Feb. 28, 1933. J. ANDERSON 1,899,604

CIRCUIT CLOSING DEVICE

Filed Oct. 16, 1929 2 Sheets-Sheet 1

Fig. 2.

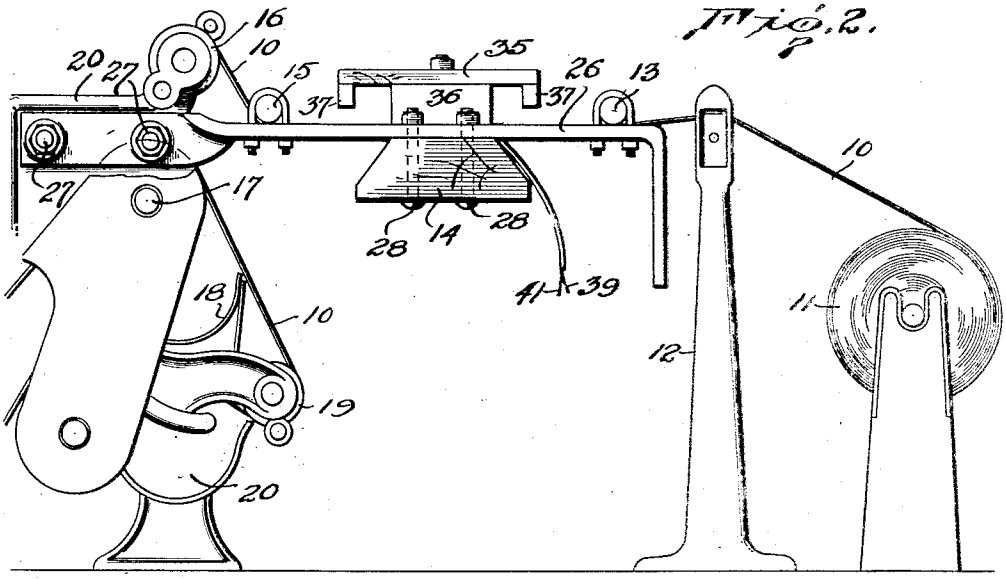


Fig. 4.

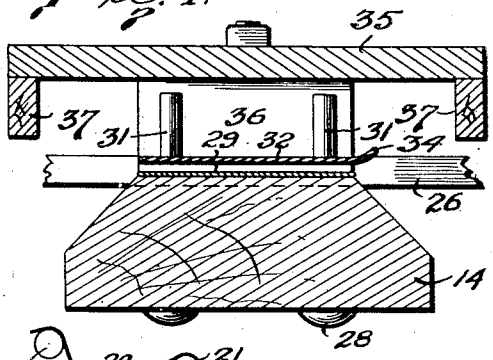


Fig. 5.

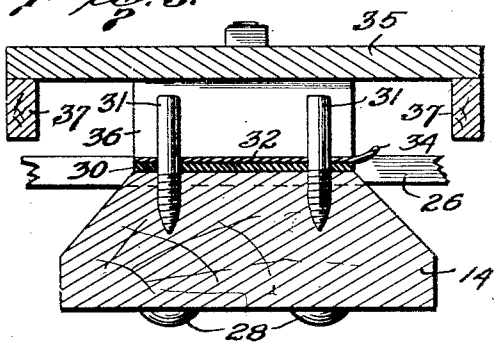
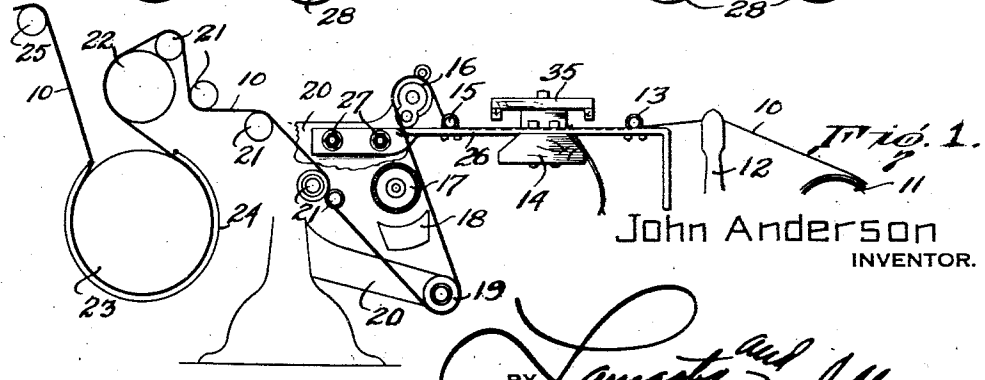


