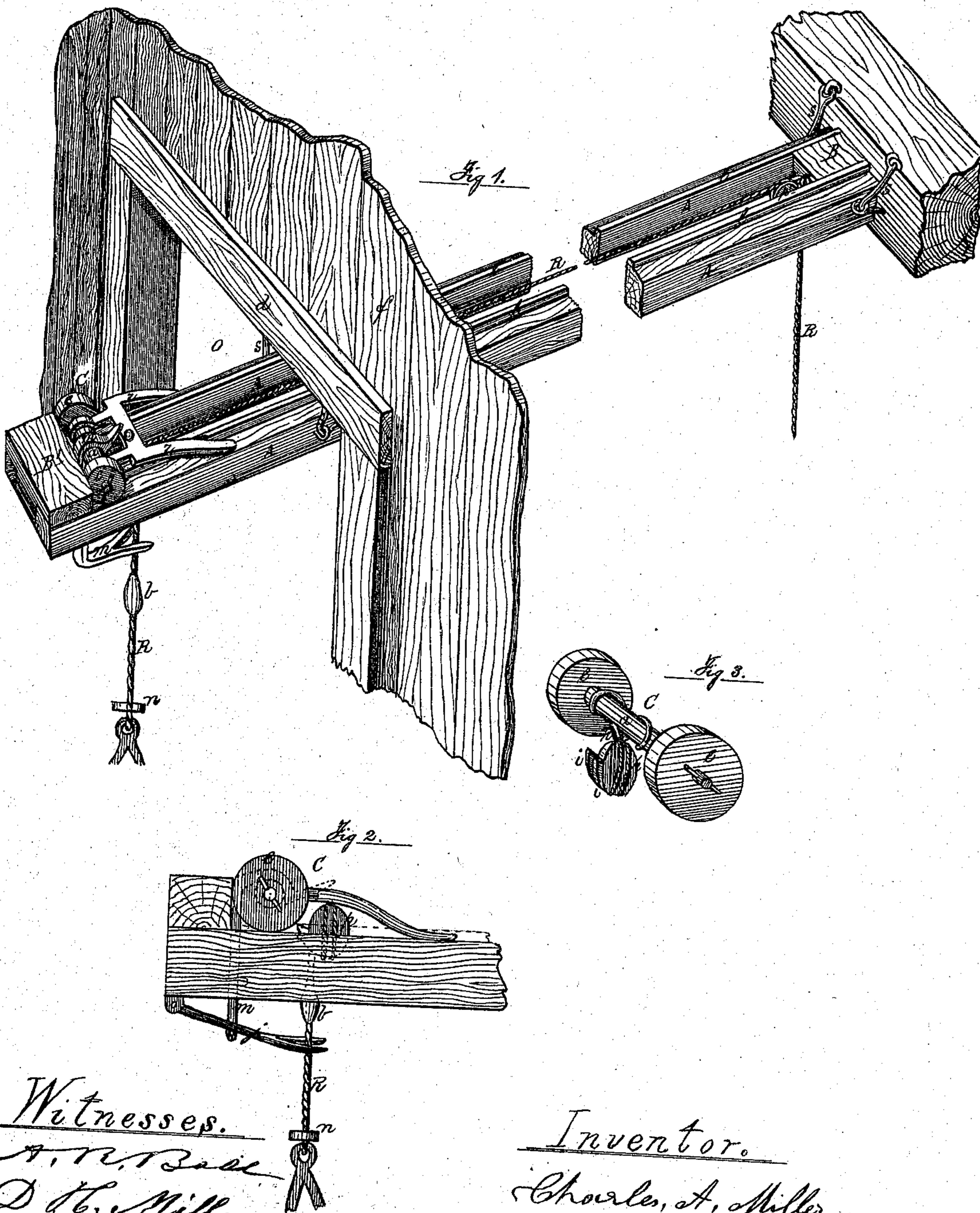


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HAY ELEVATOR AND CONVEYER.

No. 105,477.

Patented July 19, 1870.



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## IMPROVEMENT IN HAY-ELEVATOR AND CONVEYER.

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

I, CHARLES A. MILLER, of the township of Marengo, in the county of Calhoun and State of Michigan, have invented certain Improvements in Hay-Elevators and Conveyers, of which the following is a specification.

