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(54) Device for paper coating

(57) There is disclosed a paper coating device for applying a coat on a paper strip (10) advancing between a pair of horizontally overlapping rolls (11, 12), of which the lower roll (12) picks up the coat from a coat containing tank (13) and applies the coat to the lower face of the paper (10). Immediately downstream of the rolls (11, 12) there is provided a deflector (20) adapted for picking and removing the coat splashes coming from the rolls. The deflector (20) has a lower edge located above the tank, and an upper edge (21) located proximate to the paper (10). The distance of the upper edge from the paper can be adjusted.

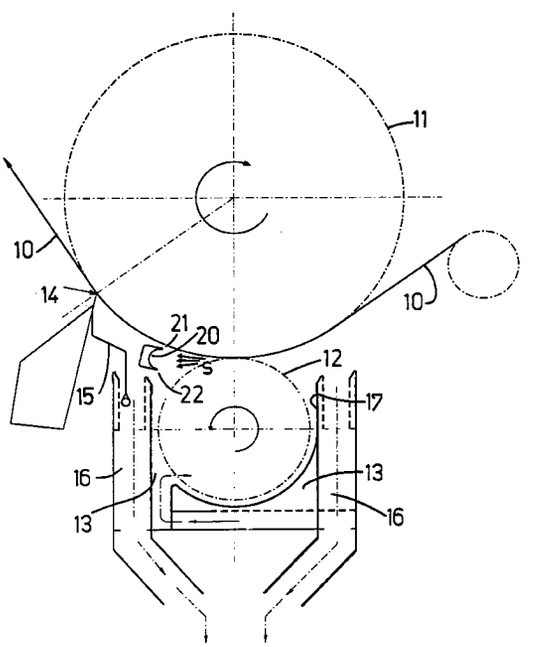

FIG.2

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Description

The present invention falls within the field of paper processing. More particularly, the invention relates to a an improved device for paper coating.

A conventional paper coating system is schematically illustrated in FIG. 1 of the attached drawings. The paper 10 to be coated is passed through an assembly comprised of two flanked rolls: an upper roll 11, commonly known as backing roll, and a lower applicator roll 12. The lower roll 12 picks the coat up from a tank 13 and applies it to the lower face of the paper 10. At the assembly output there is provided a blade device 14 calibrated so as to scrape off the coat in excess from the paper and direct it through a shoot 15 to a discharge 16 from where it is gathered and recycled, optionally after being cleaned or conditioned.

A limit encountered with the above kind of device is apparent when the coat is applied at high speed. Such a limit is mainly concerned with the splashes occurring when the rolls are spinning at high speed. An attempt to overcome this drawback has been made by reducing the speed of the rolls, but this obviously slows down the production.

Against the foregoing background, it is the primary object of the present invention to provide an improved paper coating device allowing to apply the coat at higher speed, thereby eliminating the inconveniences due to the splashes.

It is another object of the present invention to provide a device capable of improving the application of the coat on the paper by adjusting the coat level in the tank.

To meet these and other objects, the invention provides an improved paper coating device as claimed in claim 1. Other important features of the invention are defined in the dependant claims.

In order that the present invention may be well understood there will now be described two preferred embodiments thereof, given by way of example, reference being made to the accompanying drawings, in which:

FIG. 1 schematically depicts a cross sectional view of a prior art paper coating device;

FIG. 2 schematically depicts a cross sectional view of a paper coating device according to the present invention; and

FIG. 3 illustrates a variant of the device of FIG. 2.

Reference is made initially to the FIG. 2, wherein like numerals are used to designate like parts already discussed in the introductory part of the description to discuss the prior art device of FIG. 1. In summary, a paper strip 10 advances between a pair of overlapping horizontal rolls 11 and 12. The lower roll 12 picks up in coat from the coat tank 13 and applies it to the lower face of the paper.

The coat splashes S, that occur when the rolls 11, 12 exceed a certain rotational speed, are directed substantially tangent to the rolls in their contact zone, in the direction of advancement of the paper 10.

According to the present invention, in the zone immediately downstream of the rolls there is provided a deflector 20 adapted for picking and remove the coat splashes coming from the rolls. Preferably, the system by which the deflector 20 is fixed will be such as to allow to adjust the distance of the paper and/or the orientation of the deflector. As shown, the upper edge 21 of the deflector 20 is located proximate to the paper 10 but without contacting it. The lower edge 22, form where the coat splashed on the deflector drops, is above the tank 13, so that the coat can fall back into the tank directly to be applied on the paper again. In the preferred embodiment, the deflector 20 has a curved shape, its concavity facing the direction opposite to that in which the paper advances.

