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BROKE AND FUZZ REMOVER FOR DOCTORS

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FIG. 1

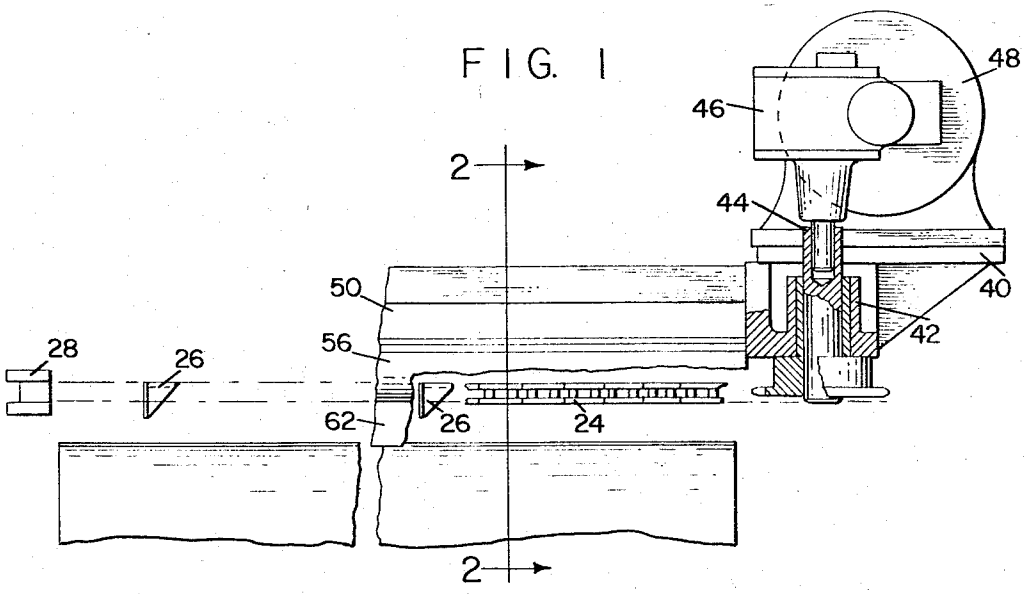
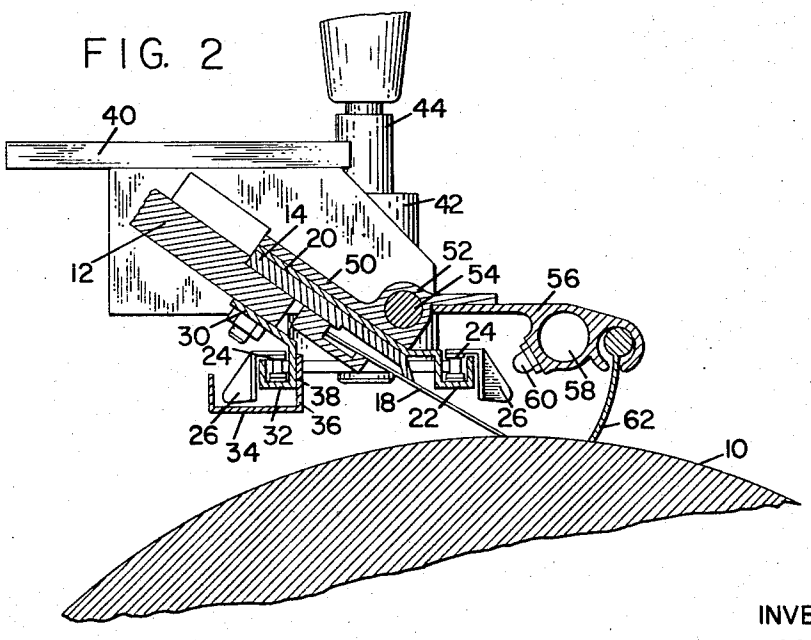


FIG. 2



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BROKE AND FUZZ REMOVER FOR DOCTORS

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This invention relates to a new and improved continuous broke and fuzz removing attachment adapted to be applied directly to the doctor back for a doctor blade. The principal object of the invention resides in the provision of a more simple and effective construction which may include the use of mechanical means for sweeping over the surface of the doctor blade continuously to remove any accumulation particularly of wet material clogging the blade, the present construction particularly lending itself to the application also of pneumatic means for directing jets of air against the doctor blade to quickly and easily blow loose dry fuzz to one side of the machine where it may be collected in the usual manner.

