Nov. 4, 1930. J. S. DA COSTA 1,780,224

SETTING MEANS FOR CONVEYING MECHANISM

Filed Nov. 26, 1929 2 Sheets-Sheet 1

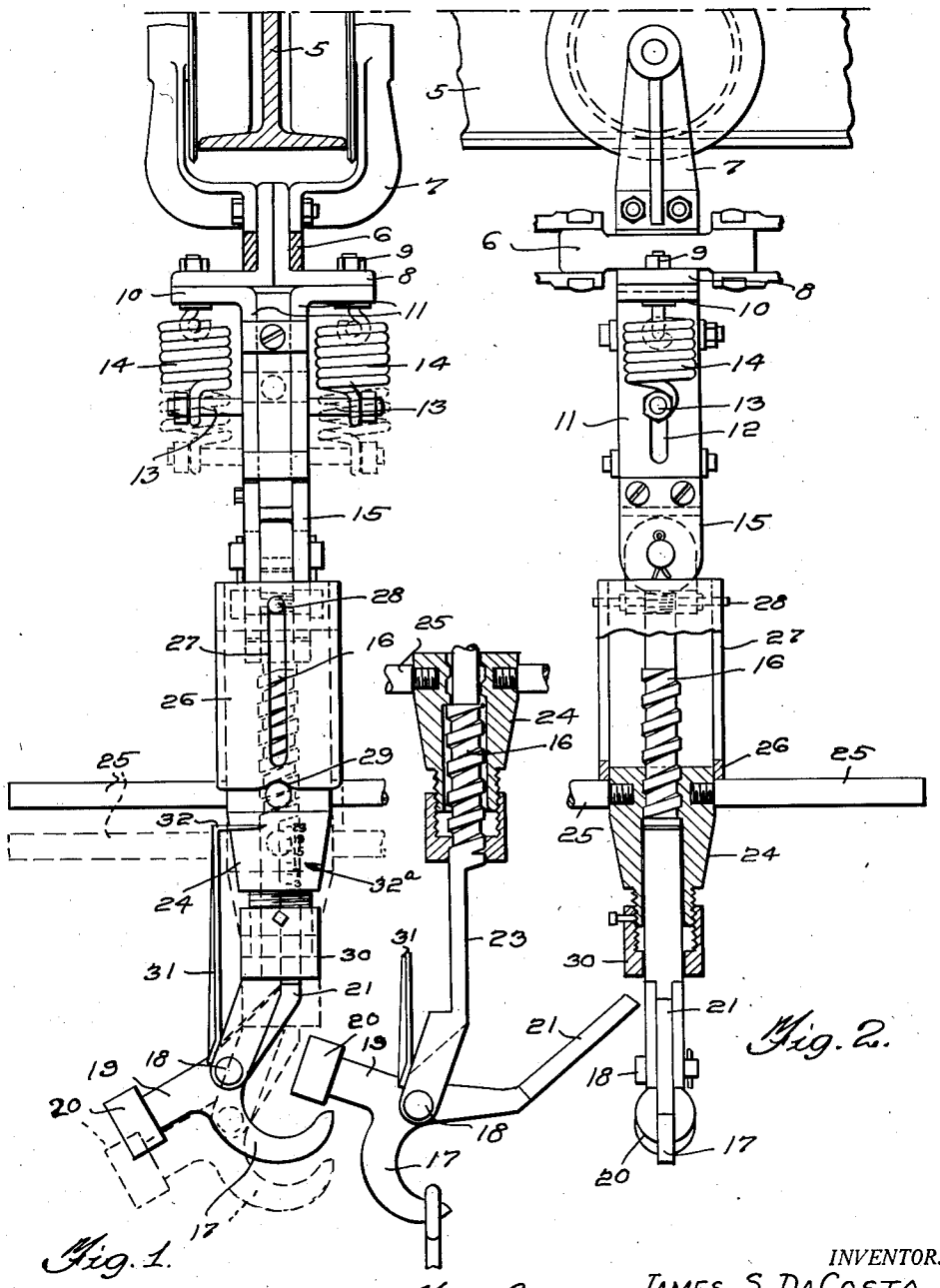


Fig. 1.

