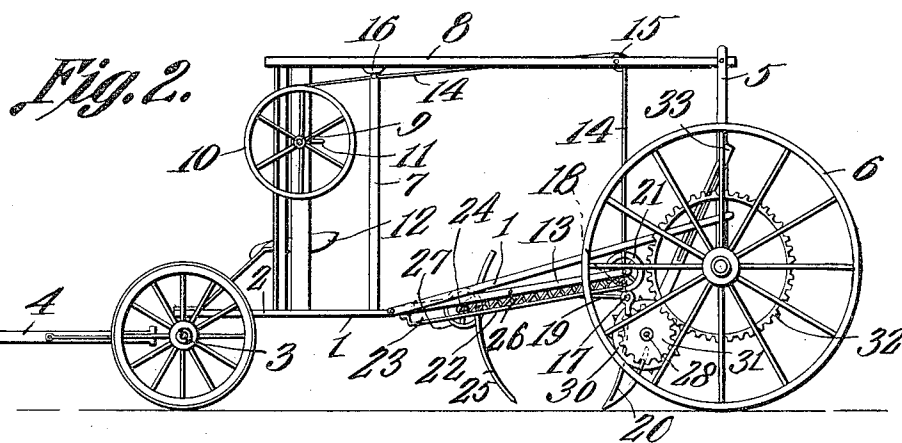


APPLICATION FILED JAN. 25, 1912.

Patented June 10, 1913.

2 SHEETS—SHEET 1.



Witnesses
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HAY RAKE.

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2 SHEETS-SHEET 2.

Fig. 3.

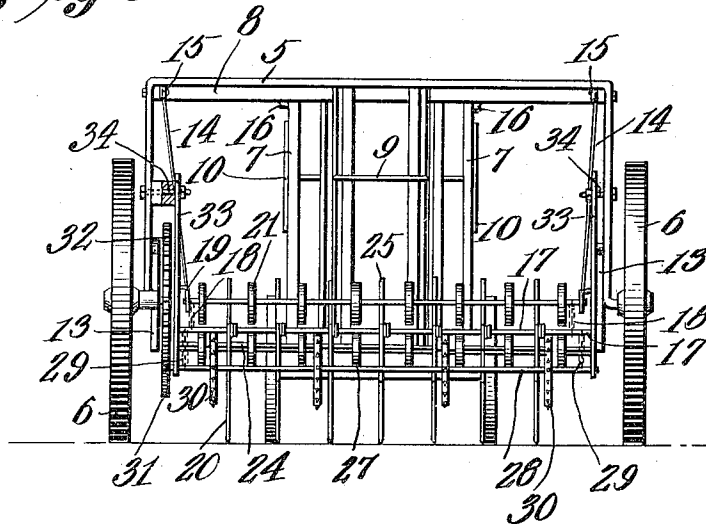
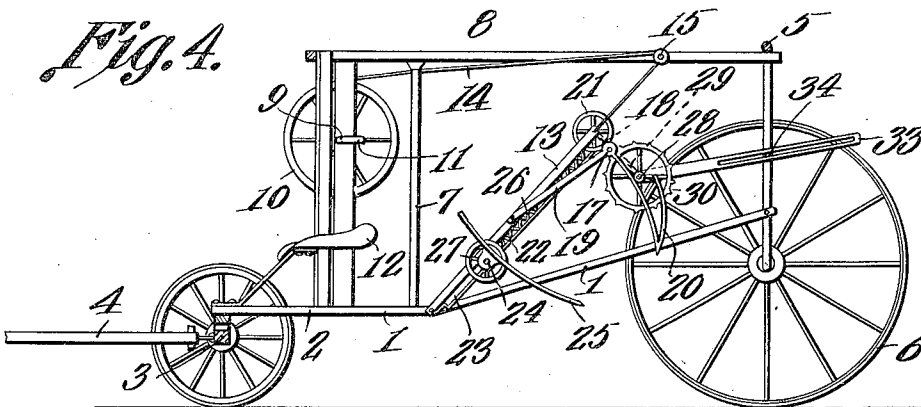


Fig. 4.



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UNITED STATES PATENT OFFICE.

HJALMAR TORGERSEN, OF ASHBY, MINNESOTA.

HAY-RAKE.

1,064,569.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed January 25, 1912. Serial No. 673,390.

