A. B. DE MOURE.

GRAIN ELEVATOR.

APPLICATION FILED MAR. 22, 1911.

1,106,632.

Patented Aug. 11, 1914.

3 SHEETS—SHEET 1.

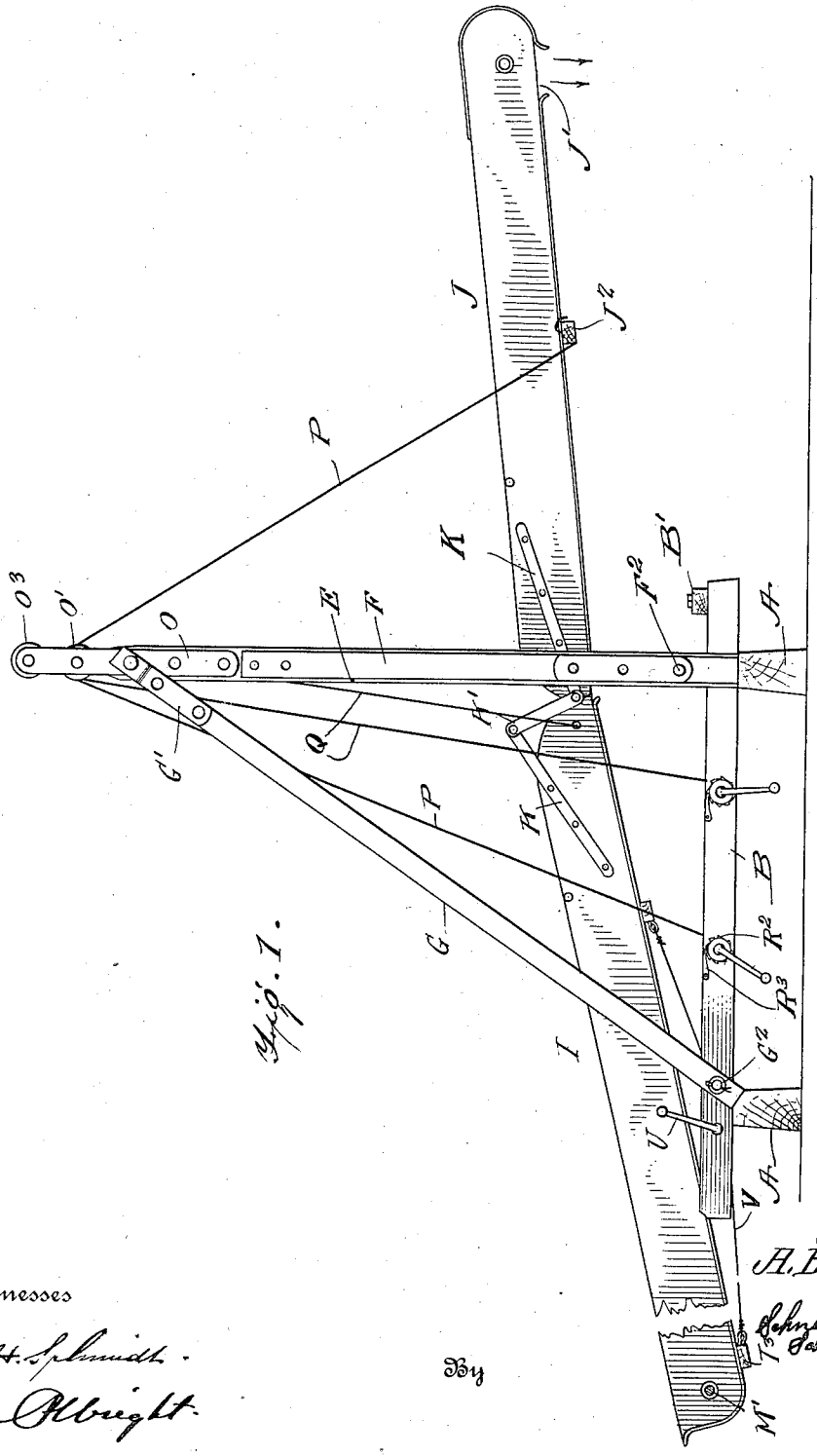


Fig. 1.

