H. J. CASE.

CONVEYING MECHANISM.

APPLICATION FILED DEC. 14, 1916.

1,305,880.

Patented June 3, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

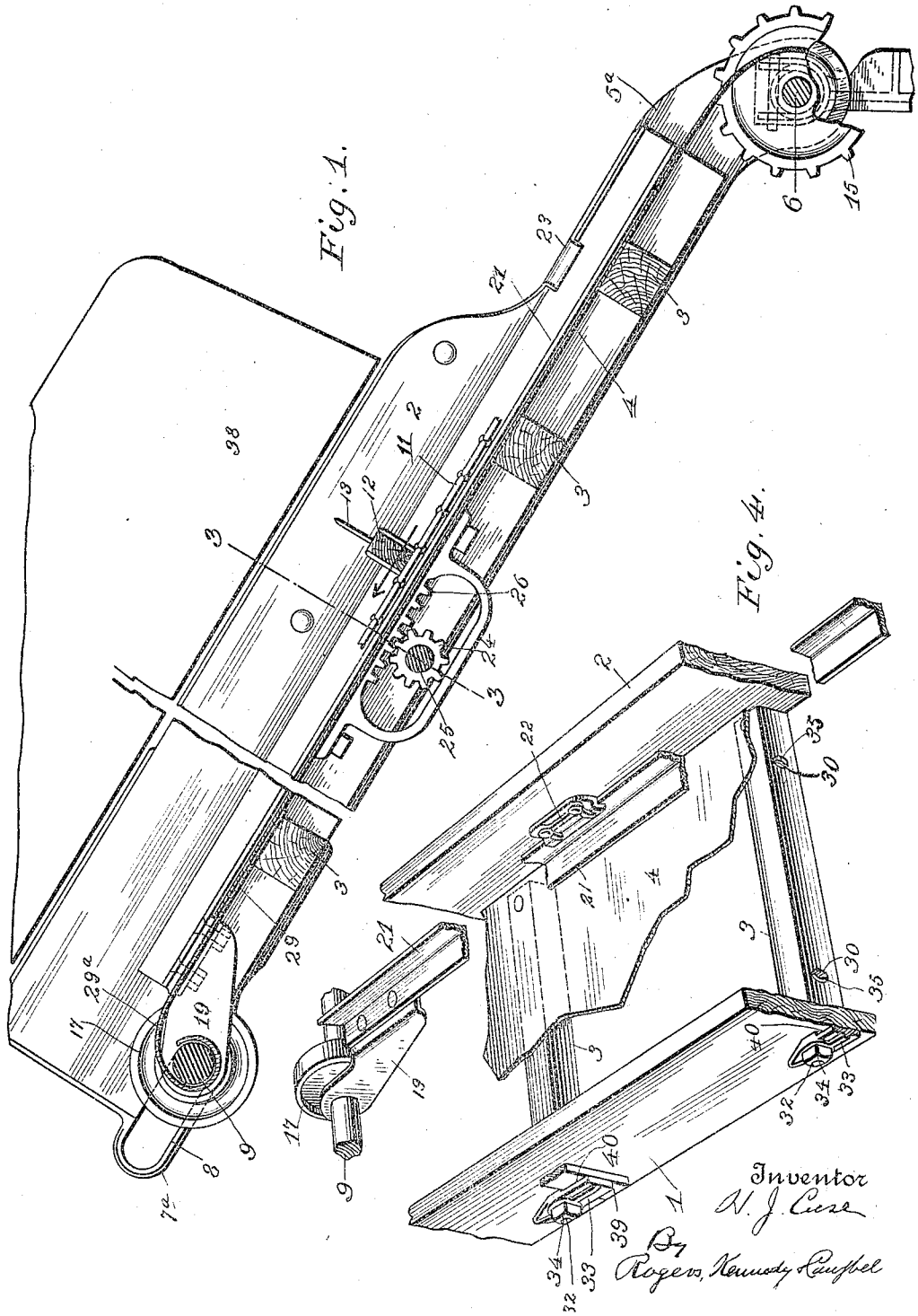


Fig. 4.

