F. J. HUDZINSKI.

PORTABLE GRAIN ELEVATOR AND STACKER.

APPLICATION FILED AUG. 20, 1918.

1,297,852.

Patented Mar. 18, 1919.

3 SHEETS—SHEET 1.

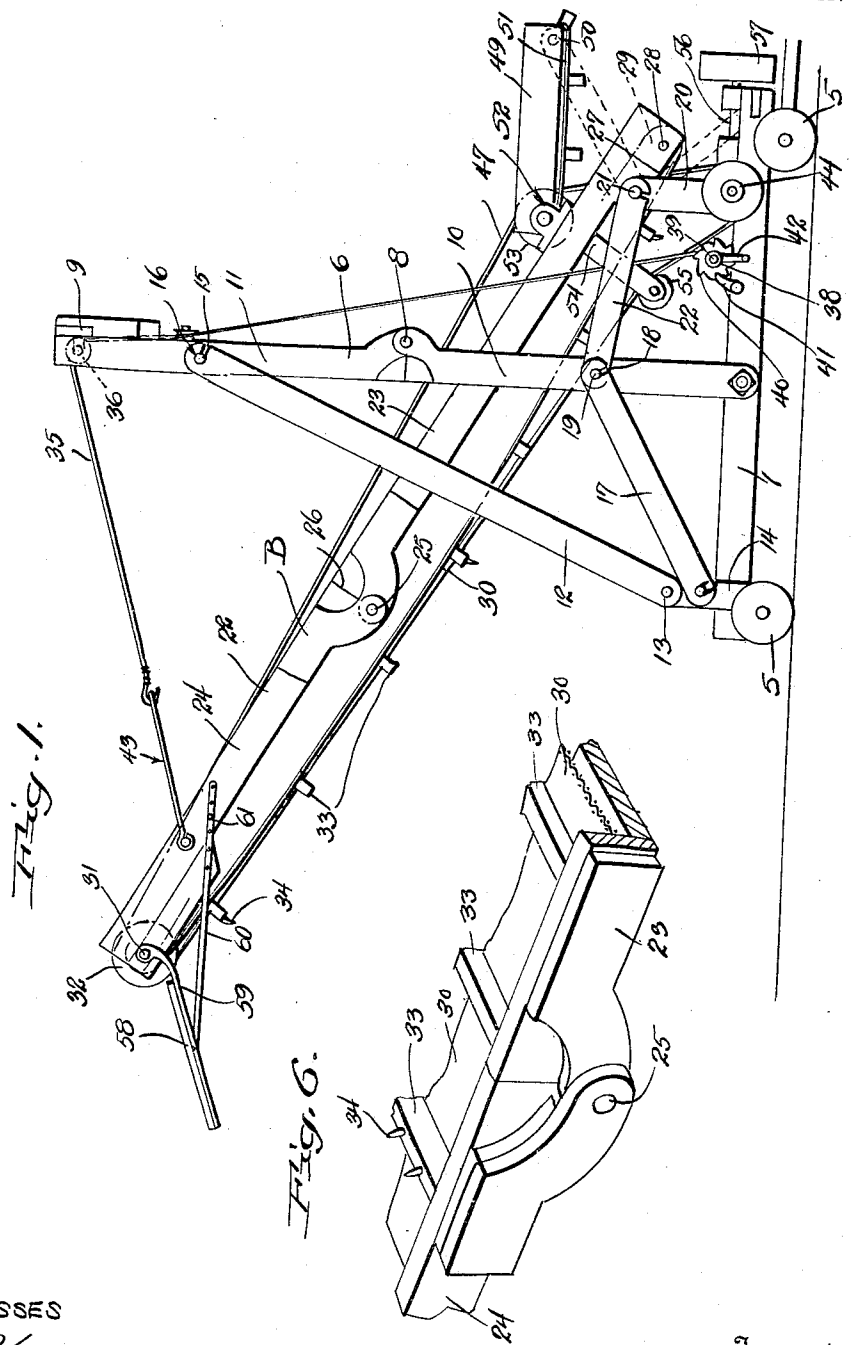


Fig. 1.

Fig. 6.

WITNESSES

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3 SHEETS—SHEET 2.

Fig. 2.

