

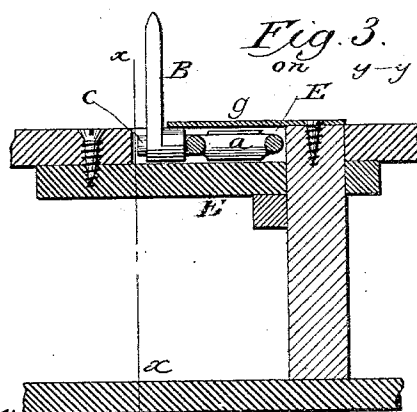
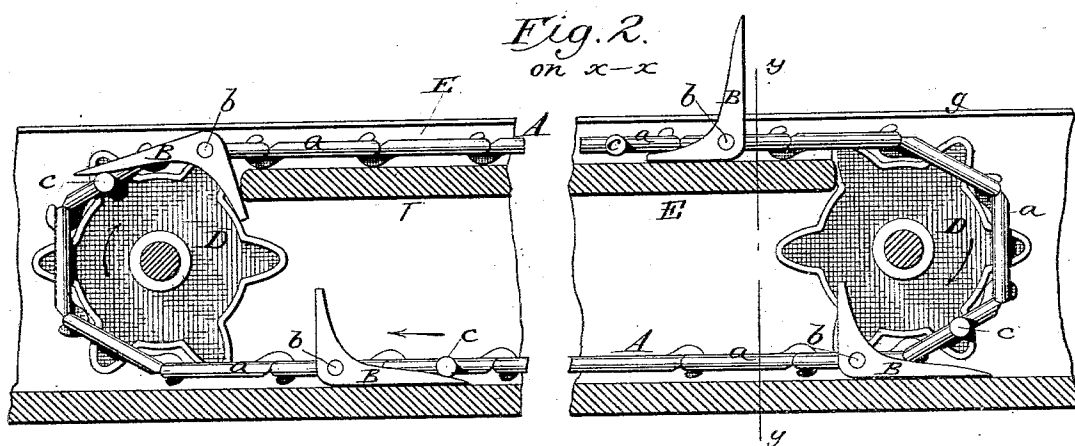
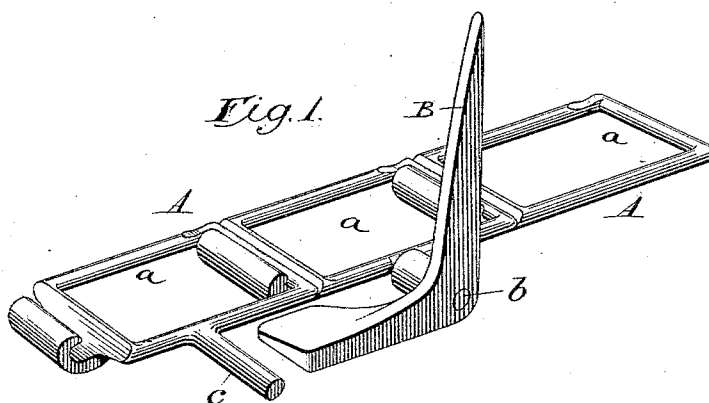
(No Model.)

J. F. GORDON.

GRAIN CONVEYER FOR HARVESTERS.

No. 300,247.

Patented June 10, 1884.



Attest

Frederic V. Hollingsworth
Newton Wyckoff

Inventor.
James F. Gordon
By his Attorney
Philip T. Dodge.

UNITED STATES PATENT OFFICE.

JAMES F. GORDON, OF ROCHESTER, NEW YORK.

GRAIN-CONVEYER FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 300,247, dated June 10, 1884.

Application filed September 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. GORDON, of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Grain-Conveyers, of which the following is a specification.

This invention has reference to that class of grain-conveyers which consist of endless chains having angular teeth pivoted thereto and arranged to operate in connection with stationary tracks or controlling devices, by which the teeth are caused to assume an elevated position while advancing at the top of the chain, and folded inward during their return movement at the under side of the chain.

The object of the invention is to insure the proper action of the teeth and avoid the difficulties which have hitherto been encountered on account of their failure to rise and fall at the proper times, and of their encountering the stationary devices in such manner as to cause breakage of the parts.

It is the aim of the invention to reduce the vertical space which is required in toothed conveyer-chains of the ordinary type, to the end that the platform and frame may be made thinner and the cutters arranged nearer to the grain.

To this end the invention consists in combining with the chain angular teeth journaled upon its outer edge, and laterally-extended studs on adjacent lengths, and arranged to act beneath the points of the teeth to insure their proper motion upon their journals.

Referring to the accompanying drawings, Figure 1 is a perspective view of my improved chain. Fig. 2 is a longitudinal vertical section of a grain platform or table having my chain mounted therein; Fig. 3, a transverse vertical section of the same.

