J. W. & E. SMALL.

HAY-LOADER.

No. 190,725. Patented May 15, 1877.

Fig 1

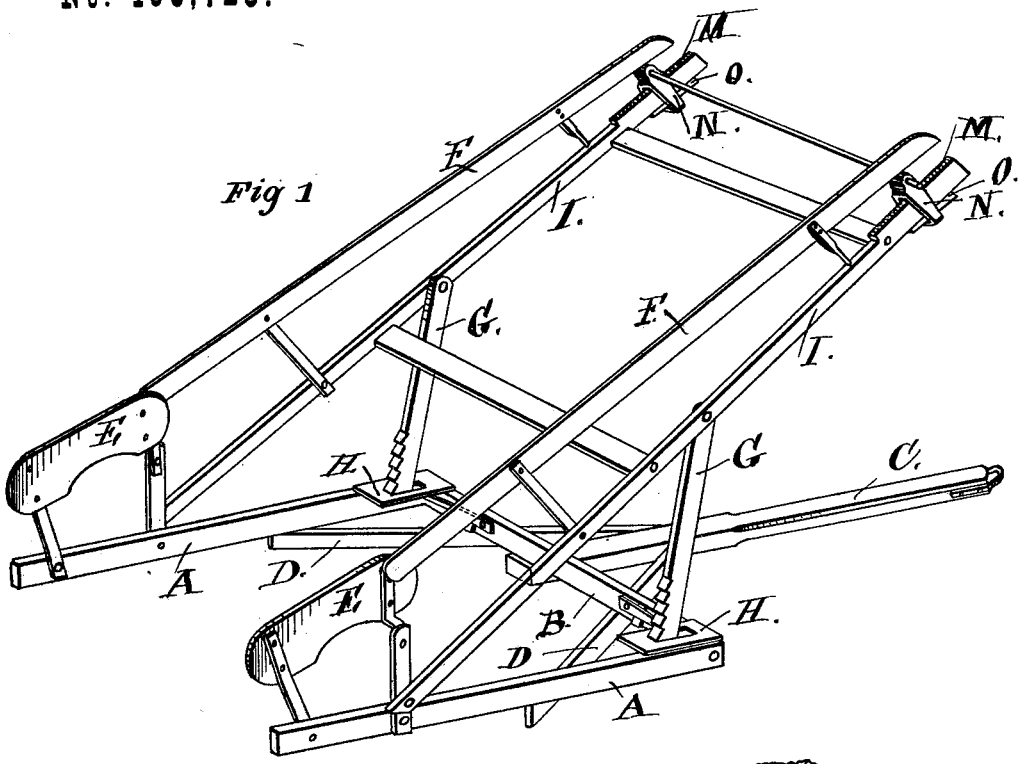


Fig 2

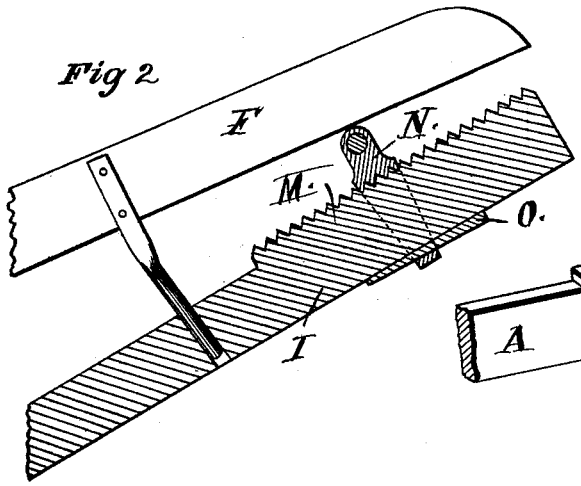
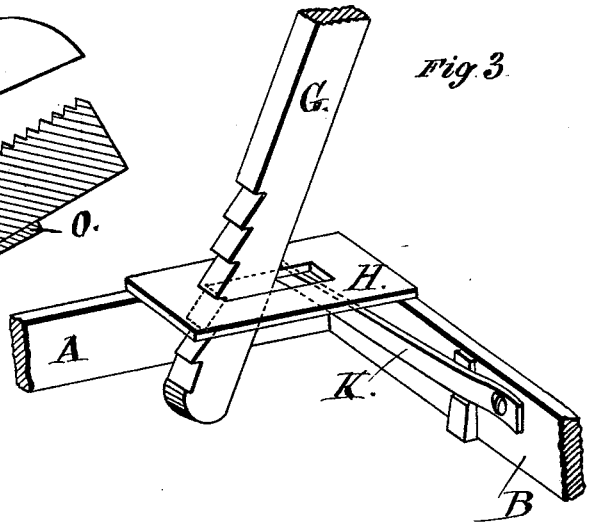


Fig 3



Witnesses
W. R. Eddin
Penn & Halsted.

