No. 813,719.

PATENTED FEB. 27, 1906.

C. KOEHLER.

HAY STACKER.

APPLICATION FILED SEPT. 21, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

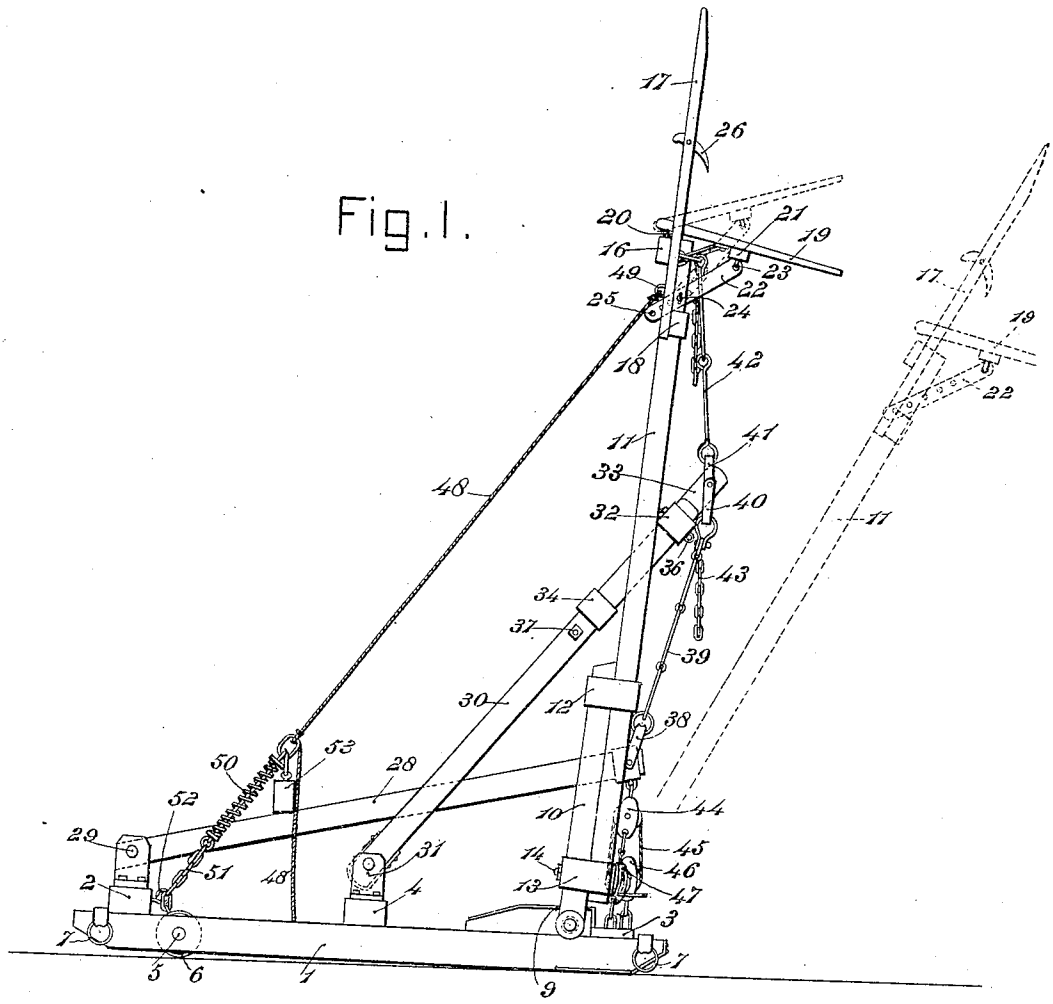
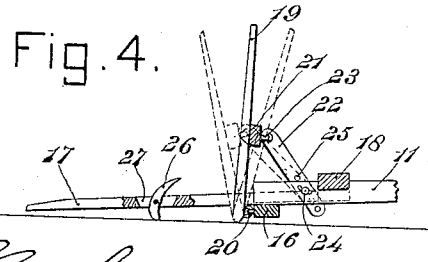


