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A. DOBSON.

PEAT HARVESTING MACHINE

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NO MODEL.

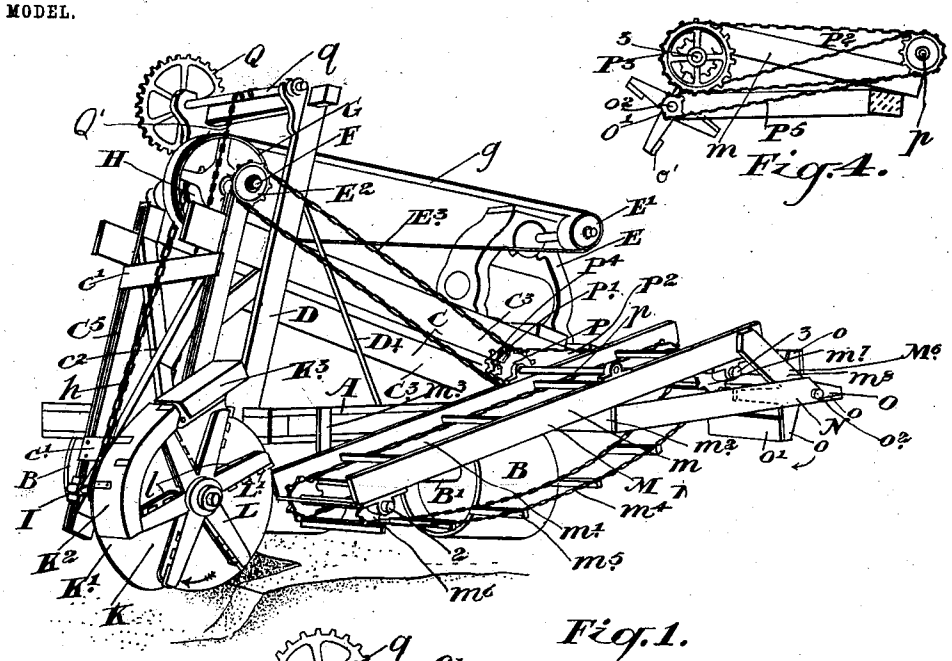


Fig. 1.

Fig. 4.



Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

ALEXANDER DOBSON, OF BEAVERTON, CANADA.

PEAT-HARVESTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 758,624, dated May 3, 1904.

Application filed June 6, 1903. Serial No. 160,447. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER DOBSON, millwright, of the town of Beaverton, in the county of Ontario, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Peat-Harvesting Machines, of which the following is a specification.

My invention relates to improvements in peat-harvesting machines; and the object of the invention is to devise a machine whereby the cost of digging and drying peat may be reduced to a minimum; and it consists, essentially, of a wagon supported on broad wheels and suitably driven, a swinging frame pivotally supported on the wagon and adjustably held in position by means of a chain and gear-wheel and pinion, a suitable motor located at one end of the swinging frame and a digging-wheel journaled at the bottom of the opposite end of the frame, a conveyer leading from in proximity to the digging-wheel laterally to the opposite side of the machine, and a discharging-fan located at the discharge end of the conveyer, the parts being otherwise arranged and constructed in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of my improved peat-harvesting machine. Fig. 2 is an end elevation from the same side, showing the conveyer and digging-wheel removed. Fig. 3 is a detail of the knife-wheel and bucket. Fig. 4 is a side elevation of the conveyer from the opposite side to that shown in Fig. 1.

In the drawings like characters of reference indicate corresponding parts in each figure.

A is the frame of the wagon; B, the wheels, which are broad, as indicated, and secured to an axle B′, which is journaled on suitable bearings B^2, depending from the frame. There are four wheels to the wagon, as indicated in Fig. 1, the two rear wheels being not clearly shown.

C is a swinging frame, which is pivoted on the shaft C′ in bearings C^2 on the main frame A.

D represents supporting-standards obliquely set and securely held in position by the braces D′.

