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MEANS FOR INTRODUCING MATERIALS BETWEEN ROLLERS

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Fig. 1

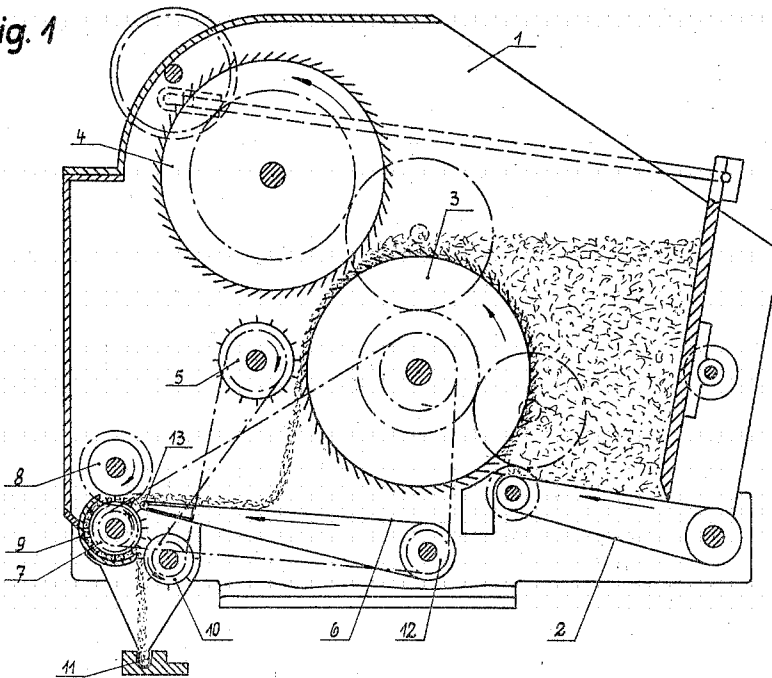


Fig. 2

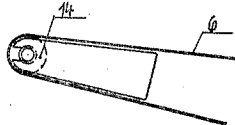
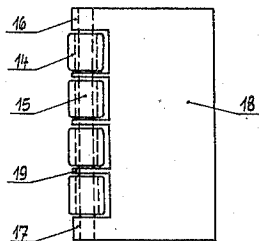


Fig. 3



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MEANS FOR INTRODUCING MATERIALS BETWEEN ROLLERS.

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In many cases the problem arises of introducing such materials as cut tobacco, paper blanks, pasty masses or the like, the constituents of which, such as fibres or the like, have a certain amount of loose cohesion, between feed rollers, which subject the material to a further treatment, as for example spiked rollers in the case of tobacco spreaders, or squeezing rollers in the case of pulps containing moisture, such as paper pulps or the like. When an endless band is employed for the feeding of materials, this band, as is known, must be passed over at least two guide rollers, the guide roller adjacent to the pair of feed rollers then having to be placed as near as possible to the angle between the feed rollers. The farther the guide roller is shifted into the angle between the feed rollers the smaller must its diameter be, but the smaller the diameter of the guide roller is, the more it is exposed to deflections, so that even in the case of strips of moderate breadth, which involve feed rollers of a corresponding breadth, the diameter of the guide roller cannot on this ground be reduced below a comparatively large minimum dimension. Hence the usual guide rollers cannot be advanced so far into the angle between the feed rollers as to enable a bridge to be dispensed with for transferring the material leaving the endless band into the gap between the feed rollers.

Now the object of the present invention is to make this bridge unnecessary, so that the material can be delivered by the band completely into the angle between the feed rollers, and given up to the feed rollers without tearing or dropping. For this purpose the guide roller in question is formed, in a manner known in itself, from a plurality of hollow tubes of small diameter with boxed-in lubricating packing, which is so supported as to be freely rotatable upon a fixed shaft, the shaft being supported between the individual hollow tube elements by bearing eyes carried by the bearing body. Thus the device known in the art by the designation "oilless bearing" is utilized, with which the diameter can be so far reduced that the guide roller is shifted practically right up to the gap between the two feed rollers. The deflection of the guide roller shaft is prevented by the bearing eyes supporting the shaft between the separate tubular elements. The

bearing which now extends stripwise over the entire length of the shaft can be readily adapted to the small diameter of the guide roller.