Fig. 4.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

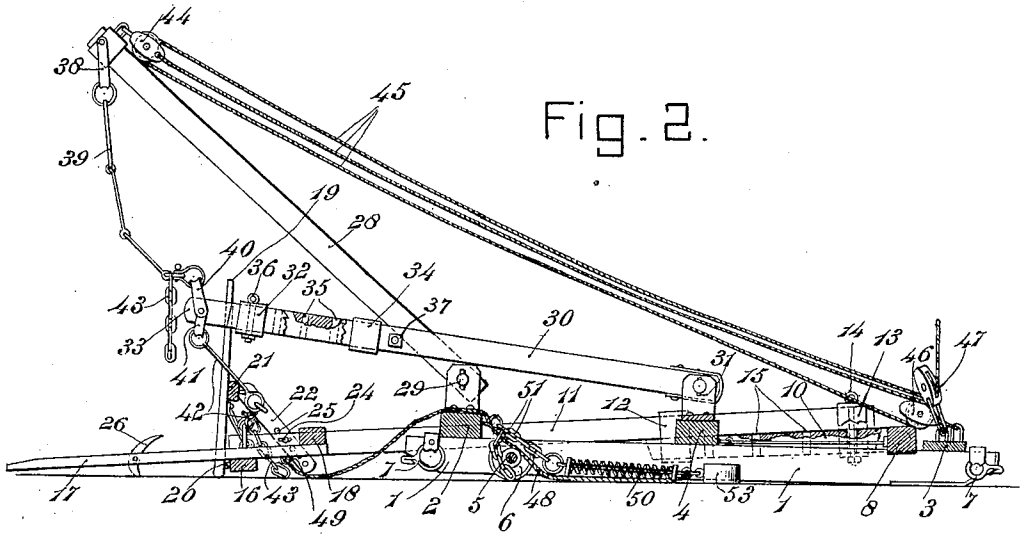


Fig. 3.

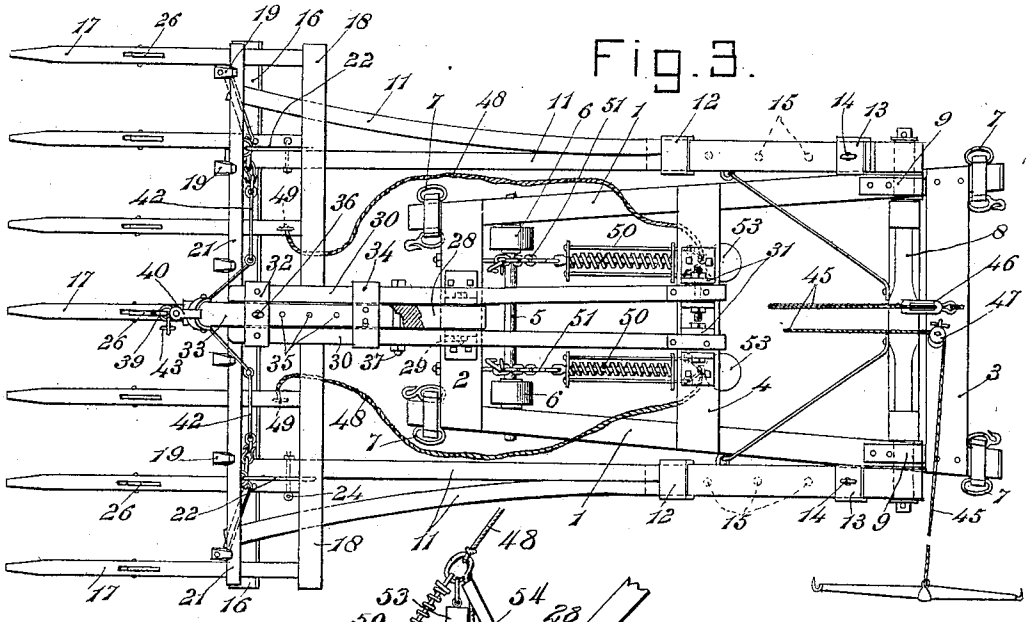
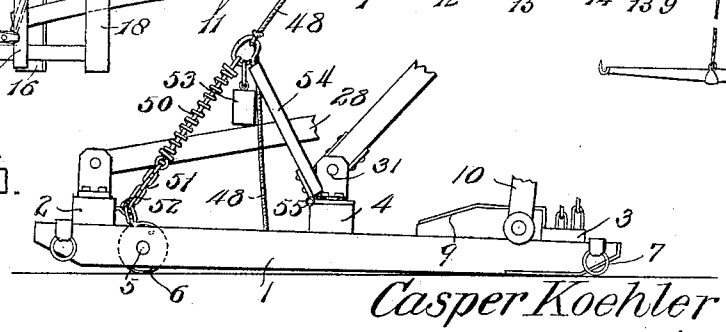


Fig. 5.



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UNITED STATES PATENT OFFICE.

CASPER KOEHLER, OF CANYON CITY, OREGON.

HAY-STACKER.

No. 813,719. Specification of Letters Patent. Patented Feb. 27, 1906.

Application filed September 21, 1905. Serial No. 279,512.

