

May 8, 1928.

J. N. STOUT ET AL

1,669,357

BINDER ELEVATOR

Filed Dec. 24, 1924

2 Sheets-Sheet 1

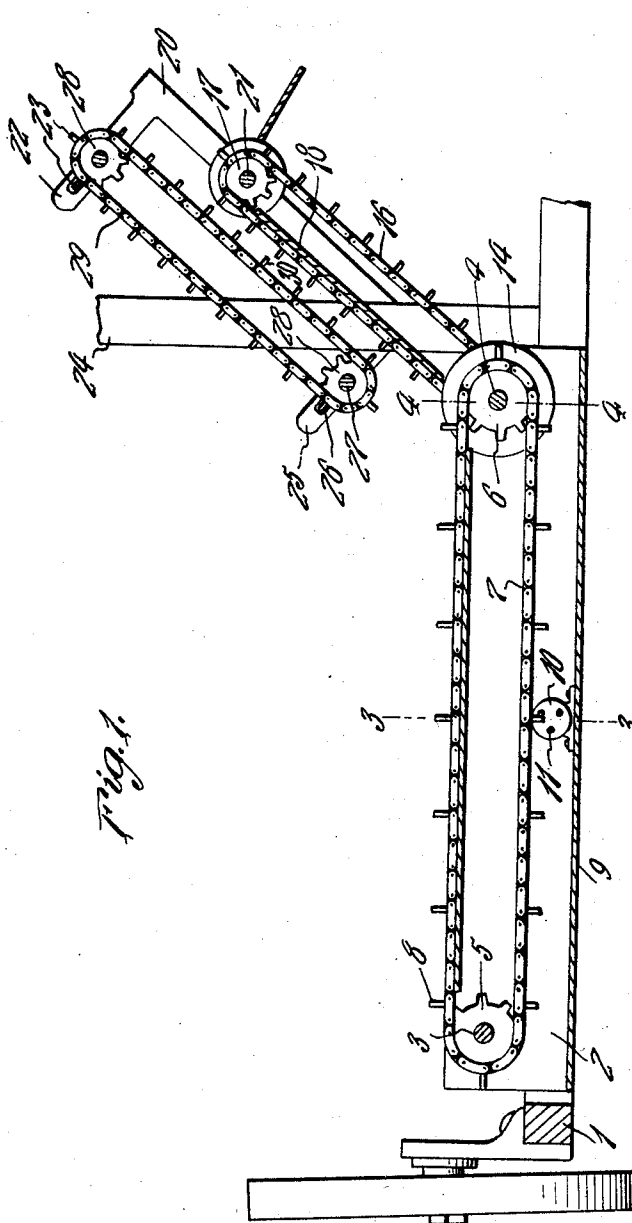


Fig. 1.

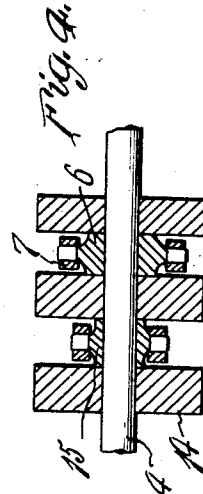


Fig. 4.

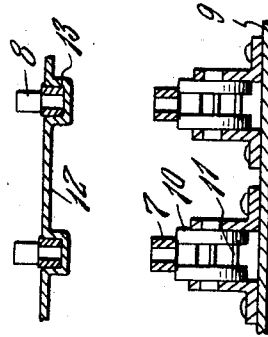


Fig. 3.

J. N. Stout
E. Schlegel
INVENTORS
BY Victor J. Evans
ATTORNEY

May 8, 1928.

