

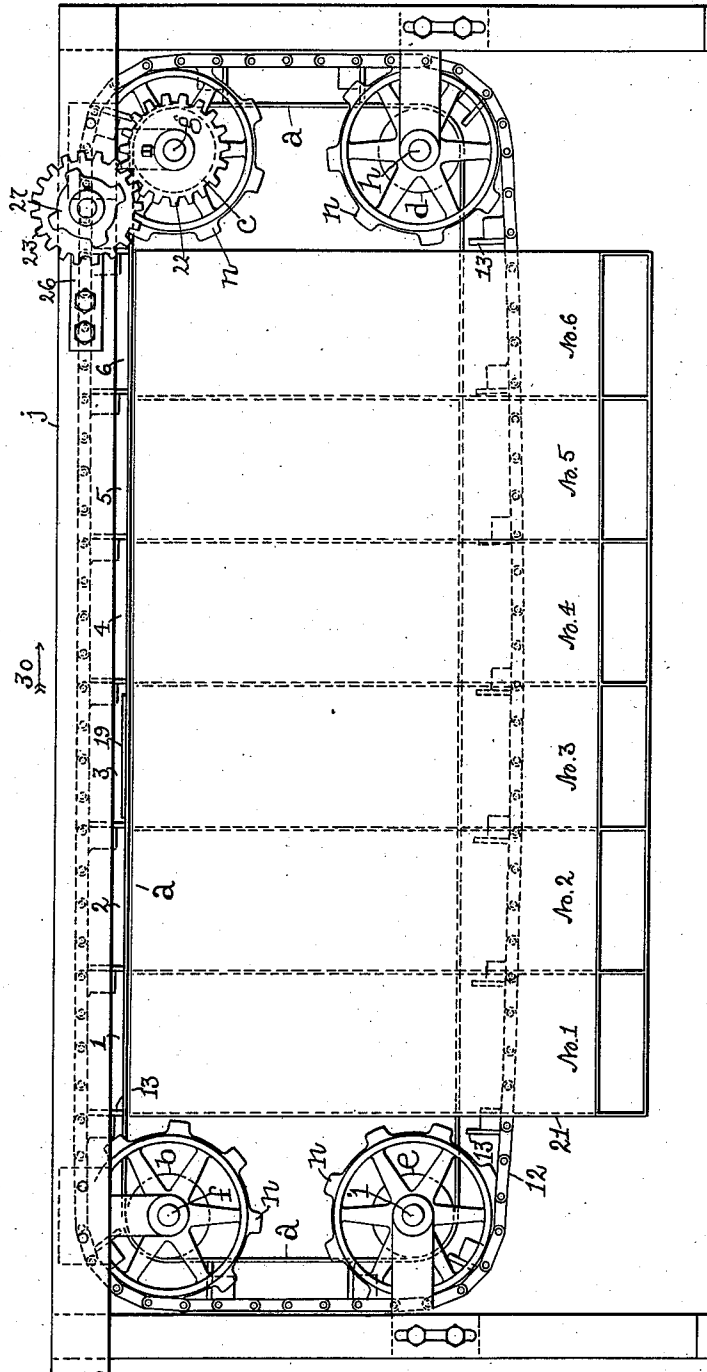
C. B. TEWKSBURY.
DISTRIBUTING APPARATUS.
APPLICATION FILED SEPT. 22, 1910.

1,014,786.

