(No Model.) 2 Sheets—Sheet 1.

E. J. GILPIN.

HAY ELEVATOR AND CARRIER.

No. 468,614. Patented Feb. 9, 1892.

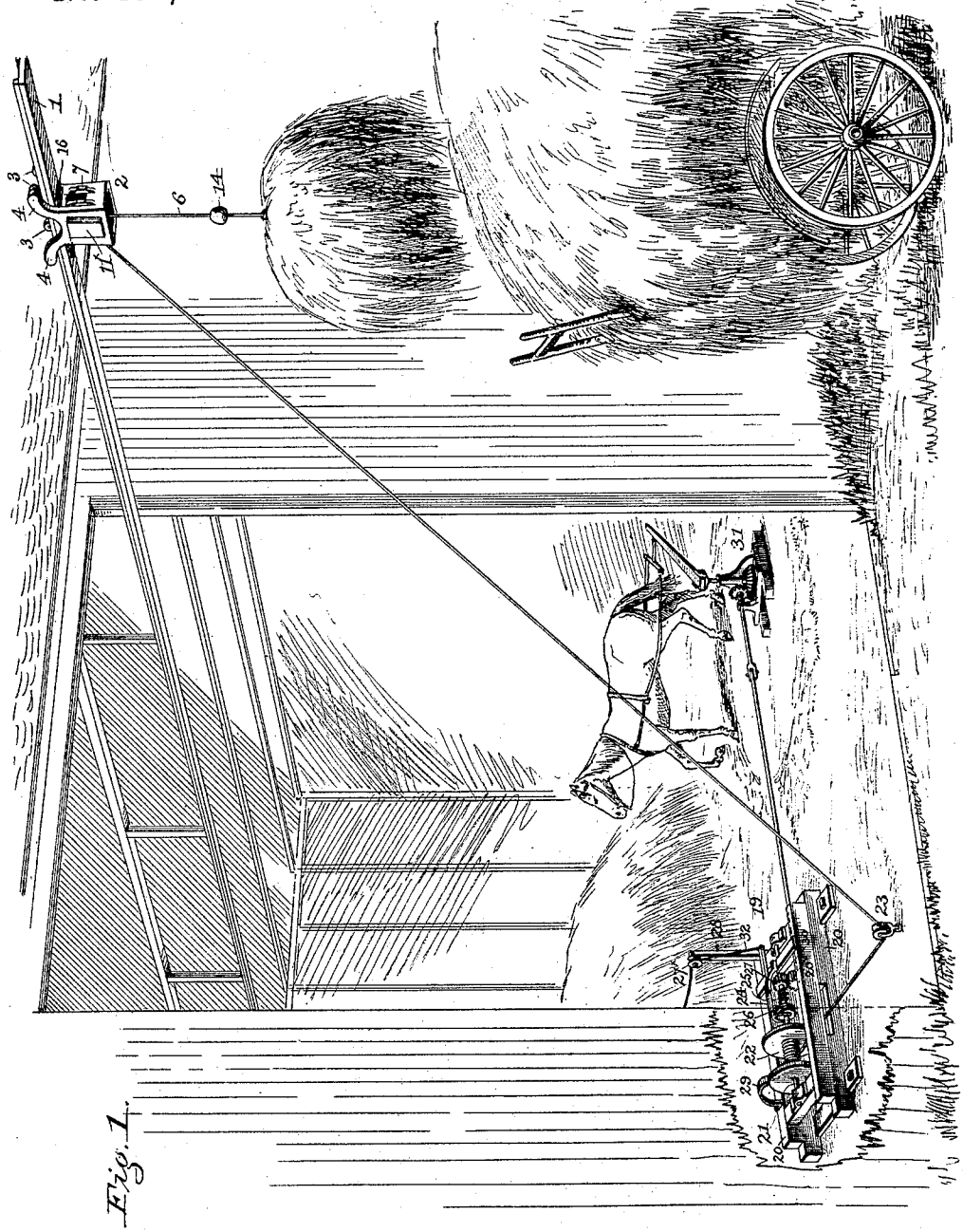

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

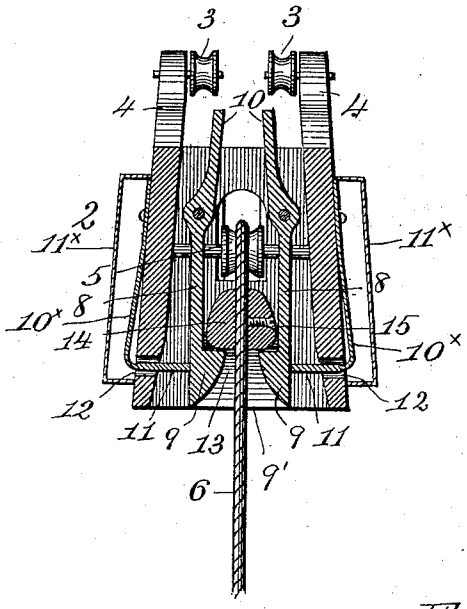


Fig. 3.

