# C. La DOW.

## Wheel Hay-Rake.

No. 168,648.

Patented Oct. 11, 1875.

*Fig. 1*

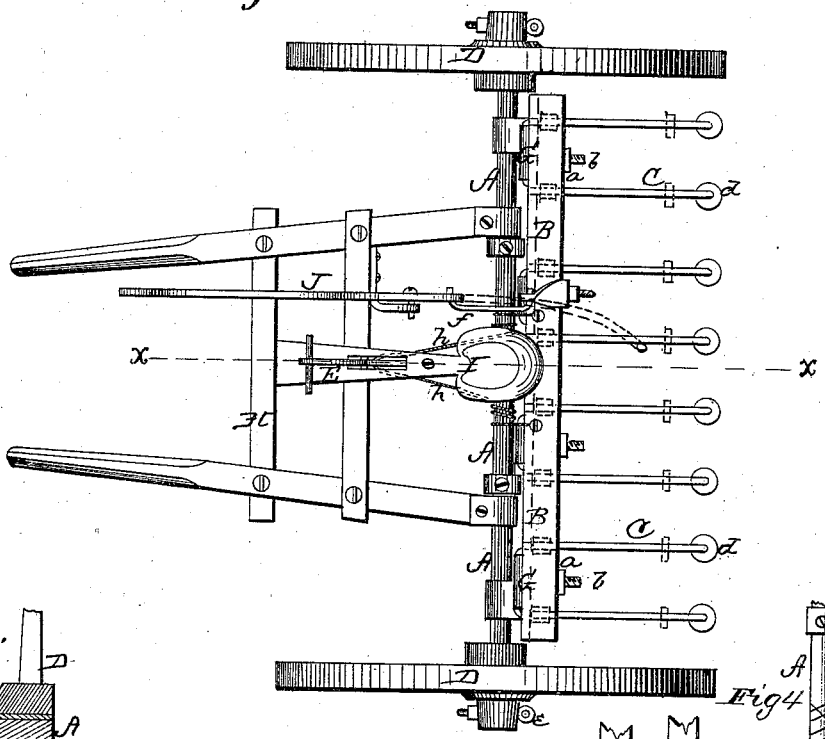



*Fig. 3.*

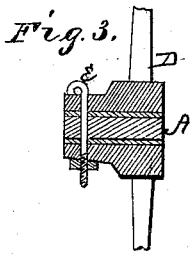



*Fig. 4*

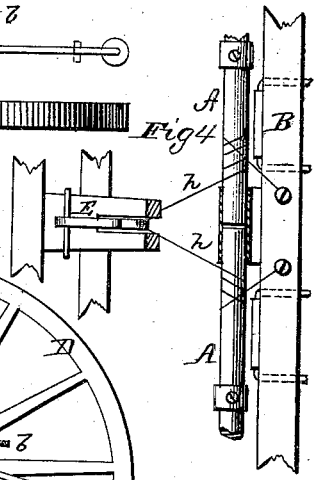
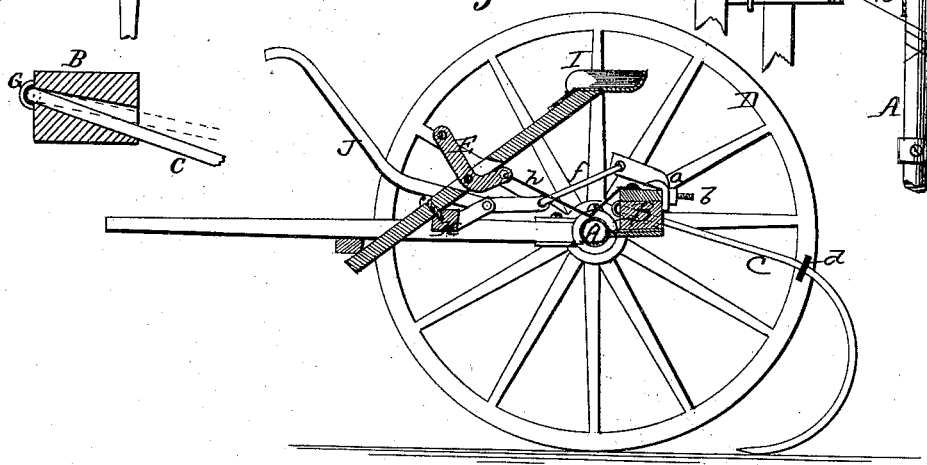



*Fig. 2.*




WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES LA DOW, OF BALLSTON, NEW YORK.

## IMPROVEMENT IN WHEEL HAY-RAKES.

Specification forming part of Letters Patent No. **168,648**, dated October 11, 1875; application filed September 2, 1875.