Fig. 2.

Fig. 3.

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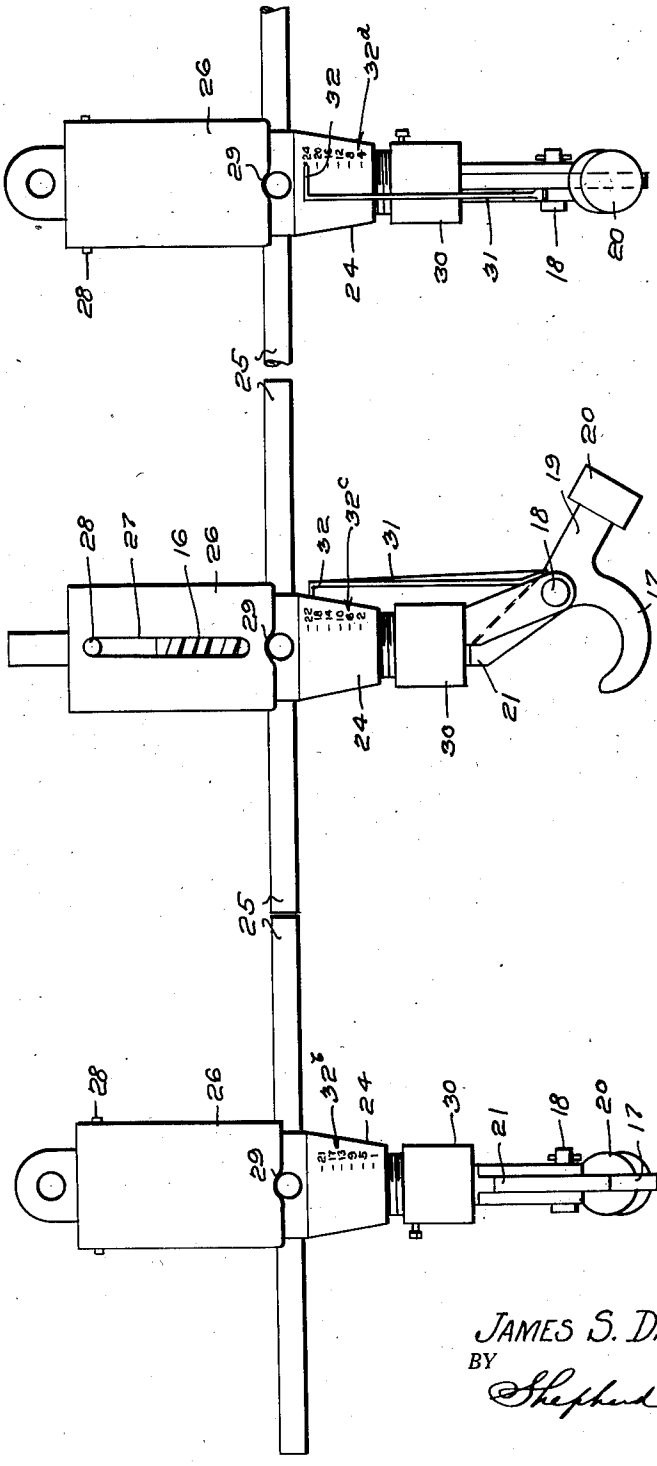


Fig. 6.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE

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SETTING MEANS FOR CONVEYING MECHANISM

Application filed November 26, 1929. Serial No. 409,929.

This invention relates to conveying mechanism of the character of that shown in my co-pending application Serial Number 322,429, filed November 28th, 1928. The mechanism in question comprises a traveling carrier adapted to convey articles to and automatically deposit them at any one of a plurality of stations along the line of travel of the carrier, the carrier being settable in advance to determine which receiving station is to receive the article.

Conveyors of the character described are highly useful, among other places, in post offices, mail order houses, and the like, where mail bags are regularly delivered to numbered stations to facilitate their dispatch, without confusion.