Fig. 1.



John Anderson
INVENTOR.

BY Lancaster and Allwine

ATTORNEYS.

Feb. 28, 1933. J. ANDERSON 1,899,604

CIRCUIT CLOSING DEVICE

Filed Oct. 16, 1929 2 Sheets-Sheet 2

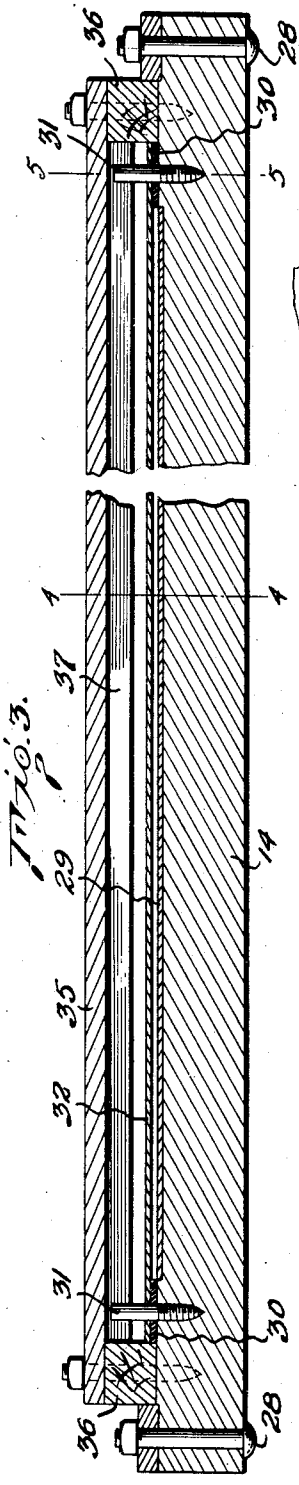


Fig. 3.

