

No. 683,039.

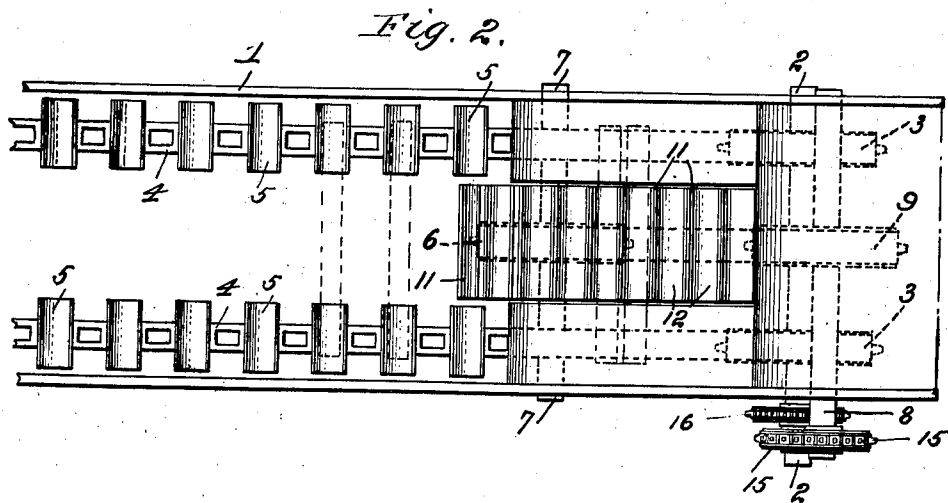
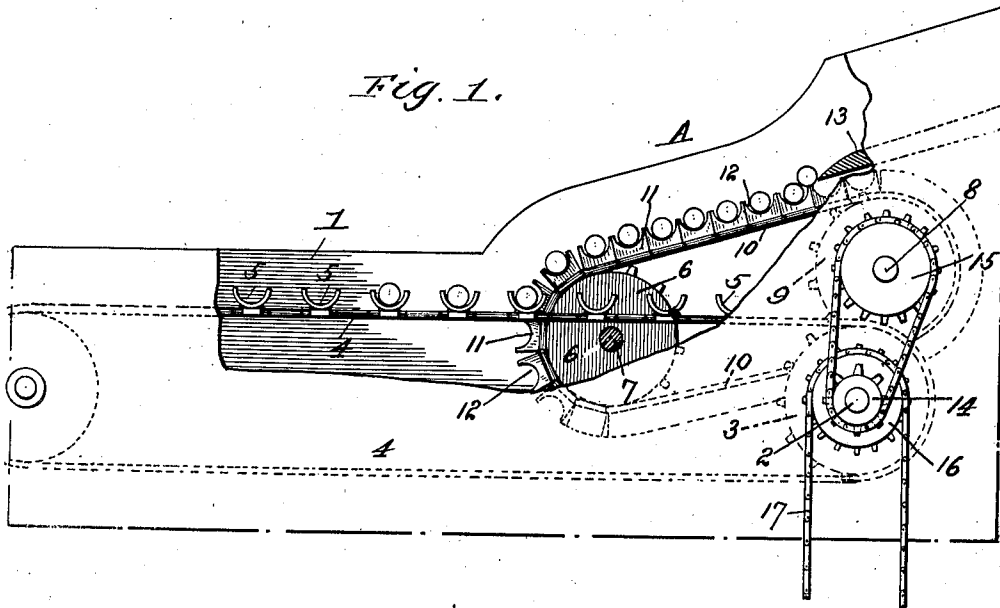
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F. J. HAGEN.

FEEDING DEVICE FOR ARTICLE MARKING MACHINES.

(Application filed Jan. 8, 1901.)

(No Model.)



WITNESSES:

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FEEDING DEVICE FOR ARTICLE-MARKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 683,039, dated September 24, 1901.

Application filed January 3, 1901. Serial No. 41,930. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND J. HAGEN, a citizen of the United States, residing in the borough of Manhattan, county of New York, city and State of New York, have invented certain new and useful Improvements in Feeding Devices for Article-Marking Machines, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation, part of the frame being broken away to more clearly show the construction; Fig. 2, a plan view of the feeding device, and Fig. 3 shows another form of the device.

