H. Kimmel.

Hay Loader.

No 67771 Patented Aug. 13, 1867.

FIG. 1.

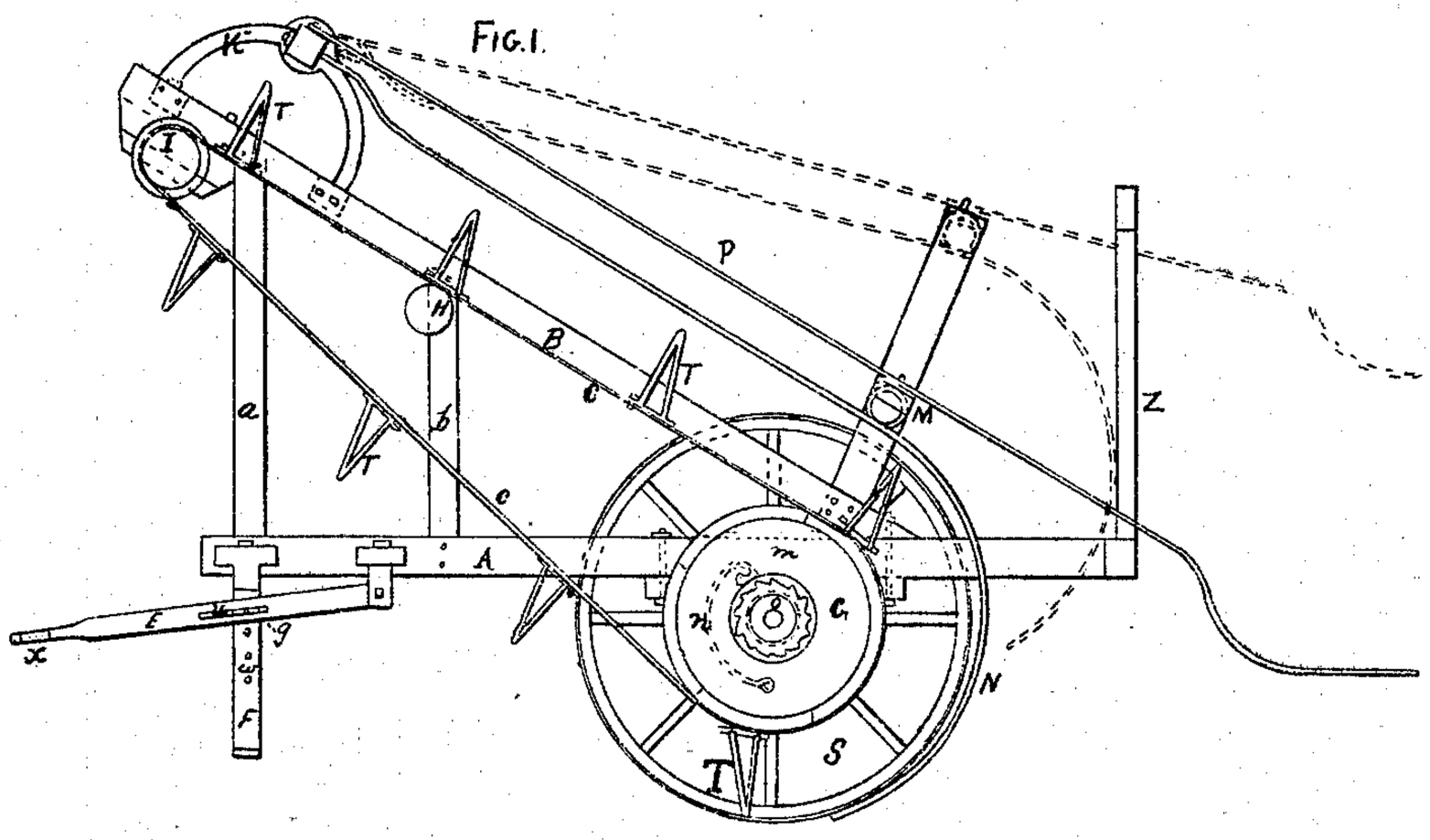


FIG. 2.

