

N. P. JORGENSEN.
CONVEYER.
APPLICATION FILED JUNE 10, 1912.

1,074,182.

Patented Sept. 30, 1913.
2 SHEETS—SHEET 2.

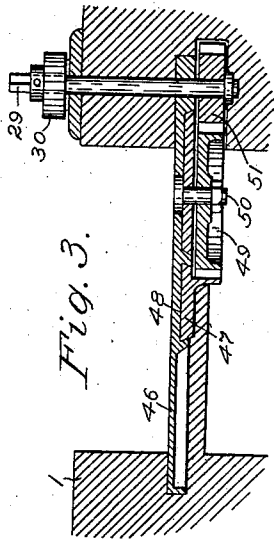


Fig. 3.

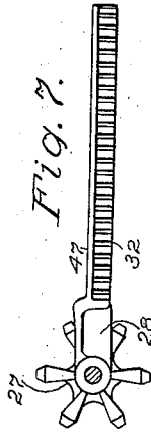


Fig. 7.

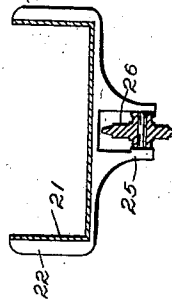


Fig. 4.

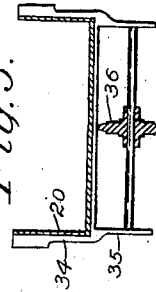


Fig. 5.

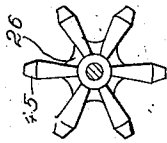
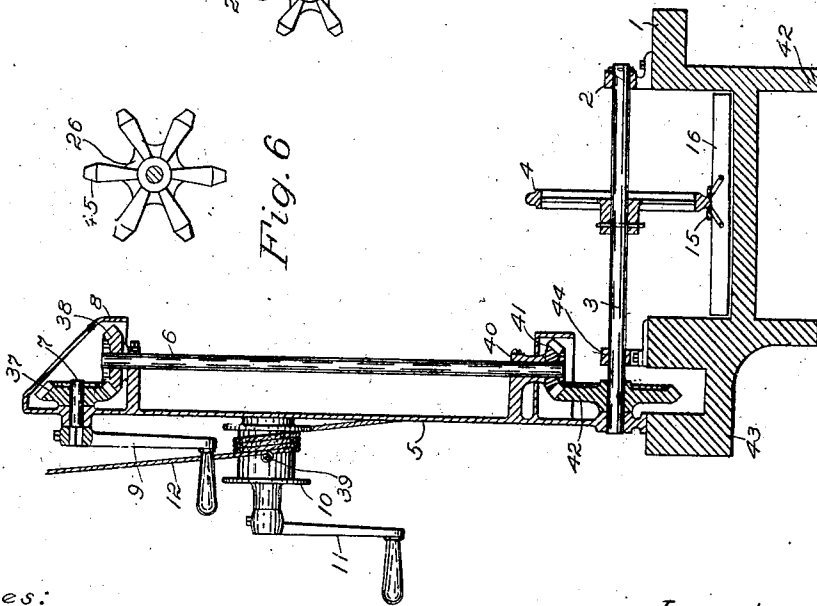


Fig. 6.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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CONVEYER.

1,074,182.

Specification of Letters Patent.

Patented Sept. 30, 1913.

Application filed June 10, 1912. Serial No. 702,802.

To all whom it may concern:

Be it known that I, NELS P. JORGENSEN, a citizen of the United States of America, and a resident of Waterloo, Blackhawk
5 county, Iowa, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

My invention relates to improvements in conveyers, and the object of my improvement is to furnish means for receiving,
10 transporting and delivering substances, such as barn or stable droppings, from the building where such substances are first deposited to some place or receptacle adapted to receive them.

This object I have accomplished by the mechanism which is hereinafter described and claimed, and which is illustrated in the accompanying drawings, in which:

20 Figure 1 is a side elevation of my said conveying mechanism, as placed in a suitable position for use. Fig. 2 is an enlarged detail cross-section of the stable trough with the included scraping and conveying means, and of the means for actuating said conveying-means. Fig. 3 is a
25 cross-section of one end of said trough, and of the mounts and other parts adjustable therein for supporting the end sprocket-wheel of the conveyer-chain. Fig. 4 is a
30 cross-section of the inner part of the foldable trough, and Fig. 5 is a cross-section of the outer part of the outer conveyer-trough, in each case the supporting-means for the sprocket-chain idlers being shown. Fig. 6
35 is an enlarged elevation of one of the sprocket-idlers. Fig. 7 is a side elevation of one of the end sprocket-idlers with its adjustable supporting-means.

40 Similar numerals of reference denote corresponding parts throughout the several views.

Referring first to Figs. 1 and 2, the numeral 1 denotes a concrete trough, which
45 may be made in alined sections secured together if desired, adapted to be placed in a stable abutting upon the stalls in a trench suitably formed to receive it. The trough has depending spaced apart longitudinal
50 parts 42 whose lower ends rest upon the top of the bottom of the trench so as to furnish an inclosed space between them in which the sprocket-chain 15 may travel. One part of this trough may have a lateral
55 projection 43 provided with a pit adapted to

receive a gear-wheel 42. The trough is of a rectangular form in cross-section, and in it scraper-blades 16 of proper dimensions to extend across it to scrape over its bottom are located secured to the inner face of a
60 conveyer-chain 15. This chain being seated movably longitudinally through the middle of the trough 1 passes about sprocket-idlers 27 and 26, located respectively at what will be called the rear end of the apparatus,
65 and at the forward end of same. The chain has its depending part which travels in the space between the standards 42 of the trough 1, further supported on idler-sprockets 36 and 17, which are respectively supported in
70 bearings in depending brackets 35 and 18 respectively secured to the parts 20 and 21 of the movable trough of the apparatus. If desired two such chains and an accordant system of supports may be adopted with
75 connections to the scraper-blades 16, but the method shown is simpler and cheaper, while retaining the same principles of operation.