Be it known that I, HJALMAR TORGERSEN, a citizen of the United States, residing at Ashby, in the county of Grant and State of Minnesota, have invented a new and useful Hay-Rake, of which the following is a specification.

This invention relates to hay rakes and is more particularly an improvement upon the structure disclosed in Patent No. 1,001,904 issued to me on August 29, 1911.

The principal object of the invention is to provide means whereby the roll of hay is prevented from traveling forward away from the teeth of the rake while the machine is traveling downgrade.

A further object is to provide roll holding means which also operate to compress the hay forming the roll.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a plan view of the machine. Fig. 2 is a side elevation. Fig. 3 is a rear elevation. Fig. 4 is a section on line A—B Fig. 1.

Referring to the figures by characters of reference 1 designates the main frame of the machine, said frame having a forwardly extending tongue 2 supported by the front or steering axle 3 from which a draft tongue 4 extends. The sides of the main frame are inclined upwardly and rearwardly and are secured, at their rear ends, to the side portions of an arched axle 5 supported by the rear wheels 6 of the machine. Standards 7 are arranged on the front portion of the main frame and support a top frame 8 the rear end portion of which is secured to the arched axle 5. A shaft 9 is journaled in two of the standards 7 and is provided, at its ends, with grooved wheels 10 while at an intermediate point said shaft has a crank 11 whereby the shaft can be easily rotated by the driver who occupies the seat 12.

A supplemental frame 13 is pivotally mounted, at its forward end, upon the sides of the main frame 1 and the rear end of this

supplemental frame is adapted to swing upwardly between the sides of the arched axle 5. This swinging movement of the supplemental frame is effected by means of cables 14 or the like secured to the rear end portion of the frame 13 and extending upwardly over guide sheaves 15 mounted on the rear portion of the top frame 8. The said cables then extend forwardly into engagement with guide sheaves 16 and are secured at their front ends to the grooved wheels 10. Thus it will be seen that when shaft 9 is rotated in one direction, the cables 14 will be simultaneously wound on the wheels 10 and the supplemental frame 13 swung upwardly at its rear end whereas, when shaft 9 is released, the cables 14 will unwind and the supplemental frame 13 will gravitate to its original position.

A bar 17 is supported from the rear end of the supplemental frame 13 by chains 18 or the like and braces 19 extend forwardly from the end portions of this bar to the sides of the frame 13. Said bar carries spring teeth 20 preferably of that type disclosed in my patent hereinbefore referred to. Wheels 21 are journaled above the bar 17 and between the sides of the frame 13 and are utilized to facilitate the rolling of the hay accumulated in the path of the teeth 20. These wheels have also been disclosed in my patent hereinbefore referred to.

Guides strips 22 are secured to the lower faces of the sides of frame 13 and extend longitudinally thereof. These strips cooperate with the sides of the frame 13 to form slots 23 in which the ends of a shaft 24 are mounted to slide. Spring fingers 25 are secured to this shaft and are bowed, the lower end portions of the fingers curving downwardly and rearwardly while the upper or shorter end portions of the fingers are curved upwardly and rearwardly. Coiled tension springs 26 are secured at their front ends to the end portions of shaft 24 while their rear ends are secured to the rear end portions of the sides of frame 13. These springs serve to hold the end portions of the shaft 24 normally pressed against the rear end walls of the slots 23. Wheels 27 are journaled on the shaft 24 at points between the fingers 25 and project rearwardly from the fingers sufficient distances to be readily engaged by the material accumulated by the teeth 20.

