

W. CARSON.
HAY BINDER.
APPLICATION FILED MAY 12, 1910.

992,642.

Patented May 16, 1911.

Fig. 1

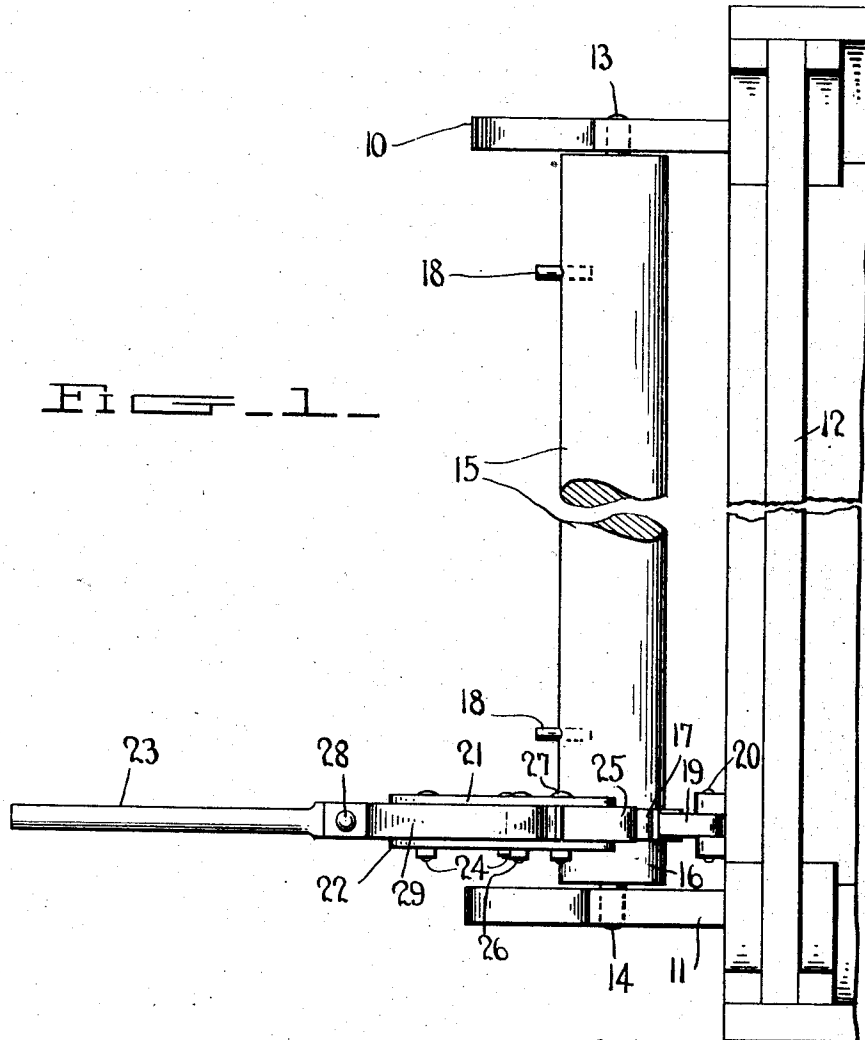
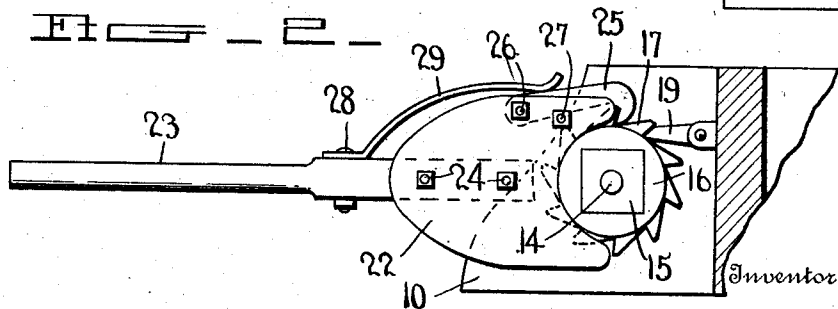


Fig. 2



Witnesses

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By *Handwritten Signature*

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UNITED STATES PATENT OFFICE

WALTER CARSON, OF PRINCETON, NEW JERSEY.

HAY-BINDER.

992,642.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER CARSON, a citizen of the United States, residing at Princeton, in the county of Mercer, State of New Jersey, have invented certain new and useful Improvements in Hay-Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to attachments to hay wagons for binding the load thereon, and has for one of its objects to simplify and improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a simply constructed device which may be readily applied without material structural changes to hay racks of various makes, and which does not interfere with the usual operations of the rack.

