

No. 809,984.

PATENTED JAN. 16, 1906.

D. E. ROWLAND & P. BACHER.

HAY ELEVATOR.

APPLICATION FILED MAY 9, 1904.

3 SHEETS—SHEET 1.

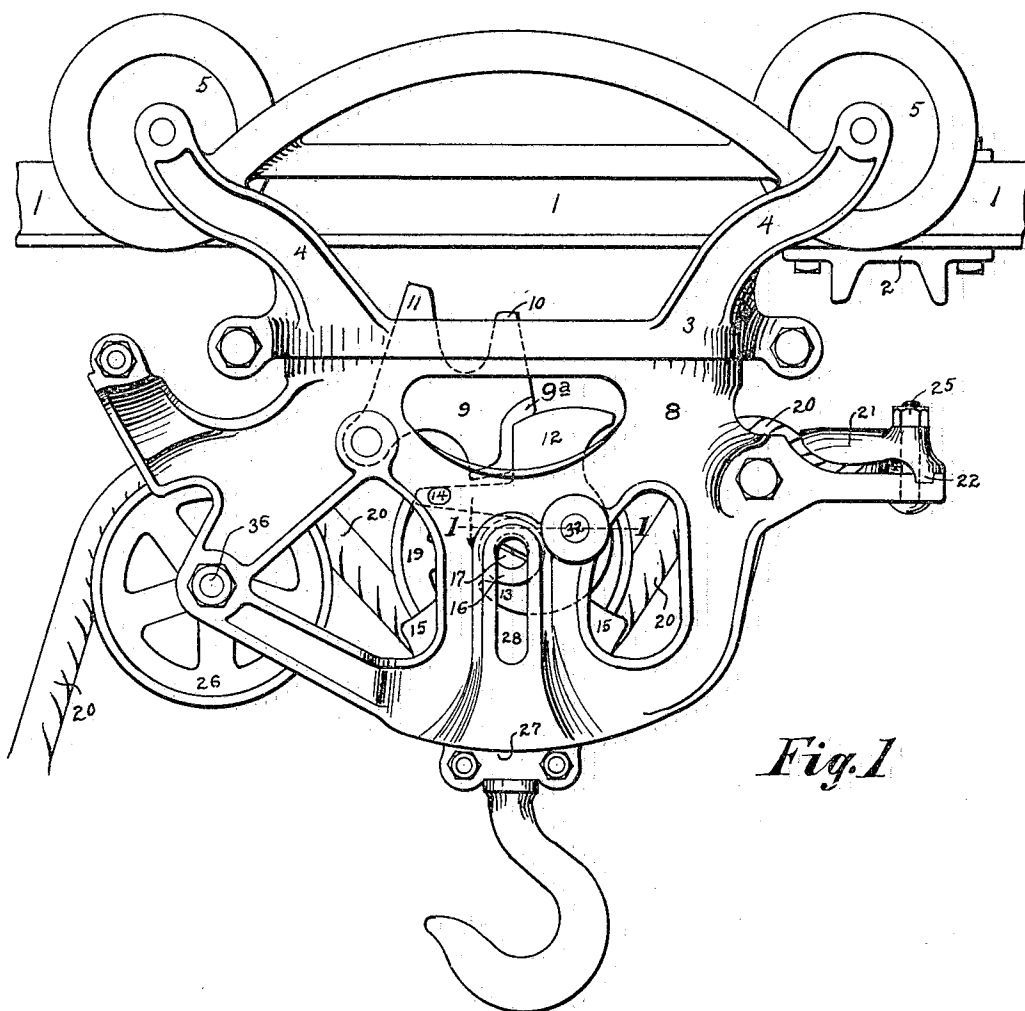