A further object of the invention resides in the provision of a device of the class described which is quickly and easily applied to an already existing doctor blade and comprising in general an endless chain which circulates about the edge of the doctor blade holder and one effective run just in front of the blade, and the reverse run which is located in back of the holder. This chain is mounted upon its own novel support, part of which is secured to the front side of the blade holder, and the other part being secured to the doctor back at the rear side. The front part also serves to mount the pneumatic means for blowing the dry fuzz.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which:

FIG. 1 is a general plan view with parts broken away to better illustrate the invention, and

FIG. 2 is a section on an enlarged scale on line 2—2 of FIG. 1.

The surface to be doctored is conveniently indicated as being a roll surface, the reference character **10** indicating this surface. The doctor back is indicated at **12** and this doctor back may be mounted as usual on trunnions or the like for the purpose of angularly adjusting the same, the doctor back being generally conventional.

A doctor blade holder includes an elongated clamping portion at **14** mounted at the forward side of the doctor back, and a shorter part **16** holds the blade **18** in a more or less conventional manner, in position to doctor the surface **10**. During the doctoring operation, fuzz collects on the blade and also sometimes broke will tend to collect in this area. Sometimes this fuzz and broke is light and dry and sometimes it is wet and clings.

Mounted on the doctor blade holder member **14** there is an elongated plate **20** which extends substantially from side to side of the machine, this being conveniently formed of a relatively heavy gauge sheet metal or the like. This elongated plate extends downwardly along the surface of the doctor blade holder member **14** but extends out beyond it terminating in an upwardly open longitudinally extending channel **22** which acts as a track for one run of a chain or the like **24**. Thus it will be seen that this run of the chain extends along the entire doctor blade or substantially the entire length thereof just above the operative area of the blade.

Paddles of any convenient description such as at **26** can be secured to the chain **24** at spaced intervals and as shown in FIG. 1 they ride along with the chain just above the doctor blade, see FIG. 2, and mechanically scrape

wet clinging material to a side of the machine where it may be collected.

At one side of the machine there is provided a return element for the chain such as is indicated at **28** in FIG. 1 and this member provides a skid or the like for turning the chain from the active run in front of the doctor blade to the return run behind the doctor back. At the lower side of the doctor back there is a plate **30** secured thereto by any desired means and extending in general parallelism with plate **20**. Plate **30** extends downwardly, see FIG. 2, and extends in a reverse direction with respect to the track **22**, forming a complementary track **32** for the non-operating or return run of the chain **24**. The paddles **26** must be free to run along the doctor blade at the operative or forward side thereof, but on the reverse or non-operating run they are conveniently provided with a pan or the like of light weight sheet metal as indicated at **34** for the purpose of preventing drip on the now-already doctored surface **10**. The pan **34** may be a relatively simple channel member but it is preferred that one side thereof as at **36** be somewhat elongated for easy attachment to the vertical portion as at **38** of the plate **30**.

At the side of the machine opposite the return member **28** there may be provided and supported in any way desired a bracket **40**. This will usually be mounted on the frame of the machine in some convenient location and it is provided with a journal **42** containing a rotary shaft **44** which can be driven through a speed reducer **46** by a motor **48**. The motor **48** may be mounted directly on the bracket **40** if desired or it can be mounted elsewhere, depending on the physical configuration of the rest of the machinery.

Therefore it will be seen that a broke and fuzz remover, particularly with respect to wet accumulated material, is easily applied to any existing doctor blade holder and back, it only being necessary to bolt the plate **30** at the under side of the doctor back **12**, and the plate **20** to the forward side of the doctor blade holder. Then arranging the belt with the paddles **26** thereon as shown, the doctor blade is kept free of heavy materials.

