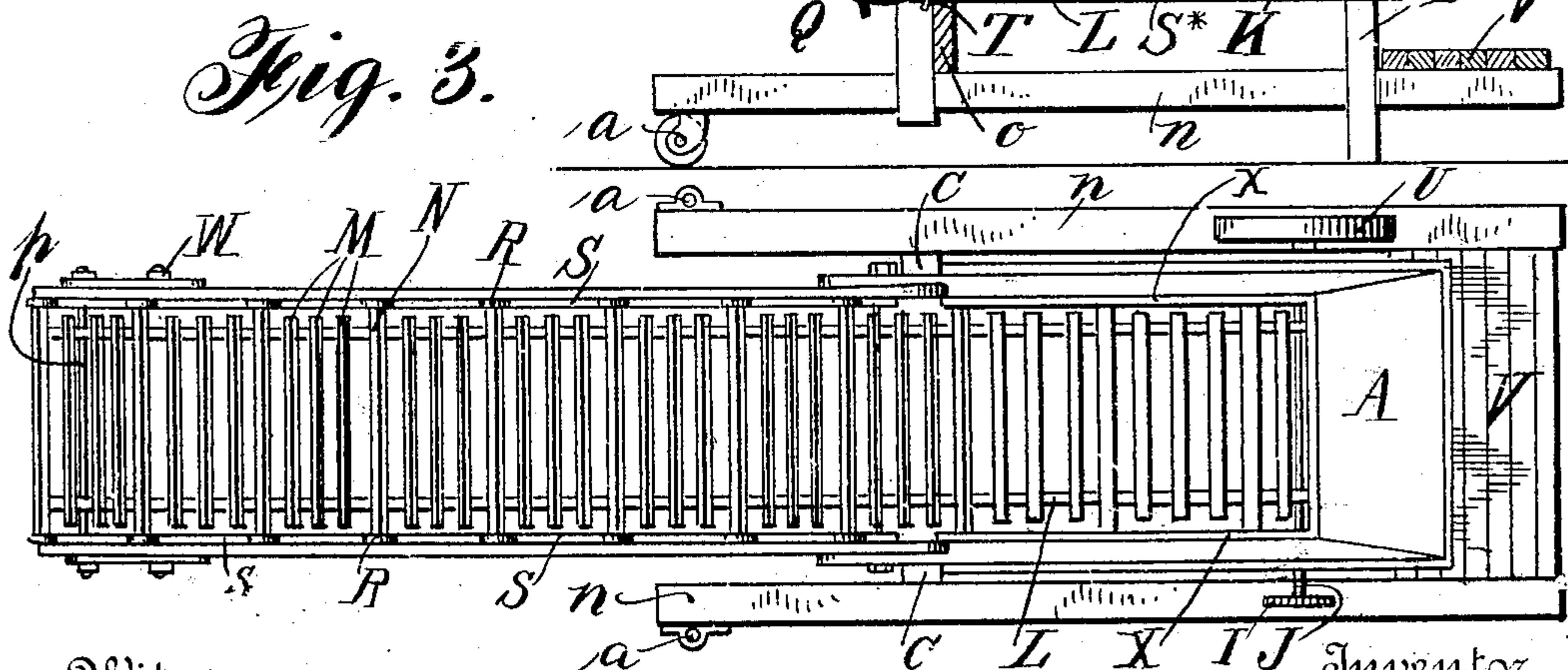
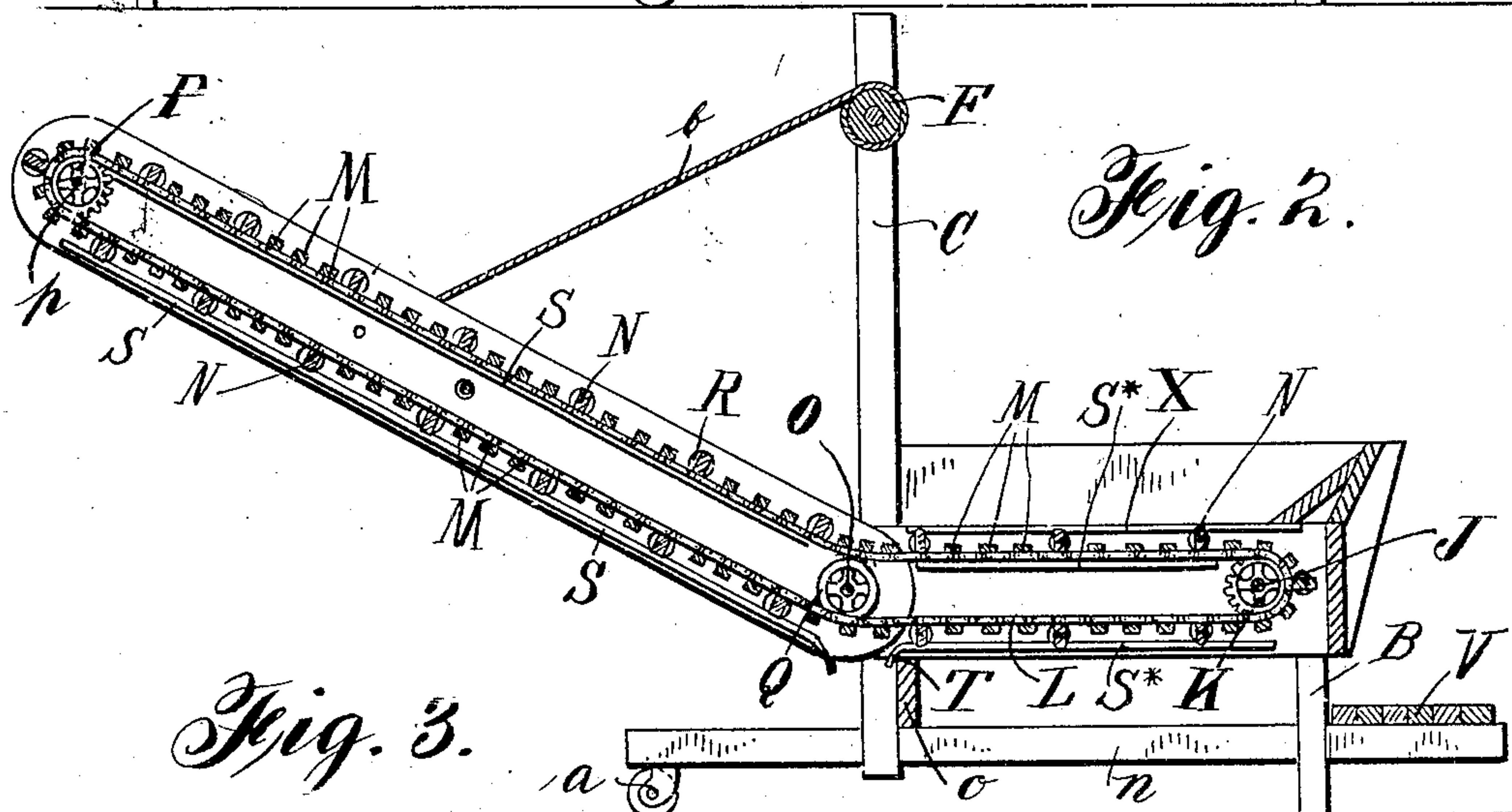
