(Model.)

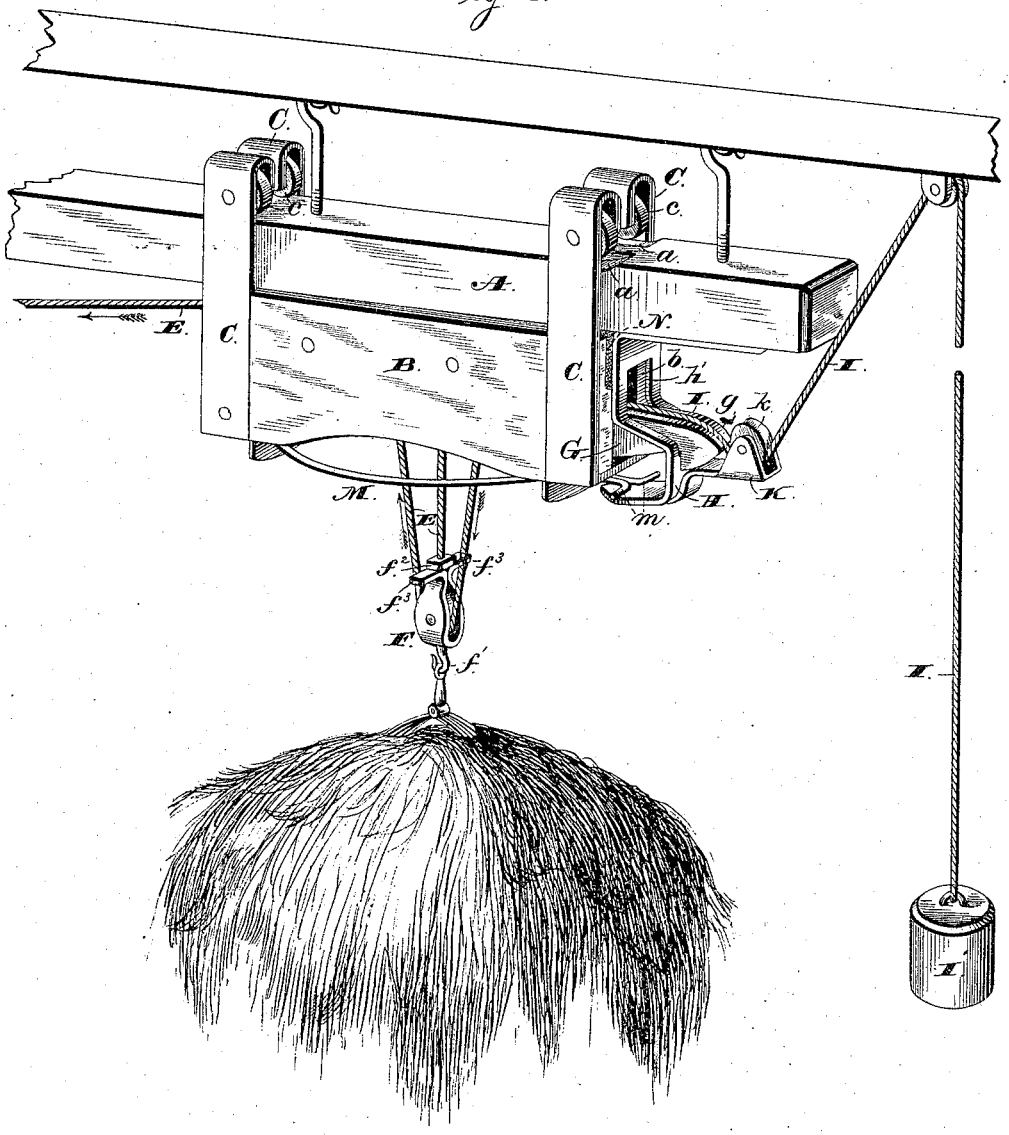
4 Sheets—Sheet 1.

H. & L. M. McCOWN.

HAY ELEVATOR.

No. 305,619. Patented Sept. 23, 1884.

Fig. 1.



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(Model.)