Patented Jan. 16, 1912.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
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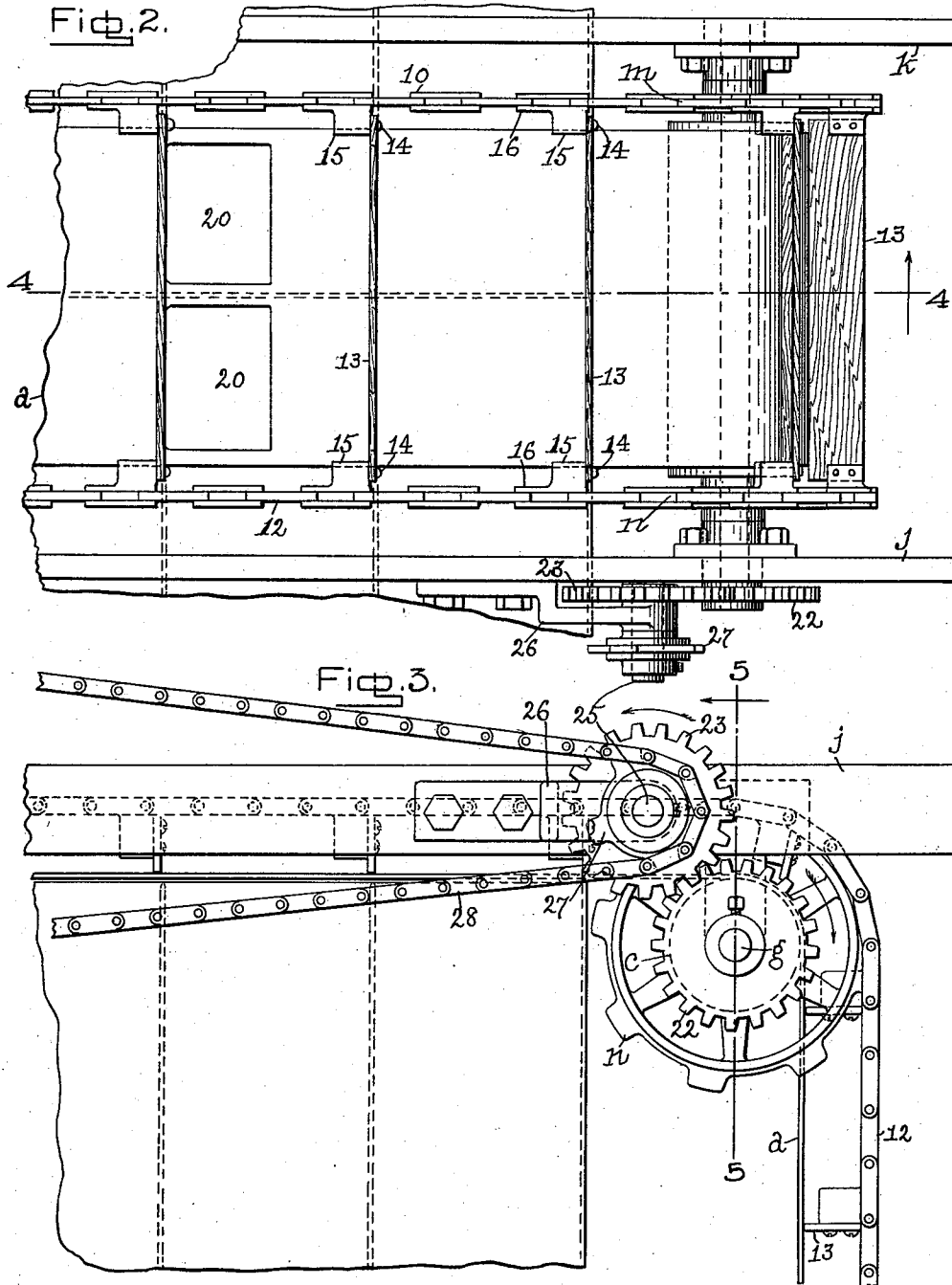
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4 SHEETS-SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 4.

