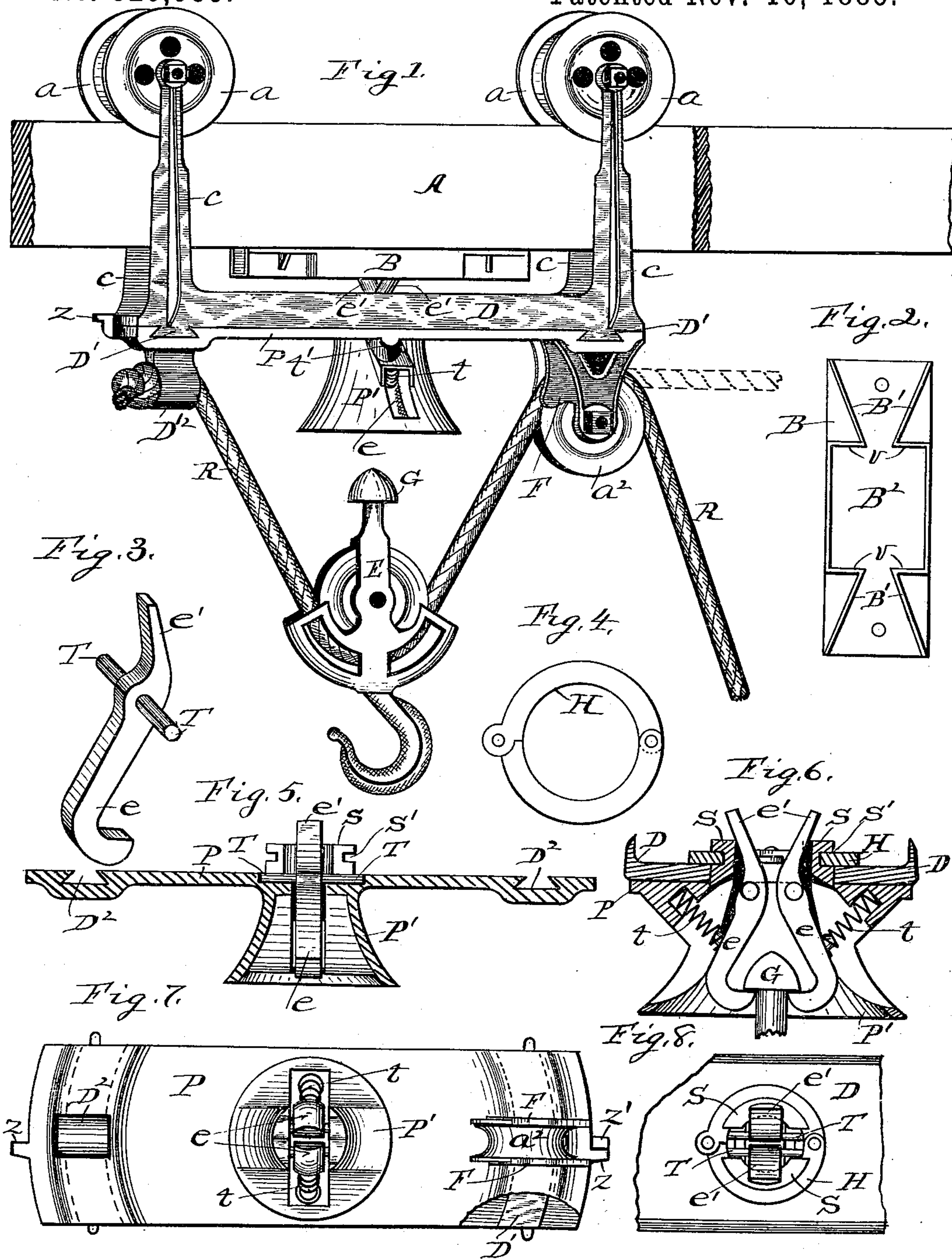


(No Model.)

J. F. MORRISEY.  
HAY ELEVATOR AND CARRIER.

No. 329,935.

Patented Nov. 10, 1885.



Witnesses,

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# UNITED STATES PATENT OFFICE.

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## HAY ELEVATOR AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 329,935, dated November 10, 1885.

Application filed February 28, 1885. Serial No. 157,313. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. MORRISEY, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Hay Elevators and Carriers, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a perspective view of the device mounted on its track as it appears ready for use. Fig. 2 is a bottom plan view of the flanged plate for attachment to the lower side of the track for operating the spring-hooks. Fig. 3 is a perspective view of one of the spring-hooks detached from the carriage. Fig. 4 is a side view of the jointed ring for connecting the reversible plate with the carriage. Fig. 5 is a central longitudinal view of the reversible plate for attachment to the lower side of the carriage. Fig. 6 is a central vertical cross-sectional view of the carriage and reversible plate, and a side view of the spring-hooks, showing the relative position of said parts. Fig. 7 is a bottom plan view of the reversible plate; and Fig. 8 is a plan view on the top of the central portion of the carriage, the other parts being broken away.

