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[56] **References Cited**
UNITED STATES PATENTS
 1,680,024 8/1928 Koerner 53/59X

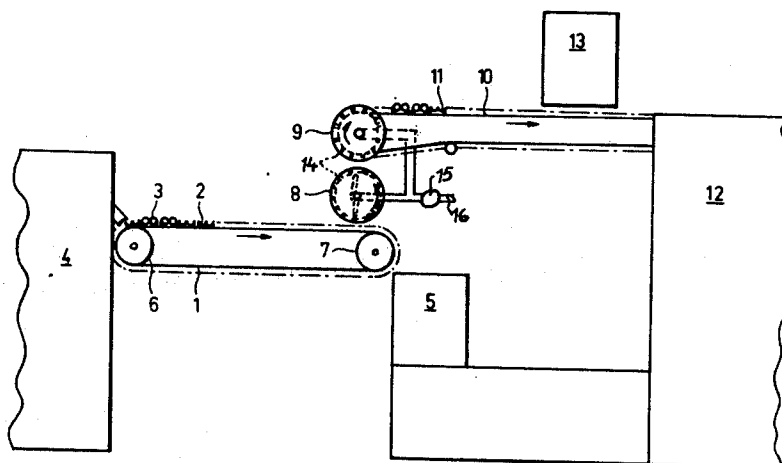
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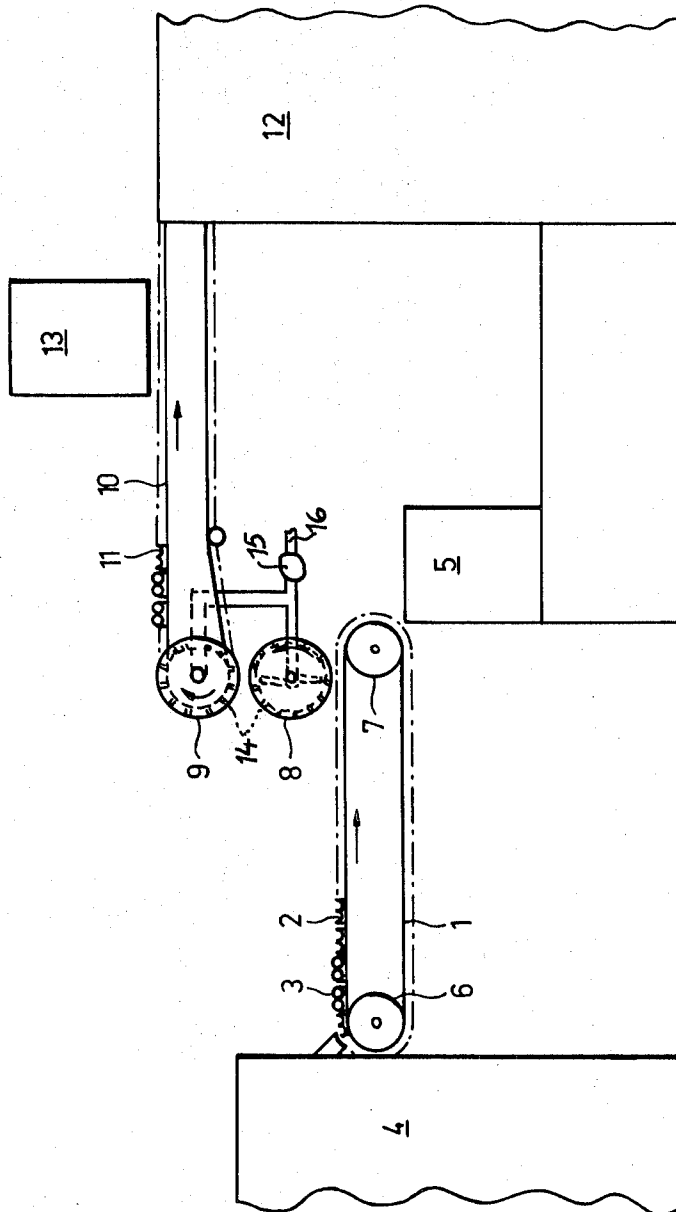
[54] **DEVICE FOR CONVEYING CIGARETTES FROM A CIGARETTE MANUFACTURING MACHINE TO A PACKAGING MACHINE**
3 Claims, 1 Drawing Fig.

[52] U.S. Cl..... **198/75,**
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ABSTRACT: A device for conveying cigarettes from a cigarette manufacturing machine to a cigarette packaging machine, comprising a conveyor for the cigarettes, a first container for the cigarettes, a switchover means adapted to actuate the conveyor to deliver the cigarettes, in dependence of the condition of the switchover means, alternatively to the packaging machine or to said first container, a second container for cigarettes, and means for alternatively feeding the packaging machine with cigarettes from said second container.