*To all whom it may concern:*

Be it known that I, CHARLES LA DOW, of Ballston, in the county of Saratoga and in the State of New York, have invented certain new and useful Improvements in Wheel Hay-Rakes; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to that class of mounted horse-rakes in which the load is dumped automatically by the draft or forward motion of the wheels when the proper engagement is made; and it consists in the construction and novel arrangement of a divided axle, with wheels firmly fastened thereon, a friction-gripe for engaging with the divided axle, stops on the teeth, and a lever for dumping the rake by hand, and holding the rake in an elevated position, all as hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of a horse hay-rake embodying my invention. Fig. 2 is a transverse vertical section of the same through the line *x x*, Fig. 1. Figs. 3 and 4 are detached views of parts thereof.

The axle of my horse hay-rake is made of round iron, and in two pieces, A A, each part being hinged by two bearings to the rake-head B, which supports the teeth. This head is provided with a series of slots, through which the teeth C pass in such a manner as to allow a free hinge movement in passing ob structions, and also to prevent their working sidewise, or crossing each other when at work. The upper ends of the teeth C are bent at right angles from the curve of the teeth, said bent portions being confined to the front side of the head by a series of grooved buttons, G, of which one is placed lengthwise over the bent portions between each pair of teeth, and secured there by a bolt, *b*, in such a way that the bent portions on the teeth may be held firmly against the head, thereby keeping them in place while at work, and at the same time admitting of the teeth being easily removed from the head when desired, which is done by loosening the nut *a* on the bolt holding the button against the angles, when, by turning the button crosswise from the angles on the teeth, they may be pushed forward and withdrawn from the slots.

I am aware that pairs of rake-teeth have been rigidly clamped to the rake-head by a button, which is pivoted in its center with its ends lying over two teeth, so that by loosening the pivot, and rotating the button, the teeth may be extracted from the head; but in such invention as known to me the teeth are rigidly clamped upon the top of the head, and have no free hinge movement, and all the elasticity that can be secured in such case must be derived from the tooth itself.

With my invention the button is grooved longitudinally, and the bent ends of the teeth and the buttons are in the front of the rake-head; hence such bent end lies in a groove formed by the half-groove in the button and the half-groove in the head, so that in operation the rake-teeth having the free hinge movement will more readily conform to uneven surfaces.

The teeth C are provided with a series of stops, *d*, of rubber, leather, or similar material, having perforations, so that they can be adjusted on any part of the teeth, and connect to said teeth by friction, and which rise and fall with the teeth, thereby preventing the collected hay from rising and riding on the teeth above the stops, thus enabling the hay to be discharged from the rake without the aid of clearer-rods or strippers. The outer end of each half of the axle is secured firmly to its corresponding wheel D by means of a bolt, *e*, passing through the outer end of the wheel-hub and axle, thereby securing at all times the rotation of the axle. The axle, being divided in two parts, permits the wheels to turn in opposite directions. A piece, *h*, of iron or steel wire or cord is coiled around each half of the axle, one end of each coil being secured firmly to the head B, while the other ends of the coils are secured to a foot-treadle, E, which being acted upon by a slight pressure, the coils are made to gripe the axle firmly, and thus lock the axle and head together

for as long a period as the pressure upon the treadle is continued, thus enabling the operator, through the forward motion of the axle, to roll the head and its attached teeth up to any desired height, and either hold or carry them in position, according to the pressure used upon the treadle. When this pressure is removed the teeth fall, and instantly resume a working position. The cross-bar H, supporting the seat I, is provided with a hand-lever, J, the lower end of which is hinged, by connection *f*, to the head, and serves to roll the head and raise the teeth when backing. The upper end of said lever is curved forward, and serves as a handle, and also to hold up the teeth and carry them by being placed beneath or under one of the teeth.

The teeth may be lowered to the ground by pressing the treadle, when the forward motion of the axle raises the teeth and drops the handle far enough to allow the curve on the lever and the tooth to disengage themselves without further attention from the driver.

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

1. The combination of a friction-gripe with the axle and rake-head, for locking them together, for the purposes set forth.

2. The longitudinally-grooved button G, pivoted to the front of the rake-head, in combination with the bent rake-teeth and grooves in the head, whereby the teeth are secured to the head, and a free hinge movement of the same permitted, substantially as herein set forth.

3. A friction-gripe consisting of a wire or cord connected to the rake-head, wrapped around the axle, and connected to the foot-lever for locking the axle to the head, substantially as set forth.

4. A friction-gripe, constructed substantially as described, in combination with the divided axle, secured firmly to the wheels, as and for the purposes set forth.

5. The curved lever-handle, in combination with the friction-gripe, substantially as herein described, the axle carrying the wheels, the rake-head, and the rake-teeth, for the purposes herein set forth.

6. The stops *d*, of india-rubber or equivalent material, adjustable upon the rake-teeth C, as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 20th day of August, 1875.

CHARLES LA DOW. [L. S.]

Witnesses:

A. R. LA DOW,

WM. S. WATERBURY.