This invention relates to certain improvements in hay elevators and carriers, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings, D is a carriage connected, by means of the hanger-arms *c* at either end, to a pair of grooved wheels, *a*, above, that are intended to roll on the track A, as shown in Fig. 1, which track is intended to be supported, in a barn or elsewhere, above the hay to be handled, which fastenings are not necessary to be shown, as they form no part of this invention. P is a plate intended to be made of cast metal, and be provided with the integral neck S on its upper side and bell-shaped dome P' on its lower side, immediately under said neck, both being located at the center of said plate, and within which neck and dome is located a pair of oppositely-located spring-hooks for catching the conical head G of block E, as will be hereinafter more fully described. The plate P attaches to the bottom of carriage D by means of passing its

neck S up through a corresponding opening through its center, as shown particularly in Fig. 6. The neck S is provided with an annular groove, S', around its exterior surface, as shown in Figs. 5 and 6, for the reception of the ring H. (Shown in Fig. 4.) After said neck is passed up through the opening in carriage D the ring H, which is in two parts jointed together, is opened so it may be placed around said neck and closed thereon in the annular groove S', as shown in Figs. 6 and 8, and its extreme ends riveted together to hold it in. This ring is wide enough to project out from said groove over the carriage D, as shown in Fig. 6, and thereby prevents plate P from becoming detached from said carriage, and forms a bearing for said plate to rotate on. The neck S of said plate, being circular, may rotate in the opening through said carriage, so that its integral plate P, with its appendages, may be reversed for the purposes hereinafter more particularly set forth. The neck S and dome P' of plate P are hollow, as shown in Figs. 5, 6, and 8, for the reception of a pair of spring-hooks, *e e*, one of which is shown in perspective in Fig. 3. These hooks are provided on either side with extending trunnions T, which rest in corresponding grooves in plate P, as shown in Fig. 5, deep enough so the trunnions will be below carriage D, which rests over their outer ends to hold them in place. These spring-hooks are supported by means of their said trunnions, and are placed opposite to each other, as shown in Figs. 6, 7, and 8, and transversely to the length of said plate P. Their upper ends, *e'*, extend some little distance above the neck S, and diverge from each other, as shown in Figs. 1, 3, and 6. Their lower ends hang suspended from said trunnions within the bell-shaped dome P', as shown in Figs. 5, 6, and 7. The sides of said dome are formed with recesses, as shown in Figs. 1 and 6, for the reception of coil-springs *t t*, which stand against the backs of said hooks to close their lower ends together. Said dome P' is also provided with recesses below said springs at the rear of said hooks, for their reception when they are forced backward in the manner hereinafter stated. The reversible plate P has attached to one lower outer end an eye-lug, D<sup>12</sup>,



in which the end of the draft-rope R is secured, and to its opposite end the sheave-wheel  $a^2$ , over which said rope passes. A pulley-block, E, is located on said draft-rope  
 5 between said eye-lug and said sheave-wheel, as shown in Fig. 1. The carriage D is provided on its under side, near each end, with the dovetails  $D' D'$ , and the reversible plate P is provided with corresponding dovetail  
 10 grooves,  $D^2 D^2$ , on its upper side, as shown in Figs. 1, 5, and 7, formed on a radius from the center of said carriage and plate, which dovetails are for attaching the outer ends of said swinging plate to said carriage for the proper  
 15 support of the outer ends of said plate when strain is applied to said draft-rope. This mode of attaching and supporting the outer ends of said reversible plate constitutes one of the principle features of this invention, as by  
 20 thus uniting the parts they become nearly as strong as if the carriage were made in one piece, and renders the carriage capable of being used to carry the hay in the opposite direction without the necessity of pulling the  
 25 draft-rope through the carriage its entire length, as has heretofore been usual. The track A is provided on its under side, immediately over the carriage, with a plate, B, as shown in Fig. 1. A bottom plan view of said  
 30 plate is shown in Fig. 2. This plate is for the purpose of operating the spring-hooks, to open them and permit block E to drop at the proper time. The lower face of said  
 35 plate is provided with a pair of opposite parallel depending flanges,  $v v$ , set on said plate in the form shown in Fig. 2, forming the rectangular chamber  $B^2$  at the center, opening into the diverging chambers or outlets  $B' B'$  at each end. Initially, the upper ends,  $e'$ ,  
 40 of the spring-hooks  $e$  stand in chamber  $B^2$ , formed by said flanges  $v v$ , as shown in Fig. 1, and prevent the carriage from rolling in either direction a greater distance than said chamber is long until they are brought near  
 45 enough together, in the manner hereinafter stated, so they may pass out through the narrow opening between said flanges at the end of said chamber. The spring-hooks  $e e$  are for the purpose of catching and holding the  
 50 conical head G of the block E, as shown in Fig. 6, and for controlling the movement in either direction of the carriage D by means of their upper ends,  $e'$ , entering the said chamber  $B^2$  in said plate B. The lower end of the  
 55 dome  $P'$  is flared or bell-shaped, so as to gather in the conical head G of block E, and cause it to center between the lower ends of the hooks  $e e$  when tension is applied to the outer end of draft-rope R. A hook on the  
 60 lower end of block E furnishes means for the attachment of an ordinary hay-fork and its appendages. The reversible plate P is provided at each end, a little at one side from its center, with the lugs  $z$ , by means of which the  
 65 said plate is prevented from rotating too far or from rotating when not required, as at each one-half rotation of said plate P one of

