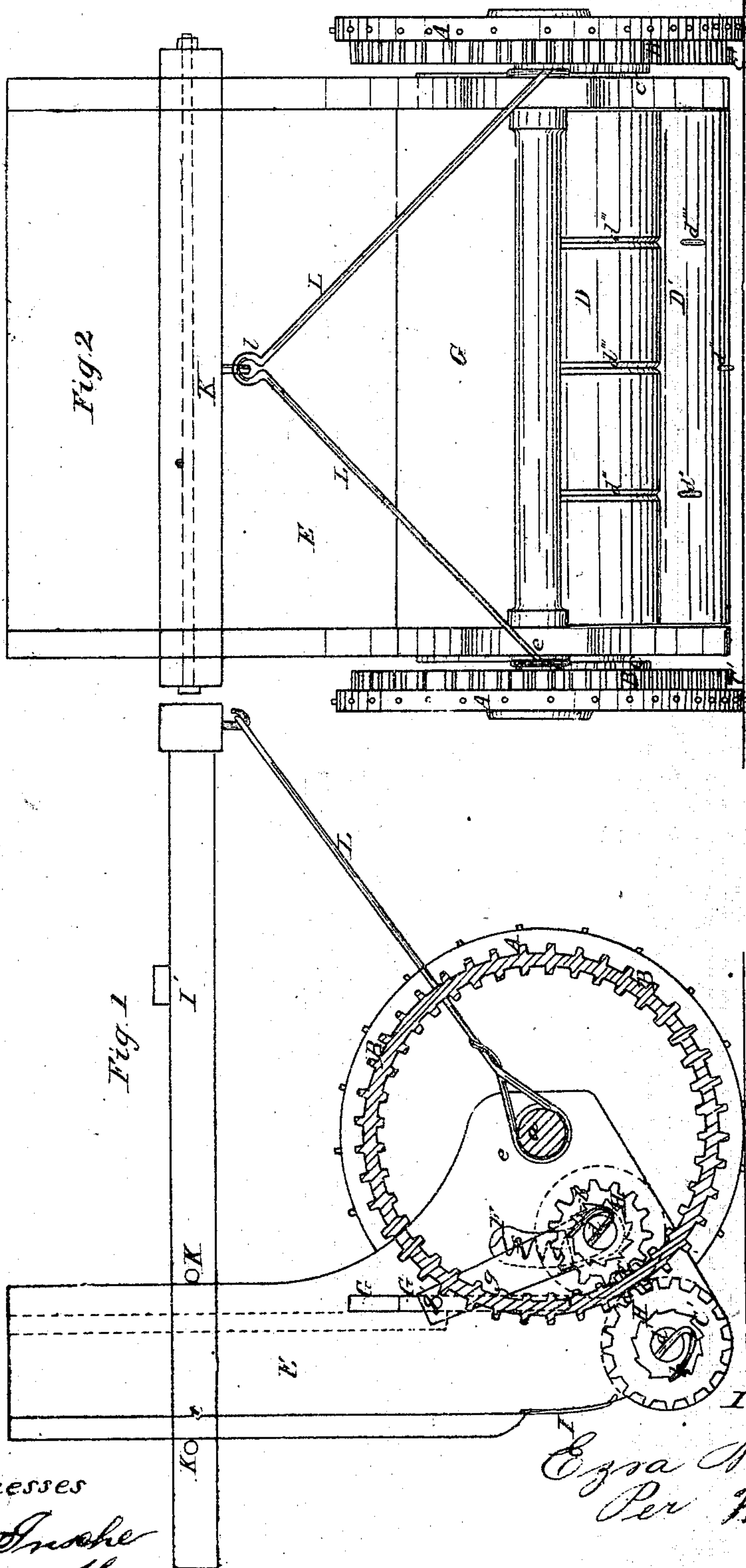


E. N. Curtice.

Hay Raker & Loader.

N<sup>o</sup> 71366

Patented Nov. 26, 1867.