If desired however light dry material such as lint may also be continuously removed by pneumatic means. This involves simply the provision of plate **50** on top of plate **20** and they can both be secured in any way desired with respect to the doctor blade holder member **14**. The blade **50** provides the journals **52** for pins or trunnions **54** which in turn mount the forwardly or upwardly extending plate **56**. This plate **56** is provided with an elongated transversely extending air chamber **58** in turn provided with a series of spaced nozzles **60** arranged along it. These nozzles may have apertures directed in the same direction as the travel of the paddles **26** for instance and blow light dry materials to the side of the machine to a collection point. The plate **56** may also be provided with a flexible blade or the like **62** for the purpose of lightly scraping the surface **10** just prior to the doctoring operation by the doctor blade **18**.

It will be seen that a relatively inexpensive broke and fuzz remover may be easily provided for any already existing construction and that it is a very simple matter to attach it thereto and put it in operation. Both the wet heavy materials are mechanically forced to the side of the machine and light dry fuzz, etc. can be blown by the air jets at the nozzles **60** as may be desired. Alternatively the member **56** may be turned up about its axis in the trunnions **54** and placed out of operation if this should be desired.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A broke and fuzz remover for a doctor blade in-

cluding a supporting doctor back and a doctor blade holder mounted on the doctor back, said remover comprising a pair of plates, one of which is mounted at one side of the doctor blade and the other at the opposite side thereof, each plate including a track, one forwardly of the doctor blade as respects the surface to be doctored, and the other to the rear of the doctor blade, a continuous driven element in the track, and paddles on the continuous driven element, said paddles traveling in general along said doctor blade in close association with the doctoring edge thereof and along the length of the doctor blade from one side of the doctored surface to the other.

2. The broke and fuzz remover of claim 1 wherein one of said plates is mounted forwardly of said doctor blade on the doctor blade holder, and the other of said plates is mounted to the rear thereof.

3. The broke and fuzz remover of claim 1 wherein one of said plates is mounted forwardly of said doctor blade on the doctor blade holder, and the other of said plates is mounted to the rear thereof at the edge of the doctor back.

4. The broke and fuzz remover of claim 1 wherein one of said plates is mounted forwardly of said doctor blade on the doctor blade holder, and the other of said plates is mounted to the rear thereof, each plate terminating in an upwardly opening generally U-shaped track member in which is mounted and guided the continuous driven element.

5. The broke and fuzz remover of claim 1 wherein one of said plates is mounted forwardly of said doctor blade on the doctor blade holder, and the other of said plates is mounted to the rear thereof, each plate terminating in an upwardly opening generally U-shaped track member in which is mounted and guided the continuous driven element, said tracks extending in opposite directions from their respective plates.

6. The broke and fuzz remover of claim 1 including means mounted on one of said plates and extending forwardly with respect to said doctor blade and containing an air chamber, a series of nozzles forming passages between the air chamber and the exterior thereof, said nozzles being located to extend toward the doctor blade and being effective to blow air to clean light dry material accumulated thereon.

7. The broke and fuzz remover of claim 1 including means mounted on one of said plates and extending forwardly with respect to said doctor blade and containing an air chamber, a series of nozzles forming passages between the air chamber and the exterior thereof, said nozzles being located to extend toward the doctor blade and being effective to blow air to clean light dry material accumulated thereon, and means pivotally mounting said air chamber containing means on said one plate whereby the chamber may be pivoted between operative and inoperative positions.

8. The broke and fuzz remover of claim 1 including a drip pan mounted on the second-named plate to the rear of the doctor blade and underlying the inoperative run thereof, preventing drip on the doctored surface.

9. The broke and fuzz remover of claim 1 including a stationary return element at one side of the machine about which the continuous element rides and is reversed from the non-operative to the operative run, and means at the opposite ends of the plates for driving said continuous element.

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