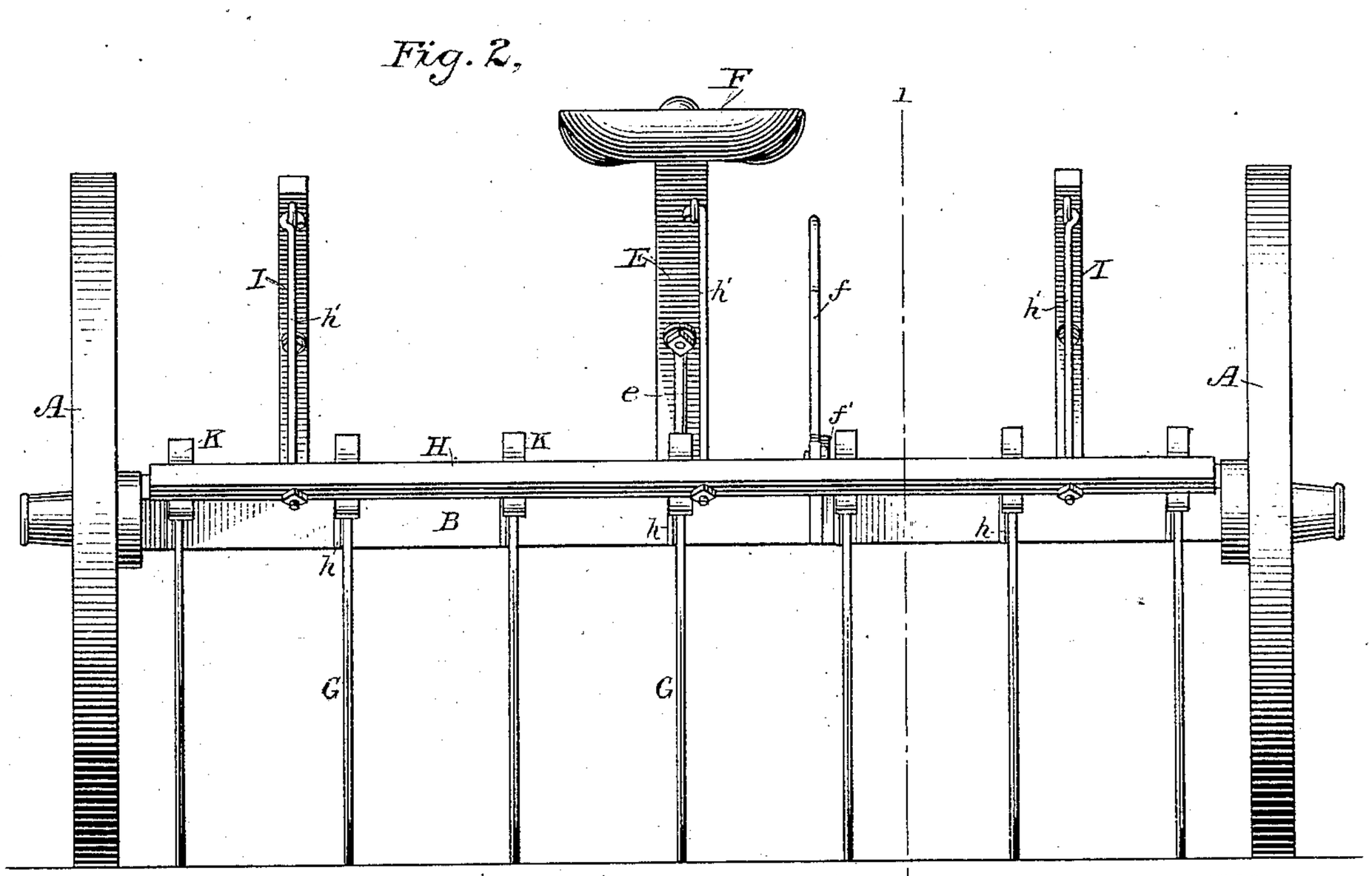


Fig. 2.



WITNESSES

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HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 256,893, dated April 25, 1882.

Application filed February 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HALL, of Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Horse Hay-Rakes, of which the following is a specification.

My invention relates particularly to apparatus for cleaning the rake-teeth at the moment they are lifted to discharge the gathered hay; and it consists in providing the swinging cleaner or clearer bar with shoes or runners elongated in the plane of the individual teeth upon which they travel, whereby said bar, with the cleaner-teeth which it carries, is caused to sink and rise relatively to the rake-teeth in its traverse to project the cleaner-teeth between the latter during a portion of the movement, and then to lift them away therefrom.

In the drawings, Figure 1 is a transverse vertical section through a rake embodying my invention, and Fig. 2, a rear view of said rake.

A represents the supporting-wheels, and B an oscillating axle journaled in said wheels and serving as a rake-head; but for the purposes of my invention this axle may be rigid and the rake-head an independent bar hinged thereto.

C is the thill-frame, in the present instance hinged to the axle to permit it to oscillate; E, the inclined seat-standard, confined beneath the front tie-bar, *c*, of the thill-frame, and supported from the rear tie-bar, *c'*, thereof by means of the bracket *e;* and F is the seat carried by said standard.