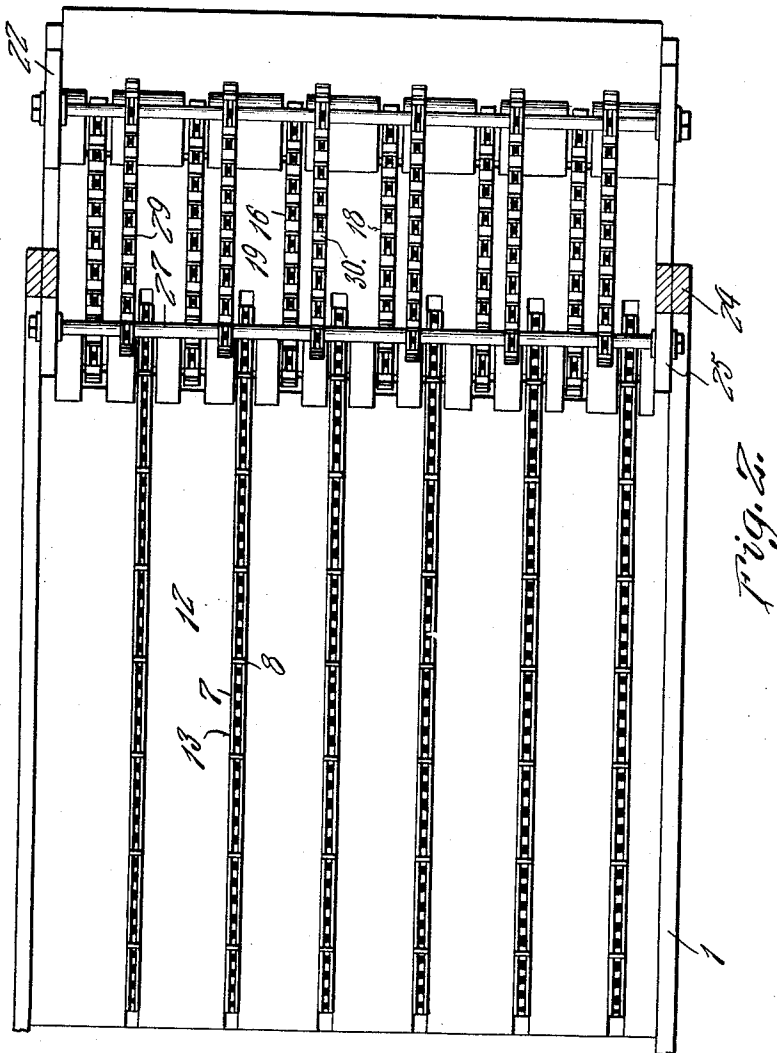
J. N. STOUT ET AL

1,669,357

BINDER ELEVATOR

Filed Dec. 24, 1924

2 Sheets-Sheet 2



J. N. Stout
E. Schlegel

INVENTORS

BY *Victor J. Evans*

ATTORNE

UNITED STATES PATENT OFFICE.

JOHN N. STOUT AND EARL SCHLEGEL, OF STAUNTON, INDIANA.

BINDER ELEVATOR.

Application filed December 24, 1924. Serial No. 757,858.

Our present invention has reference to a conveyor for binding machines.

Our object is to dispense with the fabric conveyors and elevators for binding machines and employ in lieu thereof endless chains supported in a manner whereby the straw and grain will be positively delivered from the platform on to the elevator without loss, and whereby the wedging and jamming of the stalks of straw at the juncture of the respective conveying and elevating mechanisms will be entirely overcome.

A further object is the provision of a conveyor for binding machines comprising endless chains having spaced fingers thereon for gripping the straw, the upper leads of the said chains being trained through grooves in metallic aprons.

A still further object is the provision of a conveyor for binding machines which will obviate the necessity of taking up the slack in either the conveyor or the elevator, which is of a construction to render the same strong and durable so that the life thereof, with respect to that of the ordinary conveyor, is greatly increased, and wherein the upper elevator or packer is adjustable with respect to the lower elevator so that heavy or light loads of straw may be conveyed with equal efficiency.

To the attainment of the foregoing broadly stated objects and many others which will present themselves as the nature of the invention is better understood, reference is to be had to the drawings which accompany and which form part of this application.

In the drawings:—

Figure 1 is a side elevation of the improvement in applied position, a part of the binder frame and the floor of the conveyor platform being in section.

Figure 2 is a top plan view.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is a sectional view on the line 4—4 of Figure 1.

In the embodiment of our improvement illustrated by the drawings, a portion of the binder frame is indicated by the numeral 1. Secured to the frame in any desired manner there is the substantially rectangular casing 2 of the improvement. The casing is preferably of metal and has journaled in bearings, adjacent to its ends, shafts 3 and 4, the said shafts having keyed thereon

sprocket wheels 5 and 6 around which there are trained the endless chains 7 that constitute the conveyor. Certain of the links of the chains are provided with outstanding fingers 8 and the fingers on the respective chains are in alignment.