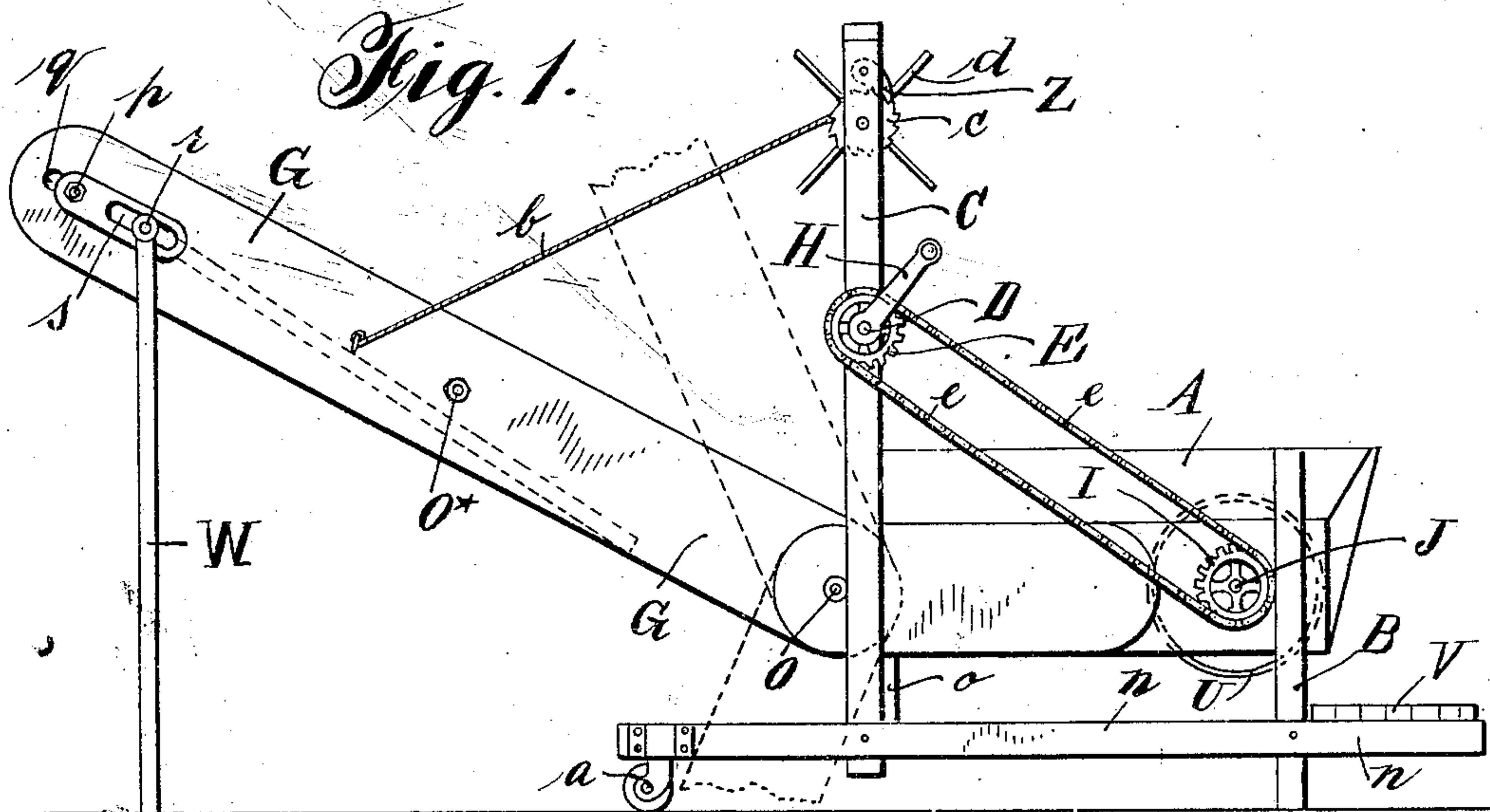