With reference to the variant of FIG. 3, the deflector 20 is fitted with a blade 23 the position of which can be adjusted to bring it closer to or further away from the paper, according to requirements.

Still in accordance with the present invention, in order to optimise the coat level in the tank 13, and therefore improve the application of coat on the paper, at the top of a vertical wall 17 of tank 13 there is provided a height adjustable overfall 24 by means of which the coat level in the tank can be raised or lowered. The coat in excess is poured into a discharge 16 adjacent to the tank 13. The combined use of the adjustable overfall and the adjustable deflector allows for a better control of the splashes.

As will be apparent, the new features of the present invention allow to overcome the speed limits of conventional paper coating devices making use of an applicator roll and a backing roll. At high coating speed, the splashes are considerably reduced. Further, as the deflector permits also to immediately recycle the clean coat, as a result it also allows to reduce the rate of coat being supplied.

While specific embodiments of the invention have been disclosed, it is to be understood that such disclosure has been merely for the purpose of illustration and that the invention is not to be limited in any manner thereby. Various modifications will be apparent to those skilled in the art in view of the foregoing example.

Claims

1. A paper coating device for applying a coat on a paper strip (10) advancing between a pair of horizontally overlapping rolls (11, 12), of which the lower roll (12) picks up the coat from a coat containing tank (13) and applies said coat to the lower face of the paper (10), characterised in that immediately downstream of said rolls (11, 12) there is provided a deflector (20) adapted for picking and removing the coat splashes coming from said rolls.

2. A paper coating device as claimed in claim 1, characterised in that the deflector (20) has an upper edge (21) located proximate to the paper (10) without contacting it.

3. A paper coating device as claimed in claim 2, characterised in that the position of said upper edge (21) is adjustable so as to bring it closer to or further away from the paper (10).

4. A paper coating device as claimed in claim 3, characterised in that the said upper edge (21) forms part of a blade member (23) slidably mounted on said deflector (20).

5. A paper coating device as claimed in claim 1, characterised in that the deflector (20) has a lower edge (22) located above said tank (13).

6. A paper coating device as claimed in claims 2 and 5, characterised in that said deflector (20) has a curved shape, its concavity facing the direction opposite to that in which the paper (10) advances.

7. A paper coating device as claimed in claim 1, characterised by comprising a height adjustable overfall (24) at the top of said tank (13) for raising or lowering the level of the paper coat in the tank.

