W. G. FETROW & E. EBERLY.

SHEAF HOIST AND CHUTE.

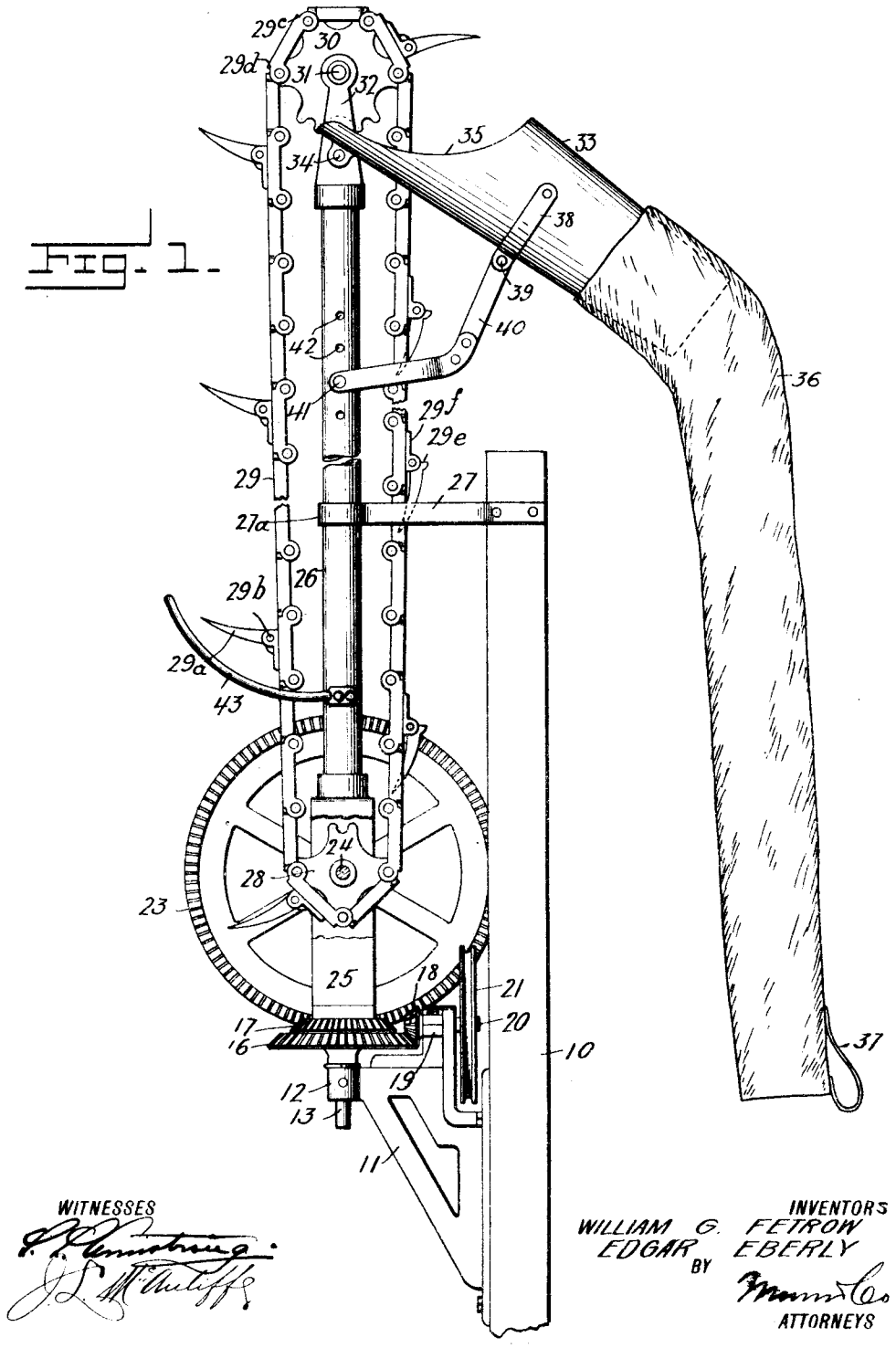
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1,114,454.