No. 854,734.

PATENTED MAY 28, 1907.

A. L. HAINES.
CONVEYER.

APPLICATION FILED DEC. 3, 1906.



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UNITED STATES PATENT OFFICE.

ALBERT L. HAINES, OF FORT FAIRFIELD, MAINE.

CONVEYER.

No. 854,734.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed December 3, 1906. Serial No. 346,019.

To all whom it may concern:

Be it known that I, ALBERT L. HAINES, a citizen of the United States, residing at Fort Fairfield, in the county of Aroostook and State of Maine, have invented certain new and useful Improvements in Conveyers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in conveying apparatus, and particularly to conveyers for carrying potatoes, apples, turnips and like produce, which is subject to being bruised, cut and otherwise damaged in the handling thereof.

An object of my invention is to provide a conveyer of the class just described which will be adapted to transport the produce upward into storage bins or barrels above the level of the hopper, or downward into a basement or cellar below the ground level, or into barrels or other receptacles resting on the ground.

Another object is to adapt a conveyer of this class for operation by either power or hand.

Other objects and features of my invention will be brought out in the description which follows.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, Figure 1 shows my new conveyer in side elevation; Fig. 2 is a central longitudinal sectional view; and Fig. 3 is a plan view, the hoisting devices being shown removed for clearness.

Similar reference characters refer to similar parts throughout the several views.

The apparatus comprises three principal parts, that is to say, a hopper, a swinging conveyer-chute with its connected hoisting devices therefor, and the mechanism for transferring the material from the hopper along the conveyer-chute to the receptacles. The hopper A is provided with the legs B suitably secured to the side-pieces *n* each of which is provided at its rear end with a caster *a* to facilitate the moving of the apparatus from one place to another. The rear end of the hopper A rests upon a cross-piece *o* which in turn is supported by the side-pieces *n*. Near the rear end of the hopper A is mounted a shaft O upon which freely swing the sides G of the conveyer-chute, these sides being held together to form a strong

structure by rods O* the ends of which are threaded to receive nuts, as shown in Figs. 1 and 2, upon the inside and outside of the conveyer-chute.

Upon the front ends of the side-pieces *n* is constructed a platform V for the reception of an engine or other suitable motor (not shown) which will drive the pulley U fast upon one end of the shaft J which carries the sprockets K. The latter mesh, each with an endless sprocket-chain L and drive said chains, each of which passes over a guide-pulley Q mounted free to rotate upon the shaft O, and over the sprockets P loosely mounted upon the shaft *p* which is adjustably mounted in the free end of the conveyer-chute. The end of each side G of the conveyer-chute is formed with a slot *q* through which projects one end of the shaft *p* mounted in a hanger *r* formed with a slot *s*. Through each of the latter passes a short stub shaft *w* upon each of which is mounted at each side of the conveyer-chute a prop W which may be swung into the dotted line position shown in Fig. 1, when not needed to assist in supporting the free end of the conveyer-chute. By moving the hangers *r* the degree of slackness of the chains L may be varied by varying the position of the shaft *p* and of the sprockets P carried thereby.