In feeding cigars or other articles to a marking-machine in which the marking device is adapted to clasp the article and to extend transversely partly around it it is necessary to so place the articles on a carrier that there will be an open space between them large enough to admit the marking device. It has been found in practice that it is practically impossible to place the articles on the carrier by hand and properly separate them, even where troughs or other article-receiving devices are secured on the carrier at the proper intervals, and it is simply necessary to drop the articles into these receiving devices. The difficulty arises because of the spaces between the receiving device on the carrier. The articles to be marked fall into these spaces when it is endeavored to feed the articles rapidly and interfere with the operation of the machine. Where the troughs are employed and they are made large enough to have their sides abut together to avoid having the space between them and at the same time properly space the articles from each other, they are large enough to hold more than one article, and it has been found that it is almost impossible to avoid placing more than one article in them.

The object of this invention is to provide an endless feed device in which the article-receiving devices or troughs will be arranged close together and be so formed that they will receive only one of the articles to be fed and so arrange this feed device that it will feed one article at a time to the carrier and to drive said feed device slower than the movement of the carrier and in the same direction,

whereby the articles will be more widely separated on the carrier than on the feed device. Where article-receiving devices or troughs are provided on the carrier, the relative speeds of the carrier and feed device are so timed that the feed device will deposit one article in each receiving device on the carrier.

Referring to the various parts by numerals, 1 designates the frame of the machine, and 2 a horizontal transverse shaft mounted therein. On this shaft are mounted two chain-wheels 3, over which the carrier-chains 4 run. These chains are separated a short distance and run parallel in the same horizontal plane, and on each chain is secured a series of short transverse article-receiving troughs 5, the troughs on one chain being in a direct transverse line with the corresponding troughs on the other chain. These chains convey the articles to a suitable marking apparatus and are separated sufficiently to permit the feed device to pass between them. In the drawings one trough is carried by every other link of the chains 4; but it is obvious that they may be placed at any desired distance from each other.

To place articles to be marked in the troughs or article-receiving devices on the carrier, the feed device is provided. This feed device consists of a chain-wheel 6, which is mounted between the two chains 4 on a horizontal transverse shaft 7, which extends across the machine just below the upper halves of the carrier-chains, near the receiving ends thereof. On a transverse shaft 8, mounted in the frame in front of the shaft 2 and slightly above the carrier, is a chain-wheel 9, which is equal in size to the chain-wheel 3 and is formed with the same number of sprocket-teeth. Connecting the wheel 9 to the wheel 6 is a feed-chain 10, whose links are of the same size as the links in the carrier-chain. On each link of the feed-chain is secured a transverse block 11, in the outer surface of which is formed a groove 12, which extends the length of the block and is substantially equal therewith in width. As the sides of adjoining blocks abut together, it will be readily understood that when the chain is straight, as at A, a continuous surface will be presented in which there will be transverse grooves having very narrow ridges

between them. The distance between the centers of the troughs on the carrier-chains is just twice the distance between the centers of the troughs on the feed-chain, and in order
 5 that the article shall be properly delivered one at a time into the troughs on the carrier-chains the feed device must be driven at one-half the speed of the carrier. This differential speed may be secured in any suitable
 10 manner. As shown in Fig. 1 of the drawings, a small chain-wheel 14 is secured on the shaft 2 and is connected by a chain with a chain-wheel 15, which is double the size of the
 15 wheel 14 and is secured on the shaft 8 of the feed device. On shaft 2 is also mounted a chain-wheel 16, over which a drive-chain 17 passes. It will thus be seen that the carrier will have twice the speed of the feed
 20 device. It will also be seen that as the feed device is driven from the driving-shaft of the carrier the relative speeds of the two devices will be maintained whether the carrier be driven fast or slow.

Above the forward or receiving end of the
 25 feed device is an inclined chute 13, down which the articles to be marked move. The discharging end of this chute is over the part A of the feed device, and as the articles are delivered directly on this continuous
 30 grooved surface they may be very readily caused to lie in the grooves. These grooves are just large enough transversely to receive one of the articles to be marked and are slightly shallower than the thickness of the
 35 article, so that when a groove contains an article other articles cannot lodge therein. The blocks are shorter than the articles to be marked, so that the article will project beyond the ends of the blocks and will en-
 40 gage in the troughs on the carrier-chains, one end engaging the trough on one chain and the other end engaging the corresponding trough on the other chain. The chain-wheel 6 is so arranged that the troughs on
 45 the feed-chain will deliver into the troughs on the carrier-chains.