said lugs  $z$  will engage with a similar lug,  $z'$ , on one end of the carriage D, as shown in Fig. 7. Thus said plate P can rotate only one-half-  
 70 way around and be arrested and held at the right place by means of said lugs.

The manner in which the said device is operated is substantially as follows: Looking at Fig. 1, the block E is supposed to have a  
 75 fork full of hay attached to its hook and in the act of being elevated by means of tension on the draft-rope R, so as to cause the conical head G to enter between the lower hooked ends of the hooks  $e e$ , as shown in Fig. 6. Continued tension on said draft-rope will  
 80 cause said conical head to pass farther up and engage the inner sides of said hooks, so as to cause their upper ends,  $e' e'$ , to close near enough together so they may pass out of the  
 85 chamber  $B^2$  of plate B by means of such tension on said rope, thus permitting the carriage D to move forward over the place where the fork is to drop its load. After the carriage has left plate B its forward move-  
 90 ment will partially slacken draft-rope R, and thus cause block E to descend so the hooks  $e e$  will hold it suspended, as shown in Fig. 6, until the fork attached to said block has been caused to drop its load, when the carriage is  
 95 caused to return by pulling on the trip-rope of the fork. (Not necessary to be shown.) When the carriage thus returns, the upper flared ends,  $e'$ , of said hooks pass under the plate B, and between the converging flanges  $v$   
 100  $v$ , to again enter chamber  $B^2$ , and in so doing are closed near enough together to cause said hooks to open and drop the block E, so the fork attached thereto may take another load of hay, as before.

Looking at Fig. 1, the carriage is shown as arranged to travel to the right. When it is  
 105 desired to cause it to carry in the opposite direction, the plate P may be reversed, with all its appendages, by rotating it on said carriage in the manner hereinbefore stated, which  
 110 can be done almost instantly by means of the draft-rope.

Having thus described my invention, what I claim as new, and desire to secure by Letters  
 115 Patent, is as follows, to wit:

1. The herein-described hay elevator and carrier, consisting of the combination of the carriage D and reversible plate P, connected detachably at their outer ends by means of  
 120 the dovetails  $D'$  and dovetail recesses  $D^2$ , and pivotally at their center by means of the neck S, having an annular groove and ring, H, therein, sheave-wheel  $a^2$ , eye-lug  $D^{12}$ , and bell-shaped dome  $P'$ , each secured to said reversible plate, spring-hooks  $e e$ , pulley-block E,  
 125 having the conical head G, flanged plate B, and draft-rope R, all arranged and constructed substantially as set forth.

2. In the herein-described hay elevator and  
 130 carrier, the combination of the carriage D, having the traveling wheels  $a$  and dovetails  $D'$ , reversible plate P, having the dovetail recesses  $D^2$ , bell-shaped dome  $P'$ , and annularly-



5 grooved neck S, ring H, spring-hooks *ee*, having the extended upper ends, *e' e'*, and flanged plate B, having the enlarged rectangular central chamber, B<sup>2</sup>, and diverging end chambers, B' B', all arranged to operate as and for the purpose set forth.

10 3. In the herein-described hay elevator and carrier, the combination of the plate B, having the flanges *vv*, forming the enlarged central rectangular chamber, B<sup>2</sup>, and diverging end chambers, B' B', spring-hooks *ee*, having the extended upper ends, *e' e'*, rope R, and

pulley-block E, having the conical head G, as and for the purpose set forth.

4. In the hay elevator and carrier shown 15 and described, the combination of the carriage D, reversible plate P, having the neck S, provided with the annular groove S', and ring H, as and for the purpose set forth.

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