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3 SHEETS—SHEET 2.

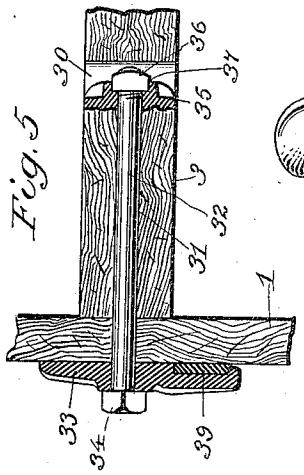


Fig. 5.

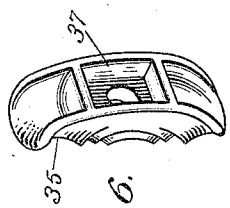


Fig. 6.

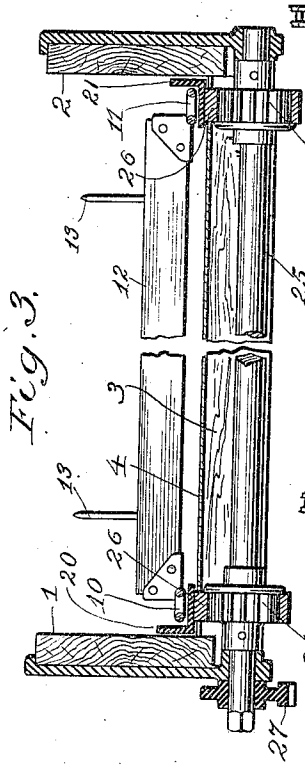


Fig. 3.

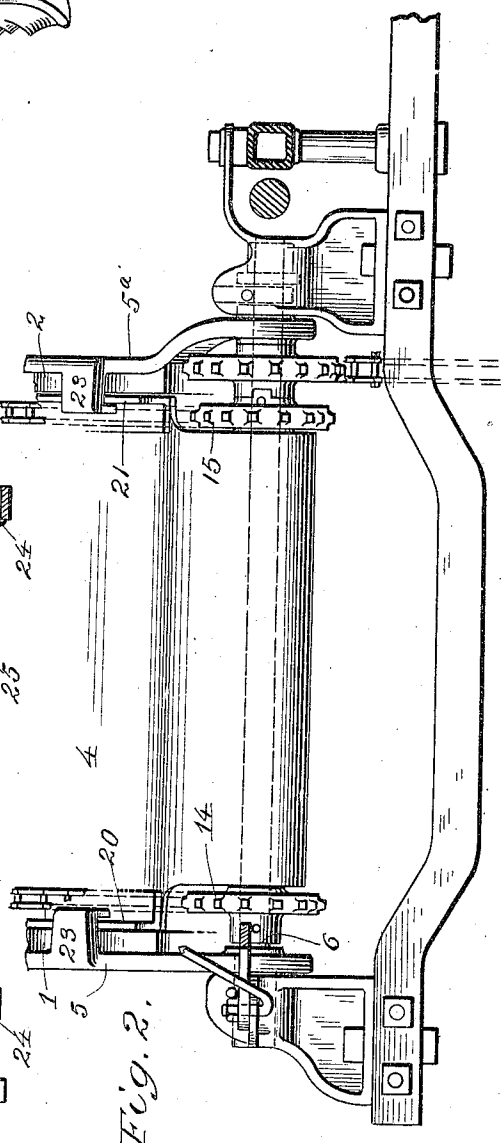


Fig. 2.

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3 SHEETS—SHEET 3.

