Oct. 27, 1931. A. F. DILLON 1,829,129

TRANSFER MECHANISM

Filed Aug. 17, 1929 4 Sheets-Sheet 1

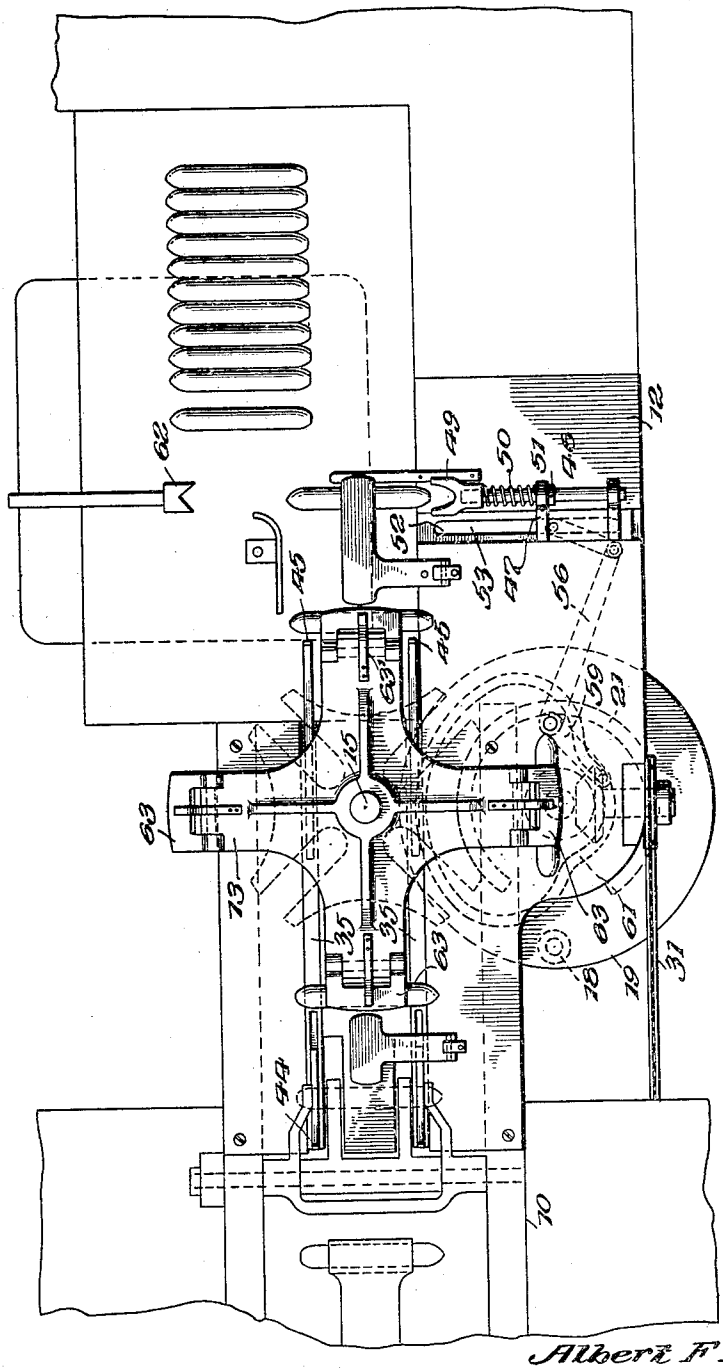


Fig. 1.