To the chains L are secured the ends of the cross-bars or lags M which serve to support the merchandise during its passage through the conveyer-chute from the hopper to the receptacles. At intervals there are interposed long slats N between the cross-bars M; and these slats N are not only longer than the cross-bars M but are higher, as is shown in Fig. 2, and are provided at each end with a roller R which rides upon a track S. The inner ends of the tracks S are curved, as is shown at T in Fig. 2, and this curvature adapts the tracks for use, when the conveyer-chute is swung downward at a low angle. The slats N by their height serve to retain the produce, when the conveyer-chute is swung into the dotted line position of Fig. 1 or the full line position of Figs. 1 and 2. The short length of the cross-bars M allows them to sag under the weight of the material without coming in contact with the tracks S.

To raise the conveyer-chute, the following mechanism is employed: Rotatably mount-

ed in the posts C is windlass-drum F around which is wound a rope *b* one end of which is fastened to the conveyer-chute. The drum is provided with a ratchet *c* and with the arms *d* and pivotally mounted in one of the posts C is a pawl Z which co-acts with the teeth of the ratchet *c* in the usual manner to lock the drum F.

If it be desired to drive the shaft J by hand power, there may be mounted between the posts C a shaft D one end of which projects; and on this projecting end is mounted a sprocket E connected by chain *e* with the sprocket I and driven by the crank-arm H.

The hopper A is provided with tracks S* for the rollers R to travel upon; and near the top of the hopper are mounted the rails X which hold the rollers R down upon the track and maintain the chains in a horizontal position as they approach the conveyer-chute.

It will be obvious to all skilled in this art that the conveyer may be used for transferring merchandise from an upper story or loft down to the ground; or from a basement up to the ground level.

I claim:

1. The combination with a hopper, of a conveyer-chute pivotally connected therewith; a pair of endless chains which pass from said hopper to said conveyer-chute; means for driving said chains; produce-supporting devices which connect said chains; tracks mounted in said hopper; and tracks mounted in said conveyer-chute and disconnected from the tracks mounted in said hopper, the ends of the tracks in said conveyer-chute which are opposed to the ends of the tracks in said hopper being curved, and said devices riding on said tracks.

2. The combination with a hopper, of a conveyer-chute pivotally connected therewith; a pair of endless chains which pass from said hopper to said conveyer-chute; means for driving said chains; produce-supporting devices which connect said chains; tracks mounted in said hopper and conveyer-chute, said devices riding on said tracks; and bars extending parallel to the tracks in said hopper, the ends of said devices passing between said bars and hopper tracks and being held upon said tracks by said bars.

3. The combination with a hopper, of a conveyer-chute leading therefrom; a pair of endless chains in said conveyer-chute; mechanism for driving said chains; cross-bars the ends of which are connected to said chains; slats connected to said chains at intervals between said cross-bars, said slats being

longer and higher than said cross-bars; and means mounted in said conveyer-chute for supporting the ends of said slats.

4. The combination with a hopper, of a conveyer-chute leading therefrom; a pair of endless chains in said conveyer-chute; mechanism for driving said chains; cross-bars the ends of which are connected to said chains; slats connected to said chains at intervals between said cross-bars, said slats being longer than said cross-bars; and means mounted in said conveyer-chute for supporting the ends of said slats, said means being separated from each other by a distance greater than the length of said cross-bars, whereby said cross-bars may sag between said means without striking the same.

5. A conveyer made up of a hopper; a conveyer-chute pivotally connected therewith; mechanism for swinging said conveyer-chute about said hopper; a pair of endless chains which pass from said hopper to said conveyer-chute; mechanism for driving said chains; cross-bars connected to said chains, said cross-bars serving to hold the material; slats connected to said chains and interposed at intervals between said cross-bars; and tracks for supporting the ends of said slats.

6. A conveyer made up of a hopper; a conveyer-chute leading therefrom; a pair of endless chains which pass from said hopper to said conveyer-chute; mechanism for driving said chains; cross-bars connected to said chains; and slats connected to said chains and interposed between said cross-bars at intervals, said slats being higher than and at least equal in length to said cross-bars to prevent the movement of the material when the conveyer-chute is inclined to the horizontal.

7. The combination of a conveyer-chute; a pair of endless chains mounted therein; mechanism for driving said chains; cross-bars the ends of which are connected to said chains, said cross-bars serving to support the material; and slats connected to said chains and interposed at intervals between said cross-bars, said slats being higher than and at least equal in length to said cross-bars to hold the material against movement when said conveyer-chute is inclined at an angle to the horizontal.

In testimony whereof I have hereunto set my hand in the presence of two witnesses at said Fort Fairfield this twenty-seventh day of November, A. D. 1906.

ALBERT L. HAINES.

Witnesses:

HERBERT T. POWERS,
HIRAM D. STEVENS.