Witnesses

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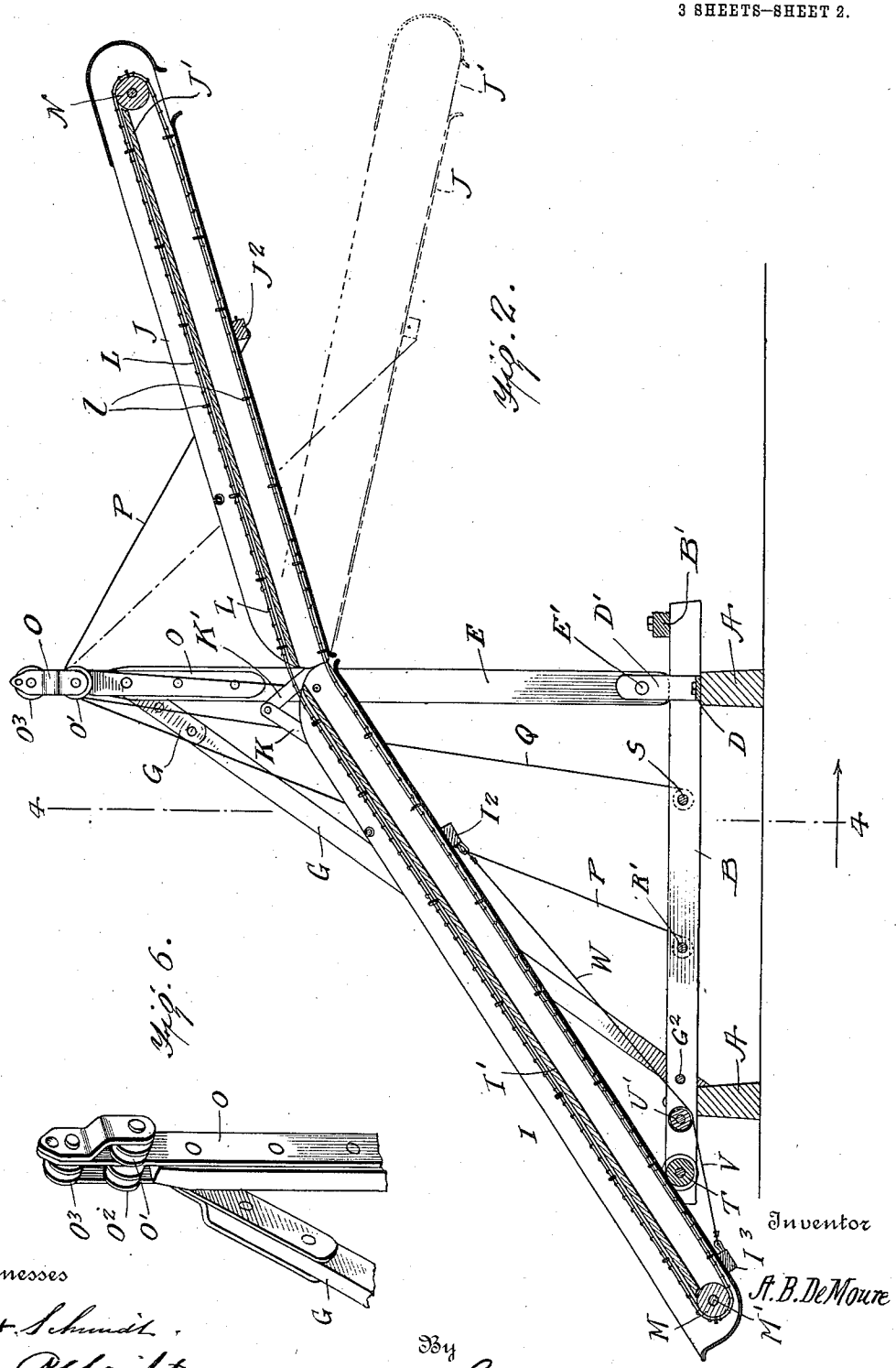
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

