(No Model.)

D. M. MAXON.

CONVEYER.

No. 422,139. Patented Feb. 25, 1890.

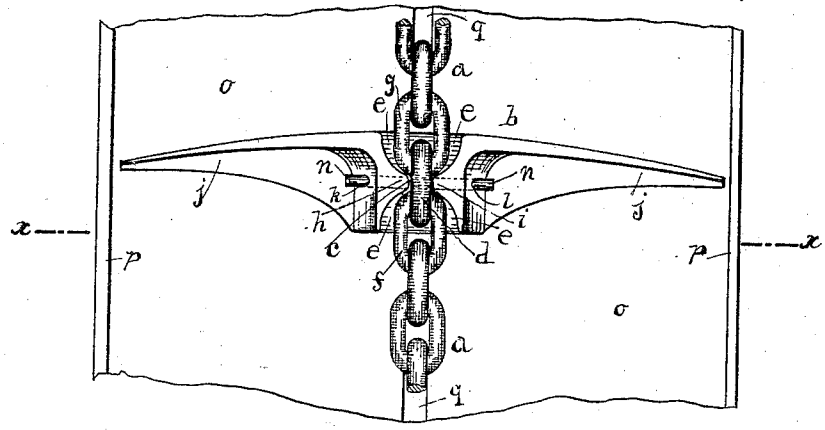


Fig. 1.

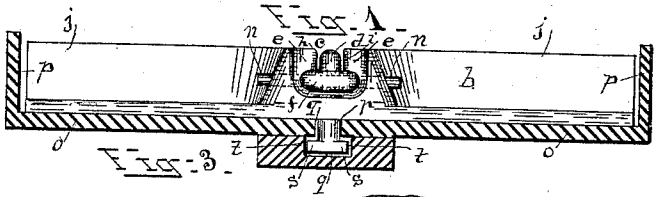


Fig. 3.

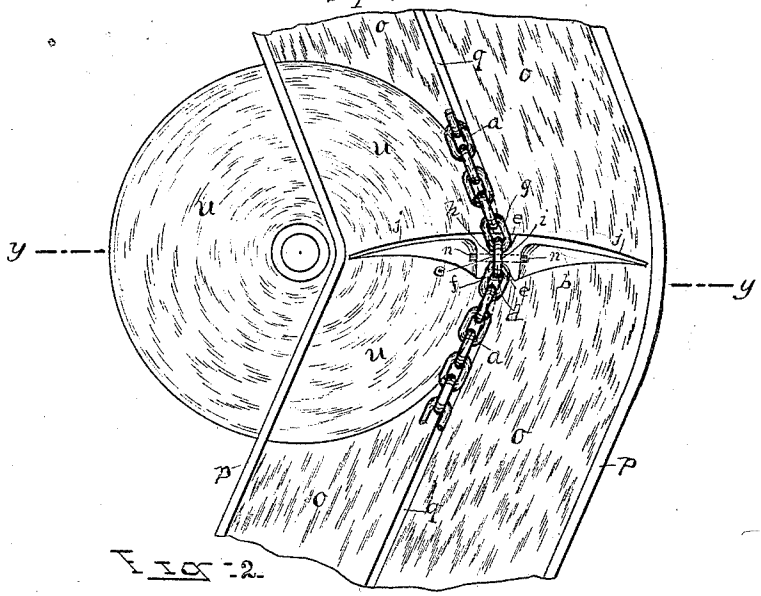


Fig. 2.

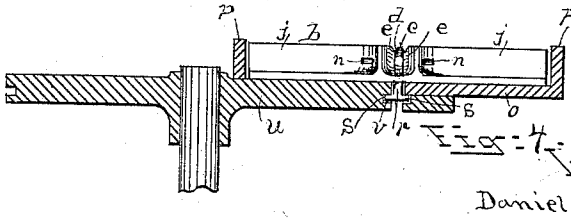


Fig. 4.

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UNITED STATES PATENT OFFICE.

DANIEL M. MAXON, OF BAY CITY, MICHIGAN, ASSIGNOR OF ONE-HALF TO JAMES McKEON, OF SAME PLACE.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 422,139, dated February 25, 1890.

Application filed May 31, 1889. Serial No. 312,736. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. MAXON, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Conveyers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in chain conveyers, and especially pertains to that class of chain conveyers in which a chain composed of oval links interlocked at a right angle to each other is used as a cable; and my invention consists in the combination, with the said chain, of a series of flights having a transverse recess to receive the vertical oval link, and provided with shoulders or engaging portions located on opposite sides of the said recess and fitted to lie between the adjacent ends of the horizontal oval links, and with a retaining pin or rivet passed through the said engaging portions and the vertical link; and the invention further consists in the combination of the cable and a series of transverse flights having a transverse recess to receive the cable, and suitably secured thereto, with a T-shaped guide portion projecting downwardly from the portion of the flight beneath the cable, and a trough or conduit provided with a groove or race to receive and carry the said guide portions; and the invention consists, further, in the combination, arrangement, and construction of the several parts of the device, as I shall hereinafter more fully describe, and particularly point out in the claims of this specification.

The objects of my invention are, first, to arrange a convenient and easy means of securing a series of transverse flights to a conveyer-cable, whereby while the flights under ordinary circumstances will be retained in a position transversely with the chain cable they will be flexible and permitted to turn to an angling position to pass an obstruction or to relieve one arm portion thereof of too great a load.