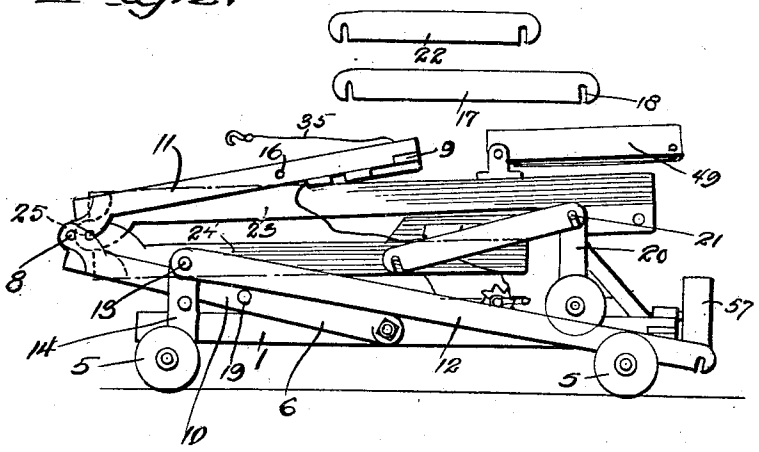
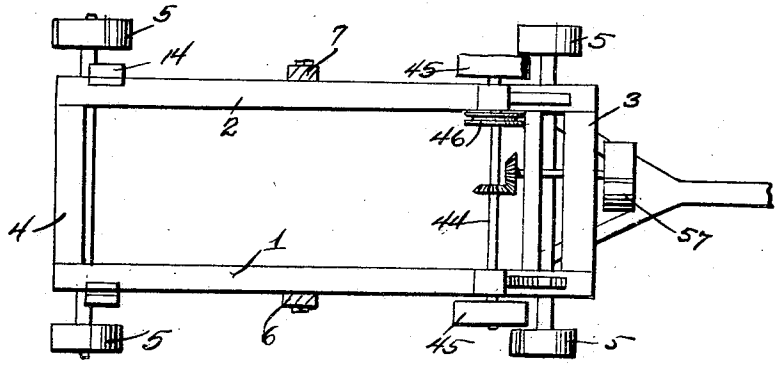


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 3.

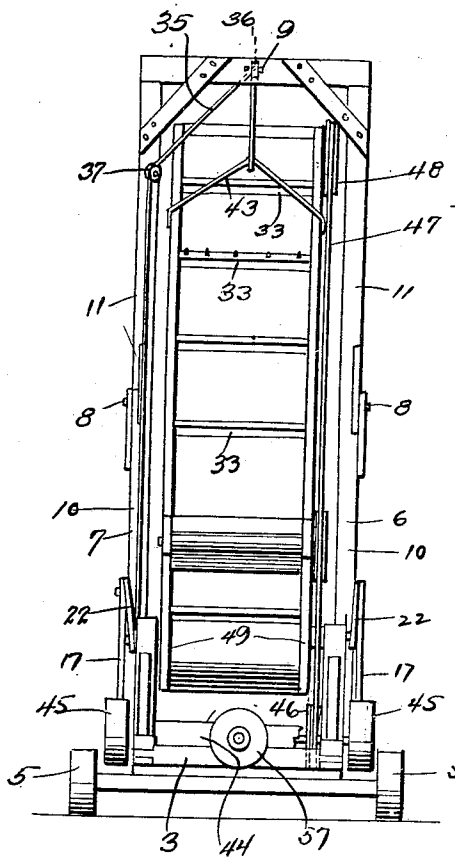
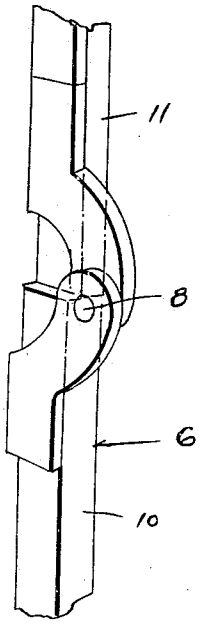


Fig. 5.



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UNITED STATES PATENT OFFICE.

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PORTABLE GRAIN ELEVATOR AND STACKER.

1,297,852. Specification of Letters Patent. Patented Mar. 18, 1919.

Application filed August 20, 1918. Serial No. 250,734.

To all whom it may concern:

Be it known that I, FELIX J. HUDZINSKI, a citizen of the United States, residing at Darien Center, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Portable Grain Elevators and Stackers, of which the following is a specification.

This invention relates to harvesting machinery and more particularly to a portable grain elevator and stacker for carrying hay, grain, corn and similar products to an elevated point for properly stacking the product.

One of the principal objects of the invention is to provide an elevator and stacker which will require very little attention while in operation thereby resulting in a material saving in labor; which may be compactly folded when not in use to be stored in a minimum space; and which may be suitably adjusted by the operator to raise the grain to the desired height.

