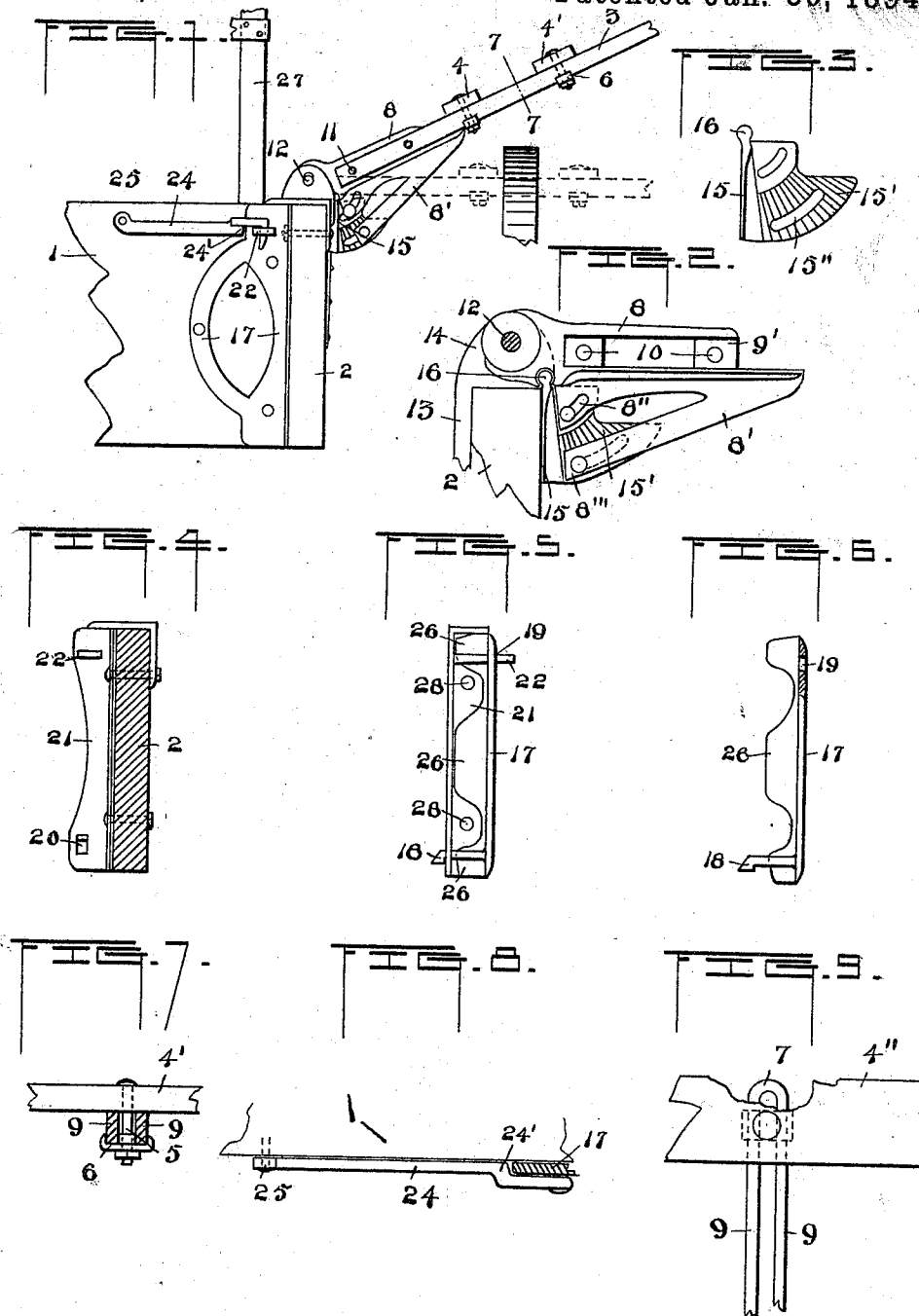


(No Model.)

E. WHITE.
HAY RACK.

No. 513,549.

