

(No Model.)

3 Sheets—Sheet 1.

A. G. PARK & W. A. DEXTER.
MACHINE FOR RAKING AND COCKING HAY.

No. 504,088.

Patented Aug. 29, 1893.

Fig.1

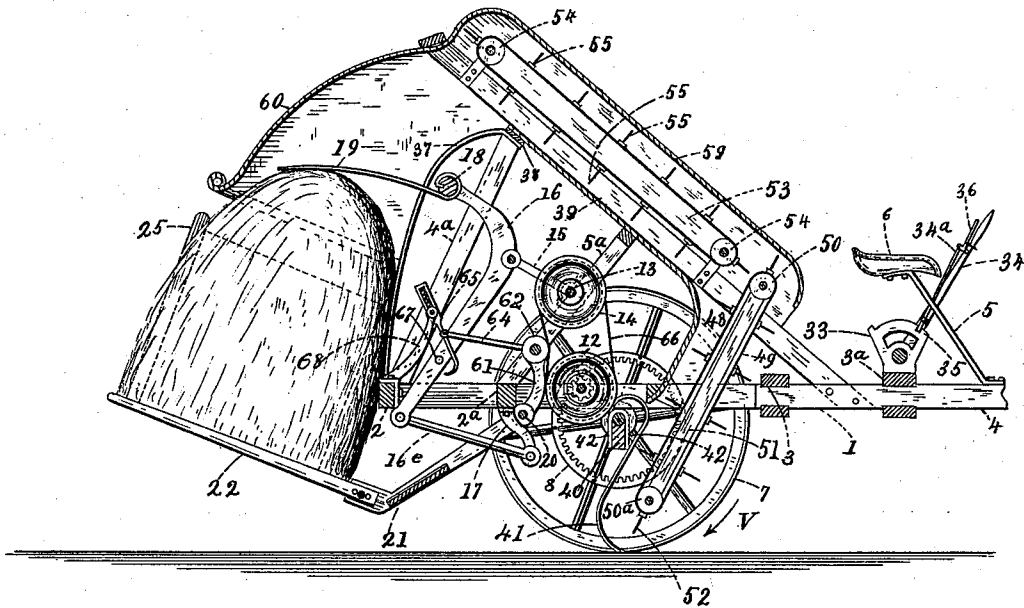
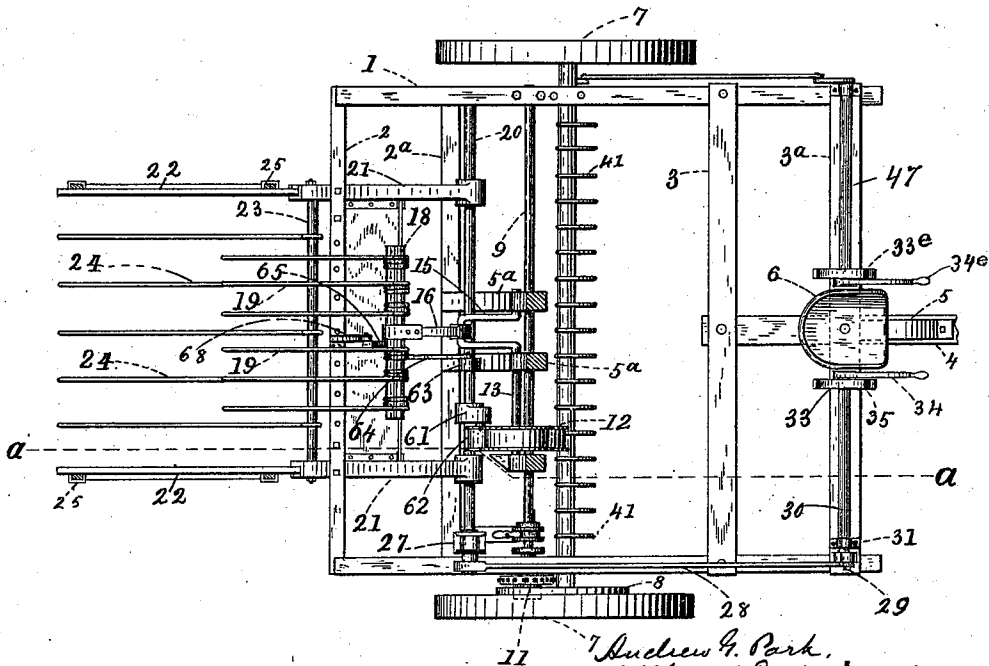


Fig.2



Witnesses.

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Fig. 3.

