March 14, 1933. K. F. SNOW 1,901,360

APPARATUS FOR HANDLING CYLINDRICAL ARTICLES AND THE LIKE

Filed Sept. 17, 1930

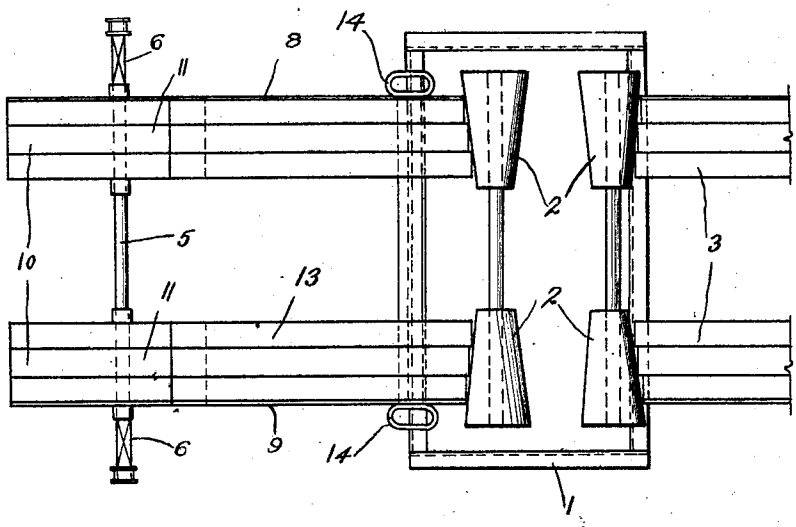

FIG. 1

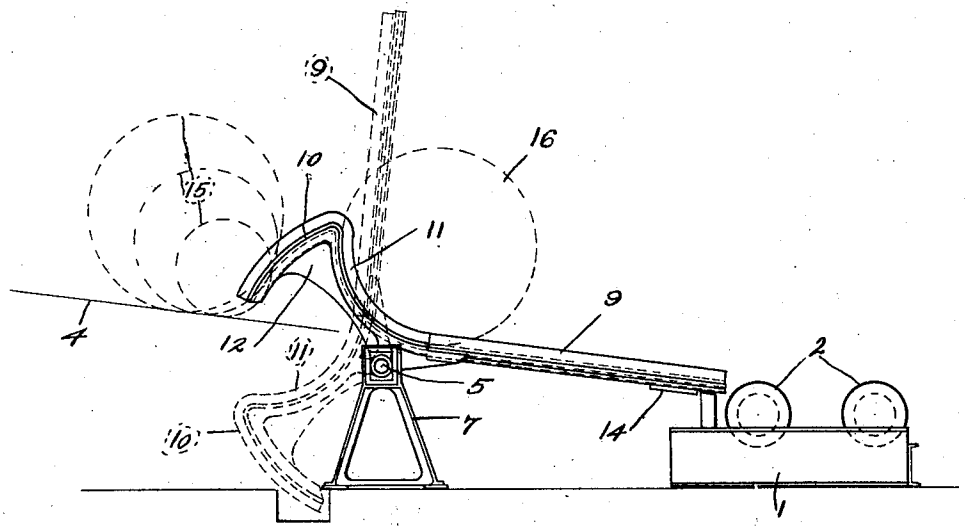

FIG. 2

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UNITED STATES PATENT OFFICE

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APPARATUS FOR HANDLING CYLINDRICAL ARTICLES AND THE LIKE

Application filed September 17, 1930. Serial No. 482,389.

This invention relates as indicated, to apparatus for handling cylindrical articles such as barrels and the like, and is designed primarily to be employed as a means for singly feeding cylindrical articles such as barrels, from an inclined conveyor or like means on to a separate receiving means such as a paint machine and the like which is employed for the purpose of treating or coating such articles.

As is well known to those familiar with the art of coating and treating barrels, any mechanism that is employed in connection with the treating apparatus for the purpose of feeding thereto, the cylindrical articles to be treated must be capable of feeding such articles singly, inasmuch as the treating operation is carried on in connection with only one of such articles at a time, and further, such apparatus after the feeding operation has been completed, must be capable of being positioned so as not to interfere with the workmen who are employed in the process of painting or treating the articles.

Another requirement of the above described form of material handling apparatus, is that when the feeding operation has been completed, such apparatus will of itself return to the inoperative position so as to move out of the way of the operators, and further that while in such inoperative position, the feeding of additional articles will be restrained until the operator elects to so feed a new article.