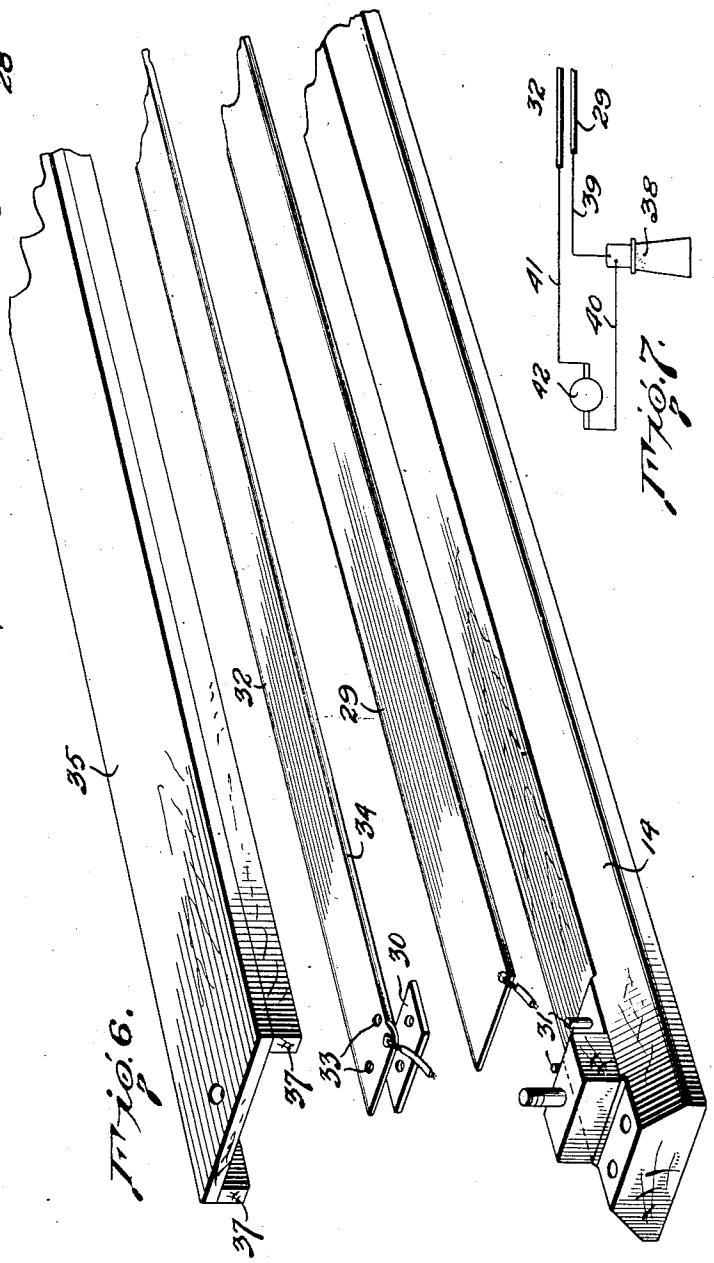


Fig. 6.

Fig. 7.

John Anderson
INVENTOR.

BY Lancaster and Allwine
ATTORNEYS.

Patented Feb. 28, 1933 1,899,604

UNITED STATES PATENT OFFICE

JOHN ANDERSON, OF LAWRENCE, MASSACHUSETTS

CIRCUIT CLOSING DEVICE

Application filed October 16, 1929. Serial No. 400,078.

The present invention relates to signals or alarms, and more particularly to a structure of this character which is of the electrical type.

An object of the present invention is to provide a circuit closing device for use in connection with rotary cloth presses for detecting the presence of metallic particles or substances which may be carried with the cloth into the press so that a signal or alarm will be given, the press may be stopped in operation and the metallic particles removed to prevent injury to the relatively smooth and polished surfaces of the press cylinder and the jacket surrounding the cylinder.

According to the present practice, one of the final processes in finishing dress goods and men's wear fabrics consist, in nearly all of the finishing processes, in passing the cloth through what is known as a rotary press. The rotary press embodies a metal cylinder which revolves in close proximity to steam heated metal jackets and the periphery of the cylinder, and the inner surfaces of the jackets must be smooth and unbroken in order to satisfactorily perform the work. At the present time, considerable damage is done these rotary presses when a foreign metallic substance becomes attached to the cloth and is carried into the press. When this occurs, the press must be stopped, the cylinder removed and reground at considerable expense, and the regrinding operation can be performed but two or three times at most when the cylinder must be discarded, and there is a resultant loss of production during this operation, which necessitates that the press lay idle for approximately a week during each regrinding operation.

It is therefore an object of the present invention to eliminate this waste in time, and the relatively great expense which is incurred in regrinding and renewing the cylinders and jackets.

It is another object of the present invention to provide a detector or alarm of this character which is of such construction that it may be readily mounted upon or in front of the press so as to receive the cloth before it enters the press, and to provide a device which will occupy but relatively small space and will in no wise interfere with the ordinary operation of the press and the carrying out of the method of treating the cloth.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a diagrammatic view showing in side elevation a rotary cloth press with a detector of this invention applied thereto and showing a web of cloth threaded through the detector and the press.

Figure 2 is a fragmentary enlarged side elevation of the detector as applied to the forward end of the press.

Figure 3 is a further enlarged longitudinal vertical section taken through the detector.

Figure 4 is a transverse section taken through the same substantially on the line 4—4 of Figure 3.

Figure 5 is a similar view taken on the line 5—5 of Figure 3.