As shown more particularly in Fig. 1, A represents the chain proper, composed of a series of links, *a*, united end to end, these links being of any ordinary or suitable form, connected detachably or otherwise by any suitable joint. At suitable intervals in the length of the chain I provide the links with journals *b*, extending laterally beyond its side or edge, and upon each of these journals I mount an angular tooth, B, consisting of an upright pointed portion to act upon the grain, and of an expanded foot or base portion of prepon-

derating weight. The expanded foot of the tooth, lying on the side next to the chain, acts beneath the stationary covering-plate hereinafter described, and thus serves to prevent the tooth from being accidentally tipped forward, so as to throw its point below the operative position at an improper time. On the links immediately behind those which bear the teeth I form laterally-extended fingers *c*—one upon each link—located in such position that the points of the pivoted teeth will ride thereon when thrown backward or downward. The location of the fingers *c* upon links other than those which carry the teeth, and in such position that they will act under the outer ends or points of the teeth, is a feature of special importance, for reasons which will hereinafter appear.

An endless chain being constructed as above is extended between and mounted, as usual, upon two sprocket-wheels, D, in the manner commonly practiced in connection with the ordinary toothed chains. The upper portion of the chain is arranged to travel in a grooved or recessed bed or guide, E, by means of which it is sustained, and upon which the bases of the teeth slide, for the purpose of maintaining the teeth in an upright position while moving forward and acting upon the grain. This guide or rail is extended between and terminates in close proximity to the sprocket-wheels, as shown in Fig. 2.

For the purpose of covering and protecting the upper portion of the chain and preventing grain or other foreign matters from entering the same, it is covered by means of a plate, *g*, one edge of which is secured to the bed or guide, while the opposite edge overlies the chain, as shown, the teeth being in such position that their points may be turned upward past the edge of the plate, as clearly represented in Fig. 2.

In the operation of the device the sprocket-wheels are turned in the direction represented in Fig. 2. As each tooth is carried forward at the top of the chain, its base rests upon the guide or rail, whereby its pointed end is maintained in an erect position, so as to act upon and move forward the grain before it. As the tooth is carried forward beyond the end of the rail or guide E, its lower and heavier end drops downward, causing the point to fold

backward and downward in line or substantially in line with the links, the tooth, as it descends, assuming the position represented in Fig. 2, and passing backward in an inoperative position to the opposite end. During the descent of the tooth the finger *c*, lying behind its point, prevents the possibility of the tooth turning upside down, as it would otherwise be liable to do when driven at a high speed or in the event of its encountering straw or other obstructive material. As the tooth rises with the chain around the sprocket-wheel, the finger *c* acts beneath the end or point of the tooth, as shown in Fig. 2, lifting the same and compelling its foot or base to descend in such position as to encounter the end of the guide or track *E*, whereby the tooth is compelled to turn upon its pivot in such manner that its point will assume an erect position.

I am aware that a conveyer-chain has been provided with laterally-extended studs bearing angular teeth, and that the same links were each provided with a stationary stud or stop located near the center of the tooth, and acting to limit its pivotal movement in both directions.

My construction, in which the stops are located on links other than those bearing the teeth, and arranged to act at the inner point of the teeth, is advantageous, in that it permits the chains to operate and the teeth to be folded in vertical space less than that required for chains constructed on the old plan. Consequently I am enabled to construct a machine with less vertical space below the cutters at the outer end of the platform, the advantage of which will be readily understood by those skilled in the art.

The difference in the space required for the folding movement of the teeth in the two cases will be readily understood when it is considered that in my improved chain the link which bears the stop is carried around the pulley in a different plane or at a different angle from that which carries the tooth, the position of the stop-finger being consequently changed during its course of movement with respect to the tooth, while in a chain having both the toothed and the stop-fingers on one link the relative position of the parts remains unchanged.

Referring to the drawings, it will be seen that in my chain the teeth have their hubs, which are necessary in order to give the teeth a sufficiently wide bearing to insure stability when in action, on the one side, or side next to the chain. This construction is advantageous, in that it permits the stationary covering-plate to be extended over the hubs, thus reducing the width of the chain somewhat, and avoiding more effectually the danger of grain or other foreign matters finding their way into the chain.

Having thus described my invention, what I claim is—

1. In an endless conveyer-chain for harvesters, the combination of links provided with journals extending laterally beyond the edge of the chain, angular teeth pivoted upon said journals, and separate links provided with laterally-extending stop-fingers arranged to act beneath the point of the teeth.

2. In an endless conveyer-chain, two adjacent links, one provided with a journal extending laterally beyond its edge, and the other provided with a stop-finger extending laterally beyond its edge, in combination with an angular rising and falling tooth mounted upon the journal and arranged to act at its point against the stop-finger, as described, whereby the chain is permitted to operate in a frame of limited vertical height.

3. A conveyer-chain having links provided with journals extending laterally beyond their edges, in combination with angular teeth mounted upon said journals, and having hubs located wholly on the side adjacent to the chain, and a stationary plate covering the chain and hub, substantially as described.

4. In combination with the endless chain having the laterally-projecting journals, and laterally-projecting stop-fingers on separate links, the angular teeth provided with the widened foot or base portion, a rail or track to support said chain or teeth, and a stationary plate to cover the chain and feet, substantially as described.

JAMES F. GORDON.

Witnesses:

H. G. PHILLIPS,
Z. L. DAVIS.