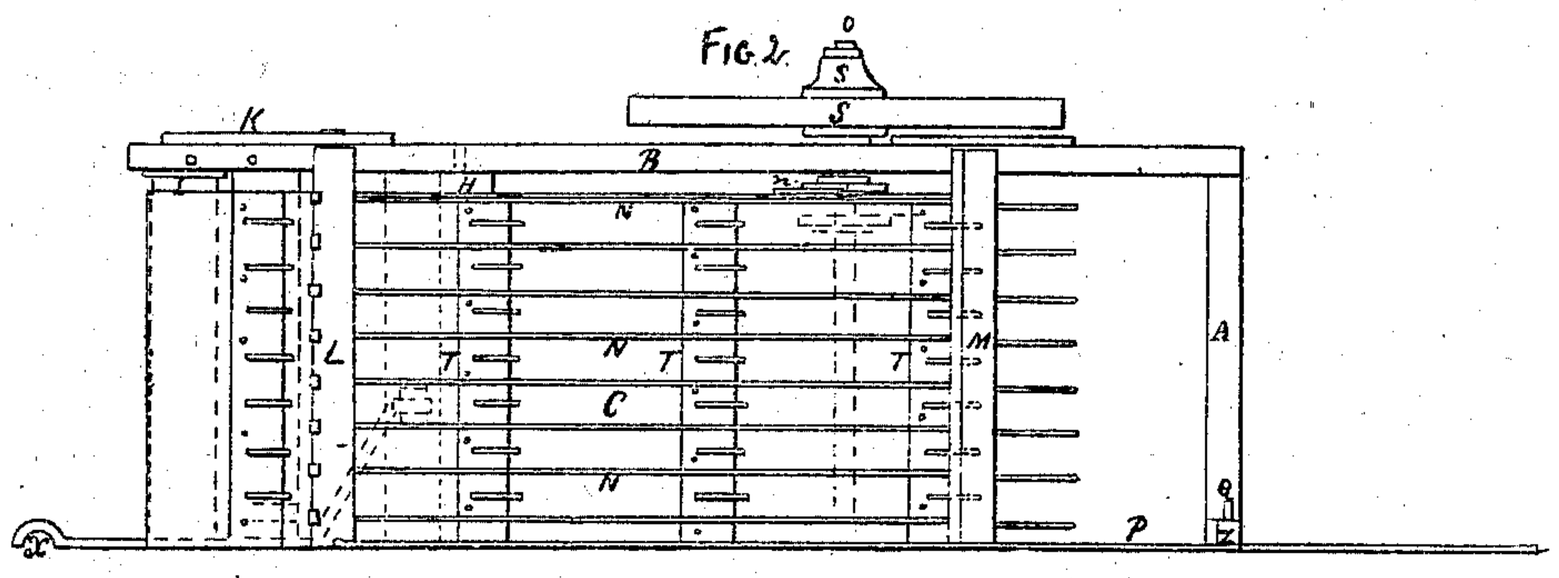


FIG. 3.

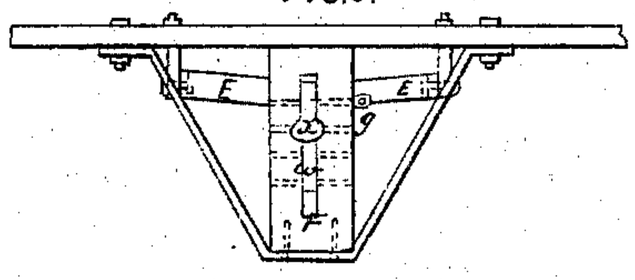


FIG. 6.

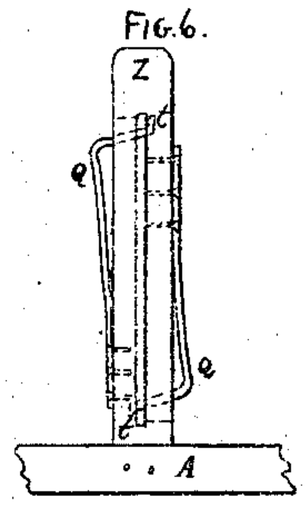


FIG. 5

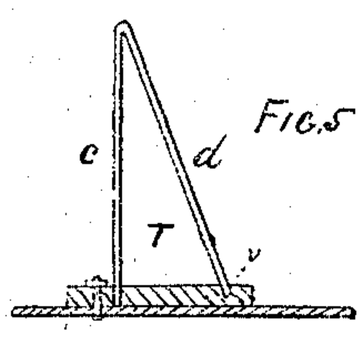
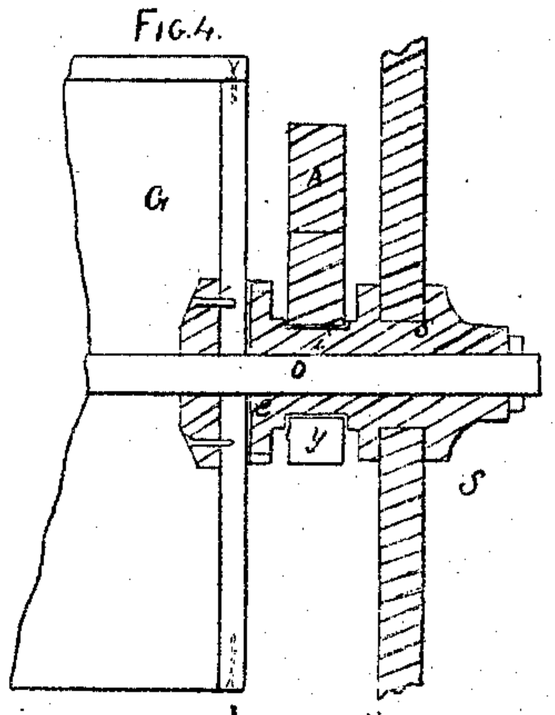


FIG. 4.



Witnesses

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Inventor

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By Job Abbott Attorney

United States Patent Office.