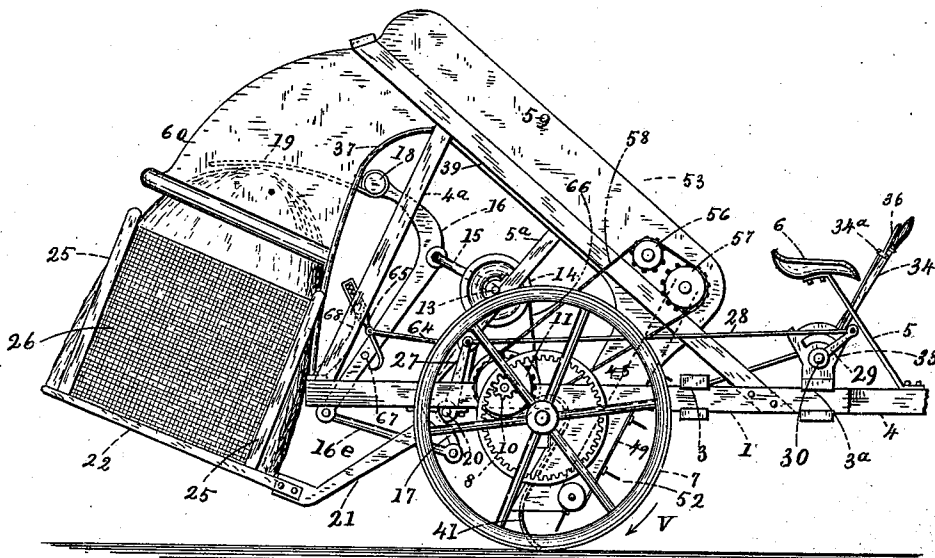


Fig. 5.

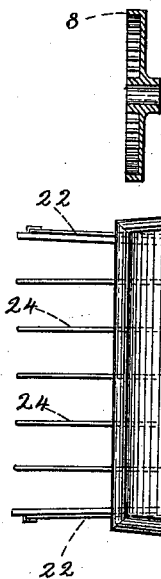
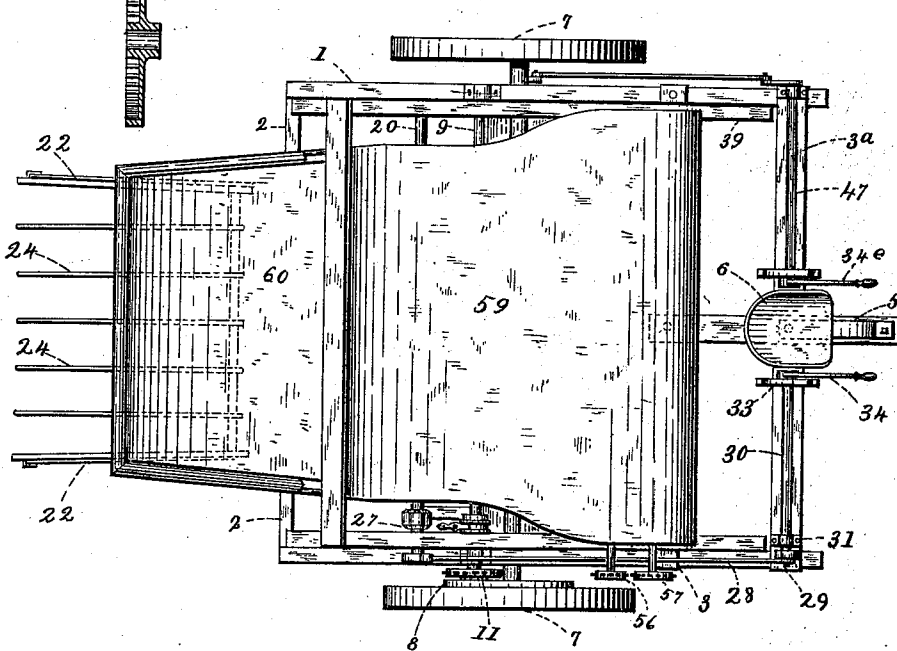


Fig. 4.



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Fig. 6.