It will be noted that the two carrier-chains must be positively driven in unison to maintain the troughs on one chain in direct trans-
 50 verse line with the corresponding trough on the other chain in order that the articles from the feed device will extend at right angles to the carrier-chains and directly across between them. The feed-chain must also be positively driven, whereby the articles to be fed will be accurately delivered into the troughs on the positively-driven carrier-chains.

Instead of delivering the articles to an endless flexible carrier, as shown in Fig. 1, they may be delivered to troughs formed in the periphery of a large carrier-wheel 20, as shown in Fig. 3. In this form of apparatus the feed device and the carrier will be properly arranged and will be given the necessary differential speed to secure the delivery of the articles to the carrier. In Fig. 4 is shown a

feed device in the form of a disk 21, mounted on a horizontal shaft and formed with transverse grooves or troughs 23 in its periphery, 70 which grooves are close together, as shown, there being practically no space between them. In this form of device the feed device and carrier will also be given the necessary differential motion to secure the proper de- 75 livery of the articles from the closely-arranged troughs of the feed device into the more widely separated troughs of the carrier.

Having thus fully described my invention, what I claim is— 80

1. The combination of two separated endless carrier-chains provided with coincident article-receiving troughs, a feed device between the carriers and comprised of a flexible endless belt or chain, chain-wheels there- 85 for, transverse blocks secured centrally to said chain and abutting together at their sides when the chain is straight and having formed in their outer longitudinal faces article-receiving grooves substantially equal in 90 width to the blocks whereby narrow ridges are formed between the grooves, means for positively driving the carrier-chains in unison, and means for positively driving the feed device slower than the carrier-chains, 95 substantially as described.

2. The combination, of two separated endless carrier-chains, troughs on each chain directly in line with corresponding troughs on the opposite chain, a feed-chain between the 100 carrier-chains, chain-wheels therefor, transverse blocks secured centrally to said chain and abutting together at their sides when the chain is straight and having formed in their outer longitudinal faces article-receiving 105 grooves substantially equal in width to the blocks whereby narrow ridges are formed between the grooves, means for positively driving the carrier-chains in unison, means for positively driving the feed device slower than 110 the carrier-chains, and a feed-board extending over the feed device and adapted to deliver the articles directly into the grooves of the blocks on the straight part of the feed-chain, 115 substantially as described.

3. The combination, of two horizontal shafts, a pair of separated sprocket-wheels on each of said shafts, parallel endless carrier-chains mounted on said sprocket-wheels whereby said chains will be moved in uni- 120 son, short transverse troughs carried by each carrier-chain, those on one chain being in direct transverse line with those on the other chain, a space being left between the two series of troughs, a second pair of horizontal 125 shafts, a sprocket-wheel mounted on each of these shafts, the wheel on the forward of these shafts being between the two carrier-chains, an endless feed-chain connecting these two sprockets, a short transverse block 130 carried by each link of the feed-chain and adapted to pass between the carrier-chains, the sides of said blocks abutting together where the chain is straight and each block

being formed with a longitudinal groove in its outer surface substantially equal in width to the block, means for positively driving the carrier-chains, and means for positively driving the feed-chain slower than the carrier-chains.

4. The combination, of two horizontal shafts, a pair of separated sprocket-wheels on each of said shafts, horizontal endless carrier-chains mounted on said wheels whereby said chains will be positively moved in unison, a series of short troughs carried by each chain, the troughs on one chain being directly in line with the corresponding troughs on the other chain, another pair of shafts, a chain-wheel on each shaft, the wheel on the forward one of these shafts being between the carrier-chains, a feed-chain mounted on these chain-wheels, short blocks carried by said feed-chain and arranged to have the side edges of adjoining blocks abut together where the chain is straight, each of said blocks being formed with a longitudinal groove in its outer surface substantially

equal in width to the block, a feed-board above the feed-chain and adapted to deliver articles upon the straight part of the chain, means for positively driving the carrier-chains, and means for positively driving the feed-chain slower than the carrier-chains, substantially as described.

5. The combination of two separated endless flexible carriers, troughs on said carriers, an endless flexible feed device between the carriers and adapted to feed articles to the troughs on the carriers, means for driving the carriers, and means for driving the feed device slower than the carriers, whereby the troughs on the carriers may be more widely separated than those on the feed device.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 2d day of January, 1901.

FERDINAND J. HAGEN.

Witnesses:

JOHN G. PEARSE,
WM. R. DAVIS.