Sept. 9, 1924.

D. GUSTAFSON

1,507,598

COMBINED SCALE AND CARRIER

Filed June 8, 1923

2 Sheets-Sheet 1

Fig. 1.

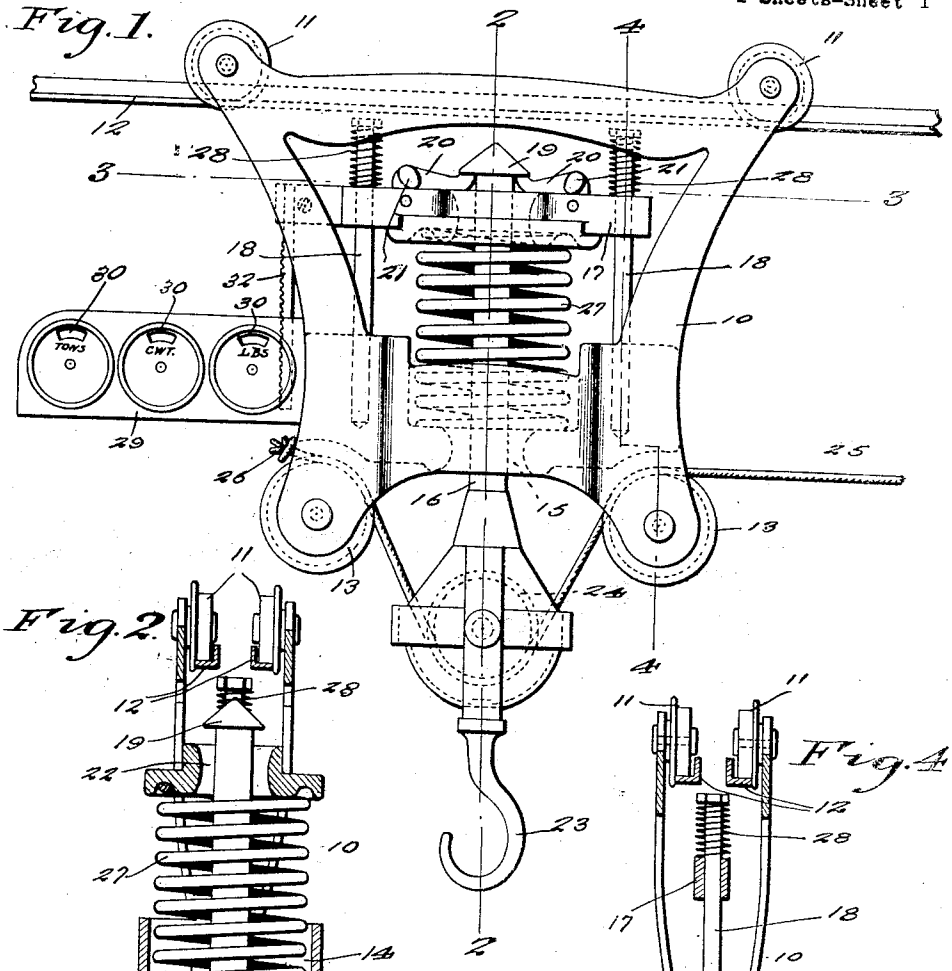


Fig. 2.

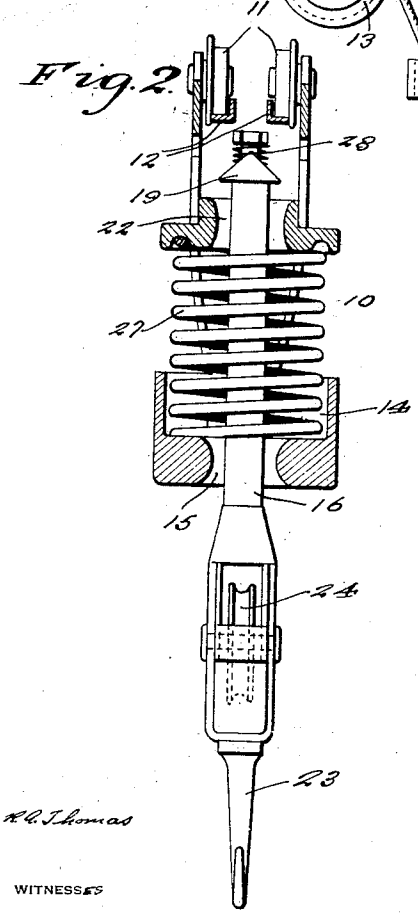


Fig. 4

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WITNESS

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2 Sheets-Sheet 2

Fig. 5.