Inventors
James W. and Edward Small
by John J. Halsted,
their Atty.

UNITED STATES PATENT OFFICE.

JAMES W. SMALL AND EDWARD SMALL, OF AURORA, ILLINOIS.

IMPROVEMENT IN HAY-LOADERS.

Specification forming part of Letters Patent No. **190,725**, dated May 15, 1877; application filed March 8, 1877.

To all whom it may concern:

Be it known that we, JAMES W. SMALL and EDWARD SMALL, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Hay-Loaders; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention is an improvement upon the hay-loader patented to us on May 23, 1876, and numbered 177,893; and our present improvements relate to an improved construction and application of the side boards to the frame and to the carrier; to improved means or devices for raising and lowering the carrier, and to improved devices for tightening the carrier and adjusting its tension.

In the drawings, which illustrate so much only of the hay-loader as is sufficient to display these improvements, Figure 1 is a perspective view, and Figs. 2 and 3 details.

A A represent the side rails of the main frame, which are connected by the cross-bar B, and the tongue C, instead of being strengthened by being secured not only to the cross-bar B but also to a similar and parallel cross-bar, as shown in said patent, is braced by two diagonal braces, D D, preferably placed flatwise for greater resisting strength, and which are severally secured to the side rails A A, and also to the cross-bar B, and then to the tongue C, these diagonals serving as braces, which greatly strengthen both the tongue and the frame, and prevent their "racking" and getting out of place. The side boards we do not make of a single piece, as heretofore, but in separate parts E and F. The parts E E are each located at the extreme rear, or in such location as to be inside the wheels and to serve to prevent the hay, when first taken up, from falling off, and also to prevent it from interfering with or clogging the wheels, and are also made of greater depth than the movable parts F F. These parts E E are affixed permanently to the frame, and never change their position relatively to the wheels or frame, while the parts F F, which are supported upon, and are raised and lowered with, the frame when the latter has its position adjusted, do not in any way affect the permanent position of the side pieces or guards E E relatively to the revolving rake, or to the side rails A A, or to the wheels. It will now be seen that the positions, and consequently the functions, of the guards E remain always the same, without variation, under all conditions or adjustment of other parts.

The devices for raising and lowering the carrier, to adapt it to the height of the load on the wagon, and for securely holding it in its adjusted position, are as follows: G G are two notched uprights or stands, having ratchet-teeth on their rear faces, which are severally adapted to catch and hold upon the edge of a slotted plate, H, the horizontal portion of the ratchet-teeth bearing down upon the horizontal top face of the plate, so as to support the pivoted bars or beams I and the weight of the carrier and the hay; but, in order to render these notched uprights still more reliable and secure against accidental displacement, each of them is constantly pressed forward to its locked position by means of a spring, K, which, while strong enough for this purpose, will yet yield enough, when required, to permit the uprights to be disengaged from a given position and shifted and locked by another tooth, the spring always being in position, and acting for every such adjustment.

The carrier and its cords or straps and cross-bars for conveying the hay need not here be described, as they are well-known; but our improved means for regulating and maintaining the tension of the carrier are as follows: After the carrier has been given the proper degree of tightening or tension by means of properly locating the tension-rollers upon the bars of the carrier-frame, we hold it to its adjusted position to maintain this tension by means of the ratchets M M on the extremities of these bars at their upper edge, and the ratchet-boxes N N adapted to be slid upon the ends of the bars, and to be tightened thereon by keys or wedges O O beneath the bars I of the frame. A tooth or downward projection should preferably be made in the upper side of the slot of the boxes N, which may engage

with any of the notches of the ratchet, and thus hold firmly when adjusted and keyed. These ratchets M may be secured to the bars I I, or, if the latter be of metal, may be integral therewith. The ratchets, ratchet-boxes, and keys can all be simply and cheaply cast, and do not require any finishing by a machinist.

We claim—

1. In combination with the fixed or stationary side boards E E, located as described, the movable side boards F F, affixed to the side beams I I of the carrier-frame, and extending from near the place or position assigned for the wheels to the end of the frame, the combination being and operating substantially as and for the purpose described.

2. In combination with the side beams I I of a hay-loader, the ratchets M M, ratchet-boxes N N, connected by a cross-rod and the plugs or wedges O, as and for the purposes described.

JAMES W. SMALL.
EDWARD SMALL.

Witnesses:
L. TITSWORTH, Jr.,
C. A. WRIGHT.