Nov. 28, 1933. O. C. ROESEN 1,937,412

WEB ROLL STOPPING DEVICE

Original Filed Dec. 15, 1928 3 Sheets-Sheet 1

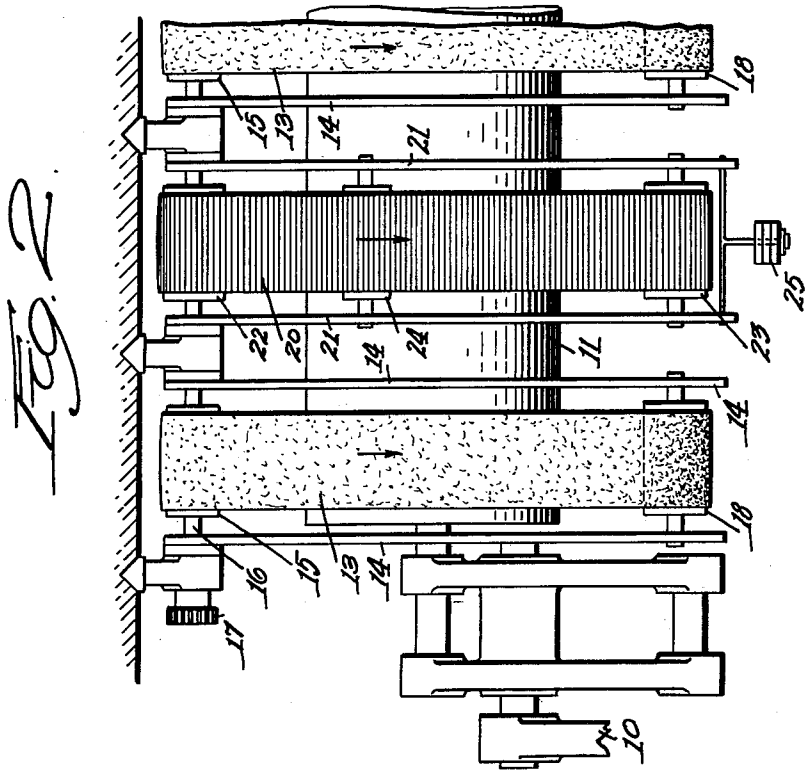


Fig. 2.

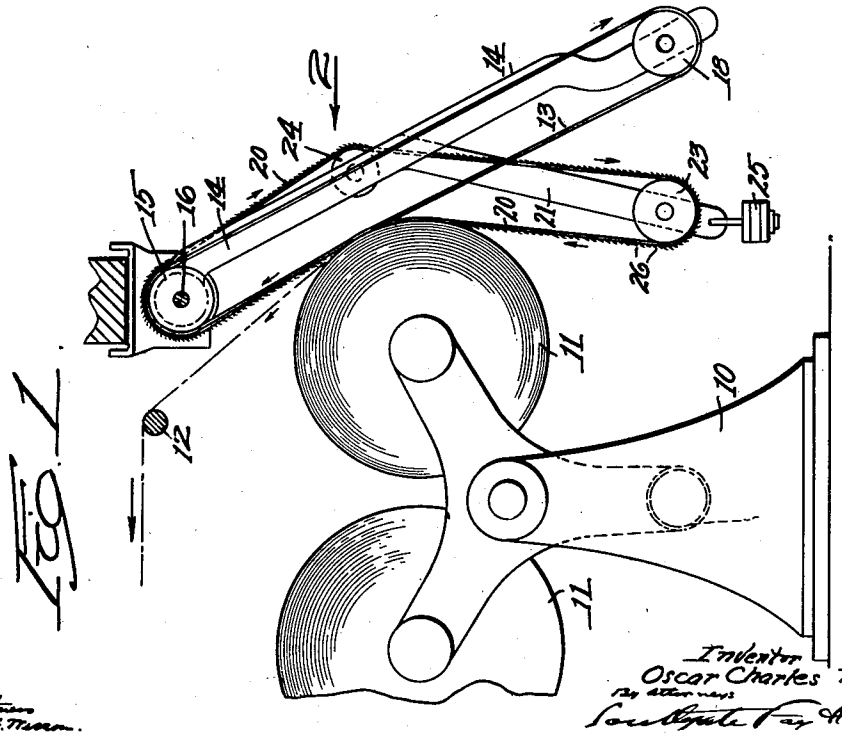


Fig. 1.