Fig. 1

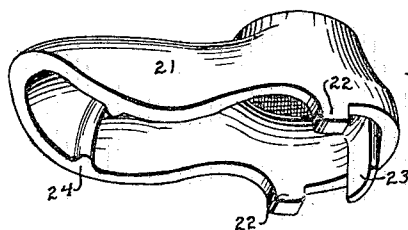


Fig. 2

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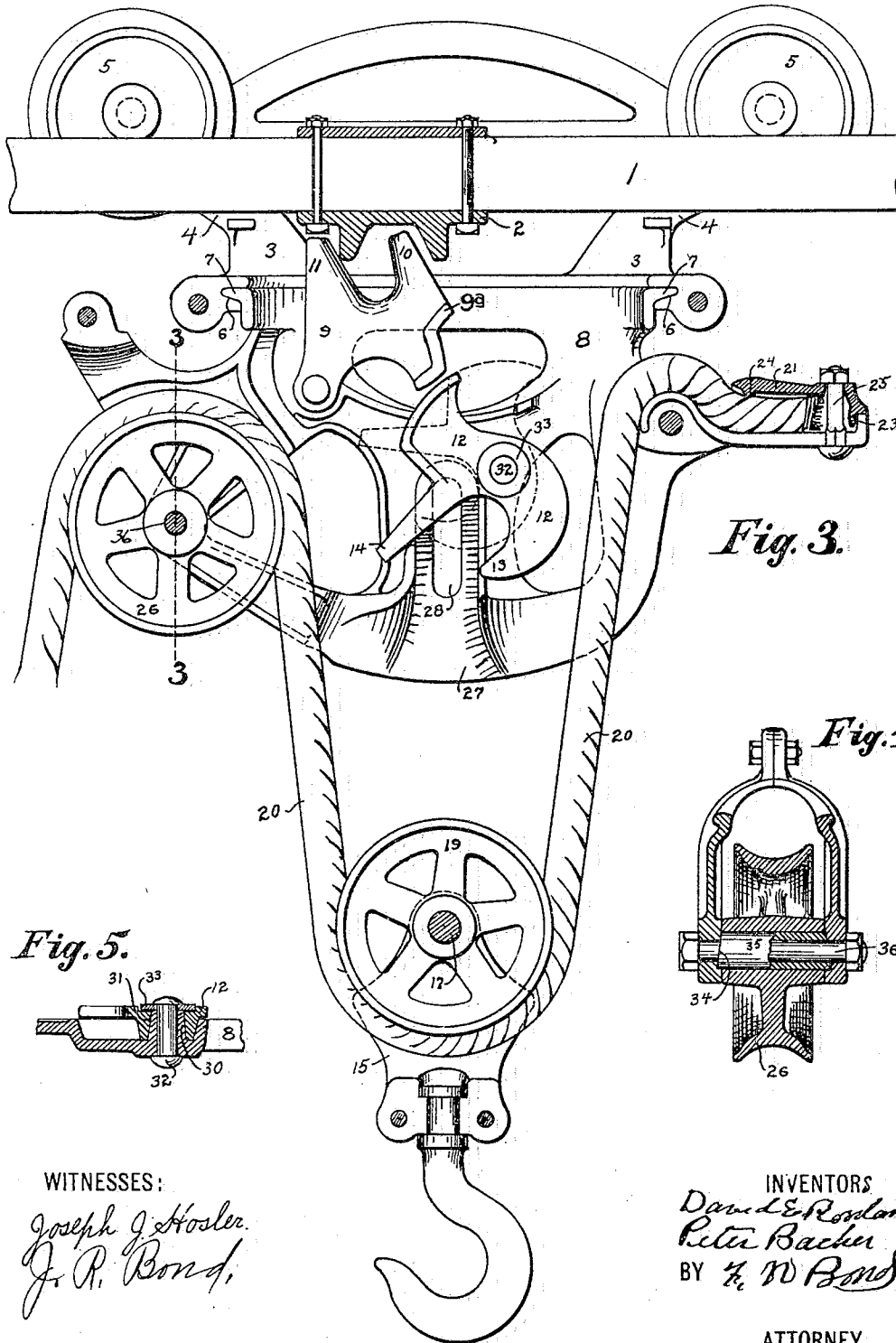


Fig. 5.

Fig. 3.

Fig. 4.

