M. B. FULLER.

Hay Raker and Loader.

No. 74,814. Patented Feb. 25, 1868.

Fig. 1.

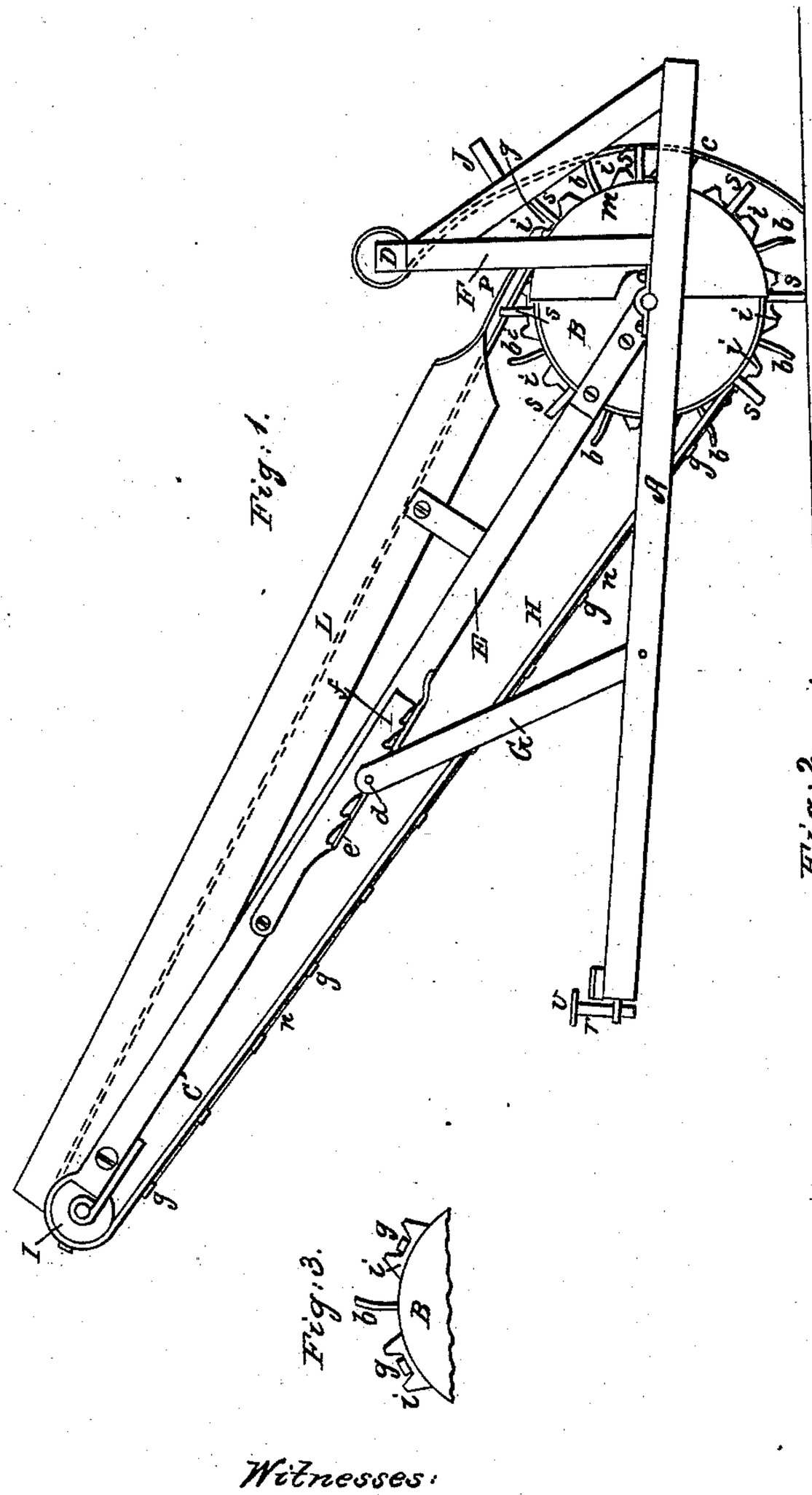

Fig. 2.

