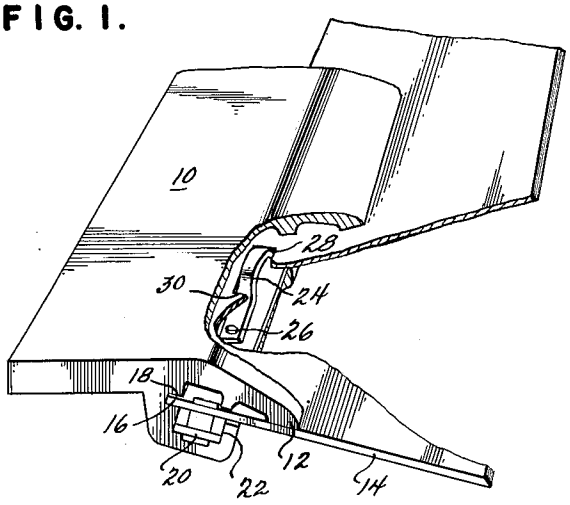
Nov. 29, 1955 H. E. B. SCOTT 2,724,999

LOCKING MEANS FOR DOCTOR BLADES

Filed May 12, 1952

FIG. 1.



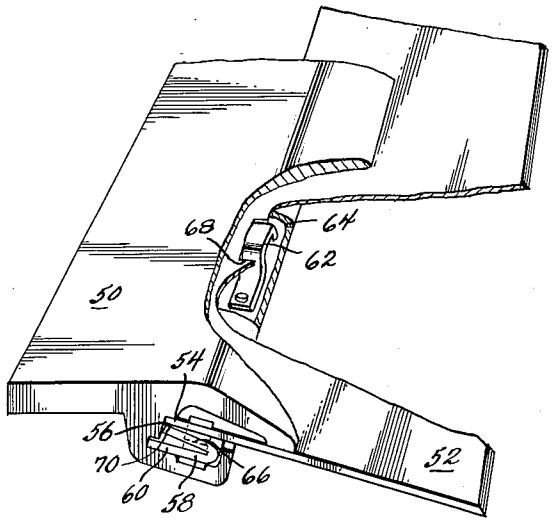


FIG. 2.

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LOCKING MEANS FOR DOCTOR BLADES

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3 Claims. (Cl. 92—74)

It is an object of this invention to provide locking means for a doctor blade which will permit edgewise removal of the blade from the holder and which will also permit lengthwise withdrawal of both blade and locking means from the holder, with consequent removal of any accumulated fuzz.

It is a further object of this invention to provide locking means as aforesaid which, in addition, afford a resilient support for the back edge of the blade.

The above and other objects will be made clear from the following detailed description, taken in connection with the annexed drawings, in which:

Figure 1 is a perspective view, partially in section, showing the improved assembly of blade, holder and locking means; and

Figure 2 is a similar view showing a modified form of locking means.

Doctor blades are used to clean practically every roll in a paper machine and extend the full width of each roll to which they are applied. It has long been established that such blades should be free to flex so as to conform to any inequalities in the surface of the roll. Since the function of the blade is to remove pulp particles from the roll against which the blade bears, there is constantly accumulating a body of pulp or "fuzz" which at times works into the blade holder and packs in tightly enough to interfere with proper flexing of the blade. When this occurs, edgewise removal of the blade from the holder is extremely difficult and most of the holders now in use will permit only an edgewise removal. The present invention contemplates a locking means which, while permitting edgewise removal of the blade, also permits lengthwise removal of both the blade and the locking means, which removal simultaneously will clean out the slot of the holder and recondition the blade for proper use.

Referring now to Figure 1 there is shown a blade holder **10** having a forward edge **12** bearing on a blade **14**. The rear edge **16** of the blade **14** enters a slot **18** in the holder **10**. A strip of metal **20**, coextensive in length with the blade **14**, lies in a slot **22** in the holder **10** and has at intervals along its length pieces of spring metal **24** riveted thereto as shown at **26**. These springs **24** normally enter slots **28** formed adjacent the rear edge **16** of the blade **14** and when the springs **24** are engaged with the slots **28** they prohibit edgewise removal of the blade from the holder. If edgewise removal is desired the blade **14** is held stationary and the strip **20** is drawn endwise in the direction of the rivets **26**. This action compresses the springs **24** against the ends **30** of the slots **28**. The compression pushes the springs **24** down into the plane

of the lower surface of the blade **14** which may then be removed edgewise from the holder.

If, due to an accumulation of fuzz, edgewise removal of the blade would be difficult, then both the strip **20** and the blade **14** may be drawn together endwise out of the holder, after which they can be separated, cleaned and restored to position.

Referring now to Figure 2 there is shown a holder **50** and a blade **52** having its rear edge **54** in a slot **56** in the holder **50**. A U-shaped strip **58** has secured to its lower leg **60** a series of springs **62** similar to the springs **24** described with reference to Figure 1. The springs **62** protrude through slots **64** in the upper leg **66** of the U-shaped strip and this protrusion is sufficient to enable the springs to enter slots **68** in the blade **52**, the engagement being precisely similar to the engagement of springs **24** with the slots **28** of Figure 1. The rear edge **54** of the blade **52** bears on the edge **70** of the upper leg **66** of the U-shaped strip **58**. This constitutes a spring and affords resilient support for the rear edge **54** of the blade **52**.

Edgewise withdrawal of the blade is accomplished precisely as has been described with reference to Figure 1. The blade is held still and the strip is moved lengthwise enough to cam the springs **62** out of the slots in the blade while for lengthwise removal the blade **52** and the U-shaped strip **58** are simultaneously withdrawn from the holder.

While specific embodiments of this invention have been described, it is not intended to limit the invention to the precise details disclosed but only as set forth in the subjoined claims.

I claim:

1. A doctor blade assembly for use on paper machines comprising: a rigid, elongated blade holder; an elongated flexible blade; said holder having a groove extending throughout its length and receiving the rear edge of said blade, the width of said groove exceeding the thickness of said blade, said blade having a series of spaced perforations adjacent its rear edge; an elongated relatively rigid blade locking member in said holder and slidable lengthwise of said holder parallel to said groove; a series of mutually independent short springs each secured at only one of its ends to said locking member, said springs being sized and spaced to enter the perforations in said blade to lock the same against edgewise displacement and being curved relative to the plane of the blade so that upon relative lengthwise movement, within said holder, between the blade and the locking member, said springs will be cammed out of said perforations.

2. A doctor blade assembly as set forth in claim 1 in which the locking member is U-shaped in transverse cross-section.

3. A doctor blade assembly as set forth in claim 2 in which the under side of the rear edge of the blade bears on one arm of the U-shaped locking member.

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