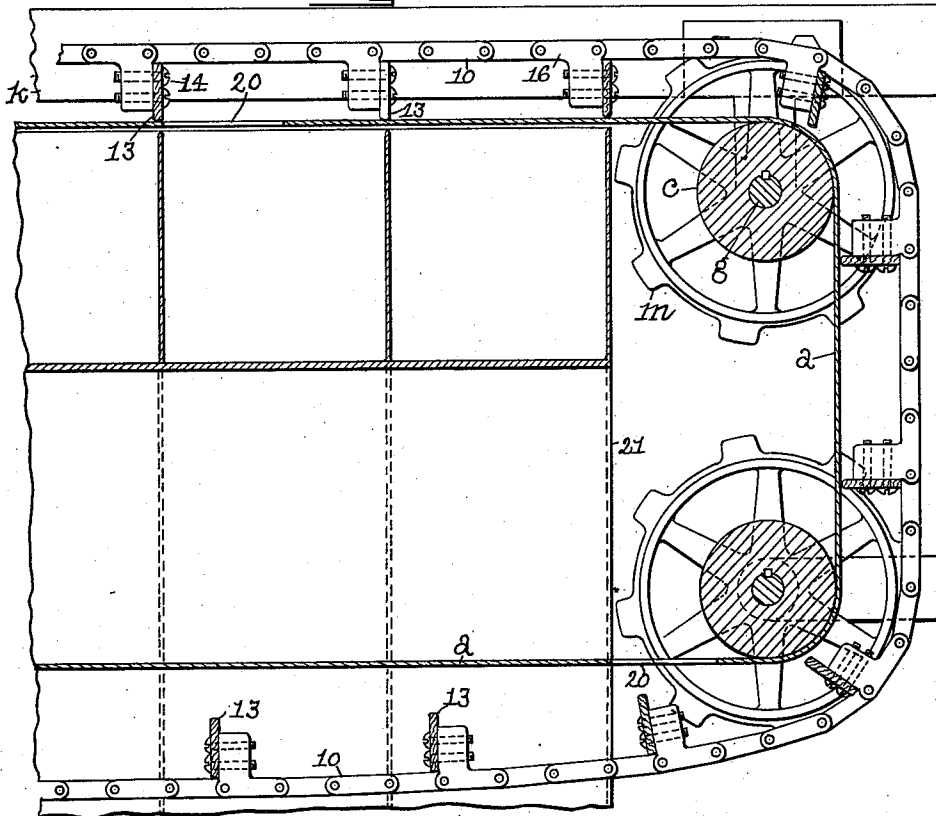
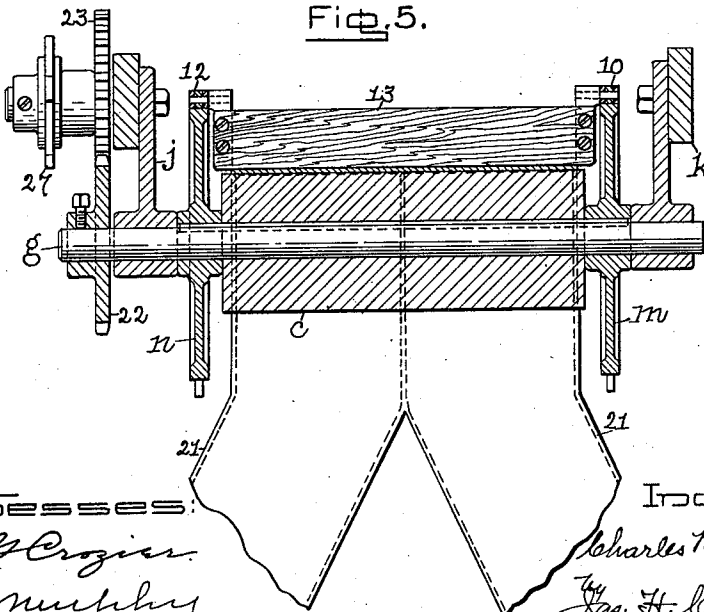


Fig. 5.



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4 SHEETS—SHEET 4.

Fig. 6.

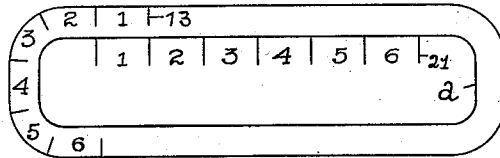


Fig. 7.

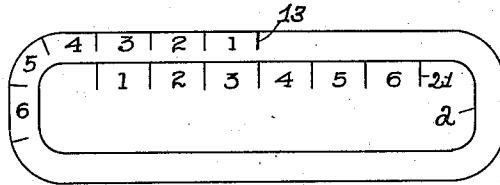


Fig. 8.

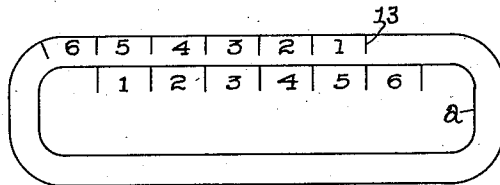


Fig. 9.

