J. L. MALCOLM.

HAY-ELEVATOR.

No. 193,415. Patented July 24, 1877.

Fig. 1

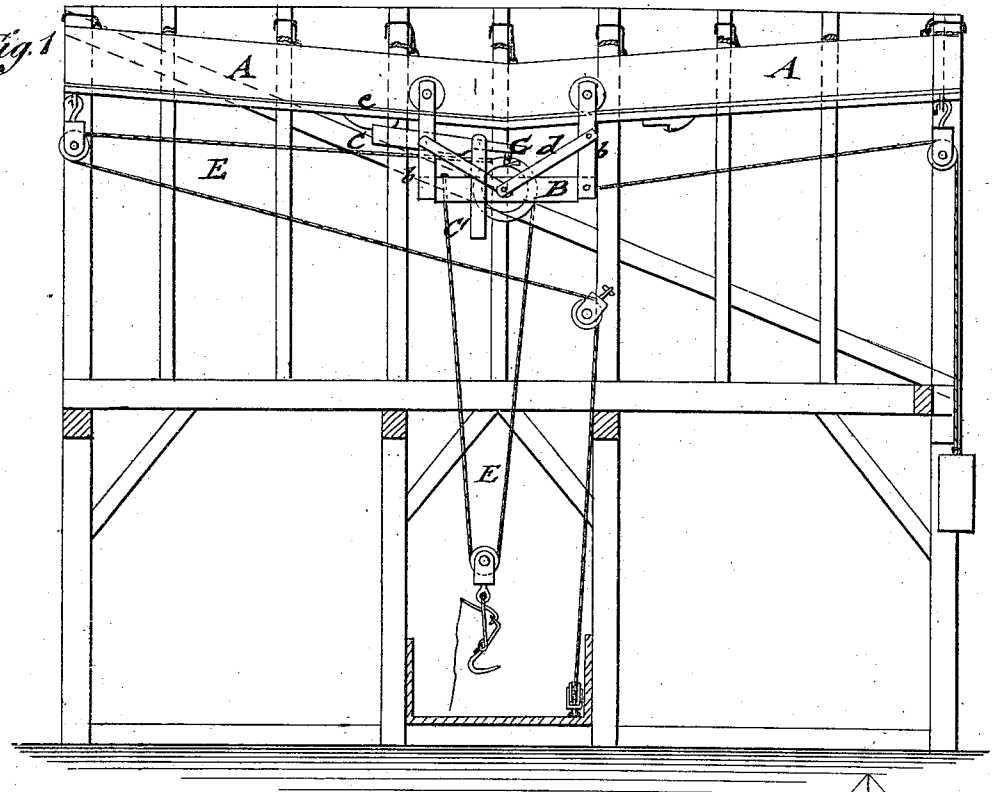


Fig. 2

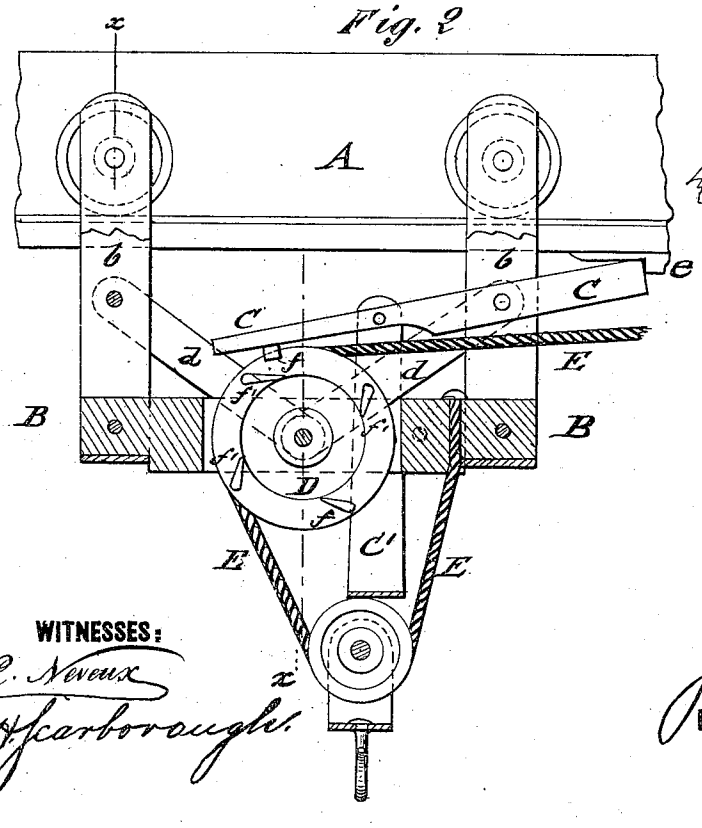
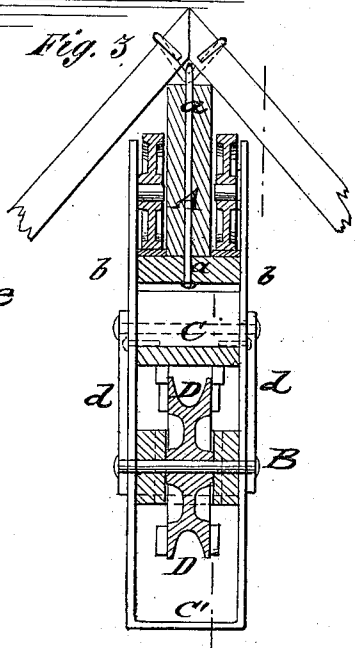