The carrier of my application aforesaid comprises a hook-like element adapted to be held in article or bag supporting position by a rotative sleeve to which a step-by-step turning movement is imparted as the carrier passes the various intermediate stations along its line of travel, the hook being released to deposit the bag or other article, after the sleeve has made a predetermined number of revolutions.

The primary object of the present invention is to apply to a carrier of the character set forth, an indicating means to enable the operator to accurately set the mechanism prior to the start of the carrier, upon its travel. Heretofore, it has been the practice for the operator to count the number of turns of the rotative sleeve to locking position to thereby determine the number of turns in the reverse direction that would be required to unlock the mechanism, and, in that way, determine the station at which the unlocking would be effected.

Under the present invention, the operator may, at any time, by merely glancing at the indicating mechanism, determine the station for which the mechanism has been set, and may, in setting the mechanism, spin the sleeve around rapidly and without counting the turns thereof, until the approximate setting has been reached, and then by observing the indicating mechanism, may accurately set the mechanism to discharge at the desired station.

In the accompanying drawing:

Fig. 1 is a view in front elevation of a conveying mechanism constructed in accordance with the invention,

Fig. 2 is a side elevation thereof, with parts in section,

Fig. 3 is a fragmentary sectional view therethrough, showing the parts in released position, and

Figs. 4, 5 and 6 are detail views of the lower end of the rotative sleeve, looking at points thereof, each a quarter turn removed from the other.

Like numerals designate corresponding parts in all of the figures of the drawing.

In the drawing, 5 designates a supporting trackway of conventional form which may be in the nature of an I-beam, and which may extend to any desired extent through a building and along railroad loading platforms, docks, or the like. A conveying chain 6 is supported at any desired number of points in its length by trolleys 7, which travel upon the trackway. Conveyors of this general character are of a conventional form and are widely known and used. The trolley illustrated in the drawing comprises transversely extending straps 8, below the chain 6, said straps being united by fastening devices 9, with the out-turned upper ends 10, of plates 11. These plates are slotted at 12, for the passage of a bar 13, the outer end portions of which are supported from the fastenings 9 by springs 14. The bar 13 constitutes the supporting element of a head 15, from which a threaded shank 16 is suspended. A hook 17 is pivoted at 18 to the lower end of the threaded shank, said hook comprising an extension 19, carrying a weight 20, which tends to throw a locking extension 21 of the hook toward and against the flat face 23 of the lower portion of the shank. A locking sleeve or nut 24 has threaded engagement with the threaded portion of the shank, said nut carrying laterally projecting arms 25, adapted to come in contact with and be actuated by stops, (not shown) disposed at the

various stations that are passed by the carrier.

In the particular embodiment of the invention illustrated in the accompanying drawings, there are four of the arms 25, and, consequently, the nut will make one complete revolution for each four stations passed. In order to prevent over-throw of the nut 24, and to cause it to come promptly to rest, after it has been moved by contact with one of the stops, I utilize a floating sleeve 26. This sleeve is slotted at 27 for engagement with laterally projecting pins 28, and it is notched at its lower edge, as indicated at 29, for engagement with the arms 25. When the arms start to move, the sleeve 26 rises, but after the arms have been a quarter turn, they are engaged by the next succeeding notch of the lower edge of the floating sleeve, and are accurately positioned and brought to rest thereby. Whenever the nut 24 has, by downward movement on threaded shank 16, been lowered to a position where a ferrule 30, carried thereby, overlaps the locking extension 22 of hook 17, the hook will be held in the bag or article supporting position illustrated in Fig. 1, while, whenever the nut 24 has been elevated by its turning movement upon threaded shank 16, to a point which the ferrule clears the locking extension 22, the weight of the bag or other article carried will throw the hook to the position illustrated in Fig. 3, to thereby discharge such bag or other article from the hook.

In carrying out the present invention, I mount a pointer 31 upon the lower end of the shank and dispose its upper end 32 in such manner as to cause it to coact with the rows of numbers 32^a, 32^b, 32^c and 32^d, that are formed upon the outer face of the nut 24.

