(No Model.) 2 Sheets—Sheet 1.

K. MICHALOUSKJ.

CONVEYER.

No. 523,674. Patented July 31, 1894.

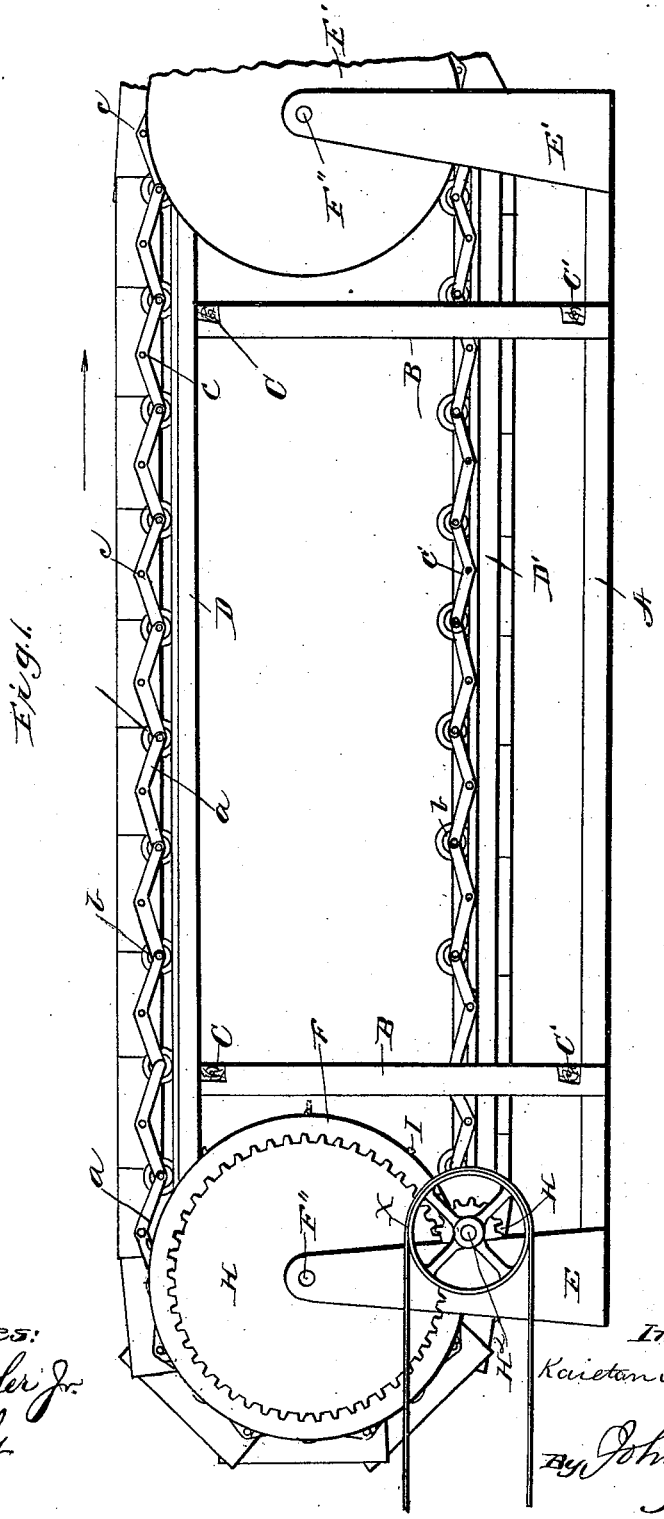

Fig. 1.

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A. M. Kelly

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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CONVEYER.

No. 523,674. Patented July 31, 1894.

