S. L. HANSON.

HAY CARRIER.

APPLICATION FILED OCT. 22, 1913.

1,132,716

Patented Mar. 23, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

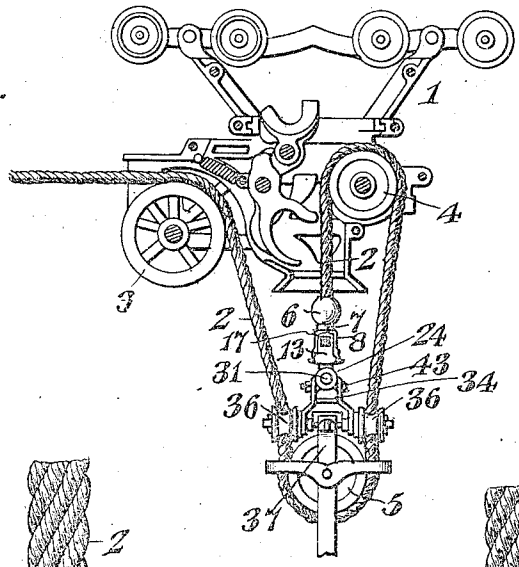


Fig. 2.

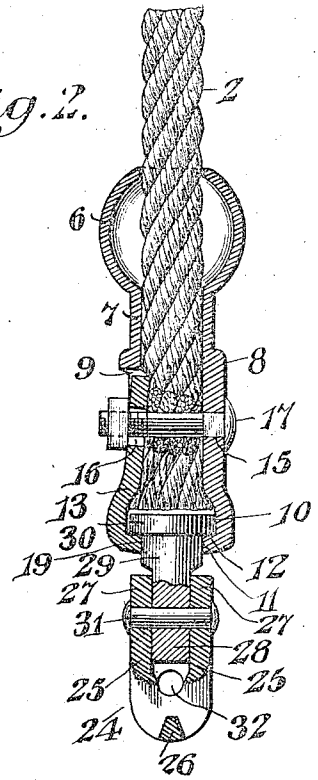
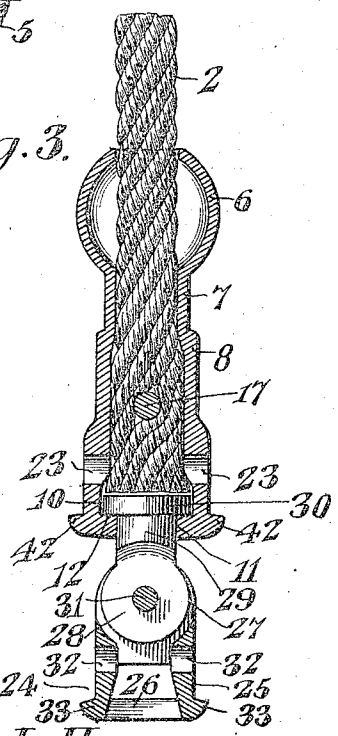


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

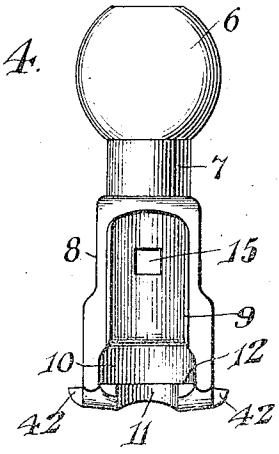


Fig. 5.

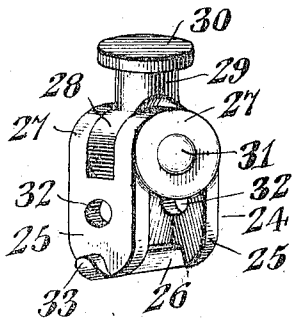


Fig. 6.

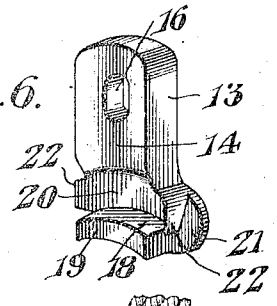


Fig. 7.

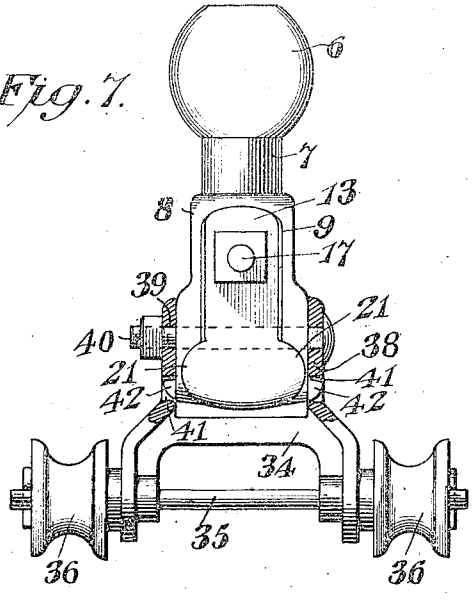
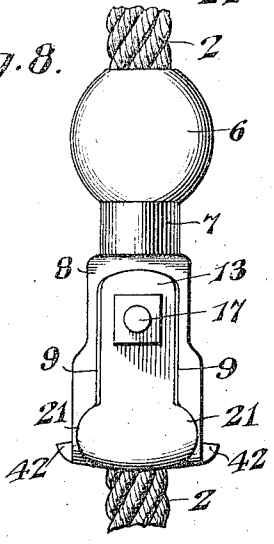


Fig. 8.