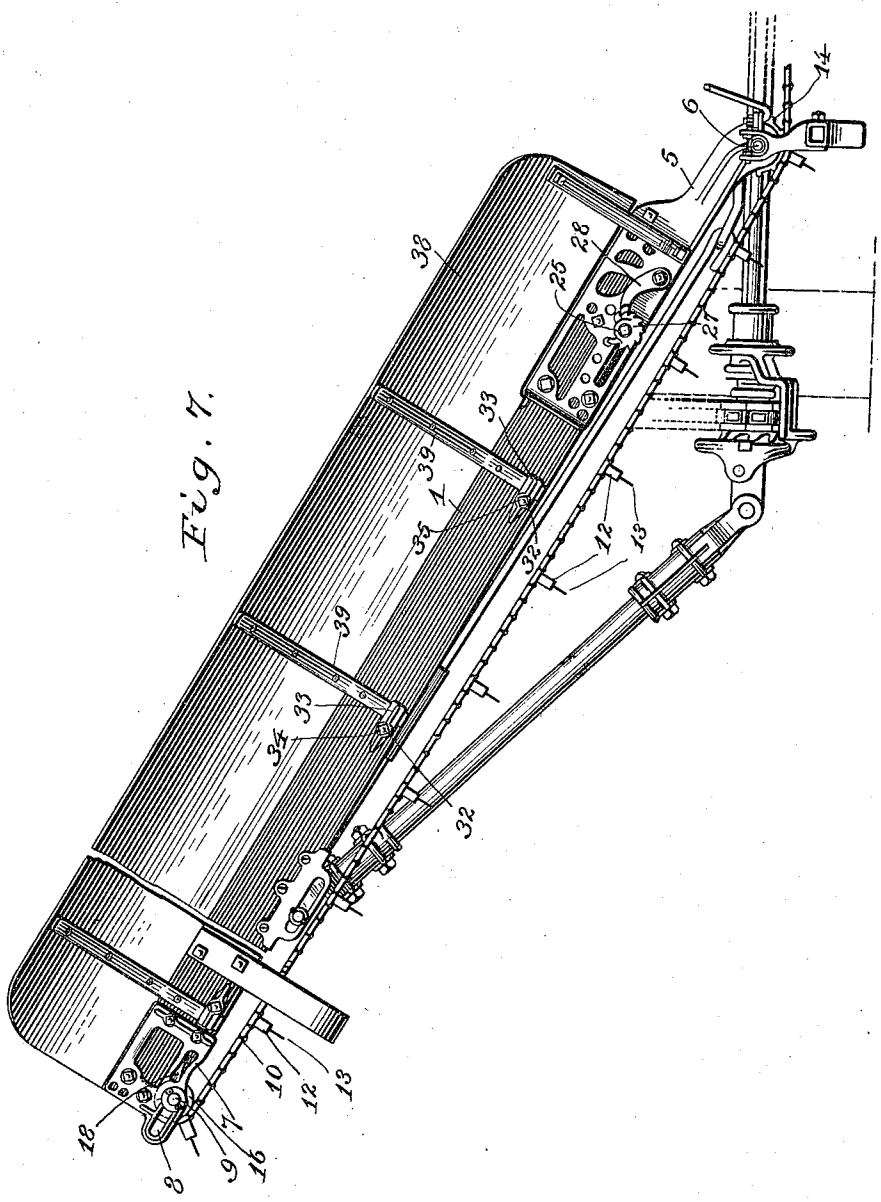


Fig. 7.

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UNITED STATES PATENT OFFICE.

HENRY J. CASE, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR TO MOLINE PLOW COMPANY, A CORPORATION OF ILLINOIS.

CONVEYING MECHANISM.

1,305,880. Specification of Letters Patent. Patented June 3, 1919.

Original application filed October 30, 1915, Serial No. 58,764. Divided and this application filed December 14, 1916. Serial No. 136,870.

To all whom it may concern:

Be it known that I, HENRY J. CASE, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Conveying Mechanism, of which the following is a specification, reference being had therein to the accompanying drawing, being a division of original application filed October 30th, 1915, Ser. No. 58,764.

This invention relates to conveying or elevating mechanism designed more particularly as an attachment for corn harvesters in order to convey the bound bundles upwardly so that they may be delivered into a wagon or receptacle traveling at the side of the harvester, although the invention is not limited to such special use but is applicable as well for other purposes.