When the machine is drawn forwardly the

downwardly and rearwardly curved fingers 25 will slide over the material to be gathered and said material will be engaged subsequently by the teeth 20 and will accumulate upon the front faces of said teeth and gradually move into engagement with the wheels 21 which, by reason of the fact that they rotate freely, will permit the accumulated material to roll in front of the teeth in the manner described in my patent hereinbefore referred to. As the size of the roll increases the material will move against the fingers 25 and the wheels 27, said wheels facilitating the rotation of the roll and the fingers 25, by extending under the front portion of the roll, preventing any of the material from falling away from the roll. As the size of the roll continues to increase, the fingers 25 will be shifted forwardly, shaft 24 sliding within the slots 23 and springs 26, at the same time, becoming elongated. The springs will serve to pull the fingers 25 against the roll so as to hold the material under pressure. When it is desired to discharge the roll of material, the operator rotates shaft 9 and thus winds cables 14 on the wheels 10 and raises the rear portion of the frame 13. The material is thus free to gravitate from between the teeth 20 and the fingers 25 after which, by lowering the frame 13, the operation of the machine can be repeated. It will be apparent that by providing fingers 25 and spring connections, the roll will be prevented from moving forward in advance of the machine while the machine is traveling downhill. For the purpose of further facilitating the rolling of the bundle accumulated by the rake teeth 20, a shaft 28 is supported back of the teeth 20 by chains 29 and has toothed wheels 30 secured to it and adapted to rotate therewith. These wheels project between certain of the teeth 20 and a gear 31 is secured to one end of the shaft 28 and meshes with a larger gear 32 connected to and adapted to rotate with the hub of one of the wheels 6. Longitudinally slotted hangers 33 are connected, at their lower ends, to the end portions of the shaft 28 and these hangers are mounted to slide on guide bolts 34 carried by the arched axle 5. It will be understood that when the teeth 20 are in their lowermost positions the upper ends of the slots in hangers 33 will bear upon the guide bolts 34 and the sprocket 31 will thus be caused to swing backwardly against and to mesh with the gear 32. Thus, when the machine is moved forward, gear 32 will rotate gear 31 and the toothed wheels 30 will rotate so as to cause the teeth on the peripheries thereof to travel upwardly between the spring teeth, thereby further facilitating the rotation of the bundle gathered by said spring teeth. When the frame 13 is elevated in the manner hereinbefore described, the shaft 28 will swing forwardly

against the teeth 20, as shown in Fig. 4, and the hangers 33 will shift relative to the guide rod 34.

What is claimed is:—

1. In a rake the combination with a wheel supported structure and gathering teeth depending therefrom, of fingers supported in front of the teeth and adapted to ride over the material to be gathered, means for connecting the fingers to the structure to permit the fingers to slide bodily relative to the structure and toward or from the teeth.

2. In a rake, the combination with a wheel supported structure and gathering teeth depending therefrom, of fingers supported in front of the teeth and adapted to ride over the material to be gathered, means for connecting the fingers to the structure to permit the fingers to slide bodily relative to the structure and toward or from the teeth, and resilient means connected to the fingers and structure for holding said fingers normally drawn toward the teeth.

3. A rake including a wheel supported structure, gathering teeth depending therefrom, a series of fingers inclined downwardly and rearwardly from the supporting structure, means connecting said series to the structure to permit the series of fingers to slide bodily along the structure and toward or from the teeth, and spring connections between said series of fingers and the structure for holding the fingers normally drawn toward the teeth.

4. A rake including a wheel supported structure, gathering teeth extending downwardly therefrom, guides upon the structure, a series of fingers pivotally supported by the guides and adapted to slide bodily upon the guides and toward or from the teeth, and yielding means connected to said series of fingers for holding the fingers normally drawn toward the teeth, said fingers being adapted to ride over material in the paths thereof.

5. A rake including a wheel supported structure, gathering teeth extending downwardly therefrom, guides upon the structure, a series of fingers pivotally supported by the guides and adapted to slide bodily upon the guides and toward or from the teeth, yielding means connected to said series of fingers for holding the fingers normally drawn toward the teeth, said fingers being adapted to ride over material in the paths thereof, and means for simultaneously elevating the teeth and fingers relative to the structure.

6. In a rake the combination with a wheel supported structure and gathering teeth depending therefrom, of fingers supported in front of the teeth and adapted to ride over the material to be gathered, means for connecting the fingers to the structure to permit the fingers to slide bodily relative to

the structure and toward and from the teeth, and revoluble means located between and extending forwardly and rearwardly beyond the fingers for facilitating the rotation of the material accumulated between the fingers and gathering teeth.

7. In a rake the combination with a wheel supported structure and gathering teeth depending therefrom, of fingers supported in front of the teeth and adapted to ride over the material to be gathered, means for connecting the fingers to the structure to permit the fingers to slide bodily relative to the structure and toward and from the teeth, revoluble means located between and extending forwardly and rearwardly beyond the

fingers for facilitating the rotation of the material accumulated between the fingers and gathering teeth, revoluble means located between and projecting forwardly and rearwardly from the teeth for rolling material gathered by the teeth, and means operated by the supporting wheels for actuating the last named revoluble means.

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

HJALMAR TORGERSEN.

Witnesses:

L. J. HAUGE,

H. G. LUNDQUIST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."