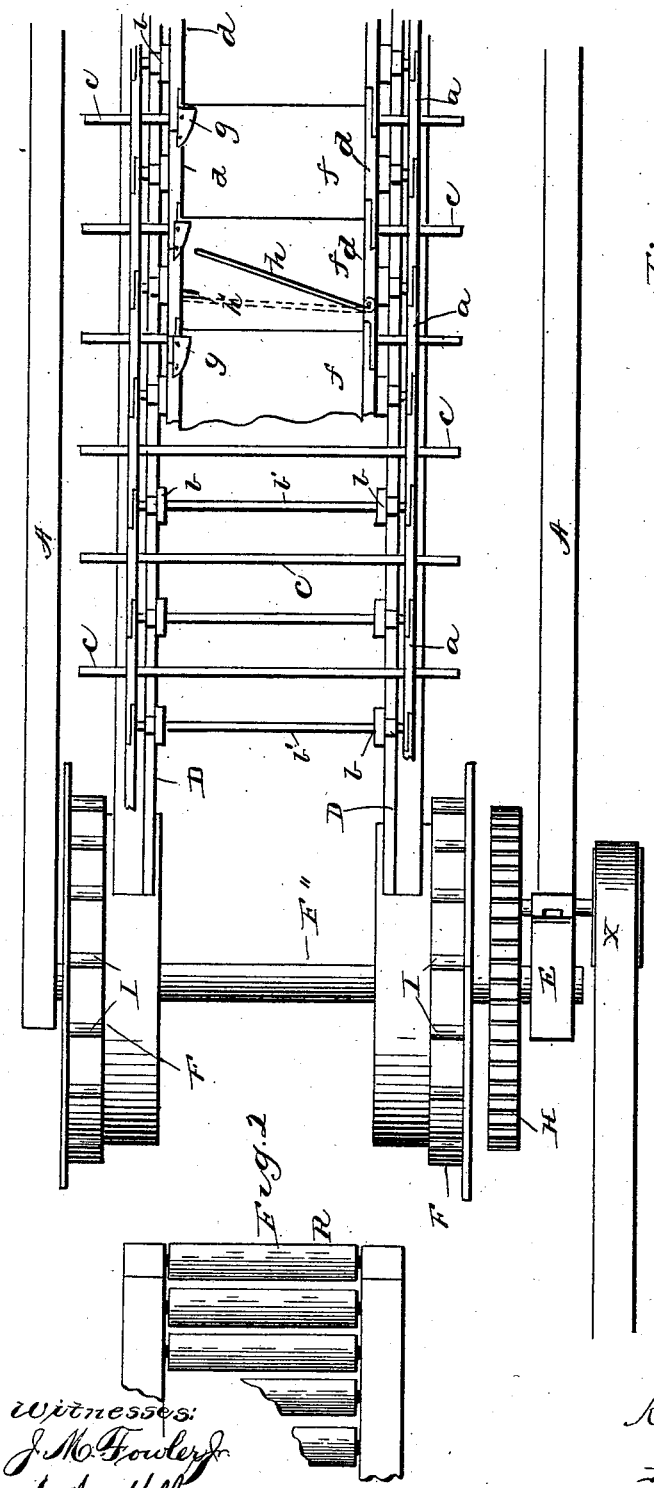

Fig. 2.

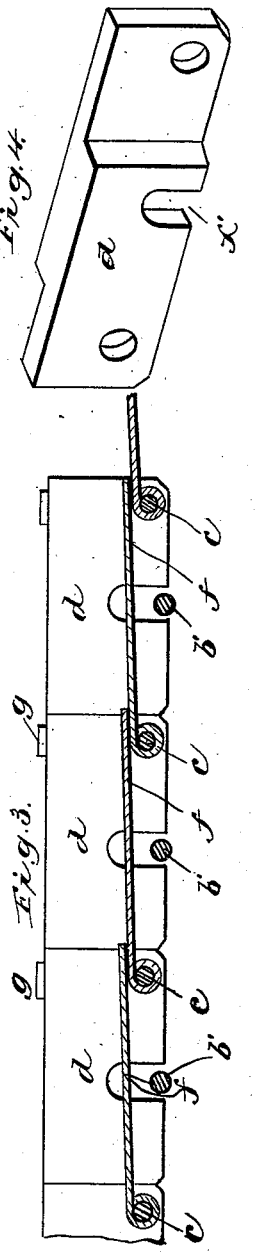

Fig. 3.

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

KAIETAN MICHALOUSKJ, OF MUNHALL, PENNSYLVANIA.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 523,674, dated July 31, 1894.

Application filed February 9, 1894. Serial No. 499,588. (No model.)

To all whom it may concern:

Be it known that I, KAIETAN MICHALOUSKJ, a citizen of Russia, residing at Munhall, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Conveyers; and I 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 consists of a suitable supporting frame carrying tracks for traction rolls or wheels, with intermediate driving rods or bars connecting flexible endless chains, with carriers, buckets or trays mounted thereon: the whole operated by suitable driving mechanism, as will be hereinafter described.