Patented Oct. 20, 1914

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

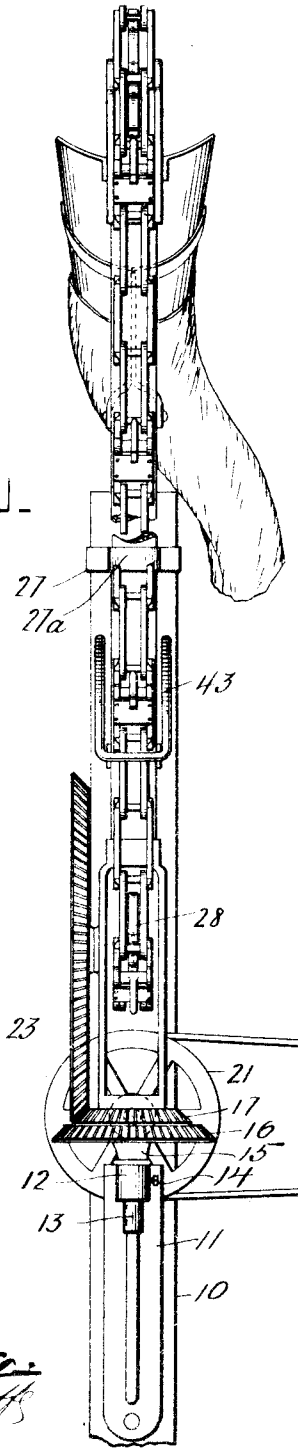
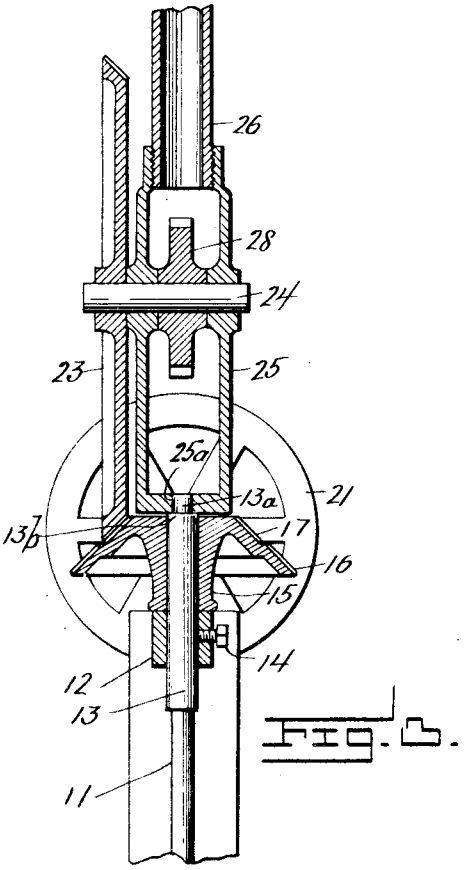


Fig. 5.



WITNESSES

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WILLIAM G. FETROW AND EDGAR EBERLY, OF MECHANICSBURG, PENNSYLVANIA.

SHEAF HOIST AND CHUTE.

1,114,454. Specification of Letters Patent. Patented Oct. 20, 1914.

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To all whom it may concern:

Be it known that we, WILLIAM G. FETROW and EDGAR EBERLY, citizens of the United States, and residents of Mechanicsburg, in the county of Cumberland and State of Pennsylvania, have invented a new and Improved Sheaf Hoist and Chute, of which the following is a full, clear, and exact description.

Our invention relates to an apparatus more particularly intended for elevating sheaves of unthreshed grain to barns or other outbuildings, or onto stacks or mows. The invention contemplates also a chute so arranged as to distribute the sheaves over the mow or room.

It is a design of our invention to improve in various particulars apparatus of the character indicated, to the end that efficiency may be promoted, as well as simplicity of construction, adjustment and control.

The invention will be particularly explained in the specific description following.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of an apparatus embodying our invention, parts being broken away; Fig. 2 is a front view; and Fig. 3 is a detail transverse vertical section of the driving gear and adjacent parts.

In constructing an apparatus in accordance with our invention, a post 10 or other suitable support has secured to it a bracket 11 formed with a sleeve or socket 12, which receives a short, vertical spindle 13, which is normally held against turning by any suitable means, such as a set screw 14. On the upper end of the spindle 13 is received the hub 15 of integral miter gears 16, 17, with one of which meshes a driving pinion 18, the shaft 20 of which has a suitable bearing as at 19, and is provided with a belt pulley 21 for receiving the drive belt 22. Of the miter gears, the lower one indicated by the numeral 16, is of larger radius than the upper gear 17, and meshing with the latter is a larger miter gear 23, secured to a shaft 24 journaled in bearings in the hollow base or fork 25 of a mast or standard 26. The base 25 is formed with a recess or vertical hole 25^a in the bottom thereof for receiving the reduced upper end 13^a of the spindle to permit the base and mast to turn on the spindle when desired, as hereinafter explained, the spindle 13 presenting a shoulder 13^b at the base of the reduced end 13^a on which the mast rests. Additional support may be given the mast by a horizontal arm 27, having an eye 27^a at the outer end thereof, through which the mast passes.