C^3 represents the side boards of the swinging frame, which are connected together by the cross-boards C^4, on which is supported the motor E, and at the opposite end are provided with depending side bars C^5, forming a depending frame braced by cross-bars c' and diagonal bars c^2. At the top of the bars C^5, I journal in suitable bearings the shaft F, upon which is secured the pulley G, which is connected by the belt g to the pulley E′ of the motor.

H is a sprocket-wheel secured on the shaft F, connected by the sprocket-chain h to the sprocket-wheel I on the knife-wheel shaft J, which is journaled in suitable bearings at the bottom of the side bars C^5. The disk K, rigidly secured to one of the bars C^5 and through which the knife-wheel shaft J passes, acts as a shield for said knife-wheel. The disk or shield K is provided with an offset portion K′, at the upper end of which extends the arc-shaped directing-chute K^2, to which is hinged the straight chute K^3.

L is the knife-wheel, the buckets l of which are substantially radially arranged, the buckets being U-shaped in cross-section, as indicated in Fig. 3, and extending outwardly, as shown.

L′ represents the knives, which are arranged in a series along the outer side of the bucket and set obliquely, as indicated in Fig. 3.

M is a conveyer having the side boards m and the bottom boards m', such conveyer being secured in position on the front of the frame by suitable supports m^2 and m^3.

The frame M, hereinbefore described, is the frame of an endless conveyer, comprising the endless sprocket-chains m^4, provided with the cross-slats m^5, such sprocket-chains being carried at each end by suitable sprocket-wheels m^6 and m^7 on the shafts 2 and 3, respectively.

N represents the lower side boards, which are suitably connected to the support m^2 at one end and to the braces M^6 at the opposite end, which are secured to the side boards m.

O is a discharge-wheel comprising the substantially radial arms o, connected together by the cross-blades o'. The discharge-wheel O is provided with a suitable shaft o^2, which is journaled in bearings in the boards N at the discharge end of the endless conveyer, which moves in the direction indicated by arrow.

E^2 is a sprocket-wheel secured on the end of the shaft F and connected by a sprocket-chain E^3 to a sprocket-wheel P on the end of the shaft p, journaled in bearings on the side boards m of the conveyer-frame M.

P′ is a sprocket-wheel secured on the shaft p and connected by the sprocket-chain P^2 to the sprocket-wheel P^3 on the end of the shaft 3.

P^4 is a sprocket-wheel on the shaft p and connected by a sprocket-chain P^5 to the sprocket-wheel O′ on the end of the shaft o^2 of the discharge wheel or fan.

It will be noticed that the sprocket-wheel on the end of the discharge wheel or fan is much smaller than the sprocket-wheel on the end of the shaft 3 for the purpose of imparting a swift beating, throwing, or spraying action on the peat when it is being discharged from the conveyer.

Q is a gear-wheel secured to the shaft q, engaged by the gear-pinion q' on the spindle q^2, which is provided with the crank-handle q^3.

Q′ is a chain connected at one end to the shaft q and at the opposite end to one of the cross-bars C′ of the wheel-frame.

Having now described the principal parts involved in my invention, I shall briefly describe its operation and utility. By the construction of my frame it will be noticed that the motor E is heavy, comparatively speaking, to the wheel-frame on the opposite end of the swinging frame, and is consequently on the short end of the frame for the purpose of balancing the swinging frame. In order to raise or lower the wheel-frame, I manipulate the crank-handle q^3, and by this means wind up the chain Q′, or let it out so as to depress the wheel-frame and bring the wheel L into the peat of the bog. It will of course be understood that the motor imparts motion through the pulley E′, belt g, and pulley G to the sprocket-wheel H, by which motion is conveyed by the sprocket-chain to the sprocket-wheel I on the knife-wheel shaft, and thereby the knife and buckets are rotated. The operator of the machine by standing on the wagon can lower the knife-wheel as the peat is being cut, such knife-wheel rotating very rapidly and cutting a concentric or arc-shaped cut into the bog, as indicated, the knife slicing off a side cut as the machine is being propelled forward by means which it is not necessary here to describe. The knife-wheel being caused to rotate in the direction indicated by arrow cuts and pulverizes the peat and carries such pulverized peat through the arc-shaped chute K^2 and out of the hinged chute K^3 onto the conveyer M, the centrifugal force throwing the peat peripherally outward and tangentially onward onto the conveyer. By the conveyer M the pulverized peat is carried onto the discharge-wheel O, which revolving rapidly serves to spread the peat in very fine particles over the dried surface of the bog, and as the wagon moves forward necessarily the peat is spread in a thin layer and will be quickly dried by the sun, and thereby relieve such peat of the greater part of the moisture, and thus reduce to a minimum the amount of artificial drying required. I wish also to draw attention to the advantages which I derive from my knife-wheel and the arrangement of the knives thereof, as I am enabled by such an arrangement to slice the peat into very thin shavings or layers, so that it is pulverized as it passes through the wheel, and when it reaches the discharge-wheel it is in fine particles for distributing onto the surface of the bog. I wish also to call attention to the manner in which the weight is distributed on the wagon. It will be noticed that the pivot-point for the swinging frame is over the wheel on the solid bog and farthest away from the edge of the bog on which the knife-wheel is acting, and therefore the wheel on such edge, having but comparatively small weight as compared to the wheel on the opposite side of the wagon, will not be liable to break away the edge surface of the bog and ditch the wagon.