4 Sheets—Sheet 2

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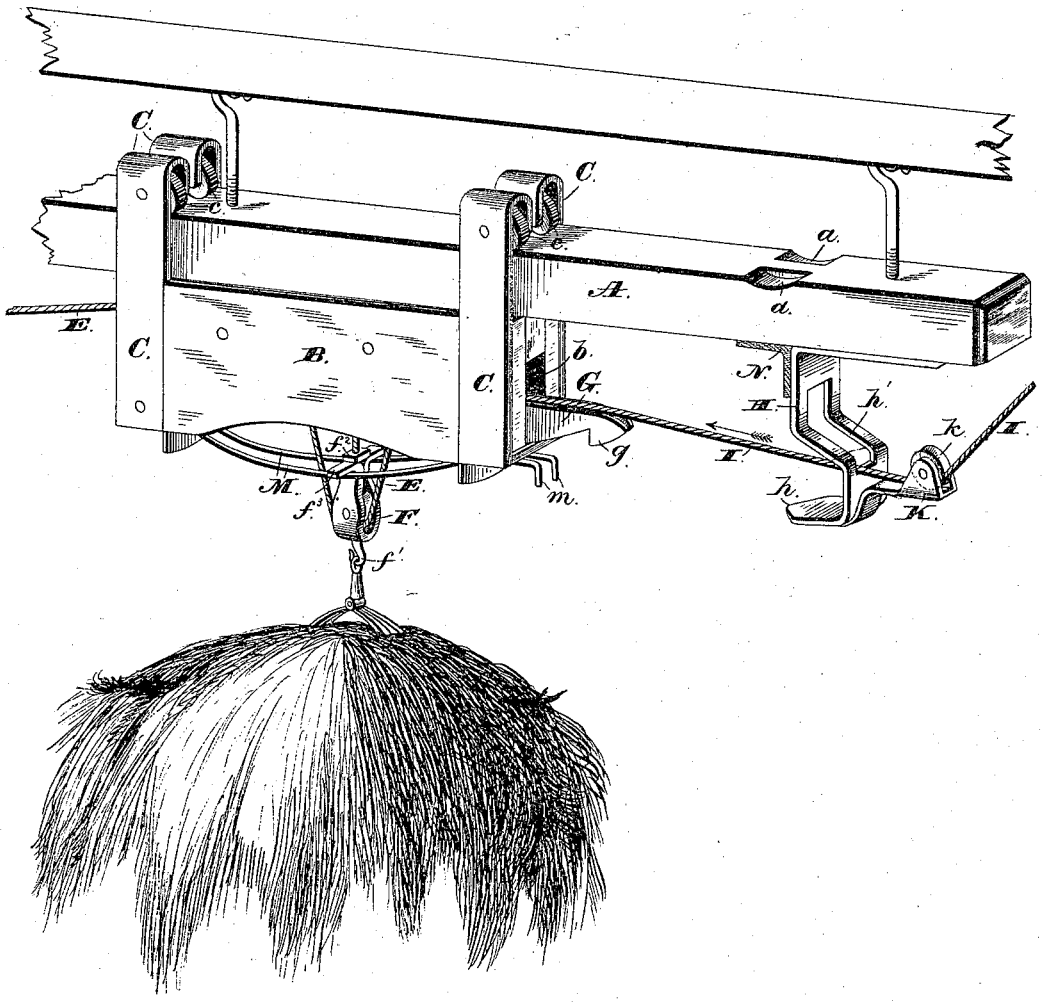
Fig. 2.



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(Model.) 4 Sheets—Sheet 3.

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HAY ELEVATOR.

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Fig. 5.

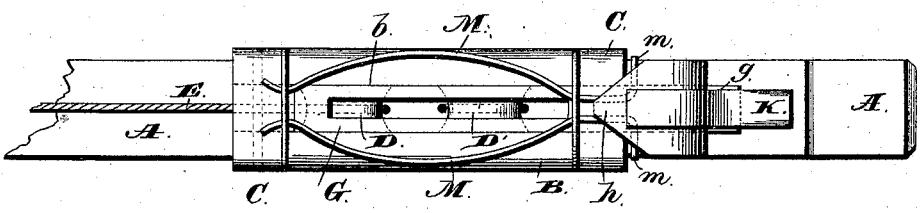
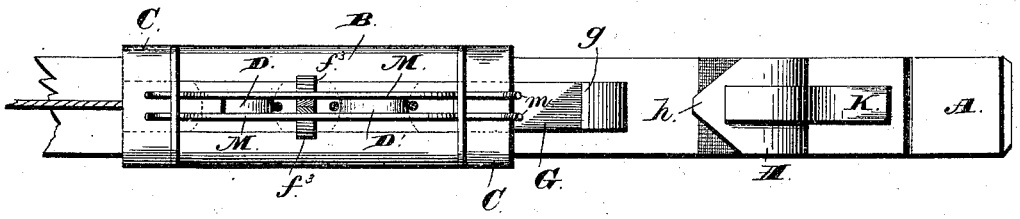


Fig. 4.