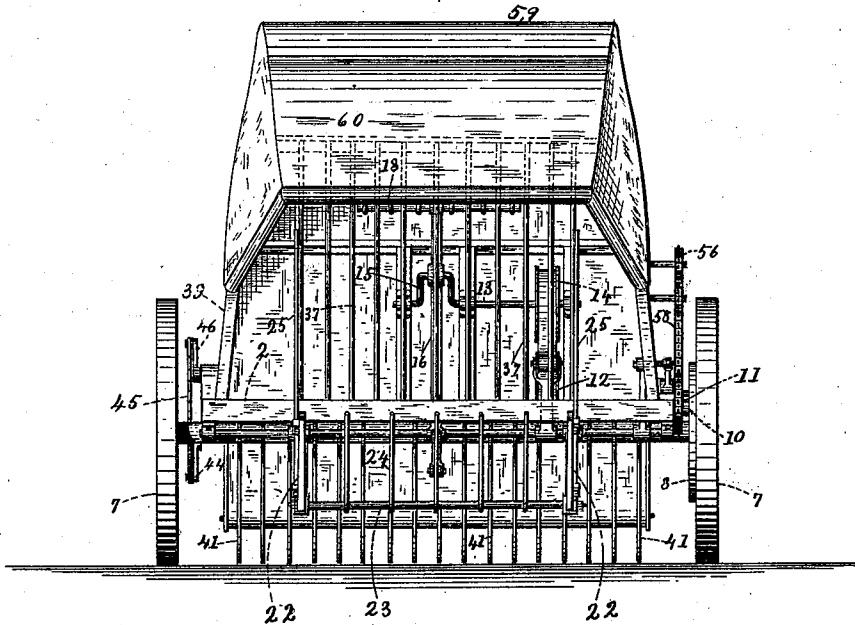
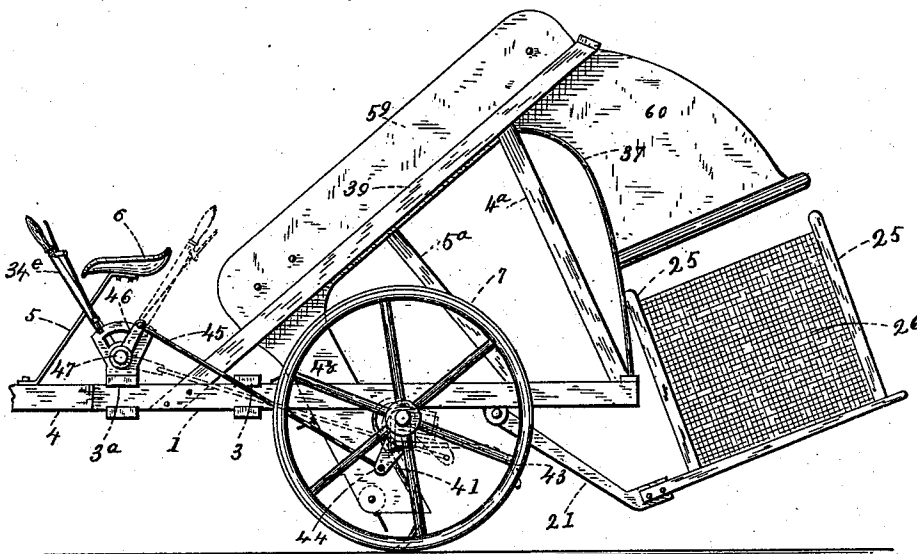


Fig. 7.



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UNITED STATES PATENT OFFICE.

ANDREW G. PARK AND WILLIAM A. DEXTER, OF WESLEY, NEW YORK.

MACHINE FOR RAKING AND COCKING HAY.

SPECIFICATION forming part of Letters Patent No. 504,088, dated August 29, 1893.

Application filed January 9, 1892. Serial No. 417,460. (No model.)

To all whom it may concern:

Be it known that we, ANDREW G. PARK and WILLIAM A. DEXTER, citizens of the United States, residing at Wesley, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Machines for Raking and Cocking Hay, of which the following is a specification.

Our invention consists in certain improvements in machines for raking and cocking hay, and will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section in or about line *a a* Fig. 2. Fig. 2 is a plan view of the mechanism below the elevator casing and elevators. Fig. 3 is a side elevation of the machine complete. Fig. 4 is a plan view. Fig. 5 is a central section through the internal gear wheel. Fig. 6 is a rear end elevation of the machine. Fig. 7 is a side elevation of the opposite side of the machine, showing the mechanism for turning the forks back, certain other parts of the mechanism in this view being omitted.