In the accompanying drawings is illustrated by way of example a tobacco spreader for cigarette machines, wherein the band formed in the tobacco spreader is to be fed to a pair of rollers, between which the tobacco band is rolled flat but is to be carried along by spikes on one of the rollers.

In these drawings:—

Figure 1 is a longitudinal sectional elevation, and

Figures 2 and 3 show in side elevation and in plan respectively the guide roller in question, with its bearing.

The tobacco spreader consists of a container 1, in which is provided a circulating conveyor band 2, which feeds the tobacco to a known spiked roller 3. Above the spiked roller 3 there is a scraper roller 4, which produces the tobacco fleece on the spiked roller 3. The tobacco fleece is then taken off by a beater roller 5, so that the tobacco falls on to an endless band 6. The belt conveyor 6 is intended for feeding the tobacco to a further pin roller 7, above which a pressure roller 8 is arranged, which forces the tobacco into the gaps between the pins on the pin roller 7. Round the pin roller is placed a concentric cover surface 9, by which the tobacco fleece situated upon the pin roller 7 is held until it arrives within reach of the pins on a further removing or stripper roller 10, which scrapes the tobacco off the pin roller 7, whereupon the tobacco drops on to a conveyor belt 11. The conveyor belt 11 delivers the tobacco to the cigarette machine.

The conveyor belt 6 passes at one end over a guide roller 12 and at the other end over a guide roller 13.

In order to enable the guide roller 13 to be introduced as far as possible into the angle between the two rollers 8 and 9, the said roller 13 has been given a very small diameter in comparison with the guide roller 12. Under these circumstances, in order to guard against this roller of comparatively small diameter deflecting, it must be supported at a number of points.

According to the invention therefore the roller 13 consists of a plurality of hollow tubular elements 14, having boxed-in lubri-

cating packing. The hollow tubular elements 14 are rotatably mounted upon a fixed shaft 15, the ends of which rest in bearing eyes 16 and 17 in a bearing 18 extending strip-wise across the entire breadth of the belt conveyor. The shaft 15 is protected against distortion in any convenient manner. The hollow tubular elements 14 may be arranged at such distances upon the shaft 15 that between the individual tubular elements there remains sufficient space for additional bearing eyes 19, which are likewise provided on the bearing 18, and support the shaft 15 at a number of points. In this way it is possible to give the shaft 15 an extremely small diameter without danger of undue bending, so that this shaft, with the tubular elements 14 slipped on to it, can be introduced right into the angle between the two rollers 8 and 9. The arranging of special lubricating appliances for the tubular elements 14 here serving as guide rollers for the conveyor belt 6 is unnecessary, because these tubular elements are constructed in a known manner as "oil-less bearings".

What I claim is:

1. The combination, with a pair of operatively coacting feed rollers, of a bearing body

arranged so as to project into the angle between the feed rollers, bearing eyes on the portion of said bearing body projecting into said angle, a fixed shaft supported in said bearing eyes, a plurality of tubular elements of small diameter rotatably mounted on said fixed shaft between said eyes and a conveyor band passed over said tubular elements for introducing materials, of the kind described between said feed rollers.

2. The combination, with a pair of operatively coacting feed rollers, of a bearing body arranged so as to project into the angle between the feed rollers, bearing eyes on the portion of said bearing body projecting into said angle, a fixed shaft supported in said bearing eyes, a plurality of self-lubricating tubular elements of small diameter having lubricant retaining means enclosed in their interiors rotatably mounted on said fixed shaft between said eyes and a conveyor band passed over said tubular elements for introducing materials of the kind described between said feed rollers.

In testimony whereof I have signed my name to this specification.

AUGUST CURT WEHNERT.