On the shaft 24, of the large gear 23 is a sprocket wheel 28, around which passes the sprocket chain 29, which passes also around a sprocket pulley 30, the shaft 31 of which is journaled in a fork 32, secured to the top of the mast 26. Certain links of the chain 29 are provided with prongs 29^a, hereinafter further referred to, for engaging the sheaves and depositing them in a chute 33 which is pivoted at its upper end as at 34, to the fork 32, the top and sides of the chute being cut away as at 35, to better receive the sheaves dropped from the prongs.

The lower end of the chute 33 leads to a tubular canvas conveyer 36, the flexibility of which permits the operator to direct the sheaves to different points on the mow or in the barn, and which furthermore is provided with a hand loop 37 at its lower end whereby the operator, by a pull on the conveyer, may turn the mast and sprocket chain about the spindle 13 as an axis. In the turning of the mast the large gear 23 is free to run around its driving miter gear 17. The relative location of the drive pinion 18 makes it possible for the gear 23 to make a partial turn.

The chute 33 has a supporting yoke or fork 38, which is pivotally connected as at 39 with an arm 40, so that the chute may rock in a vertical plane. The arm 40 is forked at its inner end and may be secured adjustably by a pin 41 adapted to be passed through any one of the vertical series of pin holes or bolt holes 42 in the mast 26. The arrangement is such that the arm 40 may be raised or lowered on the mast to vary the angle of the chute 33, the chute in its adjustment being free to rock on its pivot 34 and on the pivot 39.

The prongs 29^a are each pivoted as at 29^b to their respective links, and the latter are open, as clearly shown in Fig. 2, so that the prong after passing over the upper pulley and dropping the sheave into the chute, will itself drop, the point of the prong entering

between the links of the chain so as to clear the parts adjacent to the path of movement. Opposite ends of each link of the chain have shoulders as at 29^c, 29^d, at the outer side of the chain, opposing shoulders abutting when the chain is straightened out, and serving to resist the strain on the chain and prevent bending under the weight of the sheave carried by a prong.

By the described construction it will be seen that the gears 16, 17, may turn relatively to the mast, the latter remaining stationary, and the gear 23 journaled therein being driven to turn the sprocket wheels and sprocket chain. At the same time the operator has command of the apparatus, and by a pull on the loop 87 may conveniently give a partial turn to the mast with its appurtenances, as may be required for the proper distribution of the sheaves as delivered.

It will be observed from Fig. 1, that when the prongs are carried upwardly they gravitate to a position projecting outwardly from the links to which they are pivoted, there being a shoulder 29^e at the base of each prong adapted to seat against the face of the link the face being formed in the present instance by a bracket member 29^f secured to the link, and receiving the pivot pin 29^b.

The sheaves to be taken up by the prongs 29^a in the upward movement of the latter, are placed upon a table 43, in the form of an open frame secured to the mast 26 above the miter gear 23, the arrangement being such that a bundle placed across the table will be engaged by the pointed end of the next upwardly moving prong and carried upwardly and over the top sprocket, to be deposited in the chute 33.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent:

1. An apparatus of the character described, comprising a structure mounted to turn about a vertical axis, an elevating conveyer carried by the structure, a table comprising an open frame secured to the structure and on which the material is placed, the conveyer being provided with means for engaging the material on the table and carrying the same, and a chute pivoted at one end to the structure near the top thereof and adapted to receive the material from the conveyer.

2. In an apparatus of the character described, a mast mounted to turn on a vertical axis, an endless elevating conveyer chain on the mast, driving means for said chain, said chain having prongs to engage sheaves, and actuating means for the chain drive, said actuating means including an element carried by the mast and an element adapted to turn on a relatively fixed support below the mast.

3. In an apparatus of the character described, a mast mounted to turn on a vertical axis, an endless elevating conveyer chain on the mast, said chain being provided with prongs to carry sheaves, a chute carried by the mast near the upper end and adapted to receive material from the conveyer, a table carried by the mast and presenting an opening through which the chain and its prongs pass in an upward direction, and actuating means for the conveyer, said means being arranged below the mast table.

4. In an apparatus of the character described, a structure adapted to turn on a vertical axis, an endless, elevating conveyer on said mast and adapted to turn therewith, means for driving the conveyer, a chute carried by the mast at the upper end and adapted to receive material from the conveyer, and a flexible tubular extension on the chute, said extension being provided at its lower end with a hand grasp whereby to turn the mast and its appurtenances.

5. In an apparatus of the character described, a structure mounted to turn on a vertical axis, an endless elevating conveyer on said structure and adapted to turn therewith, the said conveyer being provided with prongs for engaging and carrying sheaves, a chute pivoted to the structure near the upper end thereof and adapted to receive material from the conveyer, means for actuating the conveyer, and means for adjusting the chute to vary the angle thereof.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM G. FETROW.
EDGAR EBERLY.

Witnesses:
H. H. MERCER,
FORREST MERCER