It is among the objects of my invention to provide an apparatus for handling cylindrical articles which shall have all of the above named desirable characteristics. Other objects of my invention will appear as the description proceeds. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

Fig. 1 is a plan view of the apparatus comprising my invention; and Fig. 2 is a side elevational view of such apparatus.

Referring more specifically to the drawing, the apparatus comprised in my invention is shown in cooperation with the bed 1 of a barrel painting or coating machine which includes oppositely tapered conical rollers 2, adapted to receive the barrel and support the same on its chime rings during the painting or treating operation. A pair of laterally spaced discharge skids 3, may be positioned in association with the paint machine to carry away from such machine, the barrels or like articles which have been freshly painted. In alignment with the paint machine may be an inclined conveyor down which the barrels, or like cylindrical articles are permitted to roll freely so that a new barrel is always in position to be fed to such machine by the apparatus comprising my invention, which will now be described.

The apparatus for feeding the barrels from the conveyor 4, or like means to the treating machine, or like means, consists of a rotatable shaft 5, which may be terminally provided with trunnions 6 here shown rotatively mounted in bearings carried by pedestals 7. The shaft 5 has secured thereto, the axially spaced pivoted laterally spaced arms 8 and 9, which serve as a means for conveying the barrels or like articles from the incline conveyor 4, to the above described machine, or like means. The arms 8 are provided with oppositely sloping terminal portions 10 and 11 which are perfectly arcuate in form although such arcuate form is not necessary to the operation of the apparatus. The space between the oppositely sloping portions 10 and 11 may be filled with a counterweight 12, which will be of sufficient mass so that the arms of the apparatus will be normally maintained thereby in the substantially vertical position illustrated by broken lines in Fig. 2. The arms 8 and 9, as well as the terminal portions 10 and 11 thereof, are formed from a plurality of plates such as 13, which are in overlapping relation along their ends so as to provide oppositely sloping upper surfaces for the arms 8 and 9, and their terminals 10 and 11, so that the barrel, or like cylindrical article, will be supported only on its chime rings or on the periphery thereof adjacent its ends so that no part of the mechanism comes in contact with the main peripheral portion of the article.

This step arrangement of the plates 13 forming the arms 8 and 9, also is of assistance in properly aligning the cylindrical articles which are transferred thereby from the conveyor to the machine. The arms 8 and 9 may be provided with handles 14, for manual operation of the apparatus.

The operation of the above described apparatus is as follows:

The arms 8 and 9, due to the effect of the counterweight 12, or the weight of the terminal portions 10 and 11 on the opposite side of the vertical plan passing through the fulcrum point for the apparatus will normally be in the broken line position illustrated in Fig. 2, so that any barrels or cylindrical articles such as 15, positioned on the inclined conveyor 4, will be prevented from rolling off from the end of such conveyor. Upon counter-clockwise rotation of the arms as viewed in Fig. 2, the oppositely sloping arcuate portion 10 and 11 of the arms will cause a single cylindrical article such as 16, to be fed to the machine in the manner which is apparent from an examination of Fig. 2. The arcuate portion 10 will engage the next succeeding barrel or cylindrical article and prevent the same from rolling down the conveyor during the feeding operation of the article 16, and permit the arms upon release by the operators, to again resume a substantially vertical position preparatory to the next feeding cycle.

It is believed that a further description of the principles described in my invention is unnecessary for those familiar with the art, suffice it to say that numerous minor changes in the above described construction may be made without departing from the principles of my invention, and without losing any of the desirable advantages obtained thereby.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In apparatus of the class described, the combination of a pair of laterally spaced arms provided with inwardly sloping surfaces, said arms pivotally supported on a transverse axis and on one side of their center of gravity so as to normally occupy a substantially vertical position, said arms provided with arcuate terminal portions adapted to engage cylindrical articles upon an inclined conveyor and singly feed the same on to said arms upon pivotal movement thereof.

2. In apparatus for singly feeding cylindrical articles from an inclined supporting means on to other receiving means, a pair of pivotally mounted arms provided with oppositely laterally sloping article-engaging surfaces, and arcuate terminal portions which, upon pivotal movement of said arms, permit only a single article to pass from such supporting means on to said arms.

3. In apparatus of the class described, the combination with an inclined conveyor adapted to support cylindrical articles of varying lengths, a shaft adjacent the terminal of said conveyor, a pair of laterally spaced arms pivotally supported intermediately of their ends by said shaft, the terminal portions of said arms adjacent said conveyor provided with longitudinally extending oppositely laterally sloping portions for engaging such articles only on their chime rings and for singly feeding such articles from said conveyor on to said arms upon pivotal movement of said arms.

Signed by me this 11 day of September 1930.

KARL F. SNOW.