June 26, 1923. 1,459,731

H. HENDERSON

FRAME FOR GATHERING MACHINES.

Filed Nov. 15, 1918 2 Sheets-Sheet 1

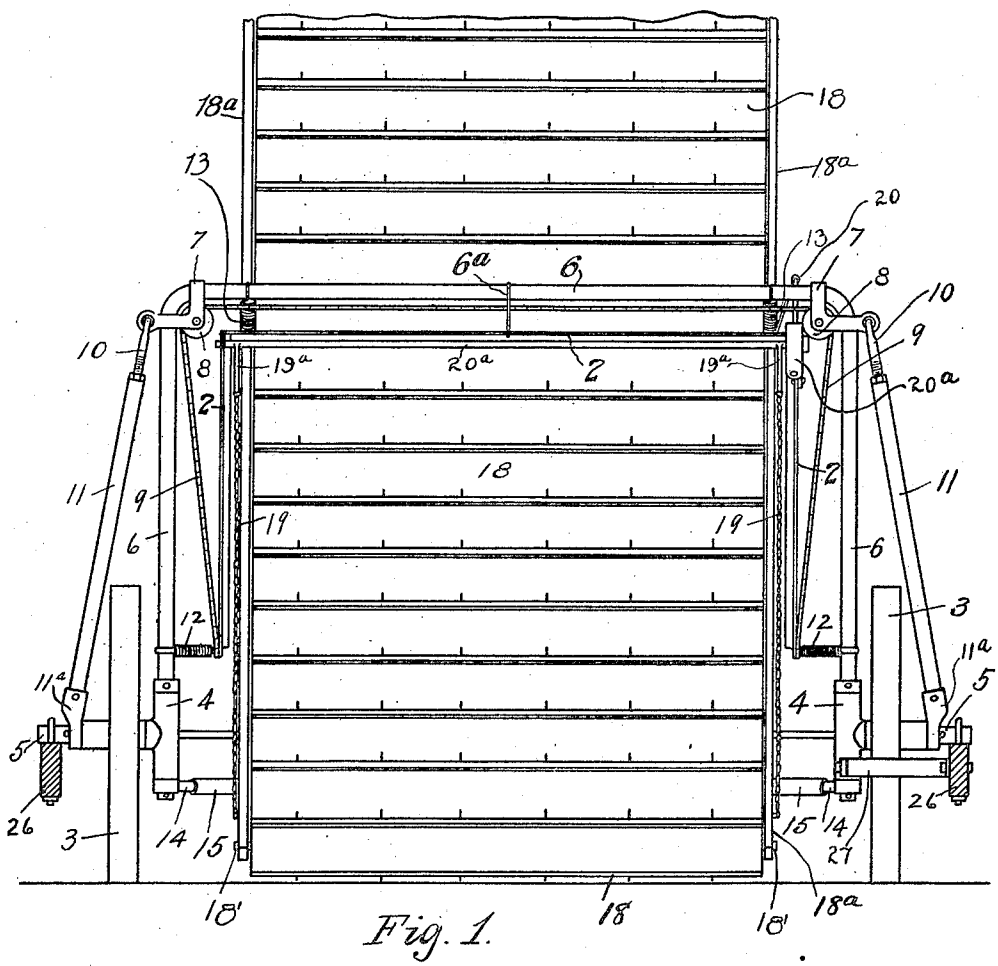


Fig. 1.