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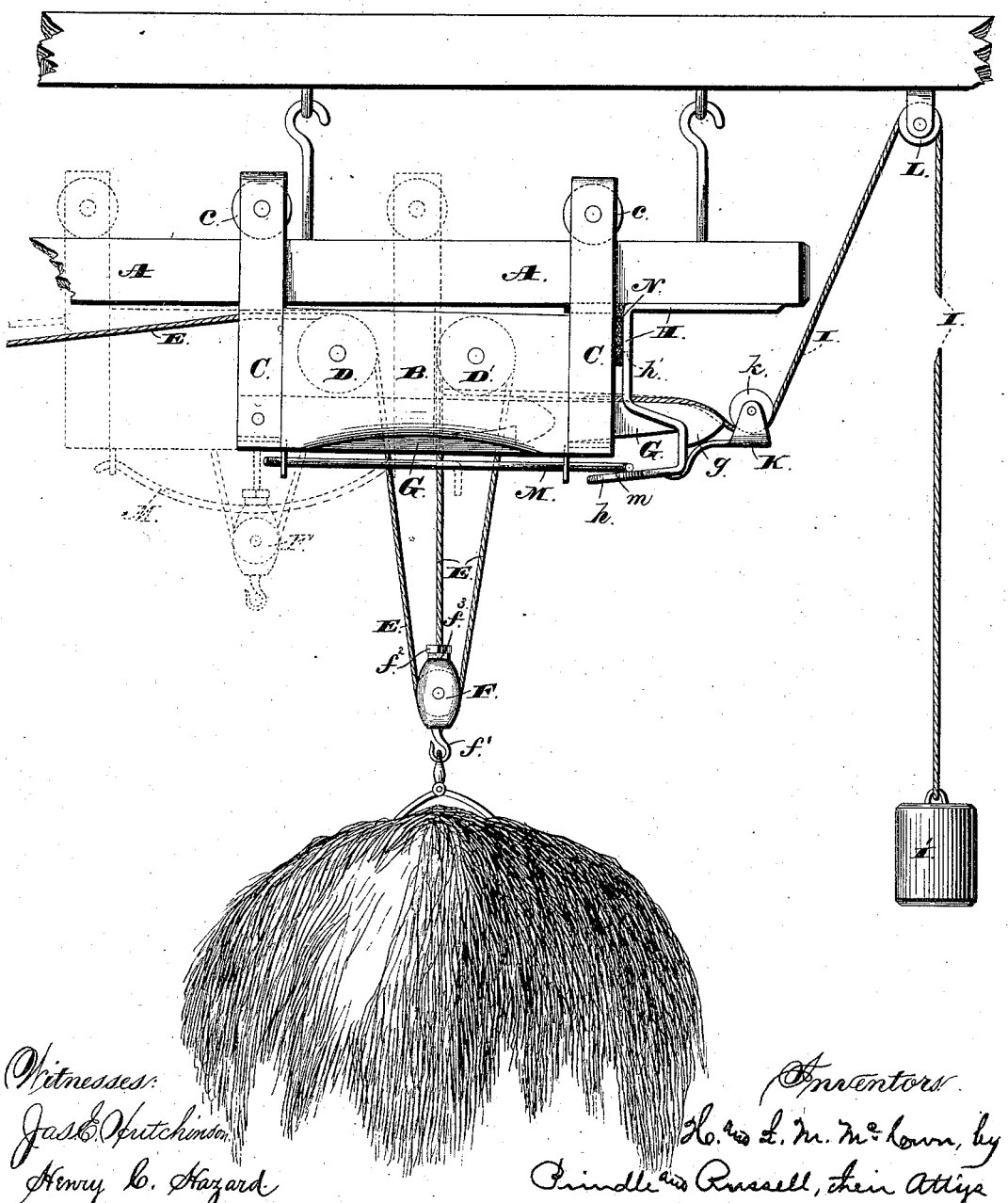
(Model.) 4 Sheets—Sheet 4.