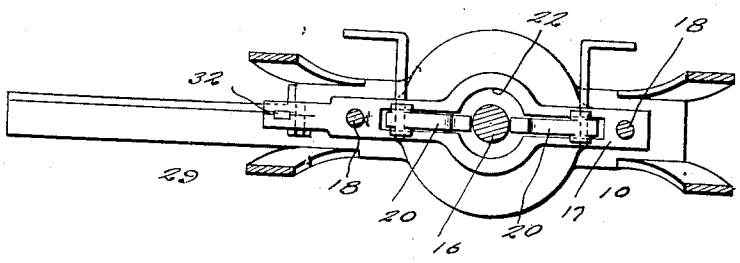


Fig. 5.

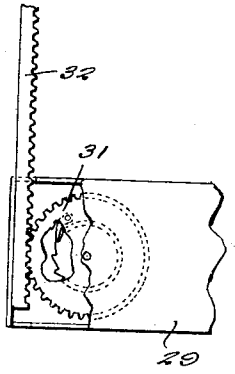


Fig. 6.

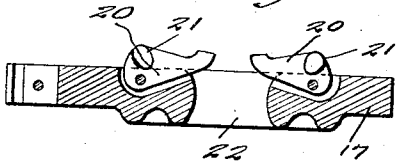
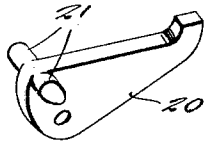


Fig. 7.



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Patented Sept. 9, 1924. 1,507,598

UNITED STATES PATENT OFFICE.

DAVID GUSTAFSON, OF EAU CLAIRE, MICHIGAN.

COMBINED SCALE AND CARRIER.

Application filed June 8, 1923. Serial No. 644,248.

To all whom it may concern:

Be it known that I, DAVID GUSTAFSON, a citizen of the United States, residing at Eau Claire, in the county of Berrien and State of Michigan, have invented new and useful Improvements in Combined Scales and Carriers, of which the following is a specification.

This invention relates to weighing devices, and has for its object the provision of a novel combined carrier and weigher for hay, straw, unthrashed grain and the like, though it is of course equally capable of use as a carrier and weigher for any other commodities capable of being handled in the manner disclosed.

An important and more specific object is the provision of a device of this character which includes a carriage movable along a suitable track and provided with means for pulling the carriage along the track, which same means is employed for lifting the load from the floor or other support so that the weight thereof will actuate the scale indicator.

An additional object is the provision of a device of this character which will be simple and inexpensive in manufacture, highly efficient in use, durable in service and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of the device,

Figure 2 is a vertical cross section taken through the center,

Figure 3 is a horizontal section on the line 3—3 of Figure 1,

Figure 4 is a vertical cross section on the line 4—4 of Figure 1,

Figure 5 is a detail view of the connecting means between the movable element and the scale,

Figure 6 is a detail section,

Figure 7 is a detail perspective view.

Referring more particularly to the drawings I have shown my device as comprising a carriage 10 formed as a suitable frame open at its center and provided at its upper corners with grooved rollers 11 which roll upon a suitable track 12 located in the barn or other structure where the device is used. At the lower corners of this frame are journaled grooved pulleys 13 for a purpose to be described.