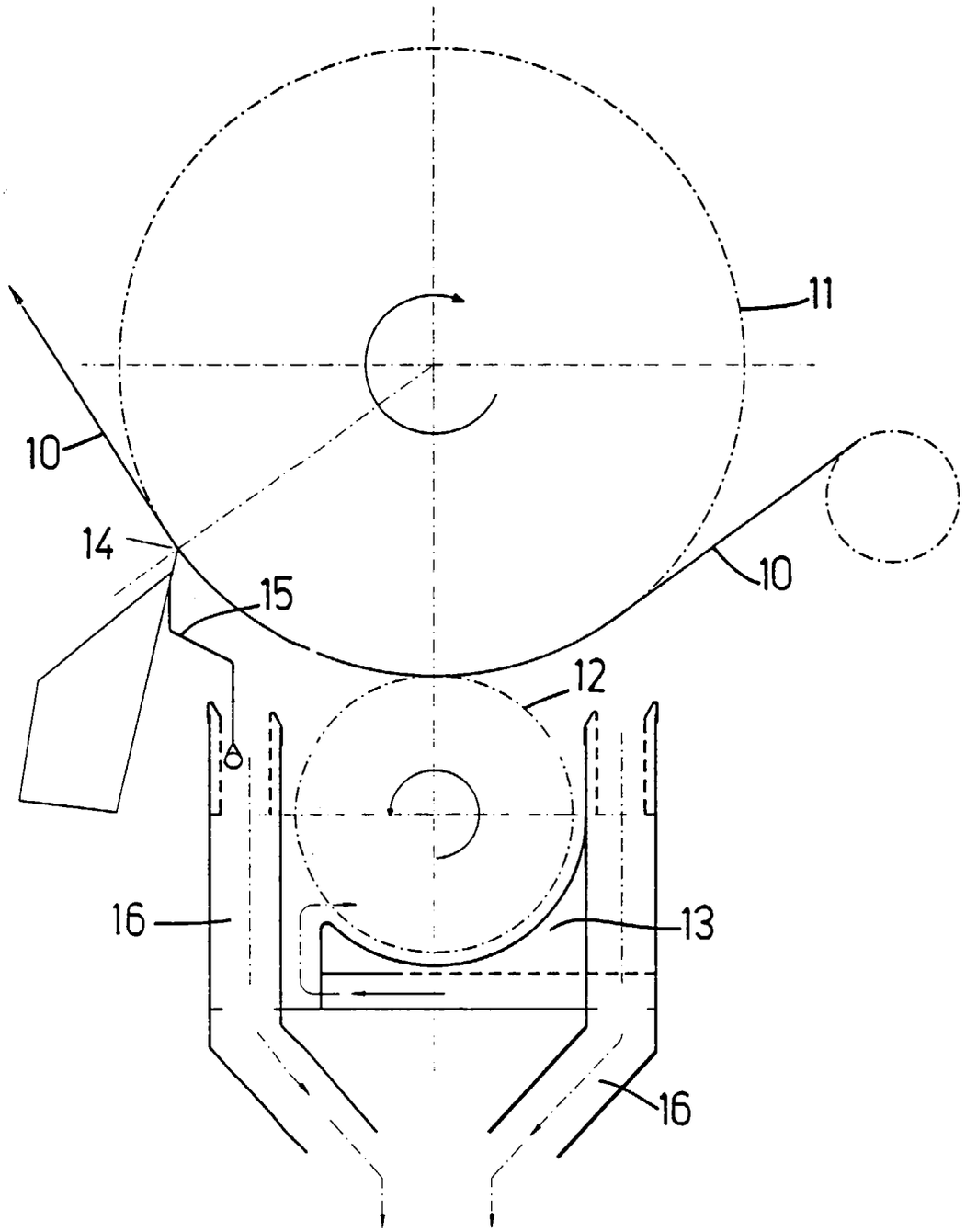

FIG. 1

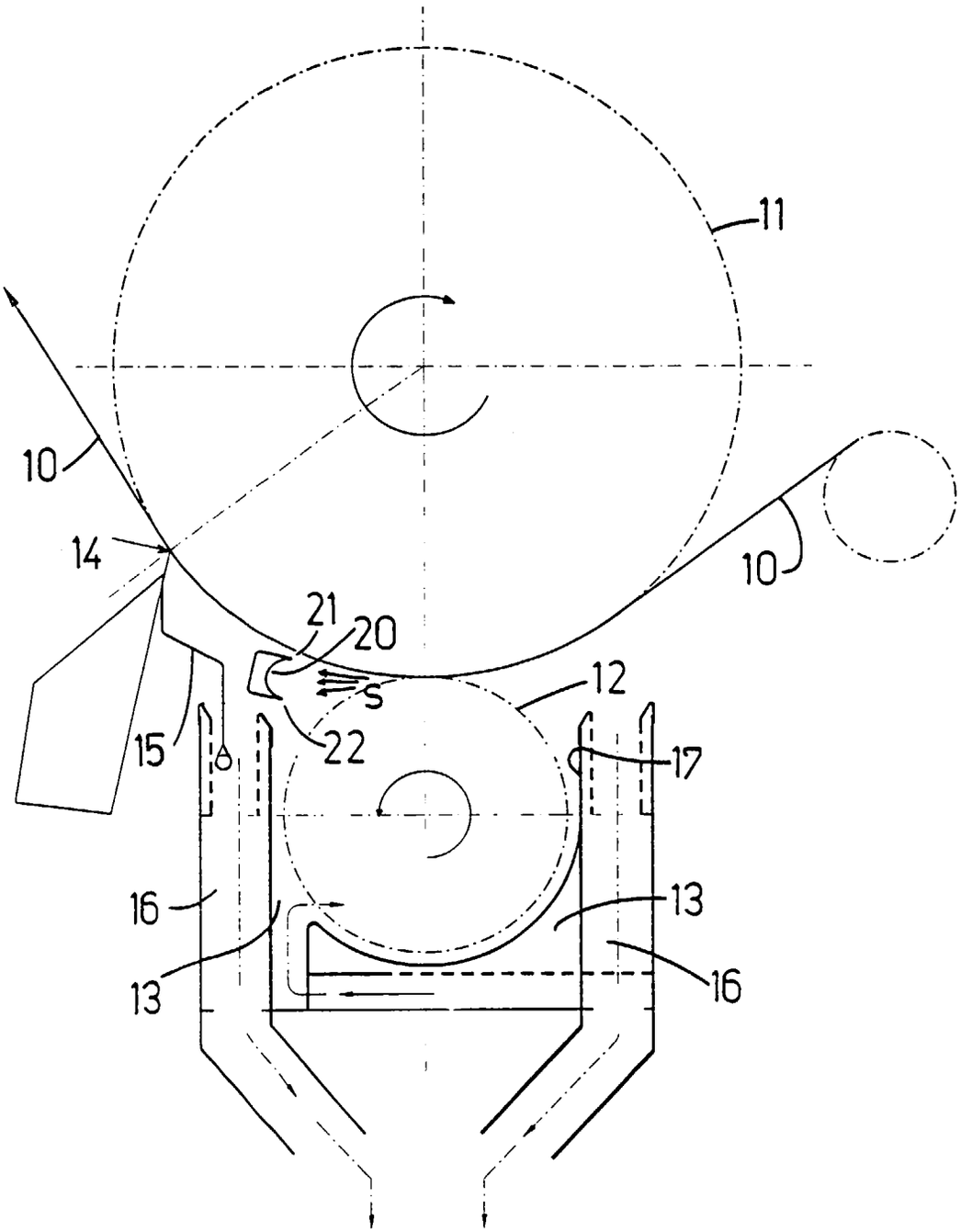