Certain forms of conveying mechanism for this purpose comprise an elongated frame giving support to an endless carrier apron or chain supported at the opposite ends of the frame by rotary shafts, and my invention consists of various improved features of construction directed to the form and construction of the frame and the operative parts mounted therein, the aim being to produce a strong, durable and effective mechanism with provision for adjustment to preserve the operative relation of the parts.

In the accompanying drawings:

Figure 1 is a longitudinal sectional elevation of my improved mechanism with certain parts omitted.

Fig. 2 is an elevation of the lower end of the same showing how it is supported.

Fig. 3 is a transverse sectional elevation on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary perspective view of a portion of the device.

Figs. 5 and 6 are views of details of the frame.

Fig. 7 is a side elevation of the elevator frame, shown as applied to a harvester frame.

Referring to the drawings:

My improved mechanism comprises an elongated frame consisting of two parallel side boards 1 and 2 which are fixedly connected together at intervals by means of connecting cross bars 3 extending between and fastened to the side boards, a plate 4 being secured to the upper sides of the cross bars so that there is produced by this arrangement a conveyer frame of trough-like form, having a bottom on which the objects to be conveyed are supported. Bolted to the outer sides of the two side boards respectively at one end, are castings 5 and 5ª provided with alining bearing openings in which is mounted a rotary shaft 6. Also bolted to the outer sides of the side boards at their opposite ends are two castings 7 and 7ª formed with longitudinally extending alined slots 8 in which is mounted for rotation a shaft 9.

Traveling in the bottom of the frame is an endless conveying mechanism in the form of two endless sprocket chains 10 and 11 which are connected together at intervals by transverse slats 12 provided with outwardly extending fingers or teeth 13. These sprocket chains pass at one end of the frame around sprocket wheels 14 and 15 mounted fixedly on the shaft 6, and at their opposite ends the chains pass around idler sprocket wheels 16 and 17 mounted loosely on the shaft 9, so that when rotary motion is imparted to the shaft 6, the sprocket chains will be caused to travel longitudinally of the frame, and through the medium of the transverse slats and projecting pins, the objects supported by the bottom of the frame will be advanced longitudinally thereof from one end to the other.

The shaft 9 is supported in two arms 18 and 19 connected fixedly to the upper ends respectively of two angle bars 20 and 21 which extend longitudinally along the bottom of the plate 4 of the frame at the inner sides of the side boards, the horizontal flanges of the bars resting on the bottom plate at its edges and the vertical flanges of the bars bearing against the inner sides of the side boards. These angle bars are movable longitudinally of the frame and are guided in their movements and confined on the side boards by means of cleats 22 fixed to the inner sides of the side boards, and cleats 23 on the castings 5 and 5ª, which latter cleats overhang the upper edges of the vertical flanges of the bars, as shown more particularly in Fig. 1. As a result of the construction described, the shaft 6 may be moved by the endwise movement of the angle bars longitudinally of the frame, the ends of the shaft in such movements slid-

ing in the slots in the castings 7 and 7ª. The purpose of this movement of the shaft is to adjust the tension of the sprocket chains, which adjustment is effected in the present instance by means of two pinions 24 fixed to a horizontal shaft 25 extending below the bottom plate 4 and mounted at its ends in bearings in the castings 5 and 5ª. The pinions are in position to engage two rack bars 26 fixed to the underside of the angle bars and extending downwardly through slots in the bottom plate 4 as shown in Fig. 3, one end of the shaft having fixed to it a ratchet wheel 27, the teeth of which are engaged by a locking pawl 28 pivoted to the casting 5. By rotating the shaft 25 in one or the other direction, which may be effected by the application of a wrench to the outer squared end of the shaft, the angle bars will be moved longitudinally, according to the direction of movement of the shaft, with the result that the shaft 9 sustaining the idler sprocket wheels will be shifted longitudinally of the frame in the guiding slots, and the idle wheels will be correspondingly shifted, and the tension of the sprocket chains adjusted.