The lower portion of the frame is formed with a socket or seat 14 communicating with an opening 15 in the bottom of the frame for the passage of a stem 16 which carries a cross head 17 slidably engaged upon spaced upright parallel guide rods 18 which traverse the open central portion of the frame. This stem 16 is slidable through the cross head and has its upper end terminating in a conical head 19 engaged by a pair of pivoted dogs 20 carried by the cross head and held against excessive downward swinging by engagement with stops 21. By this connection it will be seen that when there is no weight upon the stem and it is pushed upwardly, outward swinging of the dogs to bring them away from the head 19 will permit the stem to be withdrawn from the cross head and frame, the head 19 passing through an opening 22 in the cross head and also passing through the opening 15 at the bottom of the frame. The lower end of the stem carries a hook 23 engageable with the load and intermediate its ends the stem carries a sheave wheel 24.

The operating means for the stem comprises a cable 25 which is trained over the sheave wheel 24 and over both pulleys 13. One end of this cable is knotted as shown at 26 to anchor it with respect to the frame while the other end is the end which is pulled upon to raise the stem and the load carried thereby.

Within the socket 14 is a spring 27 which is heavy enough to sustain any load capable of being carried by the device and this spring engages against the underside of the cross head as clearly shown. Recoil springs 28 surround the guide rods 18 above the cross head so as to take up any shock.

Carried by one side of the frame is a scale structure including a casing 29 having sight openings 30 and containing any ordinary or preferred scale device which will register weight in tons, hundredweights, and pounds, there being three dials disclosed for these three indications. The exact structure of this scale forms no part of the present invention but it is of that type which is provided with an operating pinion 31. Carried by the cross head is a depending rack 32 which meshes with the scale pinion 31.

In the operation of the device the stem 16 is initially withdrawn from the frame and the hook carried thereby is engaged with the load to be carried and weighed. The operator then pulls upon the cable 25 and this naturally results in moving the stem and the load upwardly, the tapered head on the stem passing through the opening 15 in the bottom of the frame and through the opening 22 in the cross head. As this head is tapered, it will upon engaging the dogs 20, lift them upwardly out of the way until the head passes beyond them whereupon these dogs will drop back and be engaged beneath the head. As soon as the head engages these dogs it is held thereby and when the pull on the cable is released the spring 27 will support the load. However, the weight of the entire load coming upon the cross head will move it downwardly to a limited extent against the resistance of the spring 27 and the downward movement of the cross head causes corresponding movement of the rack 31 which operates the scale. The exact weight of the load may then be ascertained merely by inspecting the indications on the respective dials of the scale. If desired the load may be moved then to any desired place by pulling upon the cable as the carriage will travel along the track with which it is associated.

From the foregoing description and a study of the drawings it is apparent that I have thus provided a simply constructed and consequently inexpensive combined carrier and scale which will be very advantageous for use in handling hay, straw, grain and in fact any desired commodities. As the structure involves so few parts it is apparent that there is little to get out of order so that the device should have a long life and satisfactorily perform all of its functions.

While I have shown and described the preferred embodiment of the invention it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A carrier comprising a frame equipped with rollers and mounted upon a track, grooved pulleys journaled in said frame, a vertically movable cross head mounted within the frame, a spring supporting said cross head, dogs carried by the cross head and having limited downward movement, a stem carrying a hook and a sheave wheel, a cable trained under the sheave wheel and over said pulleys whereby to move the stem and the carriage, a head on said stem engaging said dogs for holding the stem suspended from the cross head, a scale structure mounted upon one side of the frame, and an operative connection between said cross head and the operating element of the scale.

2. A combined scale and carrier comprising a frame equipped with rollers movable along a track and further equipped with pulleys, guides within the frame, a cross head movable along said guides and formed with a central opening, the lower portion of the frame being formed with a socket and an opening communicating therewith, dogs pivoted upon the cross head, a scale structure carried by the frame and operatively connected with the cross head, a stem received within said openings and having a tapered head co-operating with the dogs, means on the stem for connection with a load, and hoisting means for moving the stem upwardly through said openings whereby its head will engage and be retained by said dogs.

In testimony whereof I affix my signature.

DAVID GUSTAFSON.