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SAMUEL L. HANSON, OF ALBERT LEA, MINNESOTA.

HAY-CARRIER.

1,132,716. Specification of Letters Patent. Patented Mar. 23, 1915.

Application filed October 22, 1913. Serial No. 796,651.

To all whom it may concern:

Be it known that I, SAMUEL L. HANSON, a citizen of the United States, residing at Albert Lea, in the county of Freeborn and State of Minnesota, have invented a new and useful Hay-Carrier, of which the following is a specification.

This invention has reference to improvements in hay carriers requiring a ball or other arrangement attached to the draft rope to enter the carrier for the purpose of releasing the same from the stop lock on the track or to be used as a registering head for the same purpose.

The object of the present invention is to provide a construction whereby when the carrier is released the device is locked in the carrier and serves as a connection between the carrier and compression pulleys, so that the rope employed is relieved from the weight.

In accordance with the present invention a ball is provided and is so arranged as to be traversed by the rope, while fast to the ball there is a rope clamp constructed to receive a swivel device and the arrangement is such that the ball will sustain the entire weight relieving the rope thereof. The ball and clamp construction is such that the ball may be employed as a registering head by having it attached directly to the pulley and, moreover, the ball with the clamp in one piece therewith may be attached to the rope at any distance from the pulleys when it is desired that the carrier be unlocked before the load is hoisted clear up.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the further understanding that while the drawings show a practical form of the invention the latter is not confined to any strict conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the claims.

In the drawings:—Figure 1 is a vertical section of a hay carrier with the invention applied. Fig. 2 is a detail section on a larger scale than Fig. 1 and taken through the ball, clamp and swivel showing the rope in place, and omitting other parts. Fig. 3 is a central section at right angles to the showing of Fig. 2. Fig. 4 is an elevation of the ball and the portion of the rope clamp integral therewith. Fig. 5 is a perspective view of the swivel adapted to the structure of Fig. 4. Fig. 6 is a clamp block adapted to the structures of Figs. 4 and 5. Fig. 7 is an elevation with some parts in section showing the adaptability of the combined ball and clamp by attachment directly to the pulley and omitting the swivel part. Fig. 8 is a view showing a use of the combined ball and clamp.

In Fig. 1 there is shown a hay carrier 1 through which is reeved a power rope 2, there being pulleys 3, 4 and 5 provided for the purpose, the pulley 5 constituting the compression pulley.

The hay carrier structure in its general form does not form part of the present invention, and hence is referred to only incidentally as may be necessary for an understanding of the operation of the present invention.

There is provided a device having at one end a ball 6 which may be in the general form of a hollow truncated sphere open at the truncated portions for the passage of an appropriate portion of the power rope 2. At one open end of the ball there is formed an axial neck 7 continued as a box 8 of general elongated rectangular form with one side open as indicated at 9. That end of the box 8 remote from the neck 7 has its interior formed into a laterally expanded chamber 10 constituting a continuation of the interior of the box, and this chamber terminates in a passage 11 alined with the elongated interior of the box, the opening through the neck 7 and the openings at the truncated ends of the ball or sphere 6. The opening 11 is of less diameter than the width of the chamber 10, thereby forming a shoulder 12 about the opening 11 except on that side corresponding to the open side 9 of the box 8, at which point the passage 11 is also open laterally to its full diameter.

The box 8 is provided with a closure block 13 having one face concave, as indicated at 14, this being the inner face, and the one presented toward the rear inner face of the box 8, while through such rear inner face of the box there is provided a passage 15 near but spaced from the point of connection of the box with the neck 7, and through the block 13 is a similar passage 16 which may be somewhat elongated in the direction of

the length of the block to facilitate the application of a bolt 17 designed to hold the block 13 to the box 8. The end of the block 13 corresponding to the opening 11 is formed with a laterally projecting ledge 18 adapted to enter the open side of the passage 11, and this ledge has the edge toward the opening 11 concaved, as indicated at 19, while the opposed face of the opening 11 is also concaved, wherefore the opening 11 when the ledge 18 is introduced thereinto is sensibly circular. Between the ledge 18 and the concave portion 14 of the block 13 the latter is hollowed out, as indicated at 20, in conformity with the chamber 10 and completing and closing such chamber. On opposite sides of the ledge 18 are wings 21 and lugs 22, the lugs engaging the ledge 12 and the wings 21 bearing against the corresponding edges of the open side of the box at the chamber 10, so that the end of the block 13 having the wings 21 enters the box 8 for but a limited distance determined by the engagement of the wings with the corresponding portion of the box. The main body of the block 13, however, is of such width as to enter the open side of the box 8 freely yet snugly.