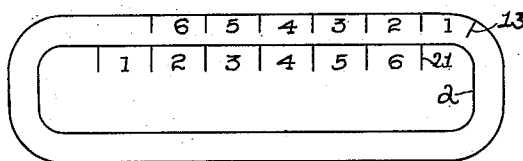


Fig. 10.

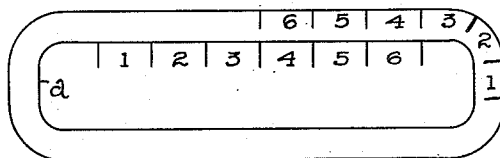
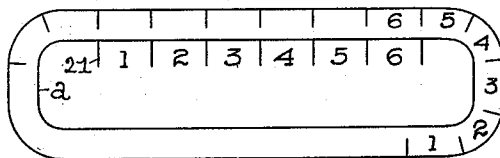


Fig. 11.



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UNITED STATES PATENT OFFICE.

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DISTRIBUTING APPARATUS.

1,014,786.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed September 22, 1910. Serial No. 583,216.

To all whom it may concern:

Be it known that I, CHARLES B. TEWKSBURY, a citizen of the United States, residing in Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Distributing Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to apparatus for distributing devices or objects into different piles or receptacles.

The invention is especially designed and adapted among other uses, for distributing differently printed cards, tags or like articles. To this end, I employ a movable support or carrier for the articles to be distributed and provide the same with one or more openings through which the cards or other objects are discharged by a movable discharging device, which moves with relation to the movable support or carrier at a different speed, whereby the cards or other objects deposited upon the carrier or support will be discharged through the opening in the carrier at different points in the travel of the carrier and preferably into receptacles arranged below the path of movement of the carrier in line with the opening therein.

The movable support or carrier may be made as an endless band or belt, and the discharging device may be made as endless chains or belts connected by cross bars, which act as scrapers and which are separated from one another to form compartments into which the cards, etc., are deposited upon the endless carrier. The discharging device may and preferably will be caused to travel twice as fast as the carrier for the cards or other objects.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a side elevation of one form of apparatus embodying this invention. Fig. 2, a plan view of a portion of the apparatus shown in Fig. 1. Fig. 3, a side elevation of the portion of the apparatus shown in Fig. 2. Fig. 4, a longitudinal section on the line 4-4, Fig. 2. Fig. 5, a cross section on the line 5-5, Fig. 3, and Figs. 6 to 11, diagrammatic views to be referred to.

In the present instance, the movable car-

rier for the articles to be distributed is shown as an endless band or belt *a* of leather, cloth or other suitable material, which is passed about four rollers or drums *b, c, d, e*, having their shafts *f, g, h, i*, journaled in a suitable framework, comprising as herein shown upright sides *j, k*. Each of the shafts referred to has attached to it to revolve therewith, sprocket wheels *m, n*, located at opposite ends of the rollers, and the sprocket wheels *m* of all the rollers are connected by an endless link chain 10, and the sprocket wheels *n* of all the rollers are connected by a link chain 12. The link chains 10, 12, constitute an endless carrier for a plurality of scraper, preferably bars 13 of wood or like material, which are extended transversely of the band or belt *a* and are secured by screws 14 or otherwise to lugs 15 forming part of side links 16 of the endless chains. The scraper bars 13 are designed to make a sliding contact with the upper half or portion of the belt or band *a*, so as to engage a card, tag or other article 19 placed thereon, and to move said article on the belt or band until it meets an opening 20 therein, through which the card is discharged into one of a series of receptacles 21 located below the upper half of the endless band or belt *a*. The scrapers 13 are separated from one another to form compartments into each of which a card or other article is deposited.

The endless band *a* may be driven in any suitable manner, and in the present instance it is driven by frictional contact with its rollers, one of which as *c* having its shaft *g* provided with a gear 22, which is driven by a pinion 23 on a shaft 25 journaled in a bracket 26 attached to the side frame *j*. The shaft 25 is shown as provided with a sprocket wheel 27, which is rotated by a link chain 28 in a manner well understood.