Referring to the drawings forming a part of this specification, Figure 1. is a side elevation of the conveyer. Fig. 2. is a top plan view thereof, partly broken away. Figs. 3. and 4 are detail views of the buckets, trays or carriers.

Like letters of reference represent like parts in the different views.

A. is the main frame, which supports the endless chains and the carriers or trays. It is provided with vertical standards, B, on which are mounted, or having secured thereto by mortises or otherwise, the cross ties or bars, C, at the top, and similar cross ties or bars, C′, at the bottom. As many standards as necessary, dependent on the length of the conveyer, are used. Mounted on these bars, C, and C′, are longitudinal bars or beams on which are supported the tracks, D. D. at the top, and corresponding tracks, D′, D′, underneath.

Vertical standards or brackets, E, E′, are provided at each end of the conveyer, for supporting the drums and driving mechanism hereinafter described. This mechanism consists of two duplex drums or wheels, F, F′. mounted on the shafts or arbors F″, F″, which are journaled in suitable bearings in the standards or brackets, E, E′. The drum F′. at the right in Fig. 1. or at the end of the conveyer, consists preferably of two plain wheels, with outside peripheral flanges, and motion is communicated thereto by the traction wheels or rolls traveling over the peripheries thereof. The drum, F, at the opposite end of the conveyer, also consists of two flanged wheels similar to drum, F′, already described, but the peripheries of these wheels instead of being plain, are provided with suitable projections or recesses, I, to engage with the rods or bars carried by the endless chains; that is to say, a portion of these wheels, are sprocket wheels. Inside the sprocket portion, both wheels are reduced in diameter and have plain peripheries to support the traction rolls, and on which they travel.

Mounted on the end of the shaft, F″, is a large toothed gear, H. Meshing with the gear, H, is a smaller gear, H′, mounted on a short shaft, H^2, journaled in boxes secured to the standard or bracket, E. On the outer end of shaft, H^2, is a band wheel or pulley, and motion is communicated thereto by a band or belt driven by any suitable power, as steam, electricity, or any other motor or power, in a manner well known, and that need not be explained.

The endless chains comprise a series of articulated links, *a*, pivoted to each other, and one of these chains is located outside of each of the tracks D, D, D′, D′. In the present instance, the chains consist of a series of links, scarfed or rabbeted on opposite sides and overlapping, and having for their pivots, the projecting ends of the traction wheels or rolls. They may however, if desired, be provided with separate or independent pivots, and any other known form of chain will answer the purpose just as well, although I prefer the form shown and described. Traction rolls or wheels, *b*, *b*, mounted on the ends of suitable shafts or axles, connect the two endless chains transversely, in the manner already explained, viz., by using the ends of the axles which project outside the wheels, as pintles for the chain links. The traction rolls each consist of an axle or spindle, *b′*, on which the wheels or rolls, *b*, *b*, one at each side, are loosely mounted, or they may be rigidly mounted on the axles, and the wheels be made to revolve, by having the ends of the axles loosely mounted in the links of the chains. The rolls or wheels revolve as they move along

the tracks, and by this means, the chain with its carriers or trays is supported, and friction diminished.

Between each pair of traction rolls, that is to say, alternating therewith; are rods or bars, *c*, which extend across, and project laterally beyond the outer sides of the chains and engage with the projections or recesses, I, of the sprocket wheels on the drum, F, as will be readily apparent. The trays, carriers or buckets lie between, and principally, are supported and carried by the chains. They each comprise vertical side pieces or bars, *d*, similar in construction to the chain links, that is, scarfed or rabbeted on opposite sides, so that the scarfed portion of the bars of one tray or carrier shall overlap the next adjacent one at each side, and are pivoted together.

The bottom or pillow, *f*, of each carrier is formed with a transverse aperture through it at one end to form a bearing, and the trays, buckets, or carriers thus constructed, are loosely mounted on the rods or bars *c'*, the free end of the bottom, *f*, resting upon and over the bearing of the next adjacent one. The bottoms, *f*, are plain or flat for conveying beams, bars, &c., but if it is designed to remove and convey earth, sand, &c., they would be in the form of scoops.