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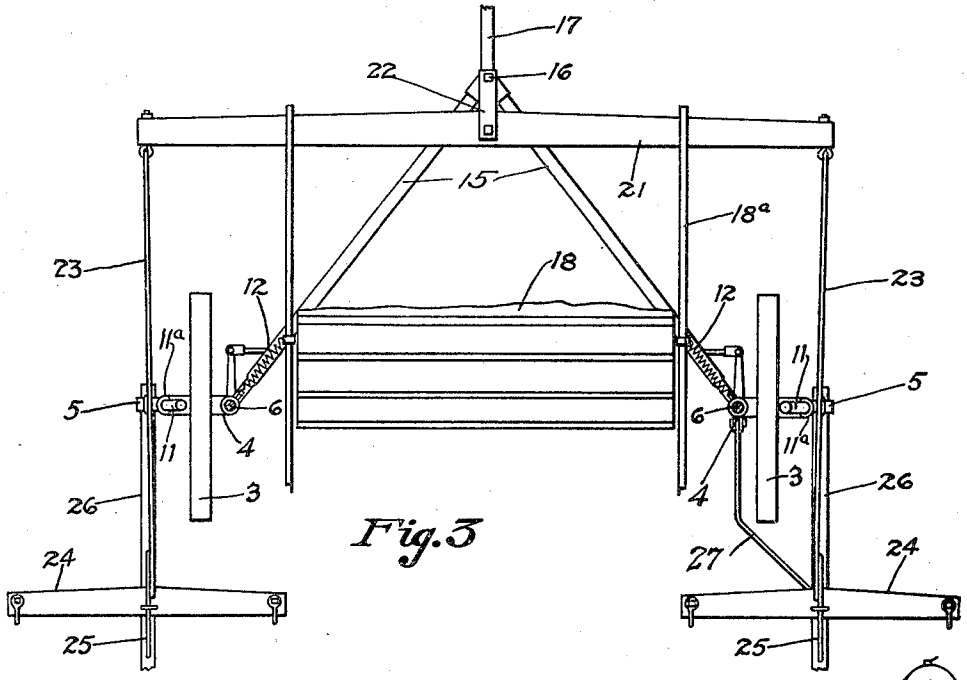


Fig. 3

Fig. 4.

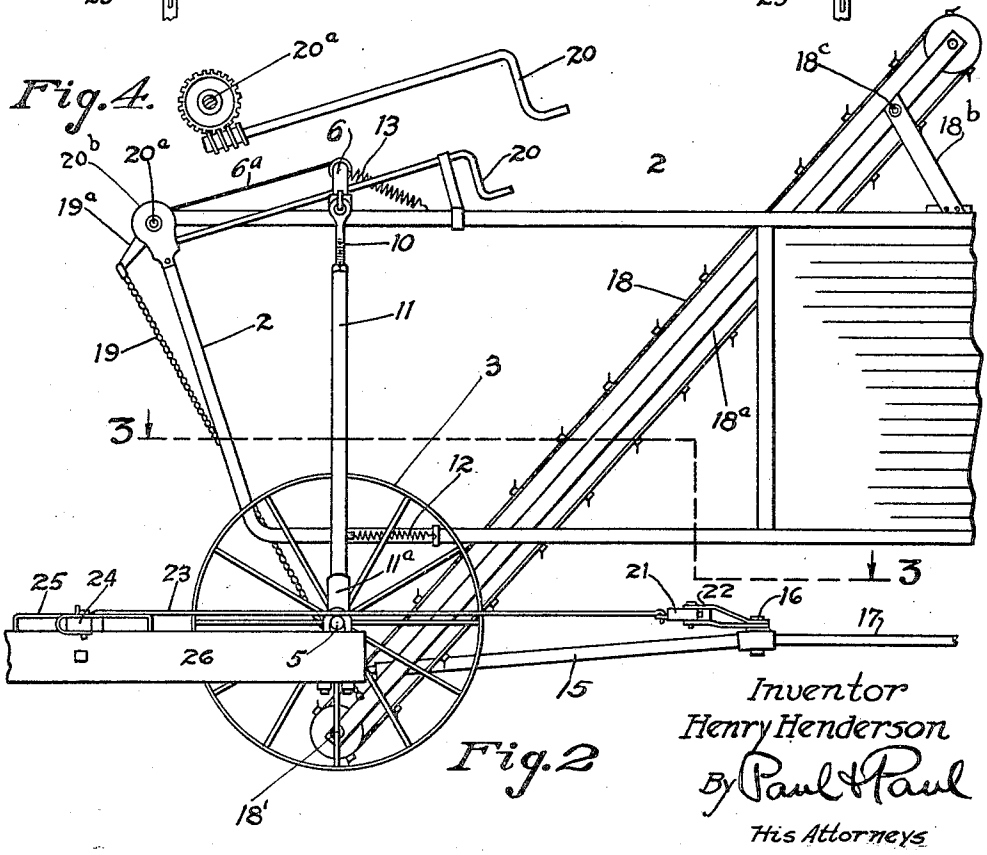


Fig. 2

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UNITED STATES PATENT OFFICE.

HENRY HENDERSON, OF HALSTAD, MINNESOTA.