My invention relates to certain modifications in the arrangement and construction of the timber ways, carriage-truck, and other apparatus for elevating and conveying hay, &c., into barns, the object being to simplify the parts, and arrange them more compactly in a vertical line, for better adaptation to barns of every kind and capacity.

The accompanying drawing exhibits my invention—

Figure 1 being a perspective view (broken) where the arrangement is shown as applied to elevate hay from the outside of a horse-barn and convey it through a window or door opening to the mow.

Figure 2 is a partial side elevation of truck with runner guides.

Figure 3 is a perspective view of a two-wheel truck without runners.

A A are two parallel track-timbers, framed with head-blocks, B B, and designed to extend through the interior of the hay-mow, and, in the case of a horse-barn, to project through the opening *o*, to a sufficient distance from the face *f* of the building, so that the truck C may run close past the transom *d*, outside, for the purpose of elevating the hay vertically, or nearly so, from a wagon below.

The truck C may be simply a pair of small wheels, hung loose on an axle, shown at *e*, *e*, and *a*, which wheels may have guide flanges, or the rims may be plain, and be guided by a rib, *l*, on each track-timber.

In this simplest form of truck, I construct the hook *h*, upon which the hoisting pulley-block, *p*, is hung, with two branching shanks, which are hooked on or wrapped around the axle *a*, so as to leave its central part uncovered, for the purpose of engaging with the dog-hook *m*, to dog the truck to the outer head-block during the action of elevating the hay.

The shank of the dog-hook may slide up and down between staples, or other guides, fastened to the outside head-block, and the hook lifted up, so as to disengage it from the axle and liberate the truck at the proper moment, by means of a knob or disk, *n*, on the rope, next to the fork (not shown) striking against the hook, through the intervention of a bend in the shank, or of a jointed arm, *j*, but in either case it is best to fork the end, so that the rope may pass between without fraying, and the knob or other device on the rope strike squarely.

When hay is elevated from the interior of large barns, where it has to be conveyed, in the mow, over cross-beams, &c., it is necessary to suspend the track-way at a height suitable to the requirements of the case, and to suspend the load directly from the truck.

For such application, I provide the pulley-block *p* with two cam-shaped projections, as shown at *i i*, between which the hoisting-rope works, and to surround the rope, at a proper point, with a bulb, *b*, which, in hoisting, slides over the surface of the cams. Then the rope and bulb spring in over the shelf of the cams, and, when the truck is liberated, the weight of the loaded fork is transferred from the sheave to the block.

The loaded fork being thus conveyed to the desired point, and tripped and discharged, the empty fork and truck may be returned, as usual, by rolling down the incline of the track-way, or by the aid of a cord, which, (when the track-wheels are stopped by the abutment B of the head-block,) will be pulled by the operator, so as to disengage the bulb from the pulley-block cam, and the fork will descend for a fresh load.

The truck is redogged to the head-block by the axle passing under the inclined termination of the hook and raising it, when it falls, to again clasp the axle, until the next load is elevated.

The rope R passes up from the fork through the pulley-block *p*, thence along the track over the pulley *p'*, and, passing down, is guided outside by other pulleys, (not shown,) and there hitched to the team, and manipulated in the ordinary way.

The tracks A A are usually suspended from the barn-timbers by hooked rods and staples, *s s*, in a portable manner, and my object is to make the arrangement compact in a vertical direction, to afford room for the loaded fork to pass, in the line of the track, through the ordinary side openings in horse-barns to the mow, and in a manner to make it equally effective for other and general use.

Any change, therefore, in the construction of the truck, which merely involves an increase of horizontal space occupied, is unimportant.

For instance, a pair of runners, *r r*, may, under certain conditions, be useful, when projected from the axle of a two-wheeled truck to steady it, and the pulley-block hung close up to a cross-bar between the runners, as shown in figs. 1 and 2, or the truck may be hung on four wheels, and with the same economy in vertical space.

I claim as my invention—

The combination and arrangement of the truck C and hoisting and conveying tackle with each other and with the track-way A A, provided with head-blocks B B', and automatic dogging-hooks *m*, said tackle being either provided or not with the cams *i* and bulb *b*, and the several parts constructed, arranged, erected, and operated substantially as and for the purposes set forth.

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Witnesses:

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