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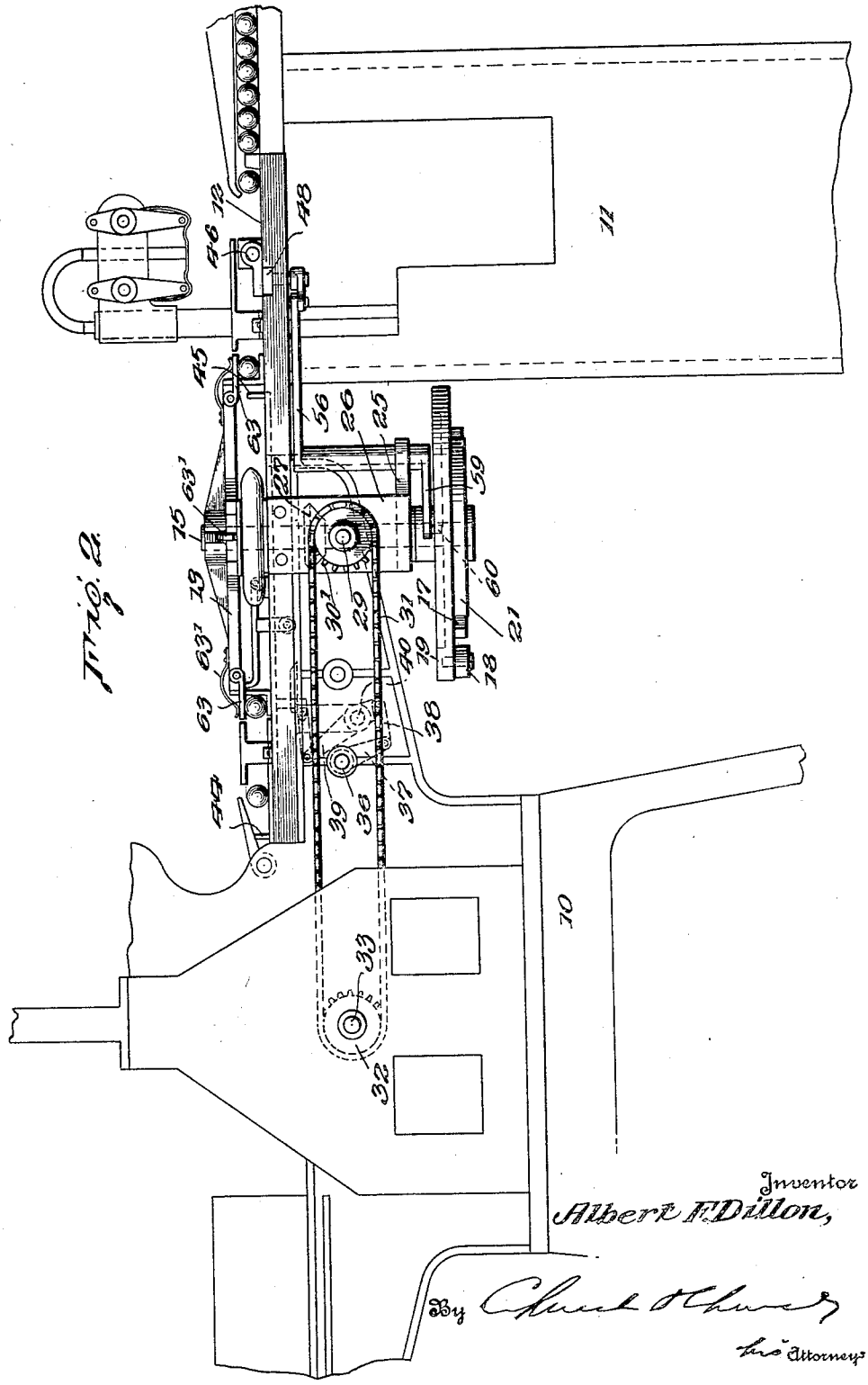


Fig. 2.

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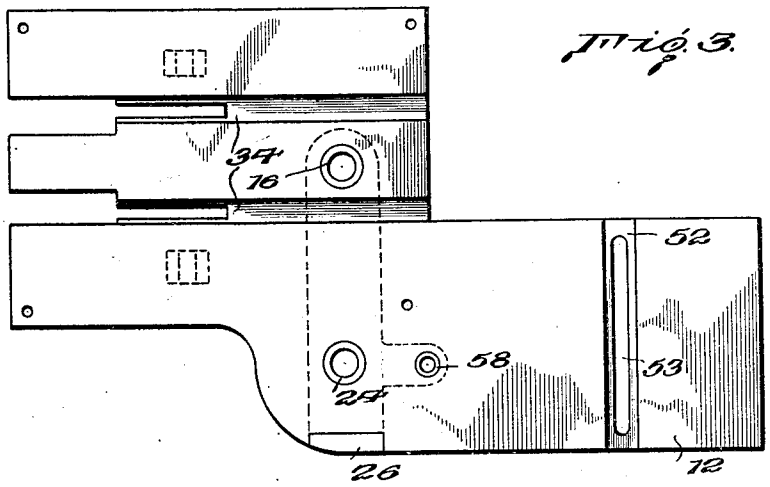


Fig. 3.

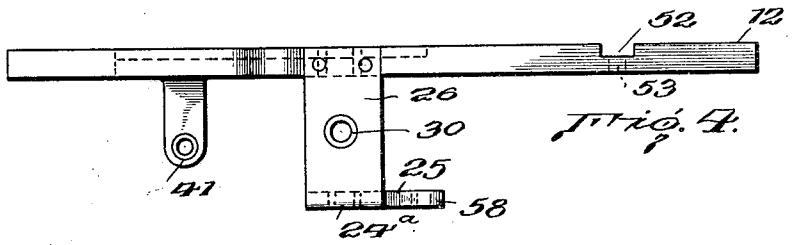


Fig. 4.