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Original Filed Dec. 15, 1928 3 Sheets-Sheet 2

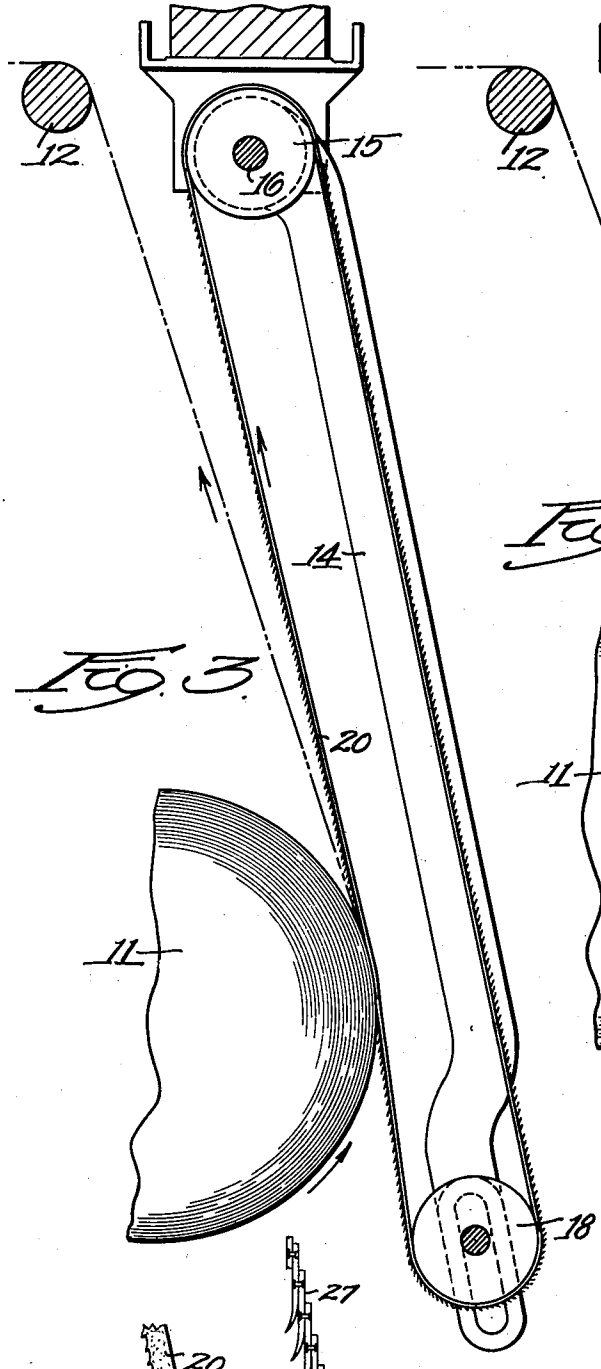


Fig. 3.

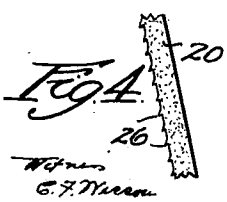


Fig. 4.

Fig. 5.