Fig. 3



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JULIUS L. MALCOLM, OF NEW ATHENS, OHIO.

IMPROVEMENT IN HAY-ELEVATORS.

Specification forming part of Letters Patent No. **193,415**, dated July 24, 1877; application filed May 28, 1877.

To all whom it may concern:

Be it known that I, JULIUS L. MALCOLM, of New Athens, in the county of Harrison and State of Ohio, have invented a new and Improved Hay Elevator and Carrier, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a side elevation of my improved hay elevator and carrier, shown as being in the barn; and Figs. 2 and 3 are a sectional side elevation and a vertical transverse section on line *x x*, Fig. 2, of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to facilitate the hoisting of the hay from the wagon to the mow in quick and convenient manner, the carriage being returned and locked after the load is dropped to the starting-point above the wagon; and the invention consists of a track-beam of inverted-T shape hung from the rafters of the barn and supporting the wheeled carriage.

The pulley over which the hoisting-rope passes has side projections, which are engaged by a fulcrumed lever with end catches for supporting the load. The catch-lever has a pendent stirrup that is raised by the sheave of the fork, so as to release the catch-lever from a stop-block of the track, and drop the same on the projections of the pulley, to retain load below the carriage until it arrives at the point where it is to be dropped.

In the drawing, A represents the track, that is made of inverted-T shape, the cross parts of the T serving for the wheels of the carriage B to run on. The track is hung to the rafters of the barn or other building by means of suspension-bolts *a*, which pass centrally through the track-beam, and are attached, by heads or nuts, to the under side of the same, the upper ends being hung by eyes or hooks to links of the rafters. The track A is preferably arranged at an incline for the return of the carriage after dropping the load; but in case no sufficient inclination may be obtained, a weighted cord-and-pulley arrangement may be used, as shown in Fig. 1, so as not to require the pulling back by the person operating the fork. The track may be plated with iron, so as to be more durable and admit the easier traveling of the carriage.

The carriage B is hung, by end stirrups *b*, to the axles of the wheels by which it runs on the track. The stirrups *b* are strengthened by diagonal braces *d*, so as to make the same stronger and hold them in their exact position. The braces also form a guard for the pendent stirrups C′ of the catch-lever C, keeping the same in exact position for contact with the sheave of the fork, so that the same will properly strike against the stirrup C′ and raise the catch-lever C from the stop-block *e*, attached to the under side of the track, above the place of unloading. The braces *d* are applied at their lower ends to the shaft of a pulley, D, which is hung to the main pieces of the carriages. The catch-lever C bears by iron end lugs or catches *f* at the sides of the pulley, and is so arranged that it does not chafe the rope in the least.

The hoisting-rope E passes over the wheel D of the carriage, being fastened at one end to the frame of the carriage, passing then through the sheave of the hay-fork, and upward and over the pulley D of the carriage, and below the track to a pulley at the end of the same, and then down and over a pulley near the ground, where it is drawn by the horse in the customary manner in hay-elevators. The pulley or wheel D is provided at both sides with fixed projections *f′*, that are cast into the same, preferably at some inclination, as shown in Fig. 2. These catches are strong enough to be engaged and retained by the catch-lever, forming the double connection with the same.

The advantage of arranging the catches at the sides consists in their not weakening but strengthening the pulley, and furnishing a stronger interlocking with the catches of the lever.

The catch-lever is released from the recessed and curved stop-block of the track by the contact of the sheave of the hay-fork when the load is hoisted up to the track. The sheave raises the pendent stirrup of the catch-lever, and throws the same out of the stop-block, so as to clear the same and admit the forward motion of the carriage along the track. The

catch-lever engages then the catches of the pulley, and suspends thereby the load below the carriage. When the load arrives at the point where it is to be dropped, the trip-cord is pulled and the fork opened. The carriage returns then along the inclined track, or by the action of the weighted cord, to its place above the wagon, where the catch-lever is raised from the projections of the pulley by passing along the curved stop-block, so as to release the pulley and admit the lowering of the fork to the wagon to be reloaded and hoisted, as before.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of wheeled carriage B, hung to track-beam and having a pulley, D, with side projections *f*, with the locking catch-lever C, substantially in the manner set forth.

JULIUS L. MALCOLM.

Witnesses:
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