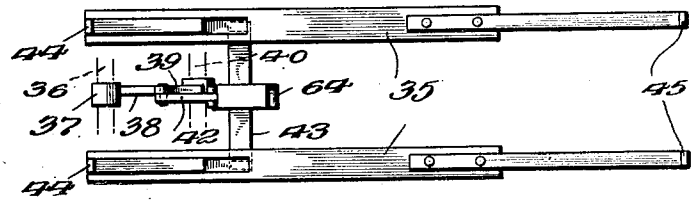


Fig. 5.

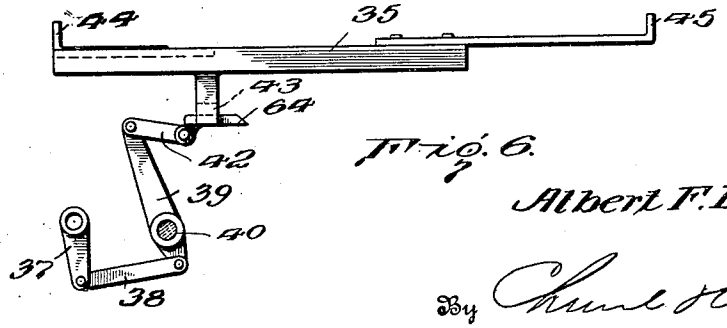


Fig. 6.

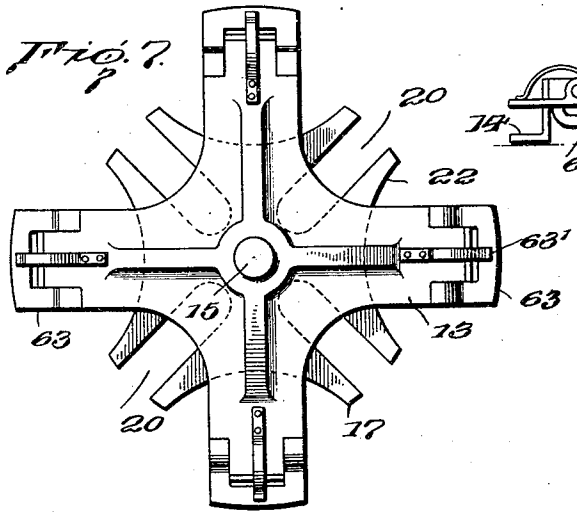
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TRANSFER MECHANISM

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Fig. 7.



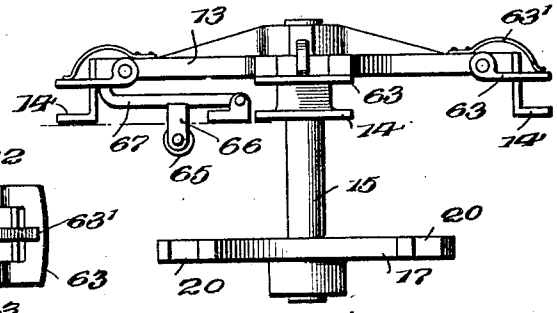


Fig. 8.

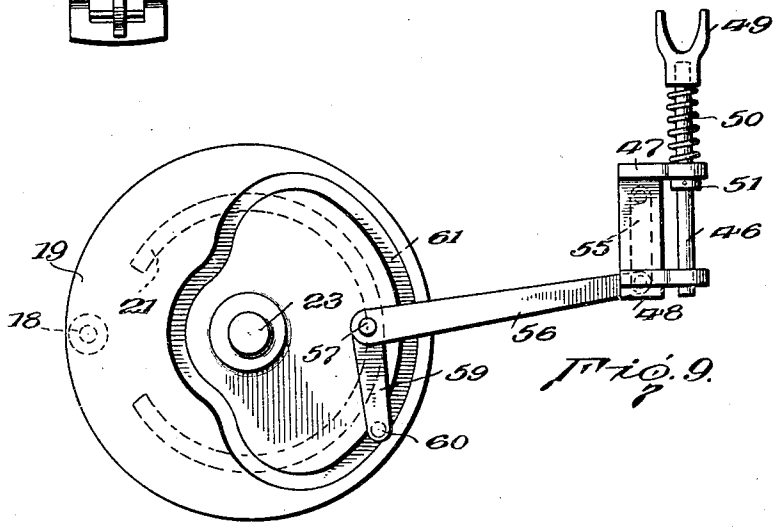


Fig. 9.