FIG.2

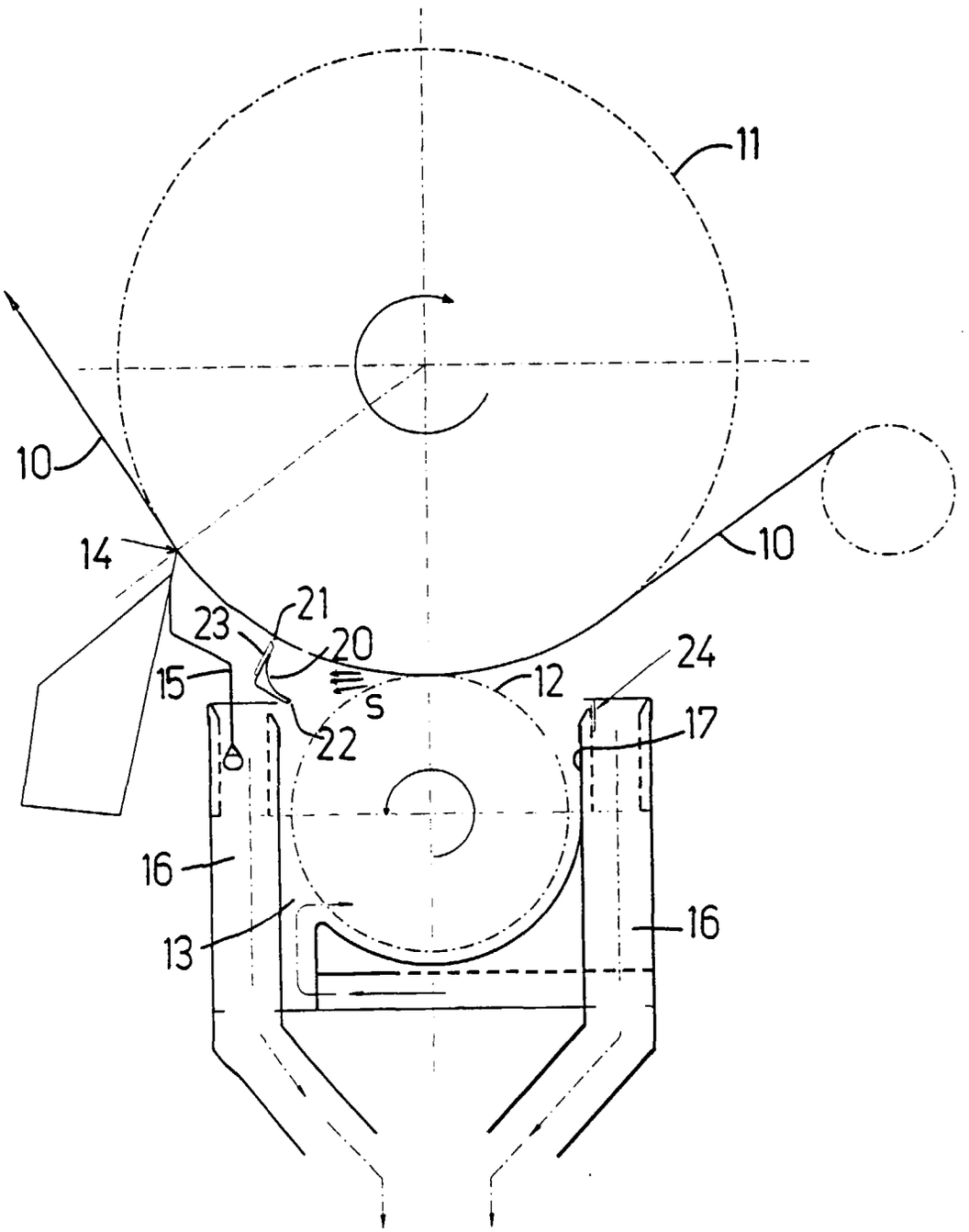

FIG.3