Aug. 18, 1925. 1,550,304

W. J. DOLAN

DEVICE FOR CLEANING PAPER MACHINE WIRES

Filed Dec. 22, 1924 2 Sheets-Sheet 1

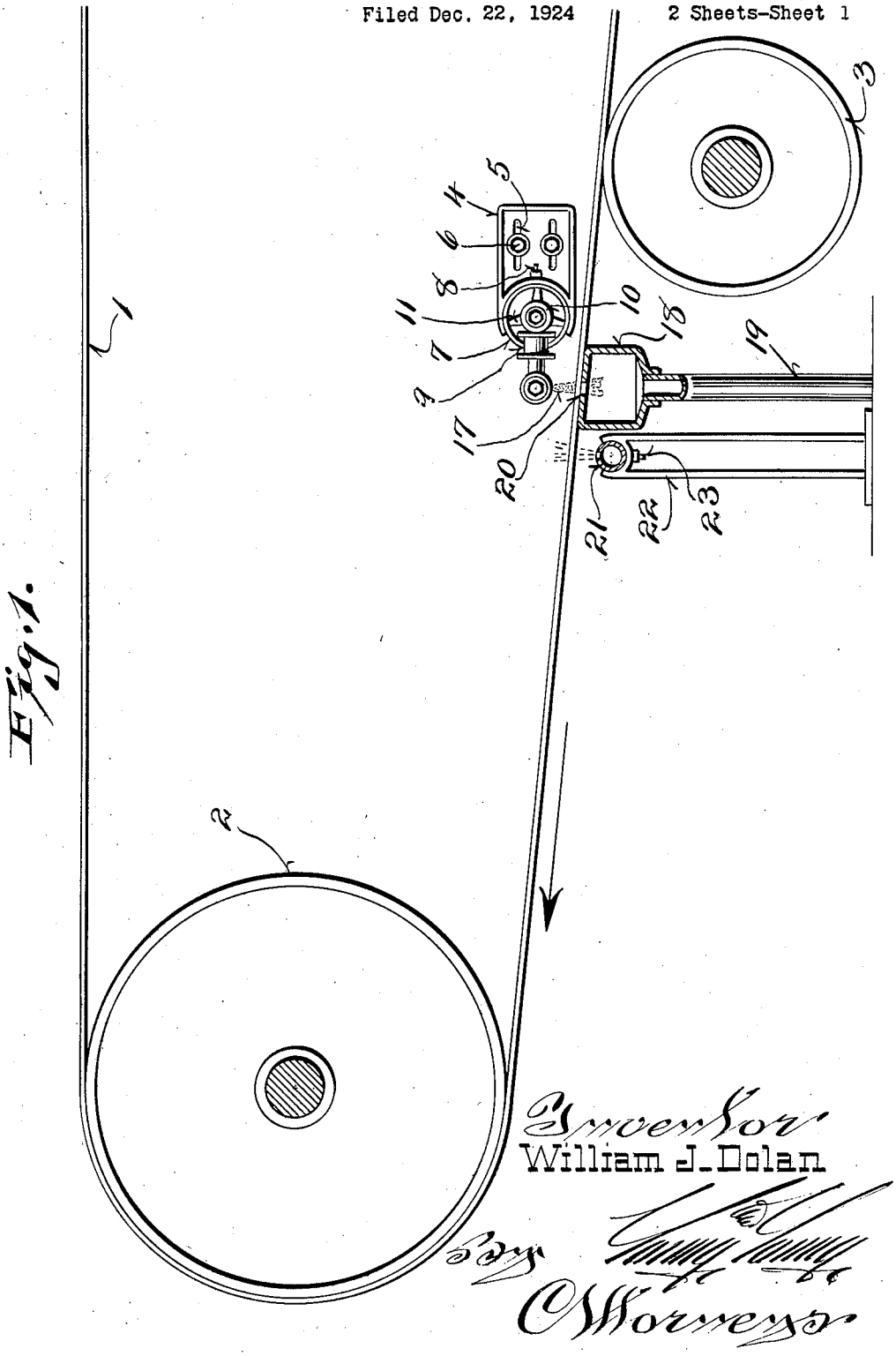


Fig. 1.