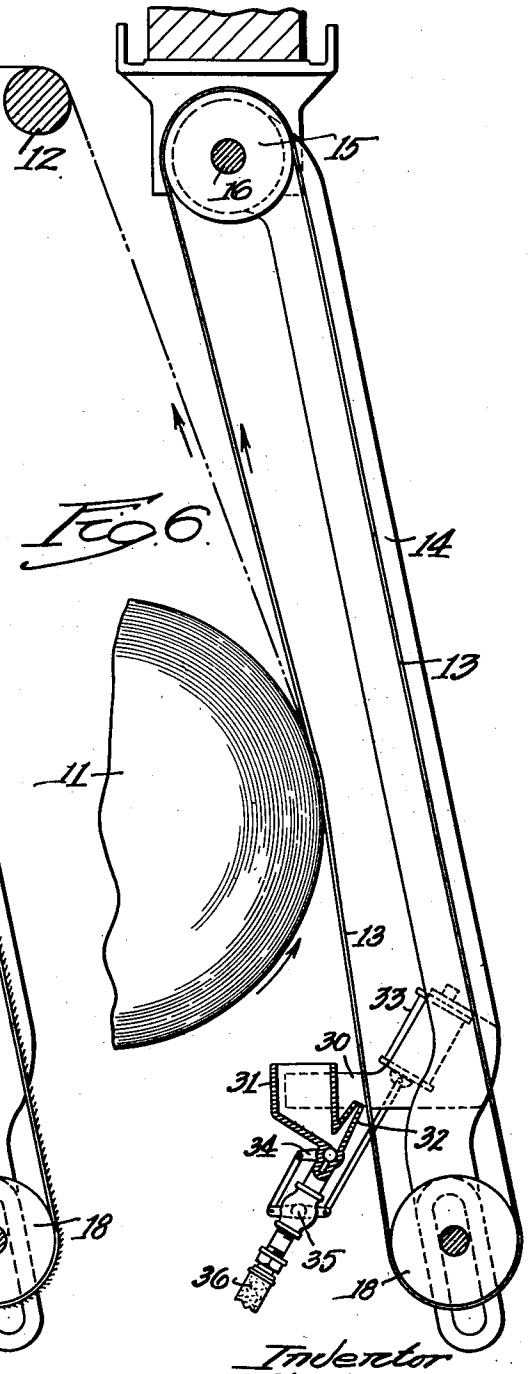


Fig. 6.

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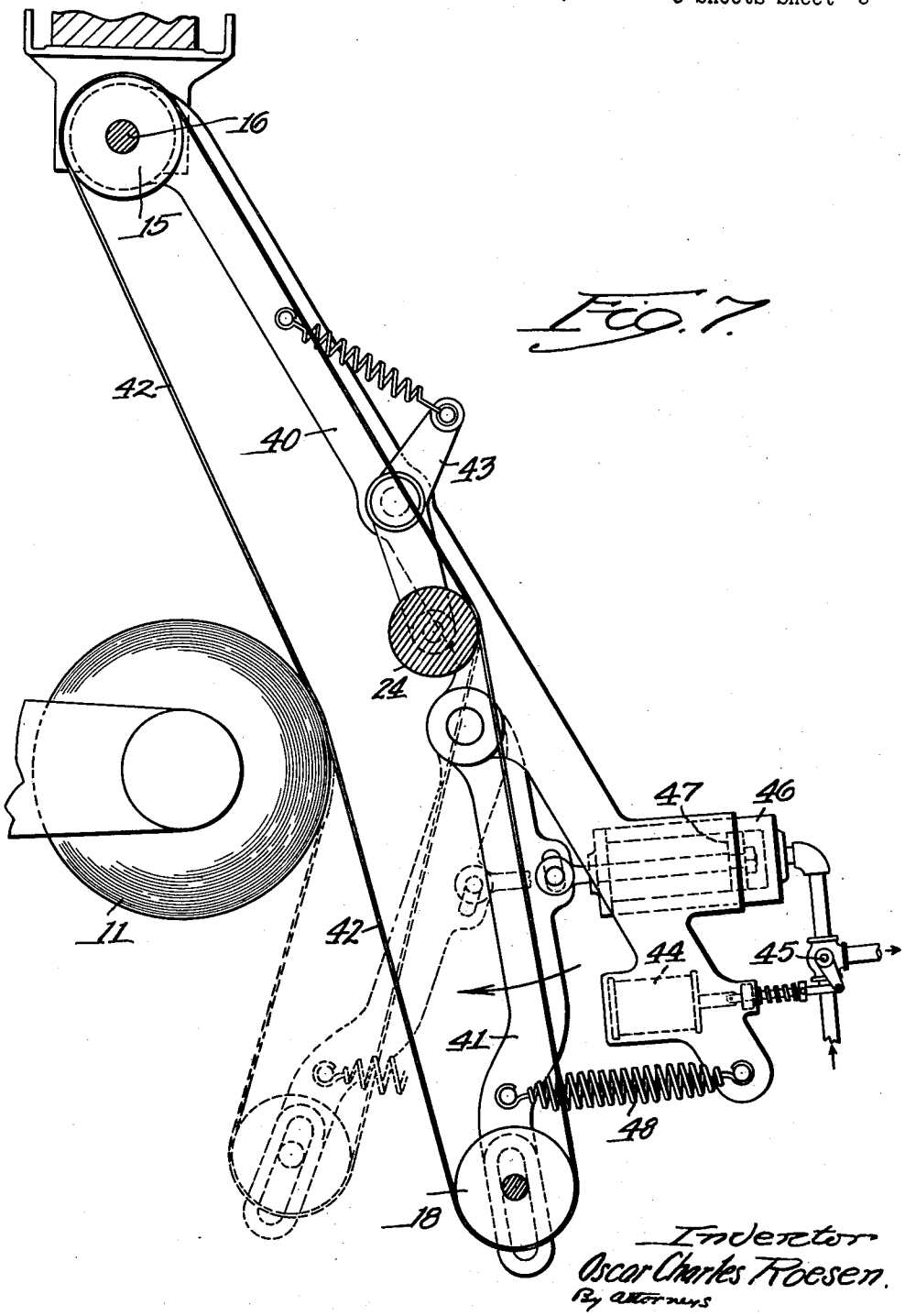