When one end of the rope 2 is passed through the ball 6 and neck 7 into the box 8, it is traversed by the bolt 17 and flattened and spread by the block 13, which then acts as an expanded clamp block wedging the end of the rope into the box 8, which is of greater diameter than the passage through the neck 7, so that the rope becomes positively clamped against any liability of escape by any force applied short of one sufficient to break the rope.

Piercing the side walls of the box 8 at a point about coincident with the inner end of the chamber 10 are alined passages 23 for a purpose which will presently appear.

Adapted to the end of the box 8 remote from the ball 6 is a swivel structure shown separately in Fig. 5, and in detail in Figs. 2 and 3. This swivel structure comprises a yoke member 24 having sides 25 connected at one end by a yoke 26 and at the other end formed into spaced ears 27 and introduced between these ears is an eye member 28 formed with a neck 29 terminating at the end remote from the eye in a laterally expanded head 30, the head being substantially flat. The neck 29 is of a size to pass through the opening 11 when the ledge 18 is introduced thereinto, while the head 30 has a lateral expansion to then engage in the shoulder 12 and corresponding wall of the ledge 18, wherefore the swivel member 24 is so held in the box 8 that it may turn freely about an axis longitudinal of the box and of the neck 29. The yoke portion of the swivel member is held to the eye 28 by a pivot pin 31 which is customarily riveted at the ends, wherefore the yoke portion of the swivel member can turn about the pivot pin 31 as an axis. This permits movement of the yoke member on two axes at right angles to each other. The sides or wings 25 of the swivel member 24 are pierced by alined openings 32. The swivel member 24 is also provided in line with the yoke portion 26 with lugs 33 outstanding from the outer faces of the side portions 25.

The hay carrier structure 1 has the pulley 5 mounted in a frame 34, see Figs. 1 and 7 traversed by a rod 35 carrying guide sheaves 36 at opposite ends exterior to the frame 34, and the supporting frame 37 of the pulley 5 is mounted on the rod 35 to turn about the longitudinal axis thereof, while the frame 34 has spaced parallel wings 38 arranged to engage opposite sides of the box 8 with passages 39 through these wings in alinement with the passages 23, so that a bolt 40 may traverse the alined passages and thus hold the frame 34 to the box 8, the swivel member 24 being then omitted. The wings 38 have other passages 41 designed to receive lugs 42 on the box 8, see Figs. 7 and 8 so that one bolt 40 will hold the frame 34 firmly to the box 8 without liability of the frame moving about the bolt 40 as an axis.

The frame 34 may be applied to the yoke portion of the swivel member by a bolt 43 traversing the passages 32 and 39 when in alinement as shown in Fig. 1, and in this case the lugs 33 lodge in the passages 41, thus holding the frame 34 from turning on the bolt 43.

With the arrangement shown in Fig. 1 the ball 6 will lock in the carrier, and this ball with the integral attachment to the box 8 serves as a connection between the carrier and the compression pulleys, so that the load is positively sustained without strain upon the rope, while being transported into the hay mow. Moreover, the clamp arrangement for holding the rope in the box 8 is so related to the rope that it is not in any manner injured and it will not break under any strain no matter how heavy which is insufficient to rupture the rope at other points. The device is adapted for either double or triple draft, being shown in Fig. 1 as arranged for triple draft, while in Fig. 7 the arrangement is such as is employed for double draft, the power rope not being connected at all to the ball 6 and box 8, while the pulley frame 34 is connected directly to the box 8 instead of to the swivel member 24, the latter being then omitted. The ball 6 under these circumstances serves as a registering head.

There are occasions when it is desired to attach the ball to the power rope at some intermediate point and then the arrangement shown in Fig. 8 is adopted, the clamp block 13 serving the same purpose as in the structure shown in Figs. 1, 2 and 3, but the

swivel member is omitted and the rope is continued entirely through the combined ball and clamp. This arrangement is desirable when it is wished to have the carrier unlocked before the load is hoisted clear up. Under these circumstances there is provided so extensive a clamping surface for the rope that the latter is not in any manner injured even though clamped at different times at different points.

What is claimed is:—

1. In a hay carrier, a ball or head provided with an axially extended clamping member, the ball having a passage therethrough for a rope and the clamping member comprising a box integral with the ball and inclosing a chamber or receptacle for the end of the rope, said box having at one side a removable clamping block separate from and independent of the ball and adapted to bind the rope in the box.