Inventor

Ezra N. Curtice  
Per Munn & Co

Witnesses

Theo. Snodgrass  
J. Allen Thayer



# UNITED STATES PATENT OFFICE.

EZRA N. CURTICE, OF SPRING WATER, NEW YORK.

## IMPROVEMENT IN HAY RAKERS AND LOADERS.

Specification forming part of Letters Patent No. 71,366, dated November 26, 1867.

*To all whom it may concern:*

Be it known that I, EZRA N. CURTICE, of Spring Water, in the county of Livingston and State of New York, have invented a new and Improved Elevator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a device for elevating hay, grain, or straw into place on top of a wagon, as desired; and consists in drawing it between two self-adjusting rollers, whereby it is compressed and rendered stiff, whence it is passed up a spout or hopper and deposited in place, as desired. Motion is given to the rollers by means of external and internal cogs set upon the inside of the carrying-wheels, which mesh into pinions set at each end of the axles of the rollers. The carrying-wheels have their axles journaled in ears projecting from the elevator.

In the accompanying drawings, Figure 1 is a side view, partly in section, of my improved elevator; and Fig. 2 is a bottom view thereof.

Similar letters of reference indicate corresponding parts.

A A are the carrying-wheels, having their fixed axle *a* journaled in the ears *e* of the spout or hopper E, and carrying on their insides the internal and external cogged rim, B, into which mesh the pinions C C' of the rollers D D', respectively.

E is the spout or hopper; and the hay, straw, or grain, being taken up by the roller D', pressed between it and roller D, is directed up the hopper E, whence it is delivered to the top of the wagon or other spot desired. The distance between the rollers adjusts itself to the quantity of the hay, straw, or grain taken up by the rollers by means of the curved slot F and spring *f*, the axle of the roller D being pressed down by the spring *f*, the slot F allowing it to rise as necessary, and in so doing compressing the spring.

*g g* are straps pivoted on the axle *d* of the roller D, and to the sliding board G at *g'*, causing the board G to rise and fall in the slot G' with the roller D, upon which it sits closely, to prevent the hay, straw, or grain from being twisted round the roller.

Pawls *b b*, secured to the axles *d d'*, respectively, work in the ratchets H H' in the pinions C C', respectively, keeping the pinions in gear when the elevator moves ahead, but throwing them out of gear when backing up, assisting also in turning round.

At the bottom of the hopper, and at the rear thereof, is a concave plate of metal, I, to scrape off the hay, grain, or straw, and if the roller D' be provided with teeth, as shown in Fig. 2 at *d'' d''*, will be provided with grooves or notches, into which the teeth mesh. The roller D will also, in such case, be provided with grooves *d''' d'''*, and for the same purpose.

The elevator is intended for use chiefly in connection with and between the bed-pieces J of the rack of a wagon, rather to the rear than center thereof.

Rods K K, passing in front and back of the hopper E from side to side, hold it in place, at the same time making it self-adjustable to the irregularities of the ground.

The rods L, secured to the fixed axle *a*, are hitched to the wagon-frame at *l*.

I claim as new and desire to secure by Letters Patent—

1. The spout or hopper E and rollers D D', operated in manner and for the purposes substantially as above set forth and described.

2. The curved slot F, spring *f*, and sliding bar G, in combination with the rollers D D', in manner and for the purposes substantially as above set forth and described.

3. The sliding bar G, metal scraper-plate I, in combination with the spout or hopper E, in manner substantially as above set forth and described.

4. The spout or hopper E, having the axle *a* of the carrying-wheels A journaled in the ears *e*, in manner substantially as above set forth and described.

5. The rods K K and L L, in combination with the bed-pieces of the rack I', or any equivalent method of attaching the elevator to the wagon, in manner and for the purposes substantially as herein set forth and described.

EZRA N. CURTICE.

Witnesses:

JOHN J. GROVER,  
GEORGE F. SCHWAB.