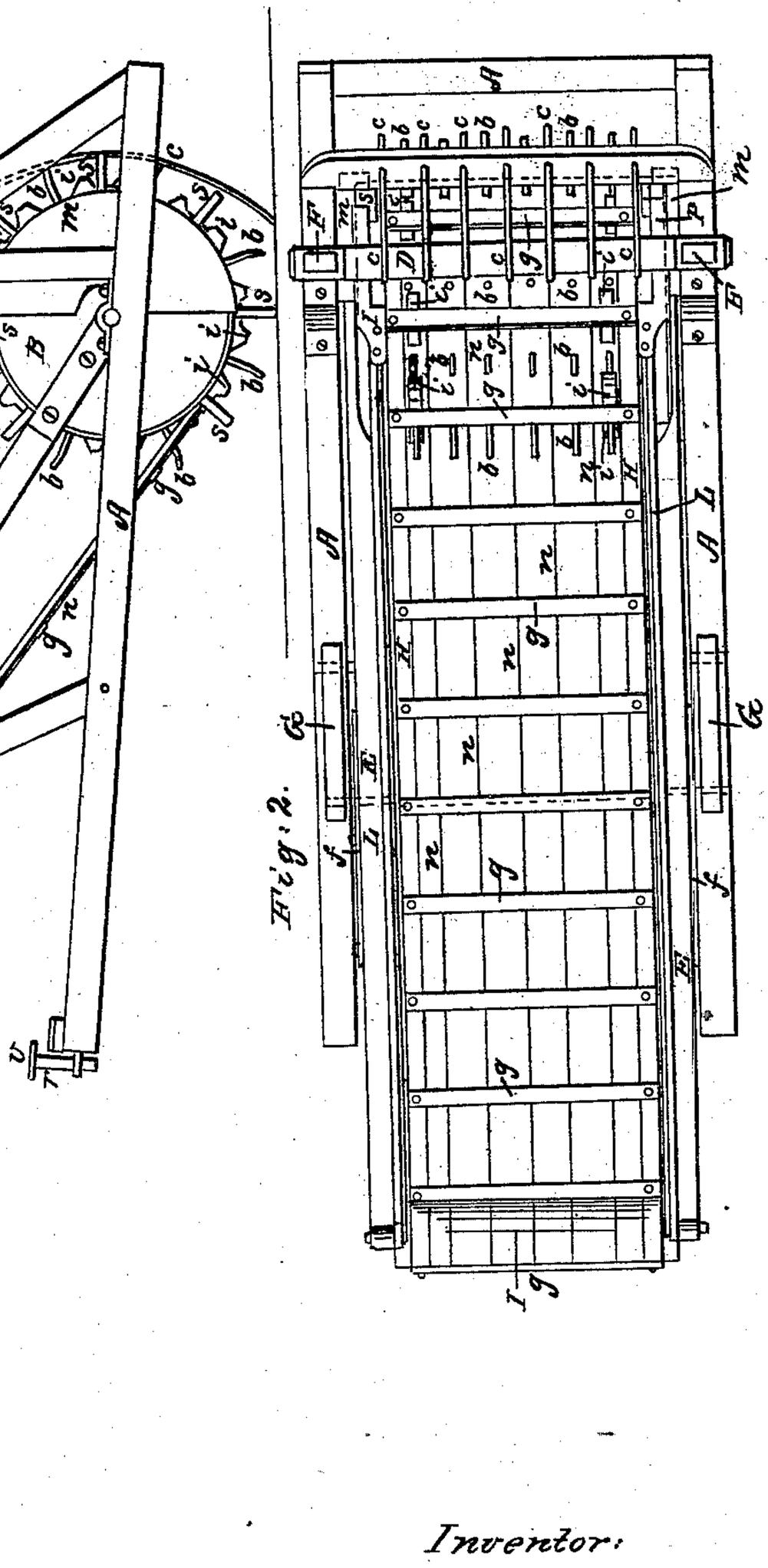

Fig. 3.

Witnesses:

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United States Patent Office.

MERRITT B. FULLER, OF SANDBORN, NEW YORK.

Letters Patent No. 74,814, *dated February* 25, 1868.

IMPROVEMENT IN HAY-RAKERS AND LOADERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, MERRITT B. FULLER, of Sandborn, in the county of Niagara, and State of New York, have invented certain new and useful Improvements in Hay-Loaders; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of my improvement.

Figure 2, a plan of the same.

Figure 3, a diagram, showing the construction and operation of the guide-blocks *i i*.

Like letters of reference designate corresponding parts in all the figures

The object of my invention is to simplify the construction of hay-loaders, by dispensing with the usual side wheels or truck, and a corresponding amount of extra framework.

The invention consists in the employment of a driving-roller mounted on a suitable frame, and armed with curved teeth, in combination with a rake and an endless carrier, no driving or supporting-wheels being required; also, the peculiar arrangement for driving the endless carrier, and maintaining it in proper place on the said roller.