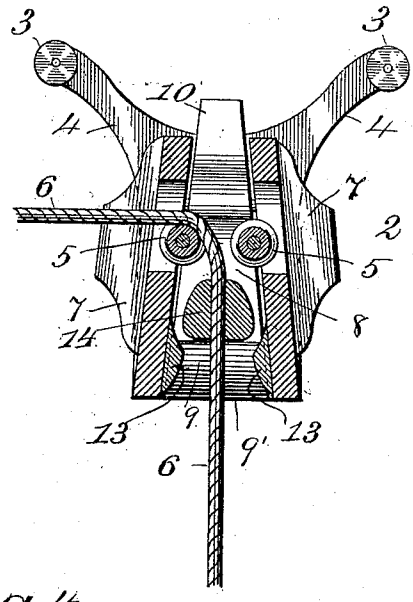
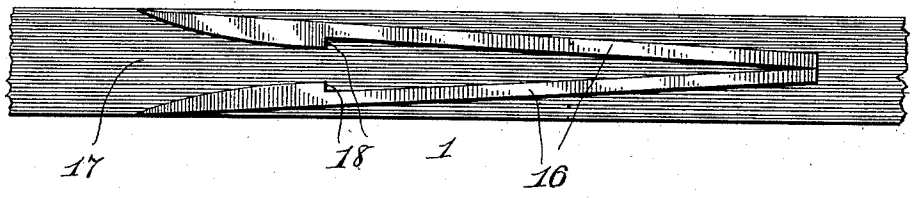


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ELI J. GILPIN, OF FOWLER, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN M. FOGLEMAN, OF SAME PLACE.

HAY ELEVATOR AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 468,614, dated February 9, 1892.

Application filed June 9, 1891. Serial No. 395,713. (No model.)

To all whom it may concern:

Be it known that I, ELI J. GILPIN, a citizen of the United States, residing at Fowler, in the county of Benton and State of Indiana, have invented a new and useful Hay Elevator and Carrier, of which the following is a specification.

My invention relates to certain improvements in hay elevators and carriers such as are commonly employed to unload hay by a fork let down on a wagon-load elevated therefrom and carried over the mow and discharged; and it has for its object to provide an automatically-operating device for elevating and carrying the hay that will be simple in its construction and mode of operation, that will obviate the attendant difficulties of having to back the horse after every tripping of the fork, and to avoid the tendency of the fork to drop its load before it has become secured to the carrier; and it consists of a specially-arranged hoisting device and hay-carrier, the details of which are hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a general perspective view of my improved carrier on a section of track preparatory to receiving its load and provided with a hoisting-jack and horse-power. Fig. 2 is a vertical cross-section of my improved carrier with the fork-rope locked within the same. Fig. 3 is a vertical transverse sectional view of the same. Fig. 4 is a detail view of the portion of the carrier-track provided with my improved trip and lock.

Referring by numerals to the accompanying drawings, 1 represents a track, which is intended to be supported in a barn or elsewhere above the hay to be handled by suitable fastenings. Upon said track a hay-carrier 2 is designed to be supported and rolled by grooved wheels 3, secured to the inner sides of the ends of upwardly-extending bracket-arms 4, which form a part of the casing of said carrier 2. The hay-carrier 2 is constructed of suitable material and may be of either a square or oblong shape. On opposite ends of said carrier and partly within the same are journaled pulleys 5, over which the operating and hoisting rope 6 is adapted to work, the portion of said pulleys extending without said casing being protected and partly incased between the outwardly-projecting jaws 7, secured to the ends of the carrier. Pivoted at right angles to said pulleys and within the hay-carrier casing are two jaws 8 8, which are provided at their lower ends below the point of pivot with arrow-head portions 9, forming a clutch and a flaring opening 9′ for receiving and holding the rope 6, carrying the hay-fork in any position desired, and are provided at their opposite ends above the point or pivot with upwardly-extending ends 10, which project beyond the top of the casing to a close proximity with the under portion of track 1.