A further object of the invention is to provide a device of this character which consists of comparatively few parts and is simple in construction, but durable and well adapted to withstand the rough usage to which devices of this character are ordinarily subjected.

For a full description of the invention and the advantages and merits thereof, reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation of the device constructed in accordance with my invention, and showing the same in operative position.

Fig. 2 is a side elevation showing the device in folded position the detachable parts being also illustrated.

Fig. 3 is an end elevation of the device as illustrated in Fig. 1.

Fig. 4 is a plan view of the carriage frame and the operating mechanism for the carrier.

Fig. 5 is a detail perspective view of the pivotal connection between the sections of the upright.

Fig. 6 is a detail perspective view of a portion of the collapsible carrier.

Referring to the drawings, in which like numerals of reference indicate like or corresponding parts throughout the several views, the carriage frame consists of the side bars 1 and 2 arranged in parallel relation and having their ends connected to the front and rear cross bolsters 3 and 4. This frame is supported upon front and rear axles to the ends of which the wheels 5 are attached so that the frame may be readily transported and moved from place to place. Pivotally attached to the side bars 1 and 2 approximately intermediate the ends thereof, are the collapsible upright members 6 and 7 each of which comprises two sections hingedly connected together at their meeting ends as indicated at 8. The upper ends of the members 6 and 7 are joined together by a cross brace 9. The sections 10 and 11, which comprise each upright member 6 and 7 are adapted to be folded when the device is collapsed as shown to advantage in Fig. 2 of the drawing. When in upright position, these upright members 6 and 7 are supported by brace arms 12 the lower ends of which are pivotally mounted as at 13 to the relatively short standards 14 carried by the side bars 1 and 2. The members 12 have their upper ends notched as at 15 to receive a connecting pin 16 carried by the section 11 of each upright member. The lower section 10 of each upright member is braced by a relatively short brace arm 17, the lower end of which is also pivotally connected to the corresponding member 14 while the opposite end is notched as at 18 to receive a connecting pin 19 carried by the member 10. In this manner the upright members are firmly supported when in extended position as shown by Fig. 1.

Mounted on the forward end of each side frame bar 1 and 2 is a support 20 the upper end of which is provided with a bearing. A shaft 21 has its end journaled in the bearings in the support 20 and the outer extended ends of the shaft are engaged by the notched ends of another pair of brace members 22, the opposite ends of which are engaged with the pin 19 to assist in bracing the upright members and also to hold the supports 20 in rigid position. The carrier or elevator indicated generally at B is pivotally mounted on the shaft 21. This carrier or elevator comprises side rails each of which are divided into rail sections 23 and 24 hingedly connected together as indicated at 25. The hinged connections are offset in the manner shown so that the ends of the sections 23 and 24 will readily abut at 26 when the elevator is in operative position. Enlarged portions 27 on the front ends of the rail

sections 23 are provided with openings through which the shaft 21 is extended so that the sections 23 are thereby pivotally connected to the shaft and supported by the supporting member 20. The enlarged portions 27 also are provided with openings to provide bearings for the trunnions 28 of a roller 29, over which is trained a flexible belt 30. The free end of each rail section 22 is also provided with a suitable bearing to receive the ends of the trunnions 31 on a roller 32 over which the belt 30 is also trained. A portion of the belt travels between the side rails 22 and as shown to advantage in Fig. 6 the belt is provided with a plurality of transversely extending cleats 33 some of which are provided with teeth 34. The cleats to which the teeth are attached are also of greater depth than the other cleats so that the belt is thereby especially adapted for all kinds of products such as corn, grain, hay and the like.

