May 25, 1937. J. R. BURGESS 2,081,320

DOCTOR BLADE FOR ROLLS, TRAVELING WEBS, AND THE LIKE

Filed Aug. 10, 1935

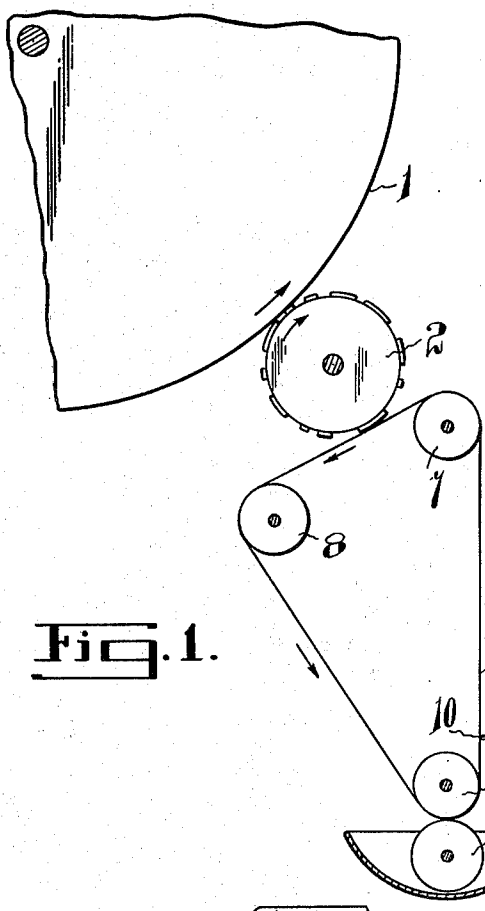


Fig. 1.

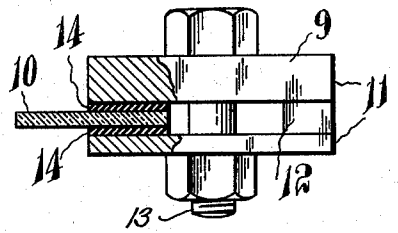


Fig. 2.

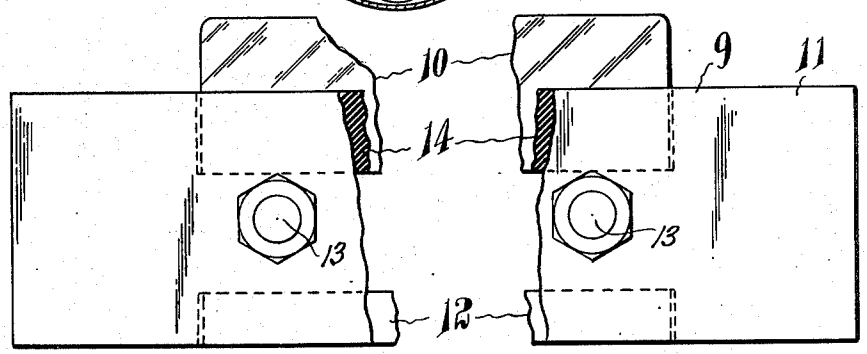


Fig. 3.

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DOCTOR BLADE FOR ROLLS, TRAVELING WEBS, AND THE LIKE

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1 Claim. (Cl. 91—18)

This invention relates particularly to the doctor blades used in connection with wall paper printing apparatus to spread the color as well as remove any excess color from the roll or traveling web which carries the color from the color pan to the printing roll, although it is applicable also to doctor blades used in connection with other printing; paper-coating or even paper-making apparatus.

In such wall-paper printing apparatus the doctor blade has usually been provided with a scraper formed from sheet brass or similar metal and clamped between a pair of iron or steel retainers. The scraper is subjected to considerable wear and has to be frequently replaced, and further the retainers become pitted by the color, and consequently it is necessary to clean them and frequently replace them in order that the scraper blade may be mounted sufficiently straight to obtain proper application of the color.

To overcome the difficulties just referred to, I have devised an improved construction of blade in which the scraper element is formed of glass, which is preferably supported between plies of rubber or other suitable resilient material, which are in turn positioned between the steel retainers.

The construction is hereinafter described and illustrated in the accompanying drawing in which

Fig. 1 is a diagrammatic view showing a typical application of a doctor blade to paper-printing apparatus;

Fig. 2 a plan view of the doctor blade; and

Fig. 3 a cross section through the same.

In the drawing like numerals of reference indicate corresponding parts in the different figures.

Referring to Fig. 1, 1 indicates a cylinder around which the web of paper to be printed is passed, and 2 the printing roll. The color is supplied to the printing roll from a color pan or receptacle 3 through the medium of a pick-up roll 4 which transfers the color to an endless web or sieve cloth 5 traveling over a series of rolls 6, 7 and 8, which web engages the printing roll to apply color thereto.

To make sure that the cloth 5 is evenly coated, with ink for the full width of the printing surface, a doctor 9 is mounted to engage the traveling cloth 5 for the purpose of spreading the color or coating material as well as removing any excess material, and it is with the construction of this doctor 9 that the present invention is particularly concerned.

The doctor 9 is constructed as follows. 10 indicates the blade proper or scraper element, which in this case is formed of glass having its web engaging edge ground and polished to provide a smooth straight edge. The glass may be of any thickness, although I find ordinary double diamond glass quite suitable. The blade 10 is mounted in a suitable holder which comprises a pair of steel retainers 11, normally held in spaced relationship by a spacer 12 and secured together by bolts 13.

The glass blade 10 is preferably of lesser thickness than the spacer 12, and at each side of the blade is provided a strip 14 of rubber or other packing material of a type adapted to be compressed by the retainers and at the same time frictionally hold the blade in place without damaging it.

I find that the glass blade possesses a number of advantages over the prior blades. The glass is more rigid and therefore does not get out of shape. It does not wear quickly and therefore lasts a long time. The glass has little flexibility and is therefore easier to install in its holder.

As stated above the color tends to cause pitting of the retainers, and I therefore prefer to make these of stainless or similar steel less liable to the pitting action.

While I have shown the doctor blade as having a square work-engaging edge, it may be provided with a rounded edge, or even a blade of circular or other suitable cross section may be employed.

What I claim as my invention is:—

In a doctor, the combination of a pair of rigid retainers, a glass blade mounted between said retainers and extending beyond the forward edge thereof, resilient packing between each face of the blade and the adjacent retainer, and means for securing said retainers and blade together, and spacing means between said retainer for limiting the compression of the packing.

JAMES ROY BURGESS