The bottom plate 4 before alluded to, terminates at the delivery end of the conveyer inward of the shaft 9, and in order that in the adjustments of the shaft the continuity of the bottom of the elevator frame will be preserved, I provide a supplemental bottom plate 29, the outer end of which is bent around as at 29ª to surround the shaft 9 whence the plate extends inwardly beneath the end of plate 4 and between it and the upper cross bar of the frame. In the adjustments of the shaft 9 the supplemental bottom plate will be shifted with the shaft and will constitute in effect an extensible continuation of the main bottom of the frame. The main bottom plate 4 is extended at its opposite end beyond the ends of the side boards and between the castings 5 and 5ª, the extremity of the plate being curved around so as to overlie the shaft 6, thereby constituting a receiving surface at the receiving end of the mechanism to receive the objects delivered thereto to be conveyed.

The cross bars 3 before alluded to are connected with the side boards of the elevator frame by connecting devices of the form shown in Figs. 5 and 6 where it will be seen that each of the cross bars is provided adjacent its ends respectively with transverse holes 30 with which communicate longitudinal openings 31 extending outwardly from the holes and through the ends of the bars. Extending through the longitudinal openings are fastening bolts 32 which extend outwardly through openings in the side boards and through plates 33 seated against the outer sides of the side boards, the outer ends of the bolts being provided with heads 34 bearing against the outer sides of the plates. The inner ends of the bolts pass through castings 35 seated against the outer walls of the holes 30, nuts 36 being applied to the inner ends of the bolts and seated in sockets 37 in the castings 35. As a result of the construction described, the side boards may be drawn firmly against the ends of the cross bars by a clamping pressure exerted longitudinally of the cross bars. By this means the parts are held with unusual firmness and rigidity in connected relations, and the interior of the frame being free from extraneous fastening devices so commonly employed.

Fender boards 38 are applied to the upper edges of the side boards, and are fastened thereto by means of straps 39 bolted at intervals to the outer sides of the fender boards and extending along the outer sides of the side boards, the lower ends of said straps being seated in sockets 40 in the inner sides of the plates 33 and being confined tightly therein by the bolts 32. This method of connecting the parts of the elevator frame together enables said parts to be readily disassembled for repairs, replacement or for other purposes, and constitutes a compact, neat and effective construction.

In the foregoing description and accompanying drawings I have set forth my invention in the particular detailed embodiment which I prefer to adopt. It will be manifest, however, to the skilled mechanic that the details may be variously changed and modified without departing from the spirit of my invention; and it will be understood that the invention is not limited to any particular form or construction of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim is:

1. In a conveyer mechanism, the combination of a frame having side boards, a bottom extending between said side boards, two bars resting on said bottom at the side edges of the same and movable endwise longitudinally thereof, a chain support carried by each bar at one end of the frame, endless chains traveling on said bars and passing over said chain supports respectively and provided with conveying means coöperating with said bottom, and an adjusting member for moving the bars longitudinally to adjust the chain supports and thereby vary the tension of the chains.

2. In a conveyer mechanism, the combination of a frame having a bottom, longitudinally movable bars provided with horizontal flanges resting on said bottom, chain supports movable with said bars, endless chains passing around said supports and provided with conveying means coöperating with the bottom, the upper stretches of said chains

being supported respectively by the horizontal flanges of the bars, and means for moving the bars longitudinally to adjust the tension of the chains.

3. In a conveyer mechanism, the combination of a frame having side boards and a bottom extending between the side boards and provided with slots, longitudinally movable bars sustained by the bottom and provided with rack teeth extending downwardly through said slots, chain supports carried by said bars, endless chains passing around said supports and provided with conveying means, a shaft mounted in the conveyer frame, pinions thereon engaging the rack teeth on the bars, a ratchet wheel on the shaft, and a locking pawl sustained by the frame and engaging the ratchet wheel.

In testimony whereof, I have affixed my signature.

HENRY J. CASE.

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