Figure 6 is a fragmentary perspective view of the detector, showing the various parts thereof separated and in their relative positions, and

Figure 7 is a diagrammatic view of the electric circuit, showing the contact plates and a signal device incorporated therein.

Referring now to the drawings, and first to Figure 1, a web of cloth 10 is taken from a roller 11 and passes over the top of a press stand 12 and is then carried beneath a tension bar 13 and through the detector 14, the web 10 passing outwardly beneath a second tension bar 15 and over a roller 16 of the press. The web 10 is carried downwardly from the roller 16 past a rotary brush 17 for removing lint and the like from the cloth which is deposited in a pan 18 arranged beneath the rotary brush 17, and is carried downwardly and backwardly about a bottom roller 19 mounted on the press frame 20. The web 10 is then carried over and be-

neath a series of rollers 21 to a stretcher roller 22, and from the roller 22 the web 10 is carried downwardly about the press cylinder 23 and between the same and a closely fitting jacket 24. The web 10 is then carried out of the press over a suitable roller 25 or the like. The detector 14 and the tension bars 13 and 15 comprise a part of the present invention and are mounted upon a pair of bracket arms 26 which are bolted or otherwise suitably secured at 27 to the frame 20 of the press. The bracket arms 26 extend forwardly from the press and provide a convenient means for supporting the parts. It is of course understood that the detector 14 may be otherwise mounted in front of the press so as to receive the web of cloth 10 therethrough before the cloth passes to the press cylinder.

The body portion of the detector is indicated at 14 and comprises a wood beam or bar which extends transversely across the front of the press and is bolted or otherwise suitably secured at opposite ends to the undersides of the bracket arms 26, and as shown are supported upon bolts 28. A lower contact plate 29 is seated in the upper face of the beam 14 and is of substantially the length of the face over which the web 10 passes as well as appreciable width as shown in Figures 4 and 6, and has its opposite edge portion rounded or smoothed so as to freely receive the cloth thereover without injury to cloth. This lower contact plate 29 is provided at opposite ends with insulating spacer strips 30 which are seated upon the upper surface of the beam 14 and held in place by upwardly extending pins 31 which are threaded into the wood beam 14. The upper contact plate 32 is of greater length than the lower contact plate 29 and overlaps and is seated upon the insulating strips 30. The upper contact plate 32 is provided at opposite ends with openings 33 adapted to freely receive the pins 31 therethrough for holding the contact plate 32 in position and admitting of the rise and fall of the latter during the passage of the web 10 between the contact plates. The forward edge of the upper contact plate 32 is curved upwardly to a slight extent as shown at 34 to present a rounded surface to the cloth as it enters between the contact plates but both contact plates 29 and 30 present large substantial faces of approximately equal area in contact with the web.

A protecting hood of electric non-conducting material, such as wood or the like, is indicated at 35 and is supported at opposite ends upon electric non-conducting blocks 36 and is adapted to extend over the contact plate. The hood 35 is provided at its forward and rear edges with depending flanges 37 which, as best shown in Figures 4 and 5, project downwardly beyond the opposite edge portions of the contact plate so as to prevent operatives from coming into contact with the plates.

Referring to Figure 7, the contact plates 29 and 32 are adapted to be incorporated in an electric circuit having a suitable signalling device 38 in the form of a horn as shown, or any other suitable device which may be used. In the present instance the horn is connected by a wire 39 to the lower contact plate 29 and the horn 38 and the upper contact plate 32 are connected to line wires 40 and 41, the exciter, or source of current supply being indicated at 42. Of course any suitable circuit or arrangement of wires may be employed in order to actuate a suitable signal 38 when metallic particles journey between the contact plates 29 and 32.

From the above, it is thought that the operation of the detector will be apparent because when metallic particles of any sort whatever become lodged in the cloth 10, such particles will close the circuit through the contact plates 29 and 32 and actuate the signal 38.

It has been found by experience that in the weaving and handling of the cloth 10 very frequently metallic articles or particles become affixed to the cloth and embedded therein and are carried into the press with the result that the surface of the press cylinder and the jackets become scratched and marred and consequently the output from the rotary press is unsatisfactory.