On the outside of the hay-carrier casing and on the sides not occupied by the pulley-guards 7 are secured leaf-springs $10^{\times}$, provided at their lower ends with right-angled inwardly-extending portions 11, that are adapted to pass through the holes 12, situated in the lower extremity of said carrier-casing and bear against the opposing jaws 8, which are prevented from shutting against each other by the triangular and beveled blocks 13, that also form a guide for conducting the ball 14 within the casing and into engagement with said jaws. A suitable cap $11^{\times}$ covers said springs and protects and holds the same to the carrier-casing. The ball 14 is adjustably secured to the hay-rope 6 by means of a set-screw 15, provided for carrying the hay-fork at any elevation that may be deemed desirable. The under side of the track 1 is provided directly over the loading-point with two converging strips 16, provided with a flaring mouth 17, and at a short distance within said mouth each strip is further provided with a shoulder 18. The upward extension 10 of jaws 8 are designed to be operated at the proper time by being compressed upon entering the flaring mouth 17 of the converging strips 16 and taking behind the shoulders 18 on said strips. The carrier is held stationary and in position while the fork with the hay is being elevated and until the drawing tension of the rope and the compression of said jaws by the entrance

of said adjustable ball on the hay-rope releases the same from behind said shoulders. The carrier, if desired to be changed in the direction of travel, may be done so by simply withdrawing the operating-rope from one pulley and shifting to the one in the opposite side of the casing, the catch and trip on the bottom of the track being of course correspondingly changed.

In operating my improved hay-carrier upon the track I avoid, as previously stated, the objections of having the horse pull directly on the hay-rope and then back, slackening the rope and tangling oftentimes and dragging in the mud by the use of a hoisting-jack 19. This jack is placed in a convenient position for operating the hay-carrier, and is constructed upon suitable frame-pieces 20. Upon said frame is secured a shaft 21, provided with suitable bearings and on one portion of which is loosely mounted a drum 22, around which the hay-rope is designed to wrap and unwrap, according to the movement of the hay-carrier, passing therefrom to the said spool under the customary ground-pulley 23. A clutch 24, normally closed by a spring 25, is also mounted on said shaft and is controlled by a lever 26, secured to the jack-frame by a bracket 27, and is operated by a cord 32, passing over pulley $27^{\times}$, attached to upright 28, secured to said frame. The clutch is designed to revolve said drum and wind the hay-rope thereon to hoist the hay-fork to the carrier and carry the same to the position desired, and to be thrown out of engagement with said drum when the carrier is being returned to its loading position, thus allowing the drum to revolve independently of the jack-gearing as it pays out the hay-rope, being held in check in its revolution by a spring-actuated brake 29, secured to the frame of the jack. The shaft 22 is provided with suitable gearing 30 to regulate the speed of said spool, and which is connected with an ordinary sweep horse-power 31, by which motion is communicated to the whole machine and carrier. The operation of my invention is now thought to be apparent. The hay-fork in the end of the hay-rope having received its load is hoisted up by the winding of the rope on the hoisting-spool and is held in an elevated position by the adjustable ball on the hay-rope becoming locked within the locking-jaws of the carrier. The drawing tension of the hay-rope and the entering of the said ball within the carrier releases the upper ends of the locking-jaws from the shoulders on the converging strips beneath the track and permits the carrier to be conveyed to the proper place, where the fork is tripped and discharged of its load. The clutch on the jack is now released from engagement with the winding-spool and the carrier is drawn back to its original position; but when the extended arms of the locking-jaws enter the flaring mouth of the converging strips and are compressed together the ball is released from the lower locking ends of said jaws and the fork dropping down to be loaded up again and the operation repeated, as described.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In a hay elevator and carrier, a suitable hoist, a track provided on its under side with converging strips having a flaring mouth and shoulders, a carrier provided with integral bracket-arms carrying rollers to engage said track, twin jaws pivoted within said carrier and having extended portions projecting beyond the top of said carrier and said jaws also having arrow-head portions forming a flaring opening and locking-shoulders, triangular and beveled blocks secured within the carrier at the bottom between the ends of said pivoted jaws, leaf-springs secured to the outside of the carrier, provided with an inwardly-extending right-angular portion projecting through said carrier and abutting against said pivoted jaws, pulleys journaled in opposite sides of said carrier, and a hoisting and operating rope provided with an adjustable locking-ball, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELI J. GILPIN.

Witnesses:
HENRY W. SNYDER,
THOMAS CONDON.