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UNITED STATES PATENT OFFICE.

ELI WHITE, OF SODUS, NEW YORK.

HAY-RACK.

SPECIFICATION forming part of Letters Patent No. 513,549, dated January 30, 1894.

Application filed April 3, 1893. Serial No. 468,874. (No model.)

To all whom it may concern:

Be it known that I, ELI WHITE, a resident of Sodus, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Hay-Racks; 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 pertains to make and use the same.

The invention relates to wagon racks and bodies and has for its object to increase their efficiency and durability without unduly increasing their cost or complexity of parts; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is a partial end elevation of a wagon body and rack the latter being indicated in a lowered position in dotted lines. Fig. 2 is a similar view on an enlarged scale an upper corner of a side board being the only part of the body shown. Fig. 3 is a side elevation of a toothed or serrated hinged plate or ratchet for adjusting the rack. Fig. 4 is an elevation of an end-board receiving-iron bolted to a side board shown in section. Fig. 5 is a side elevation of the end-board receiving-iron bolted to a side board detachably connected with an end-board iron fixed to the end board. Fig. 6 is a side elevation of the latter iron detached. Fig. 7 is a partial transverse section on line 7-7 of Fig. 1. Fig. 8 is a top plan of a hook; and Fig. 9 is a partial plan showing the outer extremity of an arm of the rack.

Numeral 1 denotes an end board and 2 a side board of a wagon box or body.

3 indicates an adjustable arm of a rack supported upon the body, each side being supplied with as many as desired or necessary. Each arm comprises two members 9 as indicated in Figs. 7 and 9.

4, 4', 4'' indicate the longitudinal bars of the rack.

The rack arms are made of sheet steel by bending a piece of suitable length and width thus forming an arm or bar having two parallel members 9 joined by a bend at the outer end as indicated at 7 in Fig. 9. The two members may however be made of distinct pieces and bolted together with distance blocks between them but it is preferred to make them of one piece as shown. The longitudinal bars

of the rack are each adjustably secured to these arms by means of a bolt 5 and clamps 6 as shown. These have a spacing block situated between the members 9 and adapted to receive the bolt 5, the construction being such that the said members 9 are held in fixed relation to each other and also to the longitudinal bars, but so that said bars can be readily adjusted on the arms to and from the wagon.

Each arm of the rack is secured to a hinge piece 8 having a recess 9' on each side to receive the end of a member 9. Bolt holes 10 are provided to receive bolts 11 whereby the arm and hinge piece are connected.

12 denotes the pivot of the hinge and 13 is a part thereof of saddle form fixed to the side board and having two ears 14 to receive between them the part 8 attached to the arm 3.

15 denotes a plate or ratchet having a rounded head 16 adapted to be slipped lengthwise into a suitable socket in the saddle 13, the latter being a fixed part of the rack arm hinge. This plate 15 hangs beside and against the side board 2.

The arm-receiving hinged piece 8 has a fin or web 8' provided with a part having a curved slot 8'' and another part 8''' provided on its inner face with teeth or ribs (not shown) adapted to engage similar teeth or ribs 15' on the ratchet 15. A curved slot in said hinged ratchet plate 15 is denoted by 15''. By means of the curved slots and suitable bolts the hinged arm-holding piece 8 and the ratchet plate 15 can be secured together in various positions, their respective ratchet teeth engaging each other in every adjustment and the elevation of the arm being thus varied to any desired degree of inclination above the horizontal.

In Fig. 1 the horizontal position is indicated by dotted lines, a portion of a wagon wheel being shown in full lines. As the bars 4 and 4' are adjustable on the arms 2 they can be moved to admit the wheel between them and thus a rack is adapted for use with wagons having wheels of various sizes and forms. These bars are placed near the wagon it being desirable to support the arms, lengthwise of the wagon body, near the point of attachment thereto, because they are there subjected to the greatest strains in the direction of the length of the body. The bar 4 is placed close

to the end of the web 8' the length of which is preferably within the usual distance from the body of a wagon wheel that is not dished.