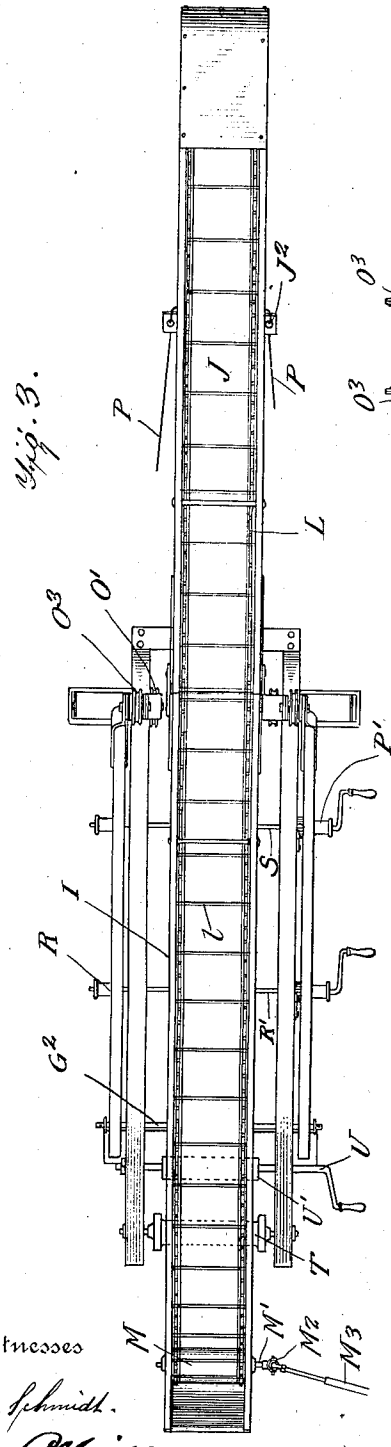


Fig. 4.

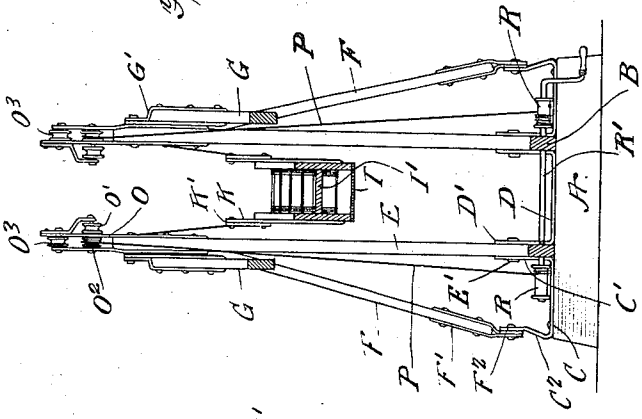
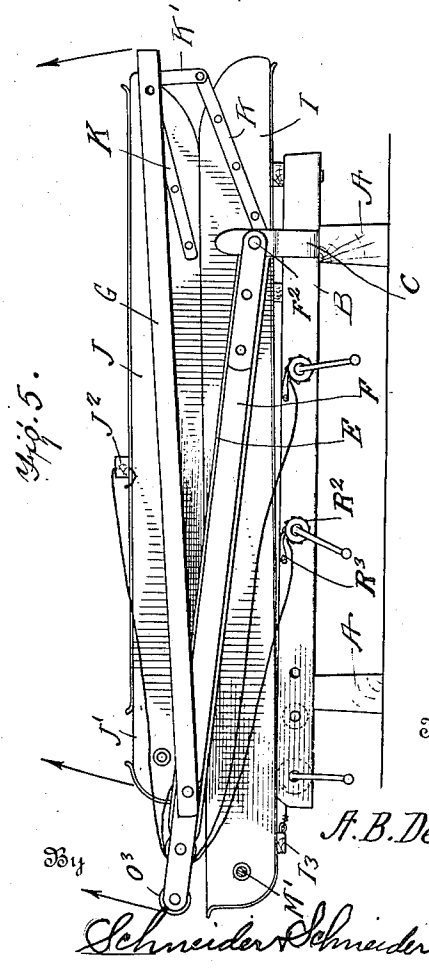


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

ADOLPH B. DE MOURE, OF PIPER CITY, ILLINOIS.