2. In a hay carrier, a ball or head provided with an axially extended clamping member, the ball having a passage therethrough for a rope, and the clamping member comprising a box integral with the ball and inclosing a chamber or receptacle for the rope, said box having at one side a removable clamping block separate from and independent of the ball and adapted to bind the rope in the box, and a swivel member adapted to the end of the clamping member remote from the head and constructed to be held to the clamping member by the block.

3. In a hay carrier, a ball or head provided with a neck, and both ball and neck having a passage lengthwise therethrough, a box constituting an integral axial extension of the head and neck with its interior in line with the passage through the head and neck, said box having one side open and laterally enlarged with respect to the passage through the ball and neck, and a clamping block separate from and independent of the ball and adapted to the open side of the box to cause the rope when lodged within the box to expand into the enlarged interior of the box.

4. In a hay carrier, a ball or head having a passage therethrough, a box constituting an axial continuation of the head and having its interior constituting a continuation of the passage through the head, the box being open on one side and that end of the box remote from the head having a passage therethrough in line with the passage through the head, and a clamp member shaped to enter the open side of the box and having an end corresponding to the end of the box remote from the head and shaped to overlap the sides of the box to prevent entrance of the clamp member into the box at said end, the ends of the box and clamp member remote from the head being shaped to form a laterally expanded chamber about the opening at the corresponding end of the box, and a swivel member having a head adapted to the chamber and a neck adapted to the opening at the chambered end of the box.

5. In a hay carrier, a ball or head having a passage therethrough and formed with an axial continuation in line with the passage and in the shape of a box having one side open and provided at the end remote from the head with an opening in line with the passage through the head and with an interior shoulder bordering the opening and defining a laterally expanded chamber, the box being also provided with alined openings through its sides in transverse relation to the chambered end of the box and the box having an opening between the first-named openings and the head and located in that portion of the box opposite the open side, and a clamp block adapted to enter the box through the open side, said clamp block having an opening alining with the second-named opening when the clamp block is applied to the box and with a ledge at the end remote from said opening conforming to the opening through that end of the box remote from the head and defining a continuation of the laterally expanded chamber in the corresponding end of the box.

6. In a hay carrier, a ball or head member, and a clamp member formed integral therewith, both the ball and clamp member having a passage extending lengthwise therethrough for the reception of a rope, the passage being enlarged within the clamp member, a removable clamp block adapted to the clamp member to engage an introduced rope and expand it into the enlarged portion of the clamp member, and a swivel member held to and swiveled in the clamp member by the clamp block, said swivel member being formed of two parts hinged together intermediately of the length of the swivel member.

7. In a hay carrier, a ball or head, and an axially extended camp-member in fixed relation to the ball or head, said ball and clamp-member having a passage for the reception of a rope enlarged within the clamp-member, and said clamp-member having a removable clamp block with one end shaped to enter the clamp-member into engagement with a rope introduced thereinto, and the other end shaped to engage a corresponding portion of the clamp-member and turn thereon.

8. In a hay carrier, a ball or head having a diametric passage therethrough, a hollow neck in line with the passage and extending axially from the ball, a box formed on that end of the neck remote from the head and extending from the neck axially with relation to the ball, the interior of the box being laterally expanded, and said box having one

side open and also formed at the end remote from the ball with a passage alined with the passage through the ball and with a lateral interior extension forming a shoulder surrounding the opening, and a clamp block having one end shaped to enter the open side of the box and the other end formed with a ledge and lateral wings, the ledge being shaped to enter the opening in the end of the box remote from the ball and constitute a continuation of the shoulder surrounding said opening with the wings engaging the box and limiting the entrance of the ledge thereinto, the box and block having openings for the passage of a clamp bolt.

9. In a hay carrier, a ball or head member having a ball or head at one end, a swivel member at the other end of the head member, and an intermediate clamp block associated with the head and swivel members to retain the latter on the head member, said clamp block being separate and readily removable from the head member.

10. In a hay carrier, a ball or head member, a swivel member mounted thereon, and a clamp block associated with the head member and swivel member to retain the latter on the head member, said swivel member being formed of two parts intermediately hinged together.

11. In a hay carrier, a ball or head member and another member swiveled to the ball or head member and formed of two parts, one of which is hinged to the swivel portion to move on an axis substantially perpendicular to the swivel axis.

12. In a hay carrier, a ball or head member, and a swivel member at the end of the ball or head member remote from the ball or head, said swivel member having one end swiveled to the head member to turn on an axis substantially longitudinal of the head member and the other end hinged to the first-named end to turn on an axis substantially perpendicular to the swivel axis.

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

SAMUEL L. HANSON.

Witnesses:
GERTIE SWENSON,
A. U. MAYLAND.