The scraper bars 13 are caused to travel at a different speed or rate than the endless carrier *a*, and in the present instance the sprocket wheels *m, n*, are twice the diameter or size of the roller *c*, so that the link chains 10, 12, and their attached scraper bars 13 are caused to travel twice as fast as the endless carrier *a* in the same direction, which is indicated in Fig. 1 by the arrow 30.

The receptacles 21 are arranged in succession and preferably are made of the same width as the compartments formed by the scrapers. In the present instance, I have shown six receptacles 21, each of which is

designed to receive a card, which is distinguishable from the others, either by color or printing or in any other suitable manner, and the endless carrier *a* is provided with a plurality of openings, one for six receptacles, that is, said openings are separated by a distance substantially equal to the total width or length of five of the receptacles 21, so that only a single opening in the endless belt or movable carrier will uncover any one of said group of six receptacles at one time. In other words, when an opening 20 in the movable support or carrier uncovers any one of the series of receptacles, all the other receptacles of the group will be covered by the said carrier. To illustrate: Let it be supposed that an opening 20 in the endless belt or band *a* is above the left hand receptacle, viewing Fig. 1, which receptacle may be considered as No. 1. When this condition arises, all the other receptacles are covered. Assume that the belt or band *a* has been moved along, so that its opening 20 uncovers No. 2 receptacle. In this case, No. 1 receptacle will be covered by the belt on the left hand side of the opening 20 and Nos. 3, 4, 5 and 6, by the belt on the right hand side of the opening. When the belt is advanced so as to uncover No. 3 receptacle, Nos. 1 and 2 will be covered by the belt at the left of the opening and Nos. 4, 5 and 6 by the belt at the right of said opening. The same is true when Nos. 4, 5 and 6 receptacles are successively uncovered by the opening in the belt. It will, therefore, be seen that each receptacle of the group, which is shown as six, but which may be any other desired number, is uncovered in succession by an opening 20 as the belt *a* is moved over the said receptacles. Inasmuch as the scrapers 13 travel twice as fast as the belt or carrier *a*, the cards designed to be distributed into the different receptacles are deposited on the belt over the No. 1 receptacle and are carried forward by the scrapers until they catch up with the opening 20, which occurs when the said opening uncovers the receptacle into which it is designed to deposite the card. The spaces between the scrapers may be designated card-receiving compartments, which may be designated compartments 1, 2, 3, 4, 5, 6, in order to enable the operation to be clearly understood.

In Figs. 6 to 11, diagrams are shown by means of which the operation of the apparatus may be clearly understood. In Fig. 6, the opening 20 in the belt *a* is supposed to register with the receptacle No. 1, and compartment 1 is in line with said opening and No. 1 receptacle. In this case, a card or other object which it is desired should be received in receptacle No. 1 is deposited in compartment 1 and drops directly through the opening 20 into receptacle No. 1. As the belt *a* is moved in the direction of arrow 30, the opening 20 is next moved over No. 2 receptacle and while the belt is thus moved the scraper moves twice the distance, bringing compartment 1 over No. 3 receptacle and compartment 2 over No. 2 receptacle, which is at such time uncovered by the opening 20. In the meantime, a card is deposited in the compartment 2 when the latter is over the No. 1 receptacle, and said card falls on the belt *a*, which at such time substantially covers the No. 1 receptacle and prevents the No. 2 card from dropping into No. 1 receptacle. No. 2 card is thus supported by the belt *a* and remains thereon until in the travel of both the belt *a* and scrapers, it is discharged through the opening 20 into No. 2 receptacle, which takes place when the apparatus is in the position shown in Fig. 7. When the belt and scrapers are in the position shown in Fig. 7, it will be seen that compartment 3 is over No. 1 receptacle, and a card, which may be designated a No. 3 card, is deposited in the compartment 3 and rests on the belt *a*. The belt *a* on its continued movement brings the opening 20 next into register with the No. 3 receptacle, and while the belt is traveling the width of one receptacle, namely, from receptacle No. 2 to receptacle No. 3, the compartment 3 travels twice as far, namely, from over No. 1 receptacle to No. 3 receptacle, as shown in Fig. 8, so that the No. 3 card is deposited into the No. 3 receptacle. In the meantime, a No. 4 card is deposited in compartment 4 when the latter is brought over No. 1 receptacle, and when compartment 3 registers with the No. 3 receptacle as shown in Fig. 8, the No. 4 card is in its compartment, which at such time is above the No. 2 receptacle, which is two spaces removed from the No. 4 receptacle, so that when the opening 20 is brought over the No. 4 receptacle, the compartment 4, moving twice as fast as the belt, is brought over said opening and receptacle and into the position shown in Fig. 9, and the No. 4 card is deposited into the No. 4 receptacle. In the meantime, compartments 5 and 6 have been successively brought over No. 1 receptacle, and a No. 5 card is deposited in compartment 5, and a No. 6 card is deposited in compartment 6, so that when the belt and scrapers have been moved into the position shown in Fig. 9, card No. 5 in compartment 5 is over receptacle No. 3, which is two spaces removed from receptacle No. 5, into which it is deposited when the opening 20 has been advanced one space so as to register with receptacle No. 5, for the compartment 5 is at the same time advanced two spaces and into the position shown in Fig. 10. The No. 6 card in compartment 6 is at such time over receptacle No. 4 as shown in Fig. 10, and when the opening 20 is advanced one space