To all whom it may concern:

Be it known that I, CASPER KOEHLER, a citizen of the United States, residing at Canyon City, in the county of Grant and State of Oregon, have invented a new and useful Hay-Stacker, of which the following is a specification.

This invention relates to hay-stackers, and has for its object to provide certain new and useful improvements whereby the manipulation of the device is materially simplified.

It is also designed to provide improvements in the lifting or elevating means in order that the necessary power for manipulating the same may be substantially uniform throughout the operation of the device.

Other objects of the invention reside in providing for the convenient adjustment of the device for varying the radius of action of the hay-fork, to adjust the positions of one set of fingers of the fork, and to cushion the hay-fork at the limit of its rearward movement.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of a hay-stacker constructed in accordance with the present invention with the hay-fork in its elevated position. Fig. 2 is a longitudinal sectional view with the hay-fork in its depressed position for receiving a load of hay. Fig. 3 is a plan view of Fig. 2. Fig. 4 is a detail fragmentary view of the hay-fork. Fig. 5 is a fragmentary side elevation of a detail of the invention.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

The present device includes a base-frame made up of spaced sills or runners 1, which are rigidly connected by front and rear cross-bars 2 and 3 and an intermediate cross-bar 4. Adjacent the front of the frame and immediately in rear of the front cross-bar 2 there is an axle 5, having supporting-wheels 6 to facilitate the transportation of the device. The ends of the sills or runners project beyond the end bars and are provided with rings or links 7, through which anchoring-stakes are adapted to be driven to hold the base-frame rigid during the operation of the device.

Extending transversely across the rear end portion of the base-frame is a rock-bar 8, journaled in suitable bearings 9, provided upon the top of the respective sills or runners, the extremities of the rock-bar being projected beyond the frame. At each side of the base-frame there is a vertically-swinging stacker-arm made up of a relatively short inner arm member 10, carried by the adjacent end of the rock-bar, and an outer longer arm member 11, slidably overlapping the upper face of the arm member 10. A substantially U-shaped guide-bracket 12 is carried by the outer end of the arm member 10 and embraces the arm member 11, and a similar bracket 13 is carried by the inner end of the arm member 11 and embraces the arm member 10, there being a movable fastening 14, carried by the bracket 13 and piercing the two arm members to rigidly connect the same when the outer member has been adjusted to any desired position. As best indicated in Fig. 3 of the drawings, it will be noted that the lower arm member 10 is provided with a series of perforations 15 for the individual reception of the fastening 14, so as to permit endwise adjustment of the arm member 11. The stacker-arms project a suitable distance in front of the base and are connected by a cross-bar 16.

The stacker-head includes a fork made up of a series of tines 17, rigidly secured to the cross-bar 16 intermediate of their ends, the rear ends of the tines being braced and connected by a cross-bar 18, which is in turn connected to the stacker-arms. Upright fingers 19 are secured to the cross-bar 16 and located between the successive tines 17. As best indicated in Fig. 4 of the drawings, it will be noted that each finger 19 has a loose or pivotal connection 20 with the cross-bar 16, and the series of fingers is rigidly connected by a cross-bar 21. Adjacent each end of the cross-bar 21 there is a brace or link 22, having a loose connection 23 with the cross-bar 21, from which it inclines downwardly and rearwardly alongside of the adjacent stacker-arm, to which it is adjustably connected by a suitable removable fastening 24, which pierces the stacker-arm and one of

a series of perforations 25 in the brace. The purpose of the braces 22 is to support the series of fingers 19 at any desired angle with respect to the tines 17. Certain or all of the tines 17 are provided with upstanding prongs 26, each of which is pivoted intermediate of its ends in an upright slot 27 in one of the tines, with the greater portion of the prong extending above the tine and bowed or inclined rearwardly. The purpose of these prongs is to prevent the hay from being drawn off of the stacker-head when the horse-rake is being withdrawn from the stacker after having placed a load of hay thereon.