GRAIN-ELEVATOR.

1,106,632. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed March 22, 1911. Serial No. 616,244.

To all whom it may concern:

Be it known that I, ADOLPH B. DE MOURE, a citizen of the United States, residing at Piper City, in the county of Ford and State of Illinois, have invented certain new and useful Improvements in Grain-Elevators, of which the following is a specification.

This invention relates to certain new and useful improvements in grain elevators.

One aim of the invention is to provide in an elevator of the class mentioned including pivotally connected sections, means for adjusting the sections relatively angularly, and for adjusting the sections upwardly and downwardly and forward and rearwardly so that they may be caused to assume any desired position for use.

A still further object of the invention is to provide an elevator which may be folded to compact form.

A still further object of the invention is to provide an elevator which is so constructed that the endless conveyer traveling upon the foldable sections of the elevator will not be disarranged when the sections are adjusted to different relative positions, or when they are folded.

With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts, hereinafter fully described and pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a side elevation of my improved elevator. Fig. 2 is a longitudinal vertical sectional view through the same. Fig. 3 is a top plan view. Fig. 4 is a transverse vertical sectional view. Fig. 5 is a side elevation of the elevator folded. Fig. 6 is a detail perspective view of the upper end of one of the standards and a portion of the pivoted brace therefor.

In the drawings, A indicates a pair of supporting members, which may be arranged upon a car or at any point desired where the elevator is to be used. Arranged upon the supports A is a frame formed of parallel side bars B connected together at one end by a cross beam B′. The forward support A is of a greater length than the rear support, and secured upon the forward support is a pair of straps C having upturned ends C′, C², the upturned end C′ of each strap being extended upwardly beside the corresponding side bar of the frame. A U-shaped strap D is arranged upon the forward support A between the side bars of the frame, and is provided with upstanding ends D′, which extend parallel with the ends C′ of the straps C. Standards E are pivotally mounted as at E′ between the ends A′ of the straps C and the upstanding ends D′ of the strap D and each of these standards carries a fixed brace F having straps F′ secured to its lower end. These straps F′ are connected to the upturned ends C² of the respective straps C by pivot pins F², in order to allow the braces to swing with the standards and be folded when desired.

Pivotally connected to the upper end of each of the standards E are straps G′ carried at the upper ends of braces G which are provided at their lower ends with apertures adapted to register with openings formed in the side bars B. A bolt G² is removably fitted through the said registering openings and serves to hold the braces in fixed position. At this point it will be understood that after removal of the bolt G², the braces may be swung upwardly, and over to the other side of the fixed braces F of the standards which will allow the standards to be folded upon the side bars of the frame, as clearly shown in Fig. 5.

Arranged between the standards is the elevator proper consisting essentially of two trough-shaped sections I and J, the sides of which have rounded abutting ends. The sides of each section carry straps K which are connected together by links K′, in order to form a compound hinge, so as to allow the sections to be folded upon themselves as shown in Fig. 5 or adjusted angularly with respect to each other, in order to assume the desired position for use. Partitions I′, J′ constitute the bottoms of the sections I and J respectively and it is over these bottoms that the material being handled is carried by an endless conveyer consisting of spaced chains L connected together by bars 1. The chains L pass over sprockets at the ends of drums M and N mounted for rotations at the outer ends of the sections I and J respectively. By this construction the endless conveyer is so mounted as to have its upper stretch travel over the partitions I′ and J′ in such a manner as to elevate grain deposited upon the partitions of the lower section. The grain is discharged through a suitable discharge spout J′ provided at the upper end of the section J. As a means for imparting movement to the endless conveyer, I provide

the drum M with a shaft M′ having a universal joint M^2, to which is connected an extensible drive shaft M^3.