DEVICE FOR CONVEYING CIGARETTES FROM A CIGARETTE MANUFACTURING MACHINE TO A PACKAGING MACHINE

The present invention relates to a device for transferring cigarettes or similar rodlike products from a cigarette manufacturing machine to a cigarette packaging machine or similar machines for use in the mass production and packaging of rod like products.

In the manufacture and packaging of cigarettes the cigarettes are usually stacked at the cigarette making machine in portable containers, which are then conveyed, manually or automatically, to the cigarette packaging machine. Should one of the machines suffer a temporary breakdown, it is still possible to maintain production rate, using the remaining machine, provided that there is available a sufficient reserve of both empty and filled containers.

In the case of rapidly operating machines, it is difficult to maintain a reserve supply of this nature and attempts have been made to build up a variable reserve of cigarettes by conveying an elongated stack of cigarettes resting on a conveyor belt from the cigarette manufacturing machine to the packaging machine. In both instances, however, the conveying devices are very complicated and bulky.

The object of the present invention is to provide a suitable conveying device, which is not encumbered with the above described disadvantages. This is achieved according to the invention by arranging a conveyor provided with changeover or switching means to receive the cigarettes from the cigarette manufacturing machine and, in dependence of the condition of the conveyor switching device, to deliver the cigarettes either to the packaging machine or to a device for stacking cigarettes in a portable container, in addition to which an arrangement is provided for alternatively supplying cigarettes in a known manner to the packaging machine from another portable container. Thus a flow of cigarettes is normally fed immediately between the machines. In the event of a packaging machine breaking down the machine is disconnected from the conveyor by the switching device and the cigarettes are collected in an empty transportable container, which, if necessary, can be exchanged for a new one, when it has been filled. Such devices for collecting cigarettes are well-known and will not be described here. Should a breakdown occur in the cigarette manufacturing machine operation of the packaging machine can be maintained temporarily by supplying the same from filled containers, which is also a well-known technique for packaging cigarettes.

The invention will now be described in detail with reference to the accompanying drawing, which diagrammatically shows an embodiment of the invention for conveying cigarettes.

The device has a first endless conveyor belt 1, provided with grooves 2, in which cigarettes 3 from a cigarette manufacturing machine 4 are conveyed towards an empty container 5 transversely to their direction of movement. The belt 1 moves over two rollers 6, 7 and the cigarettes can be fed into the container 5. Above the belt 1 there is positioned a first rotatable roller 8 and a second rotatable roller 9, which are provided

with suction holes 14 around the periphery thereof, and connected via a valve device to a suction line 16. The rollers 8, 9 are designed to normally engage the cigarettes 3 on the belt 1 by suction effect and, after transfer from roller 8 to roller 9, deliver the cigarettes to a second endless belt 10, provided with grooves 11 for the cigarettes. The belt 10 passes over the centre portion of the roller 9, which is somewhat less in diameter than the outer ends of the roller, and over a roller (not shown) journaled in the packaging machine 12. In the event of the packaging machine 12 breaking down, the rollers 8, 9 are disconnected from the suction line, whereby the cigarettes on the belt 1 are fed into the container 5.

In order to continue operating the packaging machine in case of a breakdown on the cigarette manufacturing machine 4, there is provided another device for feeding cigarettes to the belt 10 from a filled container 13 situated above the belt 10. This device as well as the suction rollers 8, 9 are well known per se and will not be described in detail here.

The design of the device shown in the drawing is dependent on the position of the discharge means of the cigarette manufacturing machine and the position of the feed means of the cigarette packaging machine. When concerning other types of machines it is possible to feed the cigarettes by the belt 1 directly to the packaging machine and if this machine should break down to lift the cigarettes from the belt by means of rollers 8, 9 and feed these cigarettes to the container 5. Furthermore, the rollers 8, 9 can be substituted by one or more endless belts provided with suction holes and the belts 1, 10 may be arranged sloping.

We claim:

1. A device for conveying cigarettes from a cigarette manufacturing machine to a cigarette packaging machine, characterized in that a conveyor (1, 10) provided with a switchover means (8, 9) is adapted to receive cigarettes (3) from the cigarette manufacturing machine (4) and, depending upon the condition of the switchover means, to deliver the cigarettes alternatively to the packaging machine (12) or to a device for collecting cigarettes in a portable container (5), and in that a device is provided for alternatively feeding the packaging machine (12) in a manner known per se with cigarettes from another portable container (13).

2. A device according to claim 1, characterized in that the conveyor is provided with a first endless belt (1) for transferring the cigarettes (3) to the device for collecting the cigarettes in a transport container (5), a second endless belt (10) for transferring the cigarettes to the packaging machine (12), and a switchover means provided with at least one rotatable roller (8, 9) and by means of which the cigarettes on the first belt (1) are engaged and transferred to the second belt (10), depending upon the presence or absence of a suction effect through suction holes disposed on the periphery of the roller or rollers (8, 9).

3. A device according to claim 2, characterized in that the device for alternative feeding of the packaging machine with cigarettes from an additional portable container (13) is adapted to feed the cigarettes to the second endless belt (10).