Referring to the drawings, the frame 1 is preferably made of wood and put together in the usual way. It is provided with four cross-bars 2—2^a, 3 and 3^a, the usual pole 4, and the inclined supporting beams 4^a and 5^a. To the forward cross-bar 3^a, is secured a spring, 5, upon which the seat, 6, is fastened in the ordinary way. The driving wheels, 7, are secured to the axle so as to turn in boxes in the usual way, which, being well known and not a part of this invention, a further description here is unnecessary. To the shaft of the driving wheel is firmly secured an internal gear wheel, 8, and on the upper side of the frame, mounted in suitable boxes, is a transverse shaft, 9, upon which is firmly secured a pinion, 10, (see Fig. 3,) adapted to gear in with the gear wheel, 8. On the shaft, 9, is also securely fastened a sprocket wheel, 11, and a flanged pulley, 12. Above the flanged pulley is a crank shaft, 13, mounted in bearings in the inclined beams 5^a. Near one end of this crank shaft is rigidly secured another flanged pulley, 14, set so as to run in a line with the flanged pulley, 12, and at the opposite end of the shaft, 13, is the crank, 15.

This crank 15 is connected directly with the hay cocking fork arm, 16. To the lower end of this arm, 16, is pivoted a connecting rod 16^e having its opposite end pivoted to a stationary arm, 17, which is rigidly fastened to the under part of the frame, 1, by the usual bolts. At the top of the arm, 16, is a cross-bar, 18, to which the spring fork tines, 19, are attached substantially as shown in Fig. 1. From the above construction it will be seen that the hay cocking fork has a reciprocating forward and back movement as well as an up and down movement.

Near the rear of the machine is mounted bearings on the under side of the frame a transverse shaft, 20, upon which are rigidly mounted two arms, 21 having two side fork arms 22, and between the outer ends of the arms 21, is a shaft or cross bar 23, to which is secured a series of bars, 24, forming a fork upon which the hay cock is supported until completed. On each side of this fork is secured upright bars 25, between which is secured the flexible sides, 26, shown in Figs. 3 and 7. On the same shaft, 20, is firmly secured an upwardly projecting arm, 27, shown in Figs. 2—3 and 4, having its upper end pivoted to a connecting rod, 28. The opposite end of this connecting rod, 28, is pivoted to an arm, 29, on a shaft, 30, mounted in bearings, 31, at the front of the machine and having its opposite end mounted in a bearing in the base of the curved bar, 33, and at the opposite side of the bar, 33, is rigidly secured an operating arm, 34. This operating arm is provided with the usual device, 34^a, which projects down in to a notch, 35, in the curved bar for holding it when the arm is adjusted forward as shown. When it is desired to release it all that is necessary to do is to press the small arm, 36, toward the larger arm and thereby raise the bolt, 34^a, out of the notch as will be readily understood as this is a common and well known device for this purpose, see Figs. 1 and 3.

At the rear end of the frame is secured a series of rods, 37, shown in Figs. 1—3—6 and 7, having their upper ends curved forward and secured to a cross-beam, 38, (see Fig. 1,) the beam 38 being secured at each end to the inclined side beams, 39, shown in Figs. 1—3—6

and 7. Between these rods or bars, 37, the bars or tines, 19, reciprocate back and forth while operating.

Connected to a cross-bar, 40, see Fig. 1, is a series of spring curved or S shaped fork bars, 41, see Figs. 1—2—3 and 6, where these bars are shown. The object of these bars is to catch and gather the hay as the machine moves forward. The cross-bar, 40, is arranged so as to turn on the shaft being held to it by a U shaped strap, 42, see Fig. 1 where this is shown so that the forks can be made to turn back substantially as shown in Fig. 7 by the dotted lines 43. This operation is performed by means of a short arm, 44, attached to the bar, 40, and having a connecting-rod, 45, pivoted to the lower end (see Fig. 7) of the arm, 44. The opposite end of the connecting rod, 45, is pivoted to an arm, 46, which is rigidly connected to a shaft, 47. This shaft, 47, is set in bearings on the bar, 3^a, and is operated by a hand or operating arm, 34^a, and its operating parts exactly in the same way as the shaft, 30, is operated so as to raise and lower the rake bars. These bars are made in an S shape substantially as shown in Fig. 1.