For purposes of illustration, I have shown the mechanism as being provided with a sufficient number of number designations to take care of twenty-four stations. Since there are four of the arms 25, and since the nut 24 moves a quarter of a turn, at each station, it follows that there must be a row of numbers at each quarter turn upon the face of the nut, and that the numbers of one of the stations will be 1, 5, 9, 13, 17 and 21; that the numbers at the next quarter turn will be 2, 6, 10, 14, 18 and 22; that the numbers at the third quarter turn will be 3, 7, 11, 15, 19 and 23, and that the numbers at the final quarter turn, or at the full turn, will be 4, 8, 12, 16, 20 and 24. The pointer terminal 32 will indicate, at any given moment, the number of quarter turns that have been imparted to the nut to bring it to the position indicated by the pointer at that time, and, consequently, will indicate to the operator the number of intermediate stations and stops that must be passed by the carrier in order to effect such reverse movement of the nut as will free the locking extension of the hook and bring about a deposit of the bag or other article carried.

The springs 14, and associated parts, constitute a feature of my former application, and are not claimed herein. However, it may be stated that these springs function to bodily elevate all of the lower portions of the mechanism when the weight of a bag is removed from the hook, so that the arms may lie in a higher plane upon the return and unloaded movement of the carrier than the plane in which they lie during the loading movement of the carrier, and thus the arms will not contact with the stops disposed along their path, after the carrier by which they are carried has been unloaded, it being understood that there may be as many carriers carried by the conveying chain as is found to be desirable.

It is to be understood that the invention is not limited to the precise construction set forth, but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described my invention, what I claim is:

1. The combination with a carrier comprising a non-rotative element and a rotative element, the latter being adapted to be actuated step by step during the travel of the carrier, of indicating mechanism by which the degree of movement necessary to move the rotative element to releasing position may be predetermined and visually indicated.

2. A structure as recited in claim 1, wherein said indicating mechanism comprises indicating indicia carried by one of said numbers and a pointer carried by the other of said numbers.

3. A structure as recited in claim 1, wherein said indicating mechanism comprises a pointer carried by the non-rotative member, and numbers carried by the rotative member.

4. A structure as recited in claim 1, wherein said indicating mechanism comprises a pointer carried by the non-rotative member, and numbers carried by the rotative member, said numbers being disposed in a plurality of groups spaced circumferentially about the rotative member in accordance with the extent of movement imparted thereto by the several stops.

5. In a device of the character described, comprising a traveling conveyor, a carrier supported therefrom, comprising a threaded shank, a nut like sleeve engaging said threaded shank, a plurality of laterally extending arms carried by said sleeve, a hook pivoted to the lower end of said shank and adapted to be held in supporting position by movement of the sleeve in one direction and indicating mechanism between the shank and sleeve for indicating the extent to which

the sleeve has been moved with respect to said shank.

6. In a device of the character described, comprising a traveling conveyor, a carrier supported therefrom, comprising a threaded shank, a nut-like sleeve engaging said threaded shank, a plurality of laterally extending arms carried by said sleeve, a hook pivoted to the lower end of said shank and adapted to be held in supporting position by movement of the sleeve in one direction, and indicating mechanism between the shank and sleeve for indicating the extent to which the sleeve has been moved with respect to said shank, said indicating mechanism comprising a pointer carried by the shank and indicating numbers upon the sleeve.

7. In a device of the character described, comprising a traveling conveyor, a carrier supported therefrom, comprising a threaded shank, a nut-like sleeve engaging said threaded shank, a plurality of laterally extending arms carried by said sleeve, a hook pivoted to the lower end of said shank and adapted to be held in supporting position by movement of the sleeve in one direction, indicating mechanism between the shank and sleeve for indicating the extent to which the sleeve has been moved with respect to said shank, said indicating mechanism comprising a pointer carried by the shank and indicating numbers upon the sleeve, said indicating numbers being arranged in a plurality of groups spaced circumferentially about the sleeve in accordance with the number of actuating arms carried by the said sleeve.

In testimony whereof I affix my signature.

JAMES STARR DA COSTA.