HENRY KIMMEL, OF WAYNESBURG, OHIO.

Letters Patent No. 67,771, *dated August* 13, 1867.

IMPROVEMENT IN HAY-RAKES 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, HENRY KIMMEL, of Waynesburg, in the county of Stark, and State of Ohio, have invented new and useful improvements in Machines for Raking and Loading Hay; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon, of which drawings—

Figure 1 is a section of my improved hay-loader.

Figure 2 is a half plan of the same.

Figure 3 is an end view of tongue and foot-piece.

Figure 4 is a section of drum-axle, ratchet-wheel, wheel-axle, and hub, showing their connection.

Figure 5 is a section of the apron, rake-heads and teeth; and

Figure 6 is a side view of upright for supporting the rake, showing the arrangement of springs.

The nature of my invention consists in the peculiar construction and arrangement of a combined ratchet-wheel, axle, and hub, and the driving-drum, so arranged that each wheel acts as an independent driver, and the wheels which carry the machine are outside the frame, so that a longer drum and a wider rake are obtained with the same width of frame than could be otherwise obtained; also in the peculiar construction of the hay-rake teeth, which are so arranged as to form the covering shield for the apron, and at the same time to possess all the advantages of the ordinary spring-tooth rake and a greater degree of elasticity; also in the peculiar arrangement of the tongue and foot-piece in such a manner as to allow of the elevating and depressing of the upper end of the endless apron, to adapt the machine to different heights of wagons, and the loading of greater or lesser loads; also in the peculiarly-constructed springs which hold down and support the combined hay-rake and shield.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the main frame of the machine. B is the frame of the endless apron C, and is attached to the frame A at its lower end, the upper end being supported by the uprights *a* and *b*. G is the driving-drum, of wood or other material, constructed as shown, having the axle *o* passing through it, which axle also passes through the combined ratchet-wheel, axle, and hub, *e i s*, as shown in fig. 4. The ratchet-wheel *e*, wheel-axle *i*, and hub *s*, of the driving-wheel S, are cast in one piece, this arrangement allowing the wheel S to come outside the frame A, which is advantageous, as before shown. On the head of the driving-drum G are placed the pawl *m* and spring *n*, as shown, the pawl *m* engaging with the ratchet-wheel *e*, so that the rotation of the wheel S, as caused by a forward movement of the machine, causes the drum G to rotate, while no rotation of the drum G will be effected by a backward movement. Each wheel being arranged in this manner, acts as an independent driver, and each will cause the drum to rotate, even if the other be stationary. The hay-rake teeth N are coiled around the rake-head M, and then pass up and through the head L of the covering shield, being secured by nuts on the upper side. The head L is pivoted to the irons K, which are attached to the frame B, as shown. The lever P is fastened to the head L and rake-head M, and passes through a slotted hole in the upright Z to the rear of the machine, as shown in figs. 1 and 2. By this lever the combined shield and hay-rake can be brought into the position shown by dotted lines in fig. 1, thus clearing the rake-teeth from the ground. The spring Q, in the upright Z, is made as shown, so that when the lever P is raised it flies under the lever, and the bend *t* in the end prevents it from slipping out and dropping the rake. The spring Q operates in a similar manner to hold the rake down while raking. The endless apron C passes around the driving-drum G and the drum I at the end of the frame B, and is supported by the roller H, arranged as shown. The apron-rakes T are attached to the apron C, as shown. The teeth of these apron-rakes are made of wire, bent as shown, the front part, *c*, passing through the rake-head, and being fastened on the under side, while the back part, *d*, is put into the hole *v*, thus forming a brace for the tooth, as fully shown in fig. 5. The tongue E is pivoted to a cross-bar in the frame A, and passes through the slot *u* in the foot-piece F, the end *x* being attached to the rear axle of the wagon on which the hay is to be loaded. By means of the pin *g*, passing through the slotted hole *u* in the tongue E, and the different holes shown in the foot-piece F, the height of the upper end of the apron C may be varied at

pleasure, for purposes before shown. The wheel-axle *i* is secured to the frame A by the piece *y*, as shown in figs. 1 and 4.

I do not claim as my invention the endless apron C, apron-rakes T, apron-rake teeth *c d*, drums G and I, roller H, frames A and B, driving-wheels S, foot-piece F, nor upright Z; but what I do claim as my invention, and desire to secure by Letters Patent, is—

1. The peculiarly-constructed hay-rake teeth N, in combination with the rake-head M, lever P, and head L of the covering shield, constructed and arranged in the manner and for the purposes herein set forth.

2. The peculiar arrangement of the tongue E with the frame A and foot-piece F, with pin *g* therein, the several parts being used as and for the purposes before specified.

3. The springs Q and Q, with the bends *t*, in combination with the upright Z, in the manner and for the purposes specified.

As evidence that I have made this amended specification, I have hereunto set my hand in presence of two witnesses.

HENRY KIMMEL.

Witnesses:

CHS. F. MANDERSON,

E. N. BEEBOUT.