Another object of the invention is to provide a device of this character in two separate portions, a winding drum portion adapted to be detachably coupled to the rack, and an operating device adapted to be coupled to the drum when the latter is to be actuated, so that one operating device may be employed for a plurality of the winding drums.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims; and, in the drawings illustrative of the preferred embodiment of the invention,

Figure 1 is a plan view of a portion of a conventional hay rack with the improvement applied, Fig. 2 is an end view of the same with a portion of the rack broken away to illustrate the construction.

The improved device may be applied to hay racks and similar vehicles of any form, but for the purpose of illustration is shown applied to a conventional hay rack including spaced side members 10—11 and a body, a portion of the latter being represented at 12. The side members 10—11 are shown extending rearwardly of the body 12, and pivoted at 13—14 in the side members and extending between the same is a winding drum 15, the latter being preferably of wood and with the pivots 13—14 of metal. Fitting

over one end of the drum 15 is a shell or casing 16 having ratchet teeth 17 encircling its inner end. The shell 16 is preferably square internally and fits over a squared portion of the drum so that the shell 16 with its teeth 17 will rotate with the drum. The drum is utilized to receive the winding cables by which the load is secured upon the rack, and these winding cables are connected to the drum in any suitable manner, preferably by being looped at their ends over one or more laterally extending pins 18. As many of the pins may be employed as required, but generally two will be found sufficient as shown.

A backing pawl 19 is pivotally connected at 20 to the body 12 and engages one of the ratchet teeth 17 of the shell 16 and thus holds the drum and the cables wound thereon, and thus retains the grip of the cables upon the load, as will be obvious.

A lever device is employed for forcibly rotating the drum 15, and the construction of this drum forms an important portion of the present invention. The operating device comprises two plates 21—22 spaced apart a distance corresponding to the widths of the teeth 17, the plates being cut accurately at one end to engage around the shell 16 at one side of the teeth 17 and upon the body of the drum at the opposite side of the teeth, as shown in Fig. 1. By this means the plates are held from lateral movement by the projecting portions of the teeth, while at the same time the plates are free to be oscillated upon the shell and drum. The operating lever or handle 23 extends at one end between the plates 21—22 and is secured thereto by bolts or other suitable fastening devices 24. Extending between the plates 21—22 is a pawl 25 and pivoted at 26 to the plates, the pawl being arranged to engage the teeth 17 of the ratchet wheel one at a time. A transverse stop pin 27 extends through the plates 21—22 in position to limit the downward movement of the pawl 25, as shown. Connected at 28 to the handle or lever 23 is a spring arm 29 which extends forwardly and engages the pawl 25 and maintains the latter yieldably in its downward position. By this simple means it will be obvious that when the operating device is located with its plates 21—22 at opposite sides of the series of ratchet teeth 17 and elevated into the position shown in Figs. 1 and 2, the pawl 25

will engage with one of the teeth 17, and then when the handle 23 is depressed the drum 15 will be rotated for a distance equal to the movement which is imparted to the lever device, the backing pawl 19 operating to maintain the drum in the position into which it is moved. The operating device is then elevated into its former position and the pawl 25 connected with another tooth and the operation repeated, this action winding the cables which are connected to the pins 18 around the drum and applying the requisite strain to the load upon the rack, which strain will be retained by the action of the pawl 19. When the requisite strain has been applied the operating device is simply detached from engagement with the drum and disposed of in any suitable manner either upon the rack or otherwise disposed of as may be more convenient. Where a plurality of racks are employed at short intervals one of the drums 15 with its ratchet shell will be attached to each rack and one or more operating devices employed for all of the racks, thereby saving the expense of a separate operating device for each rack.

The improved device is simple in construction, can be inexpensively manufactured and applied, and constructed of any suitable material and of any suitable strength.

What is claimed is:—

1. The combination with a winding drum, of a ratchet wheel connected to the drum, a backing pawl engaging the teeth of the

ratchet wheel, two plates spaced apart and cut arcuately at one end to detachably engage against the drum and upon opposite sides of the ratchet teeth, an operating handle connected between the plates, and a hook pawl swinging between the plates and engaging the ratchet teeth.

2. The combination with a hay rack, of a winding drum mounted for rotation upon said rack, a ratchet wheel connected to the drum, a backing pawl connected to the rack and engaging the teeth of the ratchet wheel, two plates spaced apart and cut arcuately at one end to detachably engage against the drum and upon opposite sides of the ratchet teeth, an operating handle connected between the plates, and a hook pawl swinging between the plates and engaging the ratchet teeth.

3. In a windlass, the combination with a ratchet gear operatively connected therewith and of a larger diameter than its shaft, and a backing pawl stationarily secured and engaging the teeth of said ratchet, of a windlass bar having a pair of plates secured to either side of one end, said plates having their end edges cut arcuately, and a hook pawl pivotably mounted between the plates.

In testimony whereof, I affix my signature, in presence of two witnesses.

WALTER CARSON.

Witnesses:

LOUIS CARSON,
S. H. VAN CLEVE.