FRAME FOR GATHERING MACHINES.

Application filed November 15, 1918. Serial No. 262,671.

To all whom it may concern:

Be it known that I, HENRY HENDERSON, a citizen of the United States, resident of Halstad, county of Norman, State of Minnesota, have invented certain new and useful Improvements in Frames for Gathering Machines, of which the following is a specification.

This invention relates particularly to improvements in the shock loader described and claimed in Letters Patent of the United States issued to me December 31st, 1918, No. 1,289,169, and the object of my present invention is to provide means for supporting the forward portion of the frame of the gathering machine so as to permit relative, vertical motion of the forward supporting wheels and the frame, thereby permitting the machine to properly adjust itself to the uneven surfaces of the ground over which it may be moving.

A further object is to provide a construction in which the lower roll of the pick-up belt of the elevator will be directly under and parallel with the axis of the wheels so that the lower end of the belt or apron frame will at all times have the same relative position with respect to the ground line as will the wheels, thus obviating the disadvantage of the lower end of the frame striking against and digging into the ground as is frequently the case where the lower end of the frame is positioned in front of the wheel axle and the wheels drop into a depression of the ground back of the lower end of the frame.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a front elevation of a gathering machine embodying my invention,

Figure 2 is a side view of the forward portion of the machine,

Figure 3 is a sectional view on the line 3—3 of Figure 2, looking in the direction of the arrows on Figure 2 at the ends of the line 3—3.

Figure 4 is a detail view of the mechanism for raising and lowering the apron frame.

In the drawing, 2 represents the frame of the machine. 3 are the forward supporting and guide wheels. 4 are upright sleeves having axles 5 whereon the wheels are mounted. A yoke 6 has its ends mounted in the sleeves 4 and is substantially in the form of an inverted U and bridges the frame 2 extending from side to side of the machine. A brace 6^a preferably extends from the upper horizontal portion of the yoke 6 to the forward cross member of the machine frame. (See Figure 2.) Brackets 7 are mounted on the upper portions of this yoke and are provided with sheaves 8 for supporting a cable 9 which has its ends attached to the frame 2. The ends of the cable are secured in any suitable manner to the frame 2 at a point substantially opposite the lower ends of the yoke 6. The position of the lower ends of the cable is well illustrated in Figure 1 of the drawings. I have not thought it necessary to illustrate the detailed means for connecting the ends of the cable to the frame 2, but any suitable means for this purpose may be employed. The running connection of the cable 9, which supports the forward end of the machine frame, over the sheaves 8, permits a relative tilting or oscillation of the machine frame and yoke, and forward wheels 3, by which said yoke is carried, so as to permit the machine to adjust itself to any uneven ground over which it may be moved. The brackets 7 have links 10 pivotally connected therewith and rods 11 have threaded engagement at their upper ends with said links for adjustment thereon and are mounted at their lower ends on the axles 5 by a coupling 11^a, forming a brace and support for the axles to hold them and the wheels in proper alignment. The end portions of the yoke 6 are connected with the frame 2 by helical springs 12 and similar springs 13 connect the upper transversely extending portion of the yoke preferably near the brackets 7 with the frame, forming a yielding connection for holding the frame and the yoke in their proper relative position. The lower portions of the sleeves 4 are supported and held by pins 14 mounted thereon to telescope with pipes 15 which converge under the frame of the machine and are secured at 16 to a reach or tongue 17 extending rearwardly and designed to be connected to the rear axle of the machine. I have not shown in this application either the rear axle or the connection between the reach or tongue and said axle. An elevator 18 is forwardly and downwardly inclined in said frame and supported at its upper part by a pivotal connection 18^c upon suitable

standards 18[b] arranged upon the frame of the machine, its lower end being supported by cables 19 connected at their upper ends to crank arms 19[a] of a shaft 20[a] by means of which the elevator is raised or lowered through the movement of a crank 20 and gears in gear casing 20[b] as shown in detail in Figure 4.

The shaft 18′ supporting the lower portion of the elevator is below and in perpendicular alignment with the wheel axles, and consequently the lower end of the elevator and the wheels are in the same relative position with respect to the ground line. If the wheels drop into a depression the elevator will drop also and correspondingly the elevator will rise and follow the wheels over a knoll or elevation. There will, therefore, be no danger of the pick-up elevator digging into the soil when it encounters a slight elevation and the wheels are in a depression, nor will it pass over a bundle which might be lying in a low place in the ground. I therefore regard this arrangement of the pick-up elevator and the supporting wheels as an important feature of my invention.