Journaled in suitable bearings on the base 9 of the casing 2 there are spaced wheels 10 arranged in pairs and connected together by pins 11. The wheels or rollers contact with the under faces of the lower lead of the chain conveyor 7, while the spaced connecting pins therebetween permit of the passage of the flights or fingers 8 between the said rollers. The rollers prevent the sagging of the lower lead of the conveyor.

The casing, between the toothed wheels 5 and 6, has a flat top 12, and this top is formed with spaced longitudinal depressions providing channels 13 for the upper leads of the chain conveyor 7. The depth of the channels equals the thickness of the chain links and the width of the channels correspond to the width of the said chain links. In this manner it will be seen that the upper leads of the said endless chains are effectively guided over the top of the casing and that grain from the straw arranged on the conveyor cannot drop into the channels.

Keyed on the shaft 4 there are spaced rollers 14 of a larger size than the toothed or sprocket wheels 6. Each sprocket wheel is arranged between two of the rollers 14, and keyed on the shaft between the adjacent pair of rollers to those just mentioned there are sprocket wheels 15. These sprocket wheels are of a less diameter than the sprocket wheels 6 and have trained therearound the endless chain 16 that provides the lower elevator. The chain 16 is also trained around an upper sprocket wheel 17 supported on the usual angle bar connected with one of the uprights of the binder frame. The upper leads of the lower elevator chains 16 travel through channels 18 in metal plates or aprons 19 secured between the rollers 14 and the sprocket chains 17.

The angle bar 20 on which the shaft 21 for the sprocket wheels 17 is journaled, is extended upwardly a considerable distance beyond the said sprocket wheels 17 and has secured thereto rightangularly disposed upwardly directed arms 22 provided with slots 23. The upright 24 to which the angle member 20 is secured is also provided with

angle arms 25 slotted, as at 26. Adjustably received in the slots of the arms there are bearings for shafts 27 that have keyed thereon sprocket wheels 28—28 around which are
5 trained the endless chains 29 that provide the upper or packer elevator. Both of the elevators have their chains provided with outstanding fingers or flights 30 respectively, and the fingers on the respective elevators
10 are disposed in parallelism. Suitable means, such as the rollers 10 and the fingers 11 may be provided for preventing the inactive leads of the chain conveyors from sagging and of course, suitable means is provided for
15 adjusting the bearings for the shafts 27. By such arrangement either wet or dry straw may be fed with equal efficiency between the elevators 16 and 29.

The operation of our improvement will,
20 it is thought, be apparent to those skilled in the art to which such inventions relate. The straw delivered on to the conveyor 18 is directed thence on to the rollers 14, which, being of a greater diameter than the toothed
25 wheels 6 but rotating at the same angular velocity as the latter, have a greater peripheral speed than the linear speed of the conveyor 7. But these rollers are positioned at the throat defined at the juncture of the
30 horizontal conveyor 7 and the elevator 16 and exceeding, as aforesaid, the linear speed of the conveyor, the straw immediately upon

reaching the throat is instantly cast upon the elevator with the result that jamming of the straw in its passage from the conveyor 35 to the elevator is effectively precluded.

Having described the invention, we claim:

Apparatus for the purpose indicated comprising a lateral conveyor and an elevating conveyor operatively connected with the lateral conveyor and defining a throat with
40 the latter at its line of juncture with the same, and means disposed in said throat for unobstructed contact with the product being conveyed to accelerate the speed of said
45 product at the time of its transfer from the horizontal conveyor to the elevator, both of said conveyors comprising each a plurality of chains arranged in parallelism and having sprocket wheels over which they are
50 trained, a shaft positioned in the region of said throat and carrying the sprocket wheels at the adjoining ends of said conveyors, and said means comprising rollers carried on
55 said shaft and arranged in intercurrent relation with the chains of said conveyors, said rollers being appreciably larger in diameter than the diameters of said sprocket wheels and being slightly less in width than the
60 width of the space between the chains.

In testimony whereof we affix our signatures.

JOHN N. STOUT.
EARL SCHLEGEL.