Fixed upon the upper ends of the standards E are frames O carrying pulleys O′, O^2, O^3, over which pass the cables which support the elevator sections and by means of which the said sections are adjusted to assume various relative positions, as will be later described. A pair of the cables indicated by the letter P pass over the pulleys O′, and each has one of its ends connected to a cross-bar J^2 upon the section J, and its other end wound around one of a pair of winding drums R mounted upon a shaft R′, mounted with the side bars B. The shaft R′ carries ratchet wheels R^2 adapted to be engaged by pivoted pawls R^3 for locking the shaft against backward rotation, and it will be seen that by rotating this shaft, the section J can be raised and lowered as desired and adjusted angularly with respect to the section I. Cables Q pass over the pulleys O^2 and each has one of its ends wound upon winding drums P′ carried by a shaft S. The other ends of the cables Q are connected to the upper end of the section I, and it will be understood that by rotating the shaft S in one direction or the other, both sections may be bodily raised or lowered as desired.

Mounted between the side bars B is a guide roller T upon which the inner section I rests and slides while being moved. In order that the elevator sections may be moved forwardly and rearwardly between the standards, I mount within the frame a shaft U having a drum U′ upon which are wound in opposite directions cables V and W, the cable W being connected to a cross-bar I^2, adjacent the upper end of the section I and the cable V to a cross-bar I^3, adjacent the lower end of the section I, whereby by operating the crank shaft U, one cable will be wound upon the drum U′, and the other unwound, in order to move the elevator in either direction. It will be understood that the pulleys O^3 serve to prevent disengagement of the cables from the pulleys O^2 when the standards 3 are swung upon their pivotal supports.

I claim—

1. In an elevator of the class described, spaced uprights, plates secured to the opposite sides of each of the uprights and projecting above the upper end thereof, spaced pulleys journaled between each pair of plates, a bracket secured upon one plate of each pair, a pulley journaled in the bracket, a conveyer comprising connected sections, a winding drum, cables connected to one of the conveyer sections and trained over the last mentioned pulleys and wound about said drum, a second winding drum, and cables wound thereon and trained over corresponding ones of the first mentioned pulleys and connected to the other section of the conveyer.

2. A conveyer comprising sections each including sides and a bottom, bars secured to the sides of each section at the meeting ends of the sections, a link pivoted to and extending between the ends of the bars at each side of the conveyer, conveyer shafts mounted at the remote ends of the sections, a partition extending between the sides of each section above the bottom thereof, and an endless conveyer apron trained over the shafts and having its lower stretch traveling over the bottom of the sections and the upper stretch over the partitions thereof.

3. In an elevator of the class described, conveyer sections relatively angularly adjustable, connection between the sections comprising bars secured to the sides of the sections, the bars of one section each having an end located near the bottom of the section and the bars upon the other section each having an end located substantially at the top of the section, links extending between the said ends of the corresponding bars, and pivotally connected to the same, and means for relatively angularly adjusting the sections, the first mentioned section being foldable to lie in inverted position upon the second mentioned section.

4. In an elevator of the class described, a base, spaced uprights upon the base and foldably mounted thereon, conveyer sections supported between the uprights and relatively angularly adjustable, connection between the adjacent ends of the sections comprising bars secured to the sides of the sections, the bars upon one section each having an end located near the bottom of the section and the bars upon the other section each having an end located substantially at the top of the section, links pivotally connected to and extending between the said ends of corresponding ones of the bars, the second-mentioned section being adapted to be supported upon said bars and the first-mentioned section being foldable upon said links to lie in inverted position upon the second-mentioned section.

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

ADOLPH B. DE MOURE.

Witnesses:
F. W. SCHATZLE, Jr.,
J. C. DEMOURE.