H. & L. M. McCOWN.

HAY ELEVATOR.

No. 305,619. Patented Sept. 23, 1884.

Fig. 5.



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UNITED STATES PATENT OFFICE.

HARVEY McCOWN AND LUTHER M. McCOWN, OF ENON VALLEY, PA.

HAY-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 305,619, dated September 23, 1884.

Application filed June 24, 1884. (Model.)

To all whom it may concern:

Be it known that we, HARVEY McCOWN and LUTHER M. McCOWN, of Enon Valley, in the county of Lawrence, and in the State of Pennsylvania, have invented certain new and useful Improvements in Hay-Elevators; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of our mechanism immediately before the carriage is released by the raising of the load. Fig. 2 is a like view of the same after said carriage has been released. Fig. 3 is a plan view of the lower side of said mechanism as arranged in Fig. 1. Fig. 4 is a like view of the same when arranged as in Fig. 2; and Fig. 5 is a side elevation of said mechanism, the full lines showing the relative positions of parts seen in Figs. 2 and 4 and the dotted lines the relative positions of parts shown in Figs. 1 and 3.

Letters of like name and kind refer to like parts in each of the figures.

Our invention is an improvement upon a similar device for which Letters Patent No. 82,427 were issued to us upon the 22d day of September, 1868; and it consists, generally, in the improved construction of the operative parts, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A represents a way or track which is suspended from the rafters or other suitable elevated portion of a barn, and extends horizontally from the usual central space or floor laterally over the hay-mow.

Directly beneath the way A is a carriage composed of a body, B, which has substantially the width of said way, and to each end has secured a U-shaped strap, C, that has its ends extended upward at each side of said way, and has pivoted upon the inner face of each a roller, *c*, which rests upon the upper side of the former, and, in connection with the other roller *c*, furnishes a rolling bearing for said carriage.

Within the body B of the carriage are journaled two pulleys, D and D′, over the first of which passes a rope, E, that from thence extends downward to and around the sheave *f* of a pulley-block, F, from thence upward over said pulley D′, and from thence downward to the upper end of said pulley-block, to which latter the end of said rope is attached. The lower end of said pulley-block is provided with a hook, *f′*, or other equivalent means for engagement with a hay-fork.

Pivoted at one end within a longitudinal groove, *b*, that is formed within the lower side of the body B of the carriage, is a bar, G, which at its free end extends a short distance beyond the contiguous end of said part, and upon its lower face is provided at such point with a spur, *g*, that has a vertical rear face and an outward and upward inclined front face. The said bar rests ordinarily upon the straps C; but its hooked end may be raised upward a short distance, for purposes hereinafter described, and when released will automatically resume its usual position. Said bar is provided with a vertical longitudinal slot, *g′*, through which the rope E is passed.

Secured to the way A is a flat metal bar, H, which from thence extends downward to or near the upper side of the hook-bar G, from thence downward and away from the carriage to or near the inner face of the spur *g*, thence downward to a point slightly below the bottom of said casing, and from thence horizontally beneath the contiguous end of the same. The lower end, *h*, of said bar has a Λ shape in plan view, while within its central portion is provided a rectangular opening, *h′*, for the passage of said hook-bar. As said opening terminates at a point above said spur *g*, the latter is enabled to engage with said bar H immediately below said opening, and thus lock said carriage in place. The hook-bar G is held with a yielding pressure at the lower limit of its motion by means of a cord, I, which is secured at one end within the carriage-body B at a point above the projecting end of said bar, and from thence extends outward along the upper side of the latter to said end, thence downward and outward around a pulley, *k*, that is journaled within a bearing, K, attached to and extending outward from the bar H, and from

thence upward over a pulley, L, (which is pivoted to the comb or other elevated portion of the barn,) and has a weight, I′, attached to its outer end. The parts named not only operate to hold said hook or latch bar with a yielding pressure at the lower limit of its motion, but also to return the carriage to position when moved away from said bar H. The latch-bar G is automatically raised out of engagement with the bar H by means of a washer, f^2, which is placed above the pulley-block F, and by the raising of the latter is brought into contact with the lower side of said latch-bar near its longitudinal center. The weight of the load, after elevation, is supported by means of two jaws, M, which are pivoted upon the lower side of the carriage, and are adapted to be turned outward and upward to the position shown in Figs. 1 and 3, and downward in parallel lines, as seen in Figs. 2 and 4. In the first-named position said jaws are not in contact with any of the elevating mechanism; but when turned downward to the position shown in Figs. 2 and 4 said jaws are adapted to engage with two arms, f^3, which extend laterally outward from the upper end of the pulley-block F, by which means the entire weight of the load is sustained by said jaws, and the elevating-tackle released from strain. Said jaws are automatically separated so as to release said pulley-block whenever said carriage reaches the position shown in Fig. 1 by the arrangement of a downward-turned arm, *m*, at the front end of each jaw with the Λ-shaped end *h* of the bar H, said part *h* operating to turn said jaws outward and upward and to hold them in such position until after said carriage has been released and has moved a short distance away from said bar H.