What I claim as my invention is—

1. In a peat-harvesting machine, the combination with the wagon and frame, of a swinging frame pivoted on the top of the wagon, and peat-cutting means depending from one end of such frame, and means for driving such peat-cutting means as and for the purpose specified.

2. In a peat-harvesting machine, the combination with the wagon and frame, of a swinging frame pivoted on the top of the wagon, and peat-collecting means depending from one end of such frame, and a motor at the opposite end of the swinging frame and driving means between the motor and the peat-collecting means as and for the purpose specified.

3. In a peat-harvesting machine, the combination with the wagon and swinging frame pivoted on the top thereof and peat-cutting means depending from one end and extending down laterally over one side, of means for raising and lowering and supporting the depending end of the swinging frame as and for the purpose specified.

4. In a peat-harvesting machine, the combination with the wagon and swinging frame pivoted thereon and peat-cutting means depending from one end and extending down laterally over one side, of supporting-standards secured to the wagon, a shaft journaled thereon and provided with a gear-wheel at one end, a gear-pinion meshing with such gear-wheel and secured on a suitable spindle provided with a crank-handle, and a chain connected at one end to the shaft and at the other end to the depending end of the swinging frame as and for the purpose specified.

5. The combination with the swinging frame suitably swung on the wagon and having a depending portion at one end, of a peat-cutting wheel suitably journaled at the lower end of

such portion and means for driving the same as and for the purpose specified.

6. The combination with the swinging frame suitably swung on the wagon and having a depending portion at one end, of a peat cutting and conveying wheel suitably journaled at the lower end of such portion and means for driving the same as and for the purpose specified.

7. The combination with the swinging frame suitably swung on the wagon and having a depending portion at one end, of a peat-cutting wheel suitably journaled at the lower end of such portion and an ejecting means for delivering the peat from the cutting means as and for the purpose specified.

8. The combination with the swinging frame suitably swung on the wagon and having a depending portion at one end, of a peat-cutting wheel suitably journaled at the lower end of such portion and an ejecting means for delivering the peat from the cutting means, and a suitable conveyer located in the path of the ejected peat as and for the purpose specified.

9. The combination with the swinging frame suitably swung on the wagon and having a depending portion at one end, of a peat-cutting wheel suitably journaled at the lower end of such portion, ejecting means for delivering the peat from the cutting means, a suitable conveyer located in the path of the ejected peat, and a discharging-wheel at the end of the conveyer as and for the purpose specified.

10. In a device of the class described, the peat-cutting wheel consisting of arms having a series of knives on each arm and longitudinal buckets on the inside of the arms adjacent to the knives, and means for supporting and rotating the wheel as and for the purpose specified.

11. In a device of the class described, a peat-cutting wheel consisting of arms having a series of knives on each arm and longitudinal buckets on the inside of the arms adjacent to the knives, means for supporting and rotating the wheel, and means for raising and lowering the same as and for the purpose specified.