As herein above stated, it is a very costly and time consuming operation to repair these presses and the press cylinder 23 cannot be reground more than two or three times before it has to be discarded and a new press cylinder provided. The detector therefor is adapted to warn the operative before these metallic particles are carried into the press by a prolonged signal while in contact with the wide plates so that the press may be stopped and the metallic particles removed before they damage the press.

It is of course understood that the above specifically described parts may be modified as to size and materials to best suit conditions under which they are installed, and also that the detector may be mounted independently of the press or be otherwise mounted thereon than as shown, all such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A detector circuit maker for cloth treating machines, comprising a transverse bar of insulating material, means for supporting the bar in front of the machine, a lower electrical conducting contact plate embedded in the bar and over which the cloth is adapted to pass in its travel to the machine, upstanding pins carried by the bar at opposite ends of the lower contact plate, an upper electrical conducting contact plate having openings

therein adapted to freely receive said pins for supporting the upper contact plate over the lower contact plate, and insulating strips carried by the bar at opposite ends of the lower contact plate and extending above the same for spacing and insulating the upper contact plate from the lower contact plate.

2. A detector circuit maker for cloth treating machines, comprising a transverse bar, means for supporting the bar in front of the machine, a lower electrical conducting contact plate embedded in the upper surface of the bar and over which the cloth is adapted to pass, insulating strips arranged at opposite ends of the contact plate, pins carried by the bar and extending upwardly therefrom for holding the insulating strips in position and projecting above said insulating strips, an upper electrical conducting contact plate having openings at opposite ends adapted to receive said pins therethrough for anchoring the upper contact plate over the bar and the lower contact plate, said insulating strips extending above the lower contact plate to space the upper contact plate therefrom, blocks arranged at opposite ends of the contact plates, and a protecting hood mounted on said blocks and extending over the plates to ward off operatives from contact with the plates.

3. A detector circuit maker for cloth treating machines, comprising a transverse wood bar, a pair of brackets adapted to be mounted on the machine and connected to opposite ends of the bar for supporting the same, a lower electrical conducting contact plate embedded in the upper surface of the bar and over which the cloth is adapted to pass, a pair of insulating strips mounted at opposite ends of the lower contact plate and extending above the same, a pair of pins carried by the bar at each end and extending upwardly through the insulating strips for holding the same in position, an upper electrical conducting contact plate having openings therein for the reception of said pins for yieldably supporting the upper contact plate over the lower contact plate and out of contact therewith. blocks carried upon the opposite ends of the wood bar and extending upwardly therefrom, and an electric non-conducting hood mounted on said blocks and extending over said plates and provided at its forward and rear edges with depending flanges adapted to house in said contact plates.

4. A detector circuit maker for cloth treating machines, a pair of brackets adapted to be secured to the opposite sides of the frame of the machine and projecting forwardly therefrom, a transverse bar mounted on said brackets, a lower contact plate seated in the upper surface of said bar and adapted for passage of cloth thereover as the cloth is fed to the machine, anchoring and guide pins mounted upon the opposite ends of the bar and extending upwardly therefrom, insulating strips having openings therethrough freely receiving said pins for anchoring the strips at opposite ends of the lower contact plate, an upper contact plate having openings near its opposite ends adapted to receive said pins for anchoring and holding the upper contact plate on said insulating strips and above said lower contact plate, and a protecting hood carried by the bar and extending longitudinally and laterally beyond the opposite edges and ends of said contact plate.

5. In a detector circuit maker for a cloth treating machine, a support member, a substantially flat elongate electrical conducting contact plate carried thereby and a second substantially flat elongate electrical conducting contact plate mounted upon said support, spaced with its face confronting and normally insulated from said first named contact plate, said plates having an electrical conducting contact surface in length at least equal to that of a full width of a run of cloth passing therebetween and in width appreciably wide throughout their length, whereby said plates will have a substantial surface contact, as to width of plate, with the cloth passing therebetween, in contradistinction to line contact therewith.

JOHN ANDERSON.