Another object of the invention is to so arrange and construct a conveyer that one portion of a continuous line of cable may be run at a horizontal angle to the other, or a bend or curve in any portion of the line may be made.

I attain these objects by means of the devices illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved device as applied to a straight line of cable. Fig. 2 is a plan view of the device as used in a line of cable having a bend or curve. Fig. 3 is a transverse section of Fig. 1, taken at *x x*. Fig. 4 is a transverse section of Fig. 2, taken at *y y*.

Similar letters indicate like parts throughout the several views in the drawings.

a is an endless chain cable composed of ordinary oval links interlocked at a right angle to each other in the usual manner, and is supported at the ends of the run upon the peripheries of sprocket-wheels of the usual form and construction, and provided with teeth engaging with the links of the chain in any convenient and well-known form.

b represents one of a series of flights, which are secured upon the chain at a suitable distance from each other, the upper side of the flight being provided with a transverse recess, of which the middle portion *c* is adapted to receive the vertical link *d* of the chain, and the outer portions *e* of the recess are widened to receive the ends of the horizontal links *f* and *g*, which are interlocked with the vertical link *d*, and *h* and *i* are portions of the flights on opposite sides of the central portion of the recess *c*, which project inwardly against the vertical link and lie between the adjacent ends of the horizontal links *f* and *g*. The lateral portions of the arms *j* of the flight are cut away to any convenient form, and *k* and *l* are openings formed through the portions *h* and *i*, and through these openings and through the vertical link *d* is passed a pin or rivet *n*, which serves to retain the flight upon the chain cable.

When used upon a direct or straight line and for conveying material of the character of sawdust, slabs, grain, coal, &c., an ordinary conduit is provided having a bottom *o*, upon which rests the bottom of the flights *d*, and extending upward from the lateral edges of the bottom and beyond the ends of the flights are the side portions *p*.

Suitable sprocket-wheels of the ordinary forms are provided at each end of the conveyer trough or conduit, over the peripheries of which are passed the cable in the usual manner, the sprockets engaging with the links of the chain, suitable recesses, however, being made in the peripheries to receive the flights as they pass over the wheels, and motion is imparted to the chain by one of the sprockets being made the driver, and the operation is the same as in conveyers of other common forms; but for use upon a line that is somewhat curved or having one portion lying at an angle to the other portion of the run the bottom *o* is provided with a central groove or race *q*, and projecting downwardly from the under side of the flights and beneath the recess *c* is a guide portion *r*, having on its lower portion the lateral projections *s*, which project beyond the edges of the race *q* and extend into the lateral grooves *t*, formed in the sides of the race.

For a run of conveyer that is slightly curved or has a slight angle a curve of the race *q* will be sufficient to properly guide the cable in the required direction, the guides *r*, as the cable is operated, passing along the race; but should it be necessary to make a shorter curve or pass a more acute angle I place a horizontal wheel *u*, provided with a close web or body portion, so that it forms a portion of the bottom of the conduit, and with a groove *v* in its periphery to receive the laterally-projecting portions *s* of the guides, so that as the chain and flights are propelled forward the guide-pieces are carried around the corner without undue friction and with great precision, the wheel being of course of sufficient size to engage at the same time at least two of the guides.

It will be observed that my improved form of conveyer is well adapted to conveying heavy material, as the chain is of the strongest form known, and the flights are so secured to the chain that while the pin *n* retains the flight upon the chain the work of pulling, &c., devolves upon the portions *h* and *i* and provides the wearing parts with great strength and durability. The cable in this conveyer being of the ordinary form of oval-link chain, which is usually kept for sale in standard sizes, the flights made of sizes to fit the standard sizes of the chain can be furnished and sold separately as a new article of manufacture.

Having described my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a chain conveyer, the combination of a chain cable composed of oval links with a series of flights, each flight being provided with a transverse recess, of which the middle portion is fitted to receive one of the vertical links and the other portions to receive the adjacent end portions of the horizontal links, which are joined to the said vertical links, and having the portions *h* and *i* on opposite sides of the said recess between the adjacent ends of the horizontal links, and a pin or rivet passed through the said portions *h* and *i* and through the vertical links, substantially as set forth.

2. As a new article of manufacture, a flight for a chain conveyer provided with a transverse recess having the middle portion *c* to receive the vertical link and the outer portions *e* to receive the ends of the horizontal links of the chain, and having the openings *k* and *l* through the opposite sides of the said recess *c* for a retaining-pin, substantially as set forth.

3. In a chain conveyer, the combination, with a conduit or trough having in its bottom a central longitudinal race or groove *q*, of a series of flights *b*, provided on their under sides with downwardly-projecting guide-pieces *r*, resting within the said race, and a chain cable *a* above and secured to the said flights, substantially as set forth.

4. In a chain conveyer, the combination, with a chain cable having a series of flights placed beneath and secured to the said chain and provided on the portion beneath the chain with downwardly-projecting guide-pieces *r*, a run of conduit or trough having one portion lying in the same plane and at an angle to the other portion, and with each portion provided with a central longitudinal race *q*, carrying the said guide portions *r*, of a horizontal wheel *u*, suitably mounted in the angle of the conduit, with its periphery coincident with the inner side of the race *q* in each of the said sections, and with the upper surface of its web forming a portion of the bottom of the conduit, substantially as set forth.

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

DANIEL M. MAXON.

Witnesses:
FRED. MACKENSEN,
JAS. E. THOMAS.