Inventor
William J. Dolan
By
Attorneys

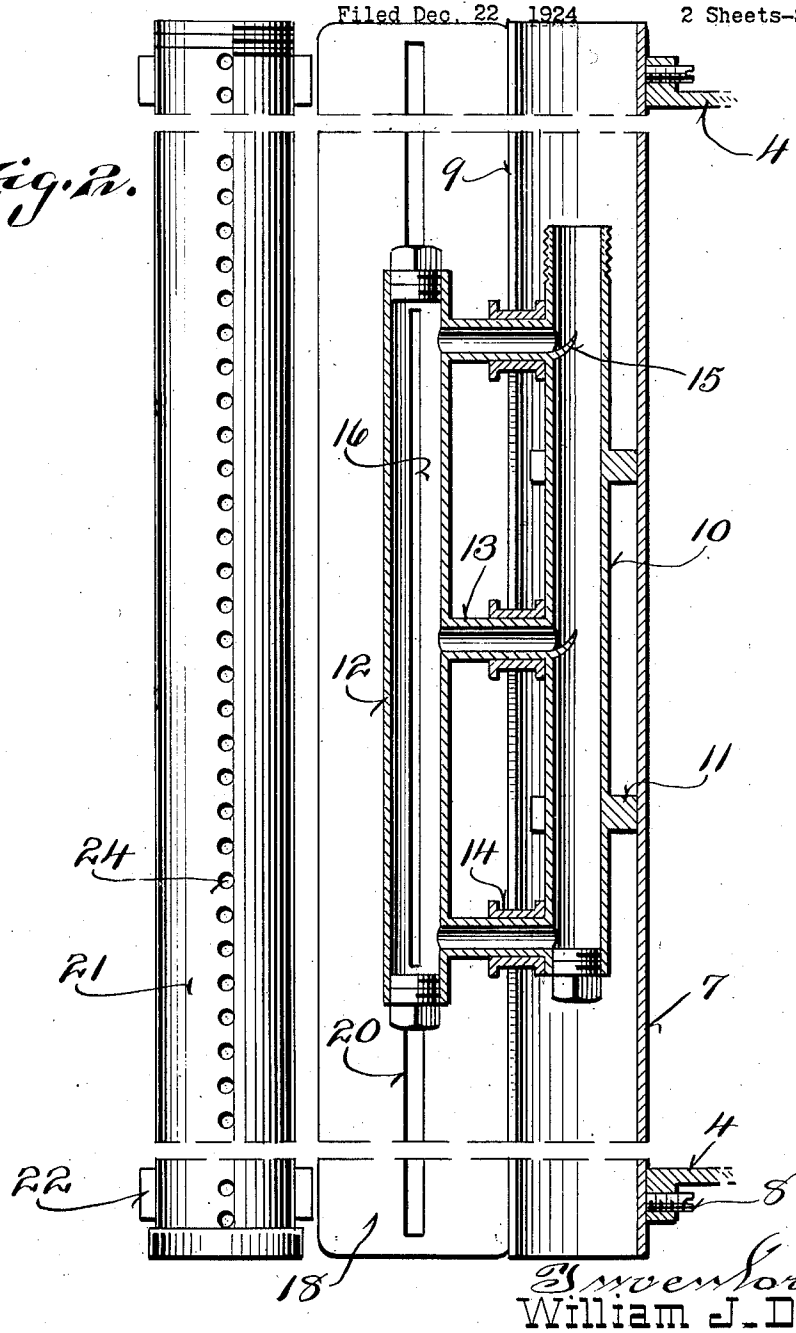
Aug. 18, 1925. 1,550,304

W. J. DOLAN

DEVICE FOR CLEANING PAPER MACHINE WIRES

Filed Dec. 22, 1924 2 Sheets-Sheet 2

Fig. 2.