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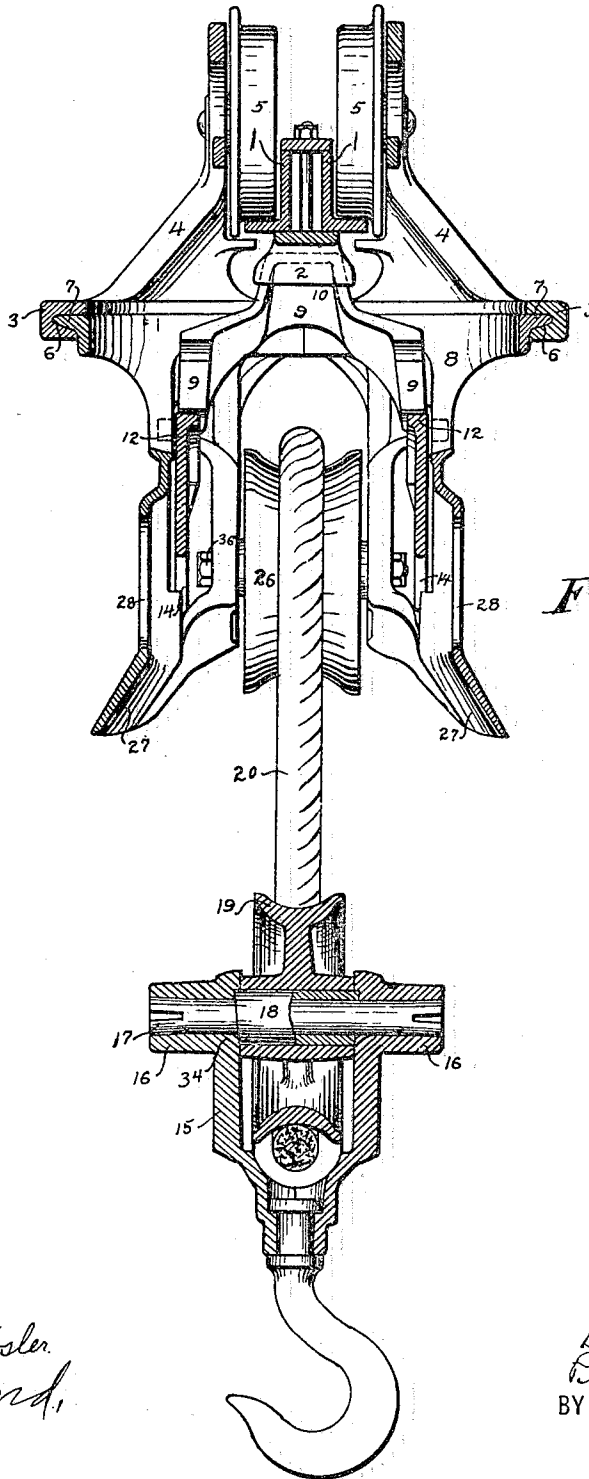


Fig. 6.

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UNITED STATES PATENT OFFICE.

DAVID E. ROWLAND AND PETER BACHER, OF CANTON, OHIO, ASSIGNORS
TO THE NEY MANUFACTURING COMPANY, OF CANTON, OHIO, A COR-
PORATION OF OHIO.

HAY-ELEVATOR.

No. 809,984.

Specification of Letters Patent.

Patented Jan. 16, 1906.

Application filed May 9, 1904. Serial No. 207,087.

To all whom it may concern:

Be it known that we, DAVID E. ROWLAND and PETER BACHER, citizens of the United States, residing at Canton, in the county of Stark and State of Ohio, 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 of the same, reference being had to the annexed drawings, making a part of this specification, and to the numerals of reference marked thereon, in which—

Figure 1 is a side elevation showing the carriage located upon the track or way and unlocked from the stop-block. Fig. 2 is a detached perspective view of the rope-clamp. Fig. 3 is a vertical section of the carriage, taken on a line where the carriage-frame sections are joined together and illustrating the different parts of the carriage for locking the same to the track and also locking the head to the carriage. Fig. 4 is a transverse section on line 3 3, Fig. 3. Fig. 5 is a section taken on line 1 1, Fig. 1. Fig. 6 is a transverse section of the track or way, also showing a vertical section of the carriage-frame.

The present invention has relation to hay-elevators; and it consists in the novel construction hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the track or way, which may be substantially of the form shown, or it may be of any desired form, inasmuch as the track within itself forms no particular part of the present invention, except a track or way must be employed to provide a means for the travel of the carriage proper. The track 1 is suspended from the rafters of a barn or other suitable framework in the usual manner.