FIG. 7.

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UNITED STATES PATENT OFFICE

1,937,412

WEB ROLL STOPPING DEVICE

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Application December 15, 1928, Serial No. 326,337. Renewed July 29, 1932

2 Claims. (Cl. 242—75)

The principal objects of this invention are to prevent the web roll in a printing press from running ahead when the press stops quickly; to provide an improved belt for engaging the web roll for this purpose and to provide fluid operating means for accomplishing the same object.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is an end view of a reel stand for web rolls with a preferred embodiment of this invention shown therewith;

Fig. 2 is a side view of the same;

Fig. 3 is a view similar to Fig. 1 showing a modification;

Figs. 4 and 5 are edge views of two forms of belts which can be used on these two constructions;

Fig. 6 is a view similar to Fig. 3 showing another modification, and

Fig. 7 is a similar view showing a fourth form.

It is well known that when the printing press stops suddenly the web roll which is delivering paper to the press, being a heavy body and having a speed of rotation to deliver the web at web speed, will tend to run ahead on account of its inertia. This supplies paper to the press when the press is stopped and tends to pile up a loose web which obviously interferes with the subsequent operations. This invention is designed to overcome this difficulty in a simple and convenient manner.

Referring first to the form shown in Figs. 1 and 2, I have shown an ordinary reel stand 10 with the web rolls 11 mounted thereon and one of them delivering the web to the press over a guide roll 12. I have shown in this figure two belts 13 which engage the running roll and are both alike arranged on pivoted frames 14 receiving their power from pulleys 15 on a shaft 16. This shaft is connected by a gear 17 with the press and the pulleys are of such size as to run the belt at slightly less than web speed to hold the web back and provide the necessary tension. These belts also run over idler pulleys 18 on the frame 14 as is well understood. This feature is well known in the art.