Inventor
William J. Dolan

By

Attorneys

Patented Aug. 18, 1925. 1,550,304

UNITED STATES PATENT OFFICE.

WILLIAM J. DOLAN, OF RHINELANDER, WISCONSIN, ASSIGNOR OF ONE-THIRD TO ROBERT KENNEDY AND ONE-THIRD TO HENRY C. HANKE, BOTH OF RHINELANDER, WISCONSIN.

DEVICE FOR CLEANING PAPER-MACHINE WIRES.

Application filed December 22, 1924. Serial No. 757,453.

To all whom it may concern:

Be it known that I, WILLIAM J. DOLAN, a citizen of the United States, and resident of Rhinelander, in the county of Oneida and State of Wisconsin, have invented certain new and useful Improvements in Devices for Cleaning Paper-Machine Wires; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to a device for cleaning the wires or wire belts of a paper making machine.

In the manufacture of paper it frequently happens that the wire belt commonly known as the Fourdrinier wires becomes spotted with foreign matter. Under these conditions it has always been necessary, prior to this invention to shut the machine down and clean it, with consequent loss of time and output.

This invention is designed to overcome the above noted defects, and objects of such invention are to provide a device which will eliminate all of this loss of time, which may be employed when needed to clean the wires in a thorough and adequate manner while the machine is still in operation.

Further objects are to provide a cleaning device for the wire belt which will project a stream of steam through the belt at the portion of the belt where the spots occur, and simultaneously apply suction, which will immediately cool the belt and prevent stretching and other detrimental results, and which will in no way interfere with the smooth and uniform running of the machine.

An embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a diagrammatic side view of a portion of a paper making machine showing the device in place.

Figure 2 is an enlarged plan view of the device with parts in section to more clearly illustrate the construction.

Referring to the drawings, particularly Figure 1, it will be seen that the wire belt 1 is shown as carried by a breast roll 2 and a wire carrying roll 3 and the direction of travel of the belt is indicated in such figure.

A pair of brackets 4 are adjustably secured to the frame of the machine at any desired point rearwardly of the wire carrying roll 3. This adjustment may be secured in any convenient manner for instance, by means of elongated slots 5 and bolts 6. The brackets are provided with outwardly extending portions which have cylindrical apertures formed therein adapted to receive a transversely extending sleeve 7. This sleeve is locked in any desired position of adjustment by means of the set screws 8.

It is to be noted that the sleeve is slotted throughout its extent, as indicated at 9, (see Figures 1 and 2) and that a steam supply pipe 10 is positioned interiorly of the sleeve and is slidably carried within the sleeve by means of a plurality of spider arms 11. A steam header 12 is positioned exteriorly of the sleeve 7 and is connected with the steam supply pipe 10 by means of a plurality of short connecting pipes 13 extending through the slot 9. These pipes may carry rollers 14 which facilitate sliding motion of the header and steam pipe with reference to the sleeve 11. It is to be understood that the steam is supplied the pipe 10 in any suitable manner as for instance by means of a flexible hose not shown.

Referring particularly to Figure 2, it is to be noted that all except the last pipe 13 are provided with forwardly and inwardly extending deflecting lips 15 or deflectors so as to equalize the discharge of steam through the pipe 13.

It is to be further noted that the steam header 12 is provided with a longitudinally extending slot 16 on its lower side which, when the device is in adjustment, is adapted to project an elongated sheet of steam, as indicated at 17, downwardly through the wire belt.

A suction box 18 is positioned below the lower stretch of the belt 1 and is carried in any suitable manner. It is provided with a suction pipe through which the suction may be transmitted to the box. The box extends longitudinally across the belt and may support the belt at this point. It is provided with an elongated aperture 20 which extends transversely across the belt and immediately below the elongated aperture 16 in the steam pipe.