The bar 4' is placed outside the wheel and
5 as near to the plane of said wheel as practicable so that the two bars act to protect the load sustained on the rack from the wheel, which protection is effectually secured in case of hay, grain in the straw, or the like by suitably elevating the arms. And it is evident
10 that the arms will not require as great an elevation for this purpose as they would were the bars 4 4' not arranged close to the wheel on either side thereof. The adjustment of
15 the brace formed by the toothed web 8' and ratchet plate 15 is effected near the wagon body instead of near the wheel as in the construction shown in my Patent No. 461,227, granted October 13, 1891, and it cannot therefore
20 interfere with the suitable placing of the bars for the objects stated.

To provide a removable end board without fastening rods or bars which board shall be strong and easily removable a plate 17 is secured to each end of the board and provided
25 with a fixed downwardly turned hook 18 and a slot 19, the former being adapted to enter a slot 20 in the plate or end-board receiving-iron 21. Fixed on said latter plate is a stud
30 22 adapted to enter a slot 19 in the plate 17. This stud is provided with an eye to receive the pivoted hook 24. The pivot 25 of the hook is fixed in the end board and is preferably above the body of the hook and hook engaging stud. The hook is provided with a shoulder
35 24' adapted to fit and bear against the edge of plate 17. (See Fig. 8.)

Referring to Fig. 5, 28 denotes bolt holes by which plate 21 is secured to the side board, said plate being angular in form and the bolt
40 holes situated in a side 21' thereof. 26 indicates angular extensions or flanges of the plate 17 which bear against plate 21 and serve as distance pieces whereby the two plates are
45 kept apart a suitable distance to prevent wearing the end board. To remove the end board it is only necessary to disengage the pivoted hooks 24 and tip it until the studs 22 are withdrawn from the plates 17 whereupon the end
50 board with its plates 17 can be lifted and the fixed hooks 18 withdrawn from slots 20 and said board is then entirely separated from the wagon. The end rack 27 can be detachably attached to the end board and will be removable
55 from the body with or without said board.

The herein described adjustable arms for the rack made of two parallel members consisting of thin strips of steel placed edgewise in vertical planes and spaced by clamping
60 blocks are cheap, strong and durable. They

are fastened in recesses in the iron of the hinge by which they are joined to the wagon body and supported at their edges in said recesses and fastened laterally therein and being rigidly held to lengthwise bars by the
65 clamps which are also spacing devices and connected by the medium of these bars to other arms they are very firmly supported and held.

The situation of the bars near the body and close to the wheels on each side thereof and
70 means for adjusting the same and also the ratchet plate and web fixed on the arm socket are regarded as important features. These parts are easy of manipulation and not liable to be broken or put out of order and do not
75 interfere with the wheel under any practical adjustment while they are adapted to defend the wheel from the load supported on the rack without the use of a special cover for the purpose.
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Having thus fully described my invention, what I claim is—

1. A wagon rack consisting of longitudinal bars secured to transverse arms 3 said arms being adapted for attachment to a wagon body
85 and comprising thin parallel members of metal held in fixed relation to each other by a clamping device 6 embracing each member and a bolt 5 passing through the bar and clamp, substantially as set forth.
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2. In a wagon rack an iron fixed on the side board and an arm pivoted in said arm provided with a web or fin 8' in combination with a ratchet 15 loosely suspended from the fixed iron and means for adjusting the relative position of the parts to vary the inclination of the arm, substantially as set forth.
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3. In a wagon body an end board provided with plates 17 having fixed hooks 18 in combination with the side boards having plates
100 21 provided with perforated studs said plates having suitable slots to receive the hooks and studs respectively and fastening devices adapted to enter the studs, substantially as set forth.
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4. In a wagon body the angular plates 21 having one side thereof fixed to the side boards, the angular plates 17 fixed to an end board and fitting within said first named plates and provided with flanges 26 and devices for detachably connecting the plates, substantially as set forth.
110

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELI WHITE.

Witnesses:

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