Instead of having all the belts across the web of this type I provide one or more belts 20 between them on other frames 21 pivoted on the axis of the shaft 16 and operating by pulleys 22 and over idlers 23 and 24. This frame preferably is of an angular form instead of being straight but it hangs down from the shaft 16 as well as the others. On account of its form and the idler 24, the belt or belts 20 will be capable of wrapping around the running roll throughout a certain arc. I have provided weights 25 on the bottom of the frame 21 which can be exchanged for heavier or lighter ones to provide the necessary tension to hold each frame 21 with its belt 20 firmly against the running roll.

This belt 20 is provided with a roughened outer surface which can be provided simply with backwardly extending projections 26 on it as shown in Fig. 4. It can be made up also of pieces of leather 27 riveted together as shown in Fig. 5 and having the ends of the pieces 27 projecting out in points 29 forming leather teeth as in the case of the projections 26 to bear on the running roll and assist in holding it back. The diameter of the pulley 22 is such that the speed of the belt is the same as the surface speed of the web. On a quick stop when the running roll tries to run away the rough grain of the belt 20 prevents it.

I have shown three belts 13, 13 and 20 as being made differently, but of course, all of them may be made with a roughened surface as illustrated in Figs. 4 and 5. This constitutes an effective way for accomplishing this result and prevents undue rotation of the running roll when the press suddenly stops.

In the form shown in Fig. 3 there are simply belts 20 on the usual frames 14, as shown in Fig. 1, and on a quick stop of the press the drag of the belts prevents the roll 11 from running away and brings it to a quick stop. This form differs from that shown in Figs. 1 and 2 only in the fact that the belts on the frame 14 are all made rough on the bearing side and the frames 21 are not used.

In the form shown in Fig. 6, a construction is shown in which the frame 14 is used and the belt 13 employed upon the same. On each frame 14 is located a bracket 30 carrying on it a hopper 31 for a friction creating material such as sand and also having a nozzle 32. On this bracket is a solenoid 33 connected with the press to be energized when the press stops. The energizing of the solenoid operates valves 34 and 35 to connect a source of air under pressure through a pipe 36 with the nozzle and force the friction creating material against the surface of each belt 13. This adds to the difficulty of rotation of the running roll and soon brings it to a stop.

In Fig. 7 I have shown a construction in which a frame 40 pivoted on the shaft 16 is provided with a pivoted link 41 carrying an idler 18 and the belt 42 passes over this idler and the tension roller 24 as well as the pulley 15, which drives the

belt. The pulley 24 is mounted on a lever 43 which is connected by a spring with the frame and kept in position to stretch the belt and keep it under tension. On the frame 40 is a solenoid 44 which operates, on the stopping of the press, to open a valve 45 which allows air to be conducted into a cylinder 46 and forces forward a piston 47 therein. This piston is loosely connected with the swinging arm 41 and pushes it forward against the resistance of a spring 48 until it gets into the dotted line position. Here the belt is wrapped around the running roll 11 and soon brings the running roll to a stop.

In all the forms of this invention it will be seen that the roll which is delivering the web to the press will be stopped quickly after the press is stopped and prevented from delivering a length of loose web to the guide rolls which guide the web to the press so that as soon as the press starts again it will take up whatever slack there is while speeding up and there will be no sudden pull on the web to start the web roll into rotation again at full speed.

Although I have illustrated and described only four forms of the invention I am aware of the fact that other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in this respect but what I do claim is:—

1. In a web supply device for a printing press, the combination with a support for the running roll, of a belt engaging the surface of the running roll for normally holding the web back and means for running said belt from the press, said belt having rearwardly extending projections from its surface engaging the web roll whereby when the belt stops these projections will tend to stop the rotation of the running roll.

2. In a web supply device for a printing press, the combination with means for supporting a running roll, of a shaft geared to the press to rotate therewith, pulleys on said shaft of such size as to rotate at a surface speed equal to the speed of the web, belts on certain of said pulleys engaging the running roll, the outer surface of such belts having projections to assist in slowing up the web roll when the shaft stops, pulleys for supporting said belts being located in position for wrapping them around the running roll and belts on others of said pulleys engaging the running roll where the web leaves it and running it at slightly less than web speed to apply tension.

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