The track 1 is provided with the stop block or head 2, which is secured to the track at a point directly above the place from which a load is to be elevated and connected to the carriage, and of course in hay-elevators of the usual class the stop-block 2 is located over the driveway of a barn.

The upper carriage-sections 3 are provided with the upward-extending arms 4, to which upward-extending arms are properly jour-

naled the traveling wheels 5, which traveling wheels are properly fitted to the rails of the track 1, as illustrated in Fig. 6.

The carriage-sections 3 are each provided with the grooves 6, which grooves receive the flanges 7, formed upon the upper portion of the lower or swiveled carriage-sections 8, said grooves and flanges being so formed that when the sections of the upper and lower carriage-frames are placed in proper relative position the lower carriage-frame sections 8 will be properly swiveled to the upper carriage-frame sections 3.

To the lower carriage-frame sections 8 is pivotally attached the carriage-locking dog 9, which dog is provided with the locking extension 10 and the stop extension 11. Below the dog 9 are pivotally attached the elevating-head and carriage-releasing dogs 12, which dogs are substantially of the form shown in the drawings, and, as shown, they are each provided with the hooked lower ends 13 and the elevating-head contact-arms 14, said arms 14 being located above the hooked ends 13 and are so located for the purpose hereinafter described.

The elevating-head 15 is provided with the lateralextendingaxial projections16, through which axial projections the pulley-axle 17 is located, and upon which axle is mounted the sleeve 18, and upon which sleeve is rotatably mounted the pulley 19, under which pulley the elevating-rope 20 is passed, substantially as illustrated in Fig. 3, said elevating-rope being secured to the lower carriage-frame sections 8 by means of the clamp 21, which clamp is provided with the flanges 22 and 23 and the clamping-rib 24, said clamp being securely connected by means of the bolt 25. The elevating-rope 20 extends from the pulley 19 upward and over the pulley 26 and thence downward and to the place where power is to be applied to elevate the load and move the carriage. In use it will be understood that the elevating-rope may have to pass under pulley or pulleys secured to the floor of the building or other structure; but said parts form no parts of the present invention and no illustration is deemed necessary.

The lower carriage-frame sections 8 are each provided with the flaring opening 27, from which flaring opening the upward-extending grooves 28 lead, said grooves being for

the purpose of receiving the axial projections 16, and thereby preventing any disarrangement of the elevating-head 15 at the time said elevating-head is entering the traveling carriage proper. As the elevating-head 15 approaches the bottom or lower end of the lower carriage-frame sections 8 the axial projections 16 will enter the flaring opening 27, and the axial projections 16 will strike the arms 14 of the dogs 12, and as the elevating-head is moved upward it will carry the arms 14, which in turn oscillate or rock the dogs 12 and bring the lower hooked ends 13 under the axial projections 16, thereby securely connecting the elevating-head 15, together with its load, to the carriage proper.

It will be understood that by providing the elevating-head 15 with the lateral axial projections 16 and providing two locking-dogs 12 the elevating-head will be supported upon both of its sides and at a point just below axle of the pulley located in the elevating-head, by which arrangement a safe connection is brought about and without danger of accidental displacement, owing to the fact that whatever swing there may be to the elevating-head and its load the pivotal point of the connecting-head is in practical axillary alinement with the axis of the pulley-axle of the elevating-head.

When the arms 14 have been lifted until the hooks 13 come under the lateral axial projections 16, the upper ends of the dogs 12 will be carried from under the dog 9, thereby allowing the dog 9 to fall, so as to disengage the arm 10 from the stop-block 2, at which time the carriage, together with its load, is released and free to travel upon the track 1. For the purpose of limiting the downward movement of the dog 9 said dog is provided with the stop-flange 9^a, which stop-flange strikes the upper ends of the dogs 12 when the hooks of said dogs are brought into position to engage the axial projection of the elevating-head. When the carriage is returned to the point where it is desired to stop the carriage, the arm 11 strikes the stop-head 2, thereby lifting said dog, so as to disengage the dogs 12 and releasing their hooked portions from the axial projections 16 of the elevating-head 15, at which time the elevating-head is free to be lowered and another load connected thereto and again elevated and connected to the carriage.