so as to register with receptacle No. 6, the compartment 6 with the No. 6 card is advanced two spaces and registers with said opening 20 and No. 6 receptacle as shown in Fig. 11 and the No. 6 card is deposited in its proper receptacle. The above operation is repeated with the next opening in the belt and with the next group of six compartments in the scraping mechanism.

10 In the present instance, the apparatus is shown as adapted to distribute two cards simultaneously, that is, the belt *a* is provided with two openings 20 side by side across the belt or band *a*, and with a double
15 receptacle for each of the group of six receptacles as indicated in Figs. 2 and 4. This arrangement of distributing apparatus serves to increase the speed at which the articles may be distributed. The endless
20 support or carrier for the articles to be distributed is shown as an endless band, but it is not desired to limit the invention to this particular form of support.

I have herein described the apparatus for
25 use in distributing printed cards, tags, etc., but I do not desire to limit the invention in this respect, as it may be used to advantage for distributing other kinds of printed matter and also merchandise.

30 Claims.

1. In an apparatus of the class described, in combination, an endless belt or band provided with an opening through it, means to move it continuously while in operation,
35 an endless series of scrapers coöperating with said band to form compartments, and means to move said scrapers simultaneously with and in the same direction as the endless band but at a greater speed having a pre-
40 determined relation to the speed of the said band, for the purpose specified.

2. In an apparatus of the class described, in combination, a movable support for the articles to be distributed provided with an
45 opening for the passage through it of said articles, means coöperating with said sup-

port to form therewith compartments, and means to simultaneously move said support and said compartment-forming means at different speeds having a predetermined re- 50
lation, for the purpose specified.

3. In an apparatus of the class described, in combination, an endless belt or band provided with an opening through it, means to move it continuously while in operation, an
55 endless series of scrapers coöperating with said band to form compartments, and means to simultaneously move said scrapers with relation to said endless band at a different predetermined speed, substantially as de- 60
scribed.

4. In an apparatus of the class described, in combination, a movable support for the articles to be distributed, means coöperating
65 with said support to form therewith compartments, and means to simultaneously move said support and said compartment-forming means at different speeds having a predetermined relation, substantially as de- 70
scribed.

5. In an apparatus of the class described, in combination, an endless belt or band provided with an opening through it, rollers about which said band is passed, shafts for
75 said rollers, sprocket wheels fast on said shafts at the opposite ends of said rollers, endless link chains passed about the sprocket wheels at each end of the rollers, scrapers
80 secured to said endless chains and coöperating with said endless band to form compartments, and means to rotate said shafts to simultaneously move said endless band and said link chains and scrapers, substantially as described.

In testimony whereof, I have signed my
85 name to this specification in the presence of two subscribing witnesses.

CHARLES B. TEWKSBURY.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.