To hold the elevator in the position shown in Fig. 1 of the drawings, a flexible cable 35 is provided which is trained over a pulley 36 carried by the cross brace 9 at the center thereof. The cable is then led to one side as shown in Fig. 3 of the drawing and trained over a pulley 37 carried by one of the upright members from which point the cable is led downwardly and wound on a drum 38 on a shaft 39 supported by the side frame bars 1 and 2. This drum also carries a ratchet wheel 40 adapted to be engaged by a pawl 41 pivotally mounted on one of the frame bars so that when the cable is wound upon the drum, the pawl will maintain the cable under a tension to hold the elevator in raised position. The drum is turned by a crank 42 fixed to the end thereof. The opposite end of the cable 35 is provided with a hook which is attached to a yoke member 43 carried by the rail sections 24. When the cable is held under a tension, the elevator is maintained in the desired elevated position and it will be obvious that the elevator may be raised and lowered as it is desired by winding or unwinding the cable on the drum 38. The carrier or elevator is also collapsible as shown to advantage in Fig. 2 of the drawing, the rail sections being permitted to swing to folded position by virtue of the hinged connection 25. The lower portions of the support 20 are also provided with bearings for a transverse drive shaft 44 upon the ends of which are mounted the pulleys 45 over which may be trained a belt from an engine or other suitable source of power whereby the shaft 44 may be driven. This shaft also carries a grooved wheel 46 over which a drive cable or chain 47 is trained. One of the trunnions 31 is also provided with a grooved wheel 48 over which the cable or chain 47 is passed whereby the roller 32 may be driven to actuate the conveyer belt. An auxiliary rearwardly extending conveyer is also provided and is pivotally mounted upon the lower end of the main conveyer and consists of the side rails 49 each of which has its ends adapted to receive the journals 50 of rollers 51. A belt 52 having cleats mounted thereon is passed over the rollers 51. Bearings 52 are mounted upon the rail sections 23 and the journals 50 of the adjacent roller are extended through the bearings to pivotally support the auxiliary conveyer. At one side, one of the journals 50 has a grooved wheel 53 which also has the cable or chain 47 passed thereover, so that when the main conveyer belt is actuated, the auxiliary conveyer belt 52 will also be actuated. The auxiliary conveyer may be any desired length and is adapted to be extended over and beyond the end of the frame to permit the operator to load the hay or grain upon the auxiliary conveyer where it will be carried to the main conveyer for being elevated.

A pivotally mounted hanger 54 is suspended from one of the rail sections 23 on the side at which the cable travels, and the lower end of the hanger carries an idler pulley 55 for receiving the cable and taking up the slack therein. This hanger may be swung on its pivot to cause the idler pulley 55 to tighten or loosen the cable as desired.

A longitudinally extending short shaft 56 is also mounted at the front of the frame and the end of the shaft carries a drive pulley 57 which may also be engaged by the driving belt when it is not convenient to attach the latter to one of the pulleys 45. The end of this shaft is provided with a beveled gear adapted to mesh with a similar beveled gear on the shaft 44 as shown to advantage in Fig. 4 of the applicant's drawings. The mechanism, therefore, may be readily driven from either side or the front of the frame.

To fold the mechanism in the position shown in Fig. 2 it is merely necessary to remove the members 17 and 22 from each side of the device as shown in Fig. 2. The brace bar 12 will then be disconnected from the pin 16 and permitted to swing downwardly, whereupon the upright sections 10 and 11 of each upright member 6 and 8 may be folded upon themselves and swung downwardly into close proximity to the frame. By unhooking the cable from the member 43, the side rails of the conveyer may be folded as shown in Fig. 2 so that all of the mechanism is compactly folded to take up a minimum space when being stored. It will be obvious that the side rail sections 22 and 23 may be of greater number so that the elevator may be longer if desired.

For projecting the material off the end of the conveyer after being elevated, I have provided a platform 58 connected by hanger members 59 to the trunnions 31 so that the

platform may be swung to any angular position desired. This platform is held by the adjustable brace members 60, the forward ends of which are pivotally connected to the platform and the opposite ends are provided with a plurality of longitudinally spaced openings, any one of which may be engaged by a pin 61 projecting from the rail-section 24.

The foregoing description and accompanying drawings have reference to what might be considered to be the preferred or approved form of my invention. I desire it to be understood that I may make such changes in the construction, combination and arrangement of parts, materials, dimensions et cetera, as may prove expedient and fall within the scope of the appended claim.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

A stacker comprising a frame having relatively short uprights rigidly fixed thereto at the ends of the frame, an upright supporting member attached to each side of the frame approximately intermediate the ends thereof, and comprising hingedly connected upper and lower sections, removable brace elements attached to the said rigid uprights and adapted to be releasably engaged with the lowermost of the said sections whereby the latter may be held normally vertically while the said removable brace elements are in position, a relatively long brace element pivoted to one of the said uprights and adapted to be releasably connected to the uppermost of the said sections at each side of the upright supporting member, the latter having a cable trained over its top, a conveyer comprising two hingedly connected sections, one of the sections being mounted for swinging movement on one of the said rigid uprights at one end of the frame the outermost section being connected to the said cable, the said hingedly connected sections having abutting faces normally in engagement whereby a tug on the cable will raise the said longitudinally alined sections at an angle with respect to the said frame, and a conveyer trained over the said sections of the conveyer frame.

In testimony whereof I affix my signature in presence of two witnesses.

FELIX J. HUDZINSKI.

Witnesses:
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VINCENTY SYTABA.

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