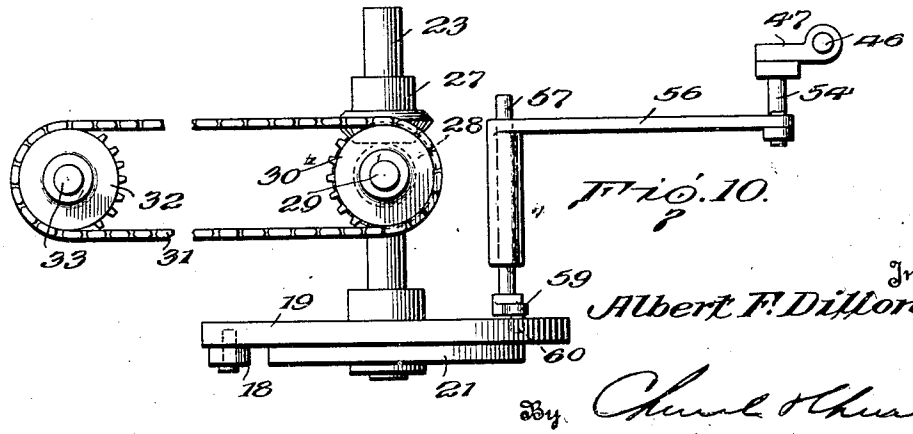


Fig. 10.

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Patented Oct. 27, 1931

1,829,129

UNITED STATES PATENT OFFICE

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TRANSFER MECHANISM

Application filed August 17, 1929. Serial No. 386,628.

This invention relates especially to a mechanism for transferring foil wrapped cigars from a foil wrapping machine to what is known as a banding machine. However, the transfer mechanism is applicable to other uses than this specific one.

Specifically, the invention consists in the provision of a mechanism for transferring the cigars from one machine to the other, thereby reducing the cost of the cigars to the consuming public, because the use of such transfer mechanism will reduce by two the number of operatives now employed as attendants to a pair of wrapping and banding machines.

In a broader aspect, the invention consists in a transfer mechanism wherein the articles, while being delivered from one machine to another of successive machines, are turned endwise so that they are reversed end for end between one machine and the next machine by which they are handled.

A still further object is to produce such a transfer mechanism consisting of a comparatively few number of parts, all of simple construction and arrangement.

With these and other objects in view, the invention consists in certain details of construction and combinations and arrangements of parts, all as will be hereinafter more fully described and the novel features particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a plan view of the transfer mechanism, a portion of the foil wrapping machine and the banding machine being shown more or less in outline;

Fig. 2 is a side elevational view of the apparatus illustrated in Figure 1;

Figs. 3 and 4 are plan and elevational views, respectively, of the table for the transfer mechanism;

Figs. 5 and 6 are plan and side elevational views of the loader and ejector;

Figs. 7 and 8 are plan and elevational views of the transfer turret; and

Figs. 9 and 10 are plan and elevational views of the banding machine feed which constitutes a part of the transfer mechanism.

The foil wrapping machine 10 and the banding machine 11 are shown more or less in outline, as before mentioned. Intermediate these two machines there is a table 12, constituting a support for the transfer mechanism proper. This transfer mechanism preferably consists of a turret 13 having a series of supports or pockets 14 arranged in pairs at diametrically opposite points thereon. Said turret is mounted on a shaft 15, journaled in a bearing 16 in table 12. The turret is located above the table and below the table there is a Geneva disk 17 mounted on shaft 15 whereby the shaft and turret may be intermittently rotated by a cam 18 on a cam disk 19 periodically engaging in the recesses 20 of the Geneva disk. To hold or lock the turret stationary during the interval between its successive movements, disk 19 has thereon an arcuate shoe 21 adapted to succesively engage the curved surfaces 22 of the Geneva disk.