For the purpose of providing proper bearing-points for the dogs 12 the lower sections 8 are provided with the hollow studs 30 and the dogs each provided with flanges 31, which flanges are located over the hollow studs 30, as illustrated in Fig. 5. The rivet or bolt 32 is passed through the hollow studs 30, and for the purpose of assisting in holding the dogs 12 washers 33 are provided, which washers are located substantially as shown in Fig. 5.

The object of forming the hollow studs as above described is to provide a means for pivotally connecting the dogs so that their bearing-points will be upon the studs 30 and not directly upon the connecting-rivets 32, said rivets being formed short, so as to provide room to allow the pulley 19 to pass into the lower sections of the carriage-frame 8, as illustrated in Fig. 1.

For the purpose of preventing the sleeve 18 from rotating the ends of said sleeves are angled or cut obliquely, which ends abut against oblique shoulders 34, by which arrangement the sleeve 18 will not rotate, but remain in fixed relative position with reference to the head 15. The sleeve 35, which is located upon the cross-bolt 36, is constructed in the same manner and for the same purpose.

The guide-grooves formed in the frame are closed or formed with seats upon their outer portions, thereby connecting the frame at the points where the grooves are located, this being for the purpose of preventing undue lateral movement at the time the extensions upon the elevating-head enter the grooves.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a hay-elevator of the class described, a track or way provided with a stop-block, a carriage adapted to travel thereon, said carriage provided with non-swiveled and swiveled portions, the swiveled portion thereof provided with locking-dogs spaced from each other and carried by the swiveled portion of the carriage-frame, said dogs provided with hooked ends, and arms spaced from said hooked lower ends, an elevating-head carrying a pulley, and said elevating-head provided with lateral axial projections, and grooves arranged to receive the lateral axial projections, substantially as and for the purpose specified.

2. In a hay-elevator of the class described, a track or way and a stop-block secured thereto, a carriage adapted to travel upon the track or way, said carriage consisting of frames swiveled together, the swiveled portion of said frame provided with a flaring opening at its lower portion, grooves leading from said flaring opening, an elevating-head provided with axial projections adapted to enter the flaring opening, dogs spaced from each other and pivoted to the frame, said spaced dogs provided with arms adapted to be engaged by the lateral axial projection of the elevating-head, and hooks adapted to engage the lateral axial projections of the elevating-head, and a dog adapted to lock the spaced dogs in engagement with the axial projections of the elevating-head, substantially as and for the purpose specified.

3. In a hay-elevator of the class described,

a track or way, a carriage adapted to travel upon said track or way, a rope-clamp fixed to the frame of the carriage and adapted to clamp the rope, an elevating-rope and an elevating-head, pulleys carried by the elevating-head and the carriage, said pulleys mounted upon sleeves having oblique ends and oblique shoulders adapted to abut against the oblique ends of the sleeves, substantially as and for the purpose specified.

4. In a hay-elevator of the class described, a track or way, a stop-block fixed thereto, a carriage adapted to travel upon said track or way, said carriage consisting of an upper section and a lower section, the upper and lower sections swiveled together in a horizontal plane, the swiveled portion of said frame provided with hollow studs, dogs mounted upon the hollow studs and in spaced relation to each other, said dogs adapted to engage the elevating-head and release the locking-dog from the stop-block of the track or way all arranged, substantially as and for the purpose specified.

5. In a hay-elevator of the class described, a carriage mounted upon a track, a clamp

provided with downward-extending flanges, and a rib, said clamp adapted to engage the elevating-rope, and an elevating-rope located between the clamp and the carriage-frame, substantially as and for the purpose specified.

6. The combination of a hay-carrier, of an elevating-head carrying a pulley, the frame of said elevating-head provided with lateral projections, locking-dogs mounted on the carrier and adapted to swing longitudinally to the carrier-frame and from a common center transverse to the carrier-frame and adapted to engage the projections on the elevating-head, said dogs provided with arms, and closed grooves adapted to receive and guide the lateral projections, substantially as and for the purpose specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

DAVID E. ROWLAND.
PETER BACHER.

Witnesses:

J. A. JEFFERS.
F. W. BOND.