At or near the center of the machine within the frame is an inclined elevator 48. It inclines forward as it goes up. It consists of a belt 49, mounted rollers, 50 and 50^a. These rollers are mounted on a suitable frame or support, 51, see Fig. 1. The upper portion of this elevator is connected rigidly to the inclined beams 39. The belt, 49, is provided with a series of teeth, 52, which carry up the hay when the elevator is elevated. Inclining in the other direction and secured and supported by the inclined beams, 39, is another elevator, 53, for elevating the hay from the lower elevator and carrying it from the fore part of the machine toward the rear where it is caught by the hay cocking fork and thrown down on the supporting bars which receive and hold it until it is deposited upon the ground. This elevator also consists of a belt supported on rollers, 54, and is provided with teeth 55 to carry up the hay. These two elevators are driven by means of two sprocket gears 56 and 57, shown in Figs. 3 and 4, which are connected by a sprocket chain, 58, connecting with the sprocket wheel, 11, shown in Fig. 3, so that the two elevators are operated at the same time. The top and outer sides of these elevators are covered over with a casing, 59, and from the end of the upper elevator (at the rear of the machine), is a wide mouthed spout, 60, through which the hay falls so as to be taken by the hay cocking fork and then packed together as the hay rises in height. On the shaft, 20, is another arm, 61, shown in Figs. 1, and 2. On this arm is a tightening roller, 62, and on the same shaft is another similar arm, 63, shown in Fig. 2, having a connecting-rod, 64, pivoted thereto at one end and its other end pivoted to a swinging hook, 65. See Figs. 1—2 and 3. From the above construction it will be seen, that at the instant the hay cock plat-

form is let down to drop the hay cock, the tightening roller, 62, is drawn back from the belt 66, see Figs. 1 and 3, so that it runs loose, at the same instant the connecting rod, 64, is moved so as to swing the hook, 65, forward so that it catches on the pin, 67, on the hay cocking arm, 16. This hook is pivoted to a stationary bracket, 68, on the frame, see Figs. 1—2 and 3, where this is shown. The object of this construction is to provide the means for holding the hay cocking arm and its fork stationary and thereby hold or prevent the continually falling hay from dropping on the completed hay cock while it is being released from the machine.

The operation of the machine is as follows—The parts being in the position substantially as shown in Fig. 3, to which reference is now had, and as the machine advances forward the driving wheels turn in the direction of the arrow, V. This causes the sprocket wheel, 11, to move in the same direction by means of the internal gear 8 and pinion, 10. This operation causes the elevators to carry up the hay as it is being gathered up by the S, shaped rake bars hereinbefore mentioned. The hay is then carried up through the elevators. As fast as the hay comes up it is caught by the forked bars, 19, of the hay cocking fork and thrown down or suitably packed to protect itself against weather or storm, on to the forked bars, 24, until enough is piled thereon to form a cock. The hand lever at the front of the machine is now operated to drop the cock on the ground when it is held by the stubble while the bars 24 are drawn from under it as the machine advances. The fork bars, 24, are now drawn up into place and the operation repeated.

In the drawings we have shown a machine adapted to form one hay cock at a time and consequently the hay has to be narrowed up as it is being elevated. For this reason we have shown the elevator case as being made narrower where the upper elevator runs through, but this can be avoided by making the machine and elevators wide enough to make two hay cocks at once.

We claim as our invention—

1. In a hay cocking machine the combination, with an elevator of a receptacle pivotally secured to the rear of the machine, the bottom of which is slotted, and the sides are flexible and provided with upright bars, the front and rear of said receptacle being open, substantially as set forth.

2. In a hay cocking machine, the combination with an elevator and a receptacle, of a spout projecting from the rear end of the elevator over the receptacle, a reciprocating cross bar between the elevator and the receptacle, flexible tines secured thereto which are movable back and forth into and out of the spout, and means for stopping the tines within the spout and holding them there when the receptacle is being unloaded, substantially as set forth.

3. In a hay cocking machine, the combination with an elevator and a receptacle, of a rock shaft for raising and lowering the receptacle, a reciprocatory fork between the elevator and the receptacle, a rotary shaft adapted to be intermittingly operated by the operating mechanism of the machine an arm rigidly secured to the rock shaft for operating the receptacle, and means for connecting and disconnecting the rotary shaft with the operative mechanism simultaneously with the operation of the rock shaft, substantially as set forth.

4. In a hay cocking machine, the combination with a frame, of an elevator mounted thereon, and a receptacle pivotally secured to the rear portion of the frame, a reciprocatory fork between the elevator and the receptacle, two pulleys on the frame, one of which is connected with the operating portion of the machine and the other one is connected with the fork, a belt upon the pulleys,

a shaft in the machine provided with an arm rigidly secured thereto, the free end of which arm is provided with a tightening pulley and with a connecting rod, for connecting with the belt and with the fork respectively, substantially as set forth.

5. In a hay cocking machine, the combination with the hay cocking fork of a tripping mechanism for catching the hay cocking fork and holding it stationary while the hay receiving platform or fork is being lowered and the hay cock being discharged, for the purpose of preventing the continually falling hay from dropping on the completed retiring hay cock substantially as described.

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