Rake-teeth G, of any approved form, are secured to the axle or rake-head, and the latter will be controlled and oscillated in the usual manner, whether by draft or by hand. The rake chosen for illustration is controlled by hand, and for this purpose I have shown a lever, *f*, connected by means of a link, *f'*, with a stud or bracket rising from the rake-head, said lever and link being so arranged as to lock the head to its work, unless intentionally disturbed.

Above the rake-teeth, and running transversely thereof, is the cleaner-bar H, having teeth *h*, and pivotally suspended by means of rods or links *h'* from the seat-standard, or from inclined supports I rising from the thill-frame. Commonly heretofore this cleaner-bar has either rested in contact with the backs of the teeth at all times or has been supported thereon by means of anti-friction rolls. Owing to the irregular outline of the rake-teeth when made of a proper shape to do good raking, there is in either of these constructions a tendency to cramp or bind when the bar has passed over to near the points of the teeth and just at the position from which they should drop. For this reason it has also been proposed to support the bar by two sets of links pivoted eccentrically to each other, so that when the teeth near their highest point it will cease to ride upon them.

As it is undesirable to have the cleaner-teeth projecting into the space beneath the rake-teeth while the latter are at work, on account of the obstruction that would be offered to the accumulating hay, stops have been arranged to limit the downward motion of the supporting-rods and the cleaner-bar which they carry, preventing the latter from following the rake-teeth entirely to their working position. In my improvement I apply to the cleaner-bar, suspended as hereinbefore described, shoes or runners K, one at each end, to rest upon the tooth at that end, and, if thought desirable, others intermediate thereto to rest upon appropriate teeth. These shoes or runners are elongated in the plane of the tooth upon which they respectively rest, so as to project beyond the cleaner-bar both above and beneath, and are somewhat rounded or turned up at heel and toe, the general trend of their running-surface being at substantially right angles to the cleaner-teeth. These shoes or runners will be always in contact with the backs of the rake-teeth; but in like manner, as they traverse nearly the entire extent of the latter in the dumping action, so said teeth will at the same time traverse the entire extent of the runners in such action, the contacting points in each constantly changing, the effect of which will be to give the cleaner-bar a resultant differential movement. Thus when the rake-teeth are down and at work the cleaner-bar will be supported upon the toes of the runners and at sufficient distance above the backs of said rake-teeth to lift the cleaner-teeth entirely out of the collecting-space; but as the

rake-teeth are lifted the cleaner-bar will relatively sink and the cleaner-teeth pass gradually down into or against the collected hay until at the time the rake-teeth have about half completed their ascent the bar, which is flush, or substantially flush, with the runners, will be in contact with them throughout its entire length, and the cleaner-teeth will be projected between them to their utmost limit. The rake-teeth, still continuing to ascend, will now ride up toward the heels of the runners, and the relative movement of the cleaner-bar from this point will be reversed—that is, it will gradually rise and its teeth be concurrently withdrawn from the hay, so as to be clear of the windrow at the moment the rake-teeth stop. At this moment the heels of the runners will be resting upon the rake-teeth some distance above or within the bar—that is, the supporting contact will be higher up the rake-teeth than if the bar itself was touching, and at a point favorable to the easy and comparatively frictionless descent of the teeth, and at which the pressure of the cleaner-frame will assist rather than impede that descent. With the fall of the rake-teeth the parts retrace the movements just described until they reach their initial position, with the rake-teeth again at work and the cleaner-bar supported at some distance above them upon the toes of the runner, so as to allow hay to collect without obstruction as high as the head.

The shoes or runners are the equivalent of a cleaner bar or board the width of which is equal to the length of a single shoe and the transverse bottom contour the contour of such shoe. Such a board would, however, be of undesirable weight, and therefore, while considering either construction within the principle of my invention, I deem the use of the runners most advantageous.

In case it is not desired to lift the cleaner-bar from contact with the rake-teeth when the latter are at work it is evident that there will still be a beneficial result in the employment of the shoe, limited to substantially its body and heel portion, to lift the bar at the end of its outward traverse and to obviate the tendency to cramp and bind at that point. It is evident, also, that by the retention of the toe portion, while omitting the heel portion, the effect of lifting the cleaner-bar at the end of its inward traverse will still be produced. Hence I do not confine myself to a shoe or runner projecting both above and below the cleaner-bar, but intend my invention to be understood as embracing either of these modifications.

I claim—

1. In combination with the rake-teeth and swinging cleaner-bar, shoes or runners attached to the cleaner-bar and elongated in the plane of the individual teeth upon which they travel at substantially right angles to the cleaner-teeth.

2. In combination with the rake-teeth and swinging cleaner-bar, means for lifting said cleaner-bar out of contact with the rake-teeth at each end of its traverse to entirely withdraw the cleaner-teeth from beneath the rake-teeth.

3. In combination with the rake-teeth and swinging cleaner-bar, shoes or runners attached to the cleaner-bar and elongated both above and below it in the plane of the individual rake-teeth upon which they travel at substantially right angles to the cleaner-teeth.

WILLIAM H. HALL.

Witnesses:
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