12. In a device of the class described, a peat-cutting wheel consisting of arms having a series of knives on each arm and longitudinal buckets on the inside of the arms adjacent to the knives, means for supporting and rotating the wheel, and a shield located behind the wheel as and for the purpose specified.

13. The combination with the swinging frame supported on the wagon and having a depending portion, of a shaft journaled in the lower end of the depending portion, a peat-cutting wheel located at one end of the shaft and means for driving such peat-cutting wheel as and for the purpose specified.

14. The combination with the swinging frame supported on the wagon and having a depending portion, of a shaft journaled in the lower end of the depending portion, a peat-cutting wheel located at one end of the shaft, and a motor located on the outside end of the swinging frame, a counter-shaft suitably journaled on the top of the depending portion, a pulley located in same, a driving-belt between such pulley and the pulley on the motor-shaft, a sprocket-wheel on the aforesaid counter-shaft, a sprocket-wheel on the peat-cutting-wheel shaft and a sprocket-chain connecting the aforesaid sprockets as and for the purpose specified.

15. The combination with the swinging frame suitably supported and provided with a depending portion at one end and means for raising and lowering such portion, of a shaft journaled at the lower end of the depending portion and a knife-wheel located on such shaft as and for the purpose specified.

16. The combination with the swinging frame suitably supported and provided with a depending portion at one end and means for raising and lowering such portion, of a shaft journaled at the lower end of the depending portion and a knife-wheel comprising arms provided with a series of knives on such arms and buckets behind the knives and means for rotating such knife-wheel as and for the purpose specified.

17. The combination with the swinging frame suitably supported and provided with a depending portion at one end and means for raising and lowering such portion, of a shaft journaled at the lower end of the depending portion and a knife-wheel comprising arms provided with a series of knives on such arms, and buckets behind the knives, a shield located behind the buckets and means for rotating the wheel as and for the purpose specified.

18. The combination with the peat-cutting or knife wheel comprising arms having knives and buckets, of a shield located behind the buckets, the arc-shaped conveyer located on an offset of the shield and the swinging ejecting-chute located at the upper end of the arc-shaped conveyer as and for the purpose specified.

19. The combination with the peat-cutting or knife wheel comprising arms having knives and buckets, of a shield located behind the buckets, the arc-shaped conveyer located on an offset of the shield, the swinging ejecting-chute located at the upper end of the arc-shaped conveyer, an inclined conveyer comprising side boards and a bottom board and endless chains carried by suitable brackets, and slats extending across the chains, and means for driving such conveyer as and for the purpose specified.

20. The combination with the peat-cutting or knife wheel comprising arms having knives and buckets, of a shield located behind the buckets, the arc-shaped conveyer located on an offset of the shield, the swinging ejecting-chute located at the upper end of the arc-shaped conveyer, an inclined conveyer comprising side boards and a bottom board and

endless chains carried by suitable brackets, and slats extending across the chains, a discharge-wheel provided with suitable cross-blades located at the discharge end of the conveyer and means for driving the same at a faster rate than the conveyer as and for the purpose specified.

21. The combination with the peat-cutting or knife wheel comprising arms having knives and buckets, of a shield located behind the buckets and an arc-shaped conveyer located on the offset of the shield as and for the purpose specified.

22. In an apparatus for harvesting peat, the combination with a suitable carrying-conveyer for peat, of a delivery-wheel deriving motion at a comparatively high speed to the carrying-conveyer, whereby the peat is delivered and spread in a cloud of fine particles as and for the purpose specified.

23. The combination with an endless-belt conveyer, of a wheel located at the delivery end thereof and provided with a plurality of blades or buckets, and means for imparting to such wheel a comparatively high rate of speed to that of the endless-belt conveyer as and for the purpose specified.

24. In an apparatus for harvesting peat, a discharge or delivery wheel located at the end of the main conveyer and deriving movement at a comparatively high rate of speed to such conveyer as and for the purpose specified.

25. In a peat-harvesting machine, the combination with the wagon, of a swinging frame carrying the cutting apparatus and pivoted on the side of the wagon opposite to that where the cutting is done as and for the purpose specified.

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