21 is an evener bar attached by a clevis 22 to the tongue 17 and having draft rods 23 extending forward to single trees 24 which are slidably mounted on rods 25 attached to bars 26 which are supported from the projecting ends of the spindles 5. The single trees have a limited sliding movement.

The means for supporting the forward end of the machine frame and the inclined elevator through the yoke carried by the wheels 3, and the cable passing over sheaves on said yoke, said cable having its ends connected to and supporting the forward portion of said machine frame, permit a relative tilting movement of said yoke and machine frame, and thereby permit the machine to accommodate itself to uneven surfaces over which the machine may be passing, and the vertical alignment of the lower shaft of the pick-up elevator and the axles of the supporting wheels insures corresponding vertical movements of the wheels and the lower end of the pick-up elevator, thereby preventing the lower end of the elevator from digging into the surface of the ground when the wheels drop into hollows, as may occur when the lower end of the elevator is in front of the wheels, as shown in my former patent.

The details of the construction may be varied in many particulars without departing from my invention.

I claim as my invention:

1. The combination, with a frame, and a forwardly and downwardly inclined pick-up elevator mounted therein, of carrying and guiding wheels for said frame, a yoke having its end portions supported by said wheels and straddling said frame and elevator, and means yieldingly connecting the sides of said frame with said yoke, and permitting relative oscillation of said yoke and said machine frame and elevator.

2. The combination, with a frame and a forwardly and downwardly inclined pick-up elevator mounted therein, of carrying and guiding wheels for said frame, a yoke having its end portions supported by said wheels and straddling said frame and elevator, and flexible means having its end portions attached to said frame and running connections with the upper portion of said yoke.

3. The combination, with a frame and forwardly and downwardly inclined pick-up elevator mounted therein, of carrying wheels for said frame, a yoke in the form substantially of an inverted U having its end portions supported by said wheels and straddling said frame and elevator braces connecting the upper portion of said yoke with the axles of said wheels, and cables attached to said frame and having running connections with the upper portions of said yoke.

4. The combination, with a frame, of supporting guide wheels having upright sleeves and axles thereon, a yoke having its end portions mounted in said sleeves and straddling said frame, flexible means connected to said frame and having running connections with the upper portions of said yoke, means connecting the lower portions of said yoke with said frame, and draft means connected with said supporting wheels.

5. The combination, with a frame, of a yoke in the form substantially of an inverted U straddling said frame, supporting wheels having axles and bearings for the ends of said yoke, flexible means connected to said frame and having running connections with the upper portions of said yoke, and draft means connected with said supporting wheels.

6. The combination, with a frame and a forwardly and downwardly inclined elevator supported therein, of a yoke in the form substantially of an inverted U straddling said frame and elevator, supporting and guiding wheels having bearings for the ends of said yoke, a flexible connection between said yoke and said frame for allowing relative oscillation of said wheels and yoke and said frame and elevator to accommodate the machine to the inequalities of the ground.

7. The combination, with a frame and a forwardly and downwardly inclined pick-up elevator mounted therein, of carrying and guiding wheels for said frame, means yieldingly supporting said frame upon said wheels and permitting relative oscillation thereof, the lower end of said elevator being in substantial vertical alignment with the axis of said wheels.

8. The combination, with a frame having carrying wheels, of a forwardly and downwardly inclined elevator frame, an elevating

apron mounted in said frame, a supporting shaft for said apron in the lower portion of said elevator frame, said shaft and said wheel spindles being substantially in perpendicular alignment, whereby the lower end of said apron will follow the ground line with said wheels, and means for vertically adjusting the lower end of said elevator frame, independently of said wheels and their supporting means.

9. In combination, with a supporting frame and carrying wheels therefor, of a pick-up elevator forwardly and downwardly inclined in said frame, the pick-up end of said elevator being supported independently of the axles of said wheels, and beneath and substantially in perpendicular alignment therewith.

In witness whereof, I have hereunto set my hand this 4" day of November 1918.

HENRY HENDERSON.