On top of the side pieces, *d*, of the carriers I provide lugs or flanges, *g*, which project inwardly, slightly over the tray or carrier bottom, *f*, so that as the chain is revolved, and when the trays or carriers are inverted after passing around the drum F', they will not be allowed to drop to a vertical position, so as to be in the way, or be broken off. One or more of the trays or carriers is provided with a hinged bar *h*, whose length is about the width of the tray or carrier. This bar is hinged preferably, at the inside and when opened across the tray or carrier, rests against a lug or catch *h'*, at the opposite side. The purpose of this bar *h*, is to form a stop so as to allow a beam or bar to be set up on end, as the chains start to go around the drum F', since it is frequently desirable to have an article presented in this position so that it may be readily grasped; by a lifting crane, for example.

It will be understood that the trays or buckets extend, ordinarily, the entire length of the chains, although it is not absolutely essential that they be arranged immediately adjacent to each other, since for conveying articles of great length, this would not be necessary. The sides of the trays or carriers have a slot, *x'*, extending from the bottom upwardly, so as to leave room for the axle or spindle of the traction rolls.

When the hinged bar *h*, is not needed, it can be neatly folded or shut up against the side of the tray or carrier and be wholly out of the way.

It will be understood that the conveyer may be of any desired length, according to the distance to which the materials or substances are to be conveyed or transported, and I do not limit its use to the conveying of any article or substance.

If the conveyer should be of great length, or if for any other reason it should be found desirable, as for example, if an electro-motor should be used; gears similar to those on drum F, are applied in the same manner to drum F', and in this construction the driving band or belt would be carried around both band wheels or pulleys, and suitable idlers and a belt shifter may be used.

The operation of my conveyer will be easily understood from the above description, in connection with the drawings.

The article or substance to be conveyed is supported or held on the trays or carriers; motion is communicated by power applied through the drawing belt, gears and sprockets; the chains and traction wheels or rolls, with the carriers are moved along on the tracks in the direction of the arrow, and the articles or substances are conveyed to any desired place.

For convenience in loading or unloading the conveyer, I use a series of rolls mounted in a frame and suitably supported; at one or both ends of the conveyer, as shown at R.

The bars or rods *c*, may be round, square, or of any other suitable form in cross section.

The chains and carriers may be arranged to travel horizontally as shown, or they may be arranged vertically, or even at an angle to the horizon.

The size and proportions of my conveyer, as well as certain details in structure may be changed or modified within the scope of my invention, and I reserve the right to make such changes.

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

1. In a conveyer, a pair of endless articulated chains, a series of axes or journals with traction rolls or wheels mounted thereon, said axes or journals forming pivots for the chain links; suitable tracks for the wheels or rolls; trays or carriers mounted between the chains, a series of sprocket bars alternating with the axes of the rolls and forming pivots for the sides of the trays or carriers and separate bottoms for said carriers journaled on the sprocket bars, and suitable driving mechanism, substantially as set forth.

2. In a conveyer, a pair of endless articulated chains connected to each other, transversely by a series of axes or journals on which are mounted traction rolls or wheels, alternating series of sprocket bars; tracks for the wheels or rolls; trays or carriers between the chains and connected therewith, each tray or carrier consisting of separate side plates, and independent bottom plates provided with a transverse bearing mounted on the sprocket bars, the free end of each bottom plate or pillow resting upon and over the

bearings of the next adjacent plate, and suitable driving mechanism, substantially as described.

3. In a conveyer, a series of trays, buckets or carriers each having separate vertical side plates and an independent bottom plate, the latter having a bearing at one end, and a journal on which the bottom plate is pivoted, the other end of the bottom plate being free and resting upon and over the bearing of the next adjacent bottom plate, substantially as set forth.

4. In a conveyer, a series of trays, buckets or carriers each having separate vertical side plates, inwardly projecting plates or flanges, and an independent bottom plate having a bearing at one end, and a journal or axle on which the bottom plate is pivoted, the other end of the plate being free and resting upon and over the bearing of the next adjacent bottom plate substantially as set forth.

5. In a conveyer, a series of trays, buckets or carriers, each having vertical side plates or bars and pivoted bottom plate; one or more of said trays or carriers being provided with a hinged or pivoted bar adapted to be swung across the bottom from one side, and rest against a lug, on the opposite side, substantially as set forth,

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

KAIETAN MICHALOUSKJ.

Witnesses:
ALEX MOHUN,
REUBEN COX.