In the drawings, A represents a suitable rectangular frame, connected directly to the rear axle of the wagon, either directly or by means of a short tongue. At the rear of this frame is mounted a roller, B, provided with rows of curved teeth, *b b*, running lengthwise, as shown. F F are two standards from the frame A, suitably braced, the tops of which are connected by the rigid cross-piece D, to which are secured the curved rake-teeth *c c*, that reach the ground at a point just back of the roller B. The teeth *c c* are arranged intermediate the teeth *b* of the roller, so as to allow the latter to revolve. E E are two side-pieces, forming the frame of the endless carrier C, the lower ends of which are pivoted by the gudgeons of the roller B, passing through them as represented. The upper end of the carrier is supported by two standards, G G, pivoted at their feet in the sides of the frame A, and connected at their top by a rod, *d*, on which the inclined pieces E rest. Straps *e e* are secured to the under side of E E, forming a guide and way, in which the rod *d* is permitted to slide in adjusting the carrier to the height of the load on the wagon. To the outer sides of the frame E E are pivoted two ratchet-bars, *f f*, armed with notches in the under edge, which engage with the rod *d*, on which the bars rest, and thus hold it in the required position. The end of carrier is gradually elevated as the load increases in height, while the ratchet-bars acting automatically, securely retain it at any desired elevation.

The carrier C consists of two endless chains, leather straps or belts, H H, passing around the driving-roller B, and a suitable roller, I, at the upper end, and connected by cross-slats *g g*, at a distance apart equal to the distance between the row of teeth on the driving-roller. To prevent these slats interfering with the teeth of the roller as the latter revolves, it is necessary that the carrier be so arranged on the roller that the slats will at all times come intermediate with the rows of teeth. In order to insure this result, and to prevent the carrier slipping, I secure to the periphery of the roller, near each end, and between the rows of teeth, guide-blocks *i i*, provided with suitable notches, having inclined sides to guide and retain the slats in place, as shown by the diagram, fig. 3.

Cords or wires, *n n*, running lengthwise of the carrier, and connecting the slats *g g*, are employed to prevent the hay falling between the slats, and to insure the clearing of the teeth. The teeth *b* are slightly curved, as shown, to facilitate the disengagement of the hay therefrom, after it reaches the carrier. A guide-board, J, provided with suitable notches or cuts, for the entrance of the rake-teeth *c*, is secured to the braces of the standards C, as shown in fig. 2, which serves to keep the teeth steady in their relative position, and to stiffen them, when they shall have sprung back to the limit of the guide-notches. To prevent the hay from working off the ends of the roller B, and winding around the gudgeons or journals, I secure to the inner sides of the frame A, semicircular caps or plates, *m m*, of the size of the roller, so as to fit and slightly overlap the rear portion of the ends thereof. This furnishes complete protection, and is of considerable importance. L L are two side-boards to retain the hay on the carrier as it is being elevated, their lower ends terminating in metallic lips or plates, *p p*, the ends of which rest on the rim of the caps or guards *m*, and slide thereon as the carrier is raised or lowered. At each end of the roller, teeth *s*, (one between each of the rows *b b*,) are employed, which serve to help

sustain the roller and give it a more steady and uniform motion as it revolves, and to take up the scattering hay at the ends of the roller.

The operation of my improvements is as follows: The machine being coupled to the wagon by means of a bolt, *r*, and plate, *v*, which is bolted to the under side of the rear axle, or connected to it in any other suitable way, is drawn along. The teeth of the roller B resting on and engaging with the ground, cause it to revolve, which in turn gives motion to the endless carrier, as before described. The teeth *c* of the rake collect the hay before them, which is elevated by the teeth *b* of the roller to the carrier, which deposits it on the load. The curvature of the teeth *b* enables the hay, after it has been carried to the top of the roller, to be readily released therefrom by the slats and cords of the carrier, which is of importance, as the teeth might otherwise, especially if the hay were a little damp, carry it around with and soon clog up the roller. The guide-plates or caps, *m m*, prevent the hay from winding around the journals of the roller.

Making the carrier adjustable to adapt it to the height of the load is of great importance. It effects a saving in power, as the amount required to drive the carrier depends in a great measure on its elevation. Regulating the inclination of the carrier to the height of the load prevents the hay being blown off, as it frequently is during the commencement of the load, when the end of the carrier is so far elevated as it is required to be when the carrier is not adjustable.

The great advantage, however, of my invention is the saving that is effected by dispensing with the use of the ordinary drive-wheels, extra framework, and other parts which the ordinary method of construction renders necessary. The weight of the roller insures the teeth *b* penetrating the hay.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The driving-roller B, provided with rows of curved teeth *b b*, and intermediate teeth *s*, which rest on the ground and support the roller, in combination with the rake *c c*, or equivalent, and endless carrier C, operating substantially in the manner and for the purpose set forth.

2. I also claim the guide-blocks *i i*, combined and arranged with the rows of teeth *b b*, and the slats *g g* of the carrier, for retaining the latter in place and prevent slipping, substantially as specified.

3. I also claim the guide-board J, constructed, arranged, and operating in the manner and for the purpose specified.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

MERRITT B. FULLER.

Witnesses:

LEE R. SANBORN,

ENOCH C. SANBORN.