In order that a shock may be avoided when the carriage is drawn into contact with the bar H, an elastic block or strip, N, preferably india-rubber, is secured to said bar at or near its upper end in position to be engaged by the end of said carriage.

In use of the mechanism the carriage is placed in the position shown in Fig. 1, the pulley-block lowered, and a hay-fork or other suitable device suspended from its hook caused to engage with the hay, after which the load is raised until the latch is lifted and the outward pressure upon the elevating-rope causes said carriage to move outward. As soon as the carriage moves away from the locking-bar the pulley-block drops downward until engaged by the jaws, after which the elevating-tackle is relieved from all strain, and no more strain upon the rope is required than is necessary to move said carriage forward over its way to the point where the load is to be dropped, when, by slackening said elevating-rope, the weighted rope will return the carriage to its former position.

For the purpose of equalizing the pressure of the elevating-rope E and the weighted cord I upon the carriage, two notches, *a*, are provided within the upper side of the way A of such position as to enable each to receive one of the forward rollers *c* when said carriage is at the inner limit of its motion. Such arrangement causes the inner end of said carriage to be depressed, and increases the effect of said weighted cord, and lessens the power of said elevating-rope, and causes said carriage to remain practically at rest while a load is being raised.

Having thus fully set forth the nature and merits of our invention, what we claim is—

1. As an improvement in hay-elevators, a carriage which is arranged to travel along a substantially horizontal track, and is provided with a latch for engagement with a fixed stop, in combination with a weighted cord, which is connected with said carriage and operates to return the latter to its normal position when moved therefrom, and which passes over and presses upon said latch with a yielding pressure at or near its engaging end, substantially as and for the purpose described.

2. In a hay-elevator, in combination with a carriage supported at or near each end by a set of rollers, a weighted rope or cord attached to the carriage and acting to return it to its normal position, the tackle for elevating the hay, suspended from at or near the center of the carriage, and the substantially horizontal track upon which the carriage-rollers run, provided with notches or recesses, into which, when the carriage is in its normal position, the forward rollers drop, so as to give a forward inclination to the body of the carriage, substantially as and for the purpose described.

3. As an improvement in hay-elevators, in combination with a carriage which is supported on two sets of rollers or wheels, one set being at each end, and travels along a substantially horizontal track, the track constructed at its forward end to allow the front set of rollers to drop lower than the rear set, to give a downward and forward inclination to the carriage when it is at its forward or normal position, so that the weight of the load of hay suspended from the carriage will tend to keep the carriage in such position, substantially as and for the purpose described.

4. In combination with the carriage, constructed substantially as shown, and provided with the latch-bar G, the weighted rope I, attached to the carriage, the stop-bar H, secured to and extending downward from the track A, and provided with the opening *h′*, for the passage of the outer end of said latch-bar, substantially as and for the purpose described.

5. In combination with the carriage shown, having pivoted to its lower side the jaws M, which are adapted to be automatically moved from or toward each other, the pulley-block F, formed at its upper end with the laterally-projecting arms f^3, and provided with washer f^2 above the arms f^3, substantially as and for the purpose specified.

6. In combination with the latch-bar G, pivoted within the carriage-body B, and provided with an engaging-spur, *g*, the bar H, adapted to be engaged by said latch-bar, the cord I, having one end secured within said block, and provided at its opposite end with the weight I′, and the pulley *k*, journaled within the bearing K upon said bar H, substantially as and for the purpose shown.

In testimony that we claim the foregoing we have hereunto set our hands this 26th day of April, A. D. 1884.

HARVEY McCOWN.
LUTHER M. McCOWN.

Witnesses:
ERNST HERWIG,
S. T. SHANER.