A water pipe 21 is positioned rearwardly of the suction box 18 and preferably is located below the belt. It is carried in suitably apertured standards 22 and is adapted to be locked in position by means

of set screws 23. This water pipe 21 is provided with a plurality of regularly spaced apertures 24, although obviously an elongated slot could be used, to project a fine sheet or stream of water against the belt from one side of the belt to the other.

In operation, when it is desired to clean the belt, suction is transmitted to the box 18 and the steam and water turned on. The steam header 12 is slid into the desired position immediately above the spotted or clogged portion of the belt and projects a blast of steam downwardly through the belt thus blowing any trash or accumulated material from the meshes of the belt and into the suction box 8, the suction aiding materially in this operation and also removing any water that may adhere to the belt to render the steam jet more effective.

It is to be particularly noted that dangerous heating of the belt is avoided as the belt is immediately chilled by the spray of water before it has traveled any but a slight distance. Thus the interval of time between which heat is applied to a portion of the belt and such portion is chilled is extremely short, and the belt is uninjured.

By practising this invention in the manner described, it will be seen that the belt is thoroughly cleaned by a high pressure high temperature steam jet and is immediately cooled before any detrimental effects can occur.

It will further be seen that the steam header may be slid laterally of the belt to any desired position and the exact portion of the belt cleaned as desired.

Further, by successively positioning the header at different points along the sleeve 7, the entire width of the belt may be cleaned.

It is to be noted also that the suction box quickly withdraws any water that may fill the interstices of the wire mesh and thus renders the steam jet more effective in blowing accumulated material from the belt.

It is further to be noted that the device is extremely simple and may be cheaply produced. It is of compact and strong formation and is not likely to get out of order and further may be readily positioned upon a standard paper machine.

Although the invention has been described in considerable detail, it is to be understood that the invention may be variously embodied and is, therefore, to be limited only as claimed.

I claim:

1. In a paper making machine, the combination of a wire belt, a steam header provided with a delivery aperture positioned above said belt and closely adjacent thereto, a water pipe positioned adjacent said steam header and adapted to project a stream of water against the belt adjacent the steam jet, and means for slidably holding said steam header, whereby it may be moved transversely of said belt.

2. In a paper making machine, the combination of a wire belt, a steam header provided with a delivery aperture positioned above said belt and closely adjacent thereof, a water pipe positioned adjacent said steam header and adapted to project a stream of water against the belt adjacent the steam jet, and means for supporting said steam header and said water pipe, and permitting angular adjustment thereof, whereby the direction of the sprays of steam and water may be adjusted.

3. In a paper making machine the combination of a wire belt, an adjustable steam header provided with a delivery aperture positioned above said belt and closely adjacent thereto, a suction box positioned below said steam header, and a water pipe positioned rearwardly of said suction box and adapted to project a stream of water against said belt.

4. In a paper making machine the combination of a wire belt, a sleeve positioned above said belt, said sleeve having a slot extending longitudinally thereof, a steam pipe slidably mounted within said sleeve and having outwardly extending delivery pipes passing through said slot, a steam header located exteriorly of said sleeve and communicating with said outwardly extending pipes, said steam header having a delivery aperture adapted to project a spray of steam downwardly through said belt.

5. In a paper making machine the combination of a wire belt, supporting brackets, an apertured water pipe and a slotted sleeve carried by said brackets and arranged in parallel relation, means for locking said water pipe and said sleeve in any desired position, a steam header positioned exteriorly of said sleeve and having a delivery aperture adapted to project a spray of steam downwardly through said belt, supporting and supply pipes extending from said header through the slot into said sleeve, rollers mounted on certain of said last mentioned pipes, and a steam pipe slidably located within said sleeve and communicating with said delivery pipes.

In testimony that I claim the foregoing I have hereunto set my hand at Rhinelander, in the county of Oneida, and State of Wisconsin.

WILLIAM J. DOLAN.