In order to keep the sprocket-chain 15 in a proper state of tension, I have adopted
80 for that purpose the following-described means. Referring to Figs. 3 and 7, the numeral 46 denotes a metal plate mounted in the trough 1 at its rear end, securely, provided with a bearing for the vertical shaft
85 29, and with a slideway 48 for a slide 47, the latter being provided on one vertical face with gear-teeth, and at its end with a horizontal bearing 28 for the shaft of the sprocket-idler 27. The vertical shaft 50 of
90 a gear-wheel 49 is mounted in said plate 46 and in mesh with the rack 32 on the slide 47, while a pinion 51 on the shaft 29 meshes operatively with the gear-wheel 49. Upon the upper end of the shaft 29 is a ratchet-
95 wheel 30 engaged by a guard-pawl 31. The uppermost end of the shaft 29 is squared, to seat a crank thereon, whereby the ratchet-wheel and said gears may be turned to adjust the position of said slide and of the
100 idler 27 to maintain the latter under proper tension.

Any suitable mechanism may be employed to drive the chain 15 forwardly, but I have shown means which are now to be described.
105 A frame 5 is supported on the forward end of said concrete trough 1 and has at its upper end a bearing for a short shaft 7, a crank 9 being removably connected to said shaft on one side of the frame and a bevel-pinion
110

37 on the opposite side of the frame under a protective housing 8. A vertical shaft 6 is rotatable in bracketed bearings 40 and supplied at its upper end with a bevel-gear 38 in mesh with the said pinion 37. Upon the lower end of said shaft a bevel-pinion 41 is secured under a housing. In bearings in said frame and in uprights 2 and 44, a shaft 3 is rotatably mounted having on its left-hand end a bevel-gear 42 in mesh with said pinion 41. Upon said shaft 3 is secured a relatively large sprocket-wheel 4 which meshes with said sprocket-chain 15. When said crank 9 is rotated in one direction, said intervening mechanism causes a forward movement of said chain 15, carrying the scrapers 16 forwardly through the trough 1 and over the upper surface of the communicating trough parts 20—21. The trough parts 20 and 21 are preferably formed of metal, and the rear end of the part 20 is hinged on pintles 33 to the uprights on the forward end of the concrete trough 1. The parts 20 and 21 are hinged together by means of a hinge 19. In Fig. 1, the trough parts 20, 21 are shown extended forwardly in operative positions; but said parts are made foldable to be retracted upon the wall of a building out of the way by the following means. A cable 23 supports the outer or forward end of the trough part 21, being secured to an eyebolt 24 above in the building. Another cable 12 has one end fastened to a medial part of the trough 20, is then passed upwardly over a pulley in a block 13, thence downwardly about a winding-drum 10 and thence downwardly again and about a pulley 14 secured to the base of the building and then secured to the trough 20. The cable 12 is detachably secured to said drum 10 in the following manner. A small circular hollow or socket is formed in the middle part of the circumferential surface of the drum, and in said socket a circular bend of the cable 12 is placed, and then a screw 39 is passed down into the drum through the hollow of the cable-bend, its flanged head engaging the bend and securing it to the drum. In this way, when the drum is turned by means of its removable crank 11 in one direction, the upper part of the cable 12 is wound up while the other or lower part is slackened, and the reverse occurs when the drum is reversely rotated. In this way, the trough part 20 may be drawn up against the building, the part 21 folding thereover.

Since the scraper-blades 16 are located to face inwardly from the chain 15, it is necessary to provide suitable sprocket-idlers to permit the blades to pass them without interfering in transit. This is effected by forming these wheels as shown in Figs. 1 and 6, wherein the webs between the sprocket-teeth 45 are reduced to but the rudiments 26, which are so near the axis that the scraper-blades 16 may fall between the teeth without interference.

The driving-sprocket wheel 4 has its teeth modified, as shown best in Fig. 1, by having their forward edges made straight and radial the rear edges only being curved, which causes the straight edges to pick up the chain 15 and seize it with a secure grip until released.

The trough sections, whether of concrete or metal may be formed in alined parts of as large a number as may be useful.

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

1. In a conveyer, a horizontal fixed integral body longitudinally troughed at top and bottom, a movable endless chain passed about said body within both troughs and spaced apart therefrom, scraper-blades fitting the interior of the upper trough and movable therethrough longitudinally to scrape its bottom and adapted to return through said lower trough, said blades being secured fixedly to links of said chain on their inner faces.

2. In a conveyer, a fixed body provided on its upper face with upstanding fixed integral spaced apart walls to provide an open-ended longitudinal trough therebetween, and having integral depending spaced apart walls to provide a downwardly-opening open-ended trough on its under side opposite the uppermost trough, an endless movable chain passed about said body within said troughs and spaced apart therefrom medially, and scraper-blades secured to inner faces of links of said chain and depending toward the bottom of the upper trough and adapted to fit the trough and scrape over its bottom and to return within the lower trough.

Signed at Waterloo, Iowa, this 23rd day of May, 1912.

NELS P. JORGENSEN.

Witnesses:

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