The cam disk 19 is mounted on a shaft 23, journaled in bearings 24, 24ª in table 12, and a plate 25, respectively, supported below said table by a depending bracket 26. Cam shaft 23 has a bevel gear 27, which meshes with a similar pinion 28 on a shaft 29, journaled in a bearing 30 in bracket 26. Shaft 29 also carries a sprocket 30′ that is driven by a chain 31 from a sprocket 32, mounted on one of the shafts 33 of the wrapping machine. With the connections thus far described, it will be seen that in the form of apparatus shown in the present instance, the turret 13 will be intermittently moved, each movement thereof carrying one of the pockets or supports 14 through an arc of 90°. Formed in the upper surface of table 12, there are a pair of grooves 34 for a pair of loading and ejecting slides 35. These slides are continuously reciprocated by connections operative from a shaft 36, this being the shaft that is ordinarily used for operating the ejector fingers commonly found in the standard foil wrapping machine on the market today. As shown in Figs. 2, 5, and 6, the operating connections between the shaft 36 and the slides 35 consist of a drive lever 37 mounted on said shaft and connected by a link 38 to an operating lever

39 pivoted on a shaft 40 which is journaled in brackets 41 depending from table 12. Operating lever 39 is connected by a link 42, pivotally attached to a cross bar 43 which connects the two slides together. Projecting from the slides 35 at their ends nearest the foil wrapping machine, are a pair of upwardly extending projections 44, and projecting upwardly at the opposite end of said slides are projections 45. As shown in Figs. 1 and 2, the cigars are delivered from the foil wrapping machine onto the slide 35 somewhat in advance of what may be termed the loading projections 44, so that upon reciprocation of the slides in a direction to move the loading projections toward the turret, one of the cigars would be moved onto one of the supports 14 of the turret. At the same time, the ejector extensions 45 at the opposite end of the slides will engage and eject a cigar carried by the support 14 of the turret then located diametrically opposite the support on which the cigar is being loaded. In this way, there is a simultaneous loading and discharging of cigars from a pair of diametrically opposed supports 14 of the turret, and as the cigar discharged will have passed through an arc of 180° from the point at which it was placed on said support, it will be seen that the discharged cigar, when it reaches the banding machine, will have been turned end for end as compared with the position it occupied when delivered from the foil wrapping machine.

To facilitate feeding the cigars to the banding machine after they have been discharged from the pockets or supports of the turret, each cigar, after it has been so discharged, is given an endwise movement as illustrated in Figure 1. This is accomplished by means of a plunger 46 slidably received in arms 47 mounted on a plate 48. Plunger 46 has a head 49, and interposed between said head and one of arms 47, is a spring 50, while, at the other side of said arm 47, there is a washer 51 on said plunger. Plate 48 is slidably mounted in the groove 52 in table 12, and in the bottom of said groove there is a slot 53 through which projects a pin 54 whose upper end engages in a comparatively link-shaped recess 55 in the bottom of plate 48. The lower end of pin 54 is mounted on a lever 56, which, in turn, is mounted on a shaft 57, journaled in bearings 58 in table 12 and plate 25. Also mounted on shaft 57, but below plate 25, is a lever 59 whose free end carries a cam roller 60 engaging in cam groove 61 in the cam disk 19. These connections, upon rotation of cam disk 19, impart a reciprocatory motion to slide plate 48 and, in turn, to plunger 46, so that a cigar engaged by head 49 will move said cigar endwise until it engages a stop 62 (see Figure 1). It will be observed that head 49 of plunger 46 yieldingly engages the cigars by reason of the spring 50 being interposed between said head and the arm 47.

To retain the cigars on the supports or pockets 14 of the turret while being transferred from the foil wrapping machine to the banding machine, each pocket is provided with what will be termed a door 63, located above the supports 14 but spring pressed downwardly so as to firmly grip a cigar positioned on the support. However, as cigars are being pushed onto the successive supports as the latter come into registry with the loading devices, doors 63 are slightly elevated by a cam surface 64 on the cross bar 43 of the slides, engaging a roller 65 journaled in depending arms 66 of a lever 67, pivoted at a suitable point beneath the turret. The free extremity of said lever 67 is adapted to be slightly elevated by said cam surface, into engagement with the doors 63, so as to also slightly raise them and hold them in raised position until a cigar has been pushed onto the support 14 and the next movement imparted to the turret.

What is claimed is:

1. In a transfer mechanism, the combination of a revolving series of article supports, means for clamping an article on each support, means for moving articles onto said supports, means operable by the last mentioned means for temporarily holding said clamping means in an inoperative position as an article is placed on each support, and means for discharging the articles from the supports after each support has passed through an arc of 180° from the point at which an article was placed thereon.

2. In a transfer mechanism, the combination of a revolving series of article supports, a pivoted clamp for each support, a slide, means on said slide for moving articles onto and off of said supports, and means operable by said slide for moving said clamps to an inoperative position as articles are moved onto said supports.

ALBERT F. DILLON.