For elevating the stacker arms and head there is a mast 28, fulcrumed at its foot in a step-bearing 29, carried by the cross-bar 2. Straddling the mast there is a prop made up of substantially parallel bars 30, which have their lower ends mounted in the respective step-bearings 31, provided upon the intermediate cross-bar 4. The upper or free ends of the bars 30 are connected by a bracket 32, and between the outer free ends of the bars is an extensible bar member 33, which is provided at its inner end with a slide or bracket 34, slidably embracing the prop members 30. The extensible member 33 is provided with a longitudinal series of perforations 35 for individual engagement by a pin or fastening 36, removably piercing the bracket 32, whereby the extensible member 33 may be held in any of its adjusted positions. A bolt or brace rod 37 pierces the prop members 30 in front of the mast 28. The top of the mast is pivotally embraced by a clevis 38, from which a flexible connection 39, preferably a chain, extends to a clevis 40 upon the free end of the prop. Another clevis 41 straddles the free end of the prop, and chains or the like 42 diverge from the clevis 41 and are connected to the stacker-head adjacent opposite sides thereof. The chain 39 is provided with a series of short links 43 for individual engagement with the clevis 40, so as to adjust the length of the chain 39 in accordance with endwise adjustments of the prop 30 and stacker-arms, a similar expedient being employed for connecting the chains 42 to the stacker-head. The tackle for raising and lowering the mast includes a block 44, carried at the upper end of the mast upon the rear side thereof and to which one end of a rope or cable 45 is connected. This cable extends downwardly from the block to another block or pulley 46, carried upon the middle of the rear cross-bar 3 of the base-frame, from which the cable passes upwardly through the block 44 and thence downwardly to another block 47, from which it runs off to one side of the device and is adapted to have a draft-animal or team hitched thereto in any suitable manner.

In practice a load of hay is placed upon the stacker-head in the usual manner, whereupon the draft-animal or team, which is hitched to the free end of the cable 45, is driven away from the device, thereby pulling upon the upper end of the mast 25 and swinging the same from its position in Fig. 2 upwardly and rearwardly to its position shown in Fig. 1, whereby the stacker-arms and stacker-head, together with the load of hay, will be swung upwardly and rearwardly and then deposited upon the stack which is being formed in rear of the stacker. It will here be noted that the fingers 19 support the load of hay when the stacker-arms are approaching the vertical, and when the latter swing slightly in rear of the vertical the load will slide off of the fingers to the stack without any interruption on the part of the prongs 26.

To limit the rearward swing of the stacker-arms, there is provided a limiting device consisting of brace cables or rods 48, connected to the stacker-head, as at 49, with their other ends connected to spring-tension devices 50, each of which is provided with a chain 51, having one of its links engaged with a hook 52, carried by the rear side of the front cross-bar 2, whereby the length of the stays or braces may be adjusted in accordance with the adjustment of the stacker-arms. The momentum acquired by the stacker-arms in swinging past the vertical is checked by the stays or braces 48, and all jars are absorbed by the tension devices 50, thereby to prevent injury to the several parts of the device. Suitable weights 53 are provided upon the stays or braces 48, preferably by the connections between the tension devices 50 and the ropes or cables 48, so as to assist in returning the stacker-arms to their normal positions. It is desirable to prevent each weight 53 from swinging laterally and interfering with the operation of the device, wherefore, as shown in Fig. 5 of the drawings, I propose to employ a guide-arm 54 for each of the weights, said arm being hinged to the intermediate cross-bar, as at 55, and connected to the cable 48 at the point of connection between the weight and said cable, whereby the arm swings vertically with the weight and at the same time prevents lateral swinging thereof.

Having fully described the invention, what is claimed is—

1. A hay-stacker comprising a base-frame, vertically-swinging stacker-arms pivotally supported upon the frame, a stacker-head carried by the free ends of the arms, a mast pivotally rising from the frame, a prop hinged to the frame and straddling the mast, a connection between the free end of the prop and the stacker-arms, a connection between the free ends of the mast and the prop, and a block and tackle connected to the mast and the rear portion of the frame for swinging the mast and elevating the stacker-arms.

2. In a hay-stacker, the combination with

a base-frame, of longitudinally-extensible stacker-arms pivotally supported upon the base-frame, a stacker-head carried by the free ends of the arms, a mast pivotally supported upon the frame, a prop hinged to the base-frame and comprising spaced members embracing the mast, an extensible prop member shiftable endwise between the outer end portions of the hinged prop members, a connection between the extensible prop member and the stacker-arms, another connection between the top of the mast and the extensible prop member, and a block and tackle extending between the top of the mast and the base-frame.

3. In a hay-stacker, the combination of a base-frame made up of spaced sills, and front, intermediate and rear cross-bars connecting the same, of a rock-bar mounted upon the rear portion of the frame and projected at opposite sides thereof, stacker-arms carried by the projected ends of the rock-bar and extending in front of the base-frame, a stacker-head carried by the free ends of the stacker-arms, a mast pivotally rising from the front cross-bar, a prop pivotally supported upon the intermediate cross-bar and straddling the mast, a connection between the free ends of the stacker-arms and the free end of the prop, a connection between the free ends of the mast and the prop, and a block and tackle extending between the free end of the mast and the rear cross-bar of the base-frame.

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

CASPER KOEHLER.

Witnesses:
H. L. KUHL,
GEO. H. TRACY, Jr.