

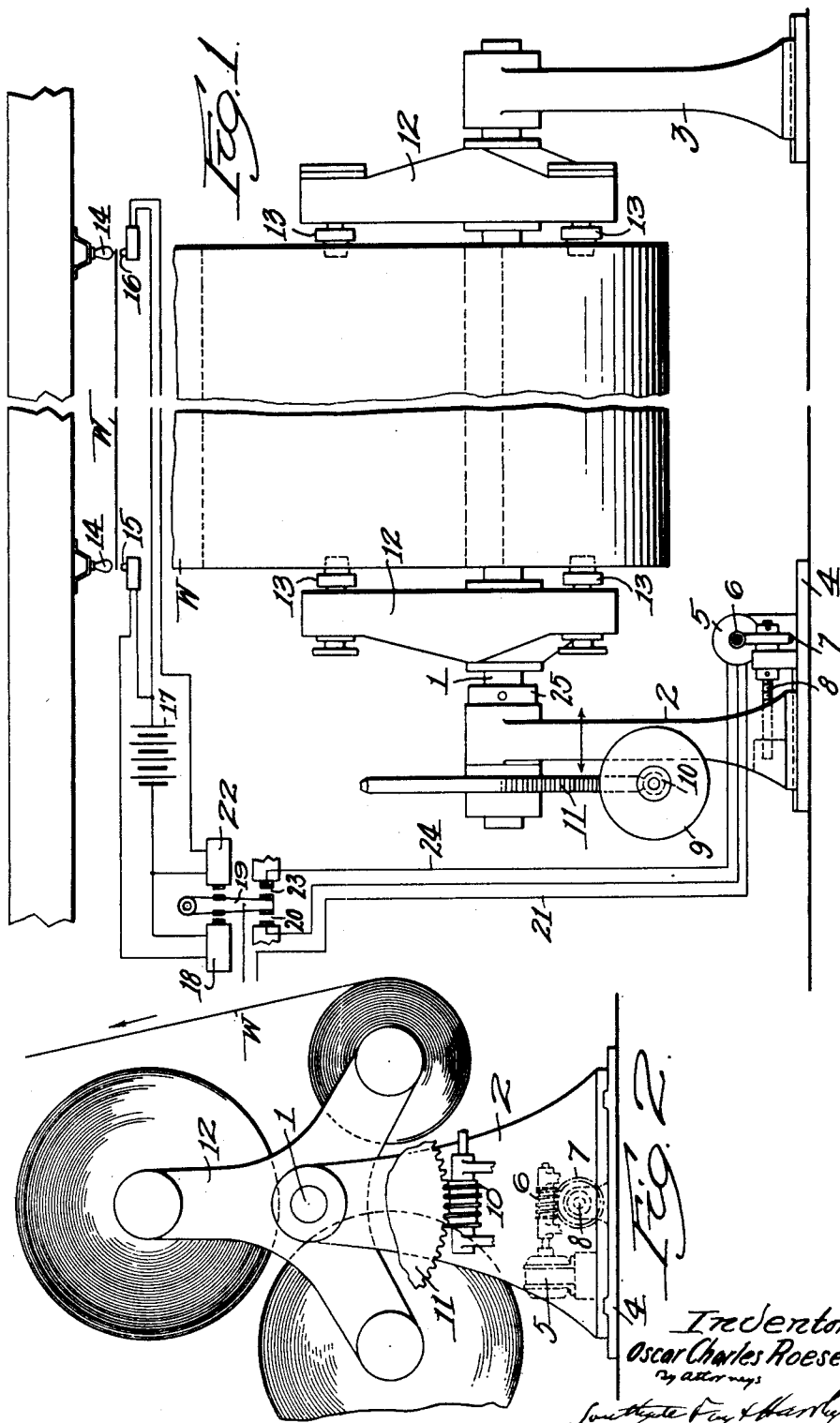
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WEB REGISTERING MEANS

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UNITED STATES PATENT OFFICE

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WEB REGISTERING MEANS

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This invention relates to means for automatically keeping a running strand or web in central registration.

The principal objects of the invention are to provide means whereby a running strand or web will, by its own variation from its normal path, move itself over to correct its position; to provide means whereby this movement into correct position will throw the automatic operating means out of action so that in normal running the said operative means will not operate, and to provide this means in a form which involves the motion of the standard for supporting one end of a web roll for use in printing presses.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a front view of a reel for carrying paper rolls and supplying them to a printing press provided with a preferred embodiment of this invention, and

Fig. 2 is an end view of the same.

Rolls of paper for printing presses are seldom placed on their cores in the same position longitudinally and therefore when a new roll of paper is put in operation it is very likely to be out of side register. This device provides for not only bringing the new roll and web into proper register but for automatically keeping it there thereafter. It will also operate in the same way for centering any other kind of a moving strand.

The reel consists of two pedestals 2 and 3 for supporting the reel shaft 1. The pedestal 3 is fixedly mounted on the floor but the pedestal 2 is provided with a tongue and groove arrangement in a sub-base 4, the tongue and groove extending longitudinally with the shaft 1. The shaft is fixed to move with the standard 2 by the hub of a worm wheel 11 and a collar 25 and is freely mounted in a bearing on the fixed standard 3.

Mounted preferably on this sub-base is a motor 5 provided with a worm 6 on its driving shaft, meshing with a worm wheel 7 to rotate a screw 8. This screw is threadedly connected to the pedestal 2. This screw 8 is mounted in such a way as not to have any end-

wise motion. Therefore its rotation causes the pedestal 2 to move to the right or left in accordance with the direction of rotation of the motor.

On the pedestal 2 is mounted a motor 9 carrying a worm 10 on the motor shaft. This worm meshes with a worm wheel 11 which is secured to and rotates the reel shaft 1. The reel arms 12 are adjustably secured to the reel shaft and are provided with spindles 13 for supporting the paper rolls in the usual way or rotary supports for any other kind of a moving strand.

The web W is run from the running roll up to the press when the invention is used for this purpose and two sources of light 14 are secured in fixed position to the frame of the press adjustably mounted thereon at points just at the edges of the web. Directly beneath the lamps are photo-electric cells 15 and 16. The cell 15 is connected through a battery 17 with an electro-magnet 18. Accordingly when the cell 15 is energized this magnet will be energized and a pivoted arm 19 pulled to the left closing contacts 20. Establishment of this contact will complete a circuit 21 through the motor 5 and start this motor rotating in such a direction as to move the pedestal 2 to the left.

This brings the web W to the left until it interrupts the beam of light from the lamp 14 so that it will not impinge on the photo-electrical cell 15. This cuts out the circuit, releases the arm 19 when it normally goes back to central position by means of springs, not shown, and stops the motor.

The operation on the other side will be obvious. In case the web shifts too far to the left the other lamp will be permitted to cast a beam on the photo-electric cell 16 and the magnet 22 is energized. This pulls the contact arm 19 to the right and closes the contacts 23, thus energizing the circuit 24. The circuits 21 and 24 of course have one common line. This causes the motor 5 to rotate in the reverse direction and brings the web back to center in the same manner.

This constitutes automatic means for centering or registering the web or strand, act-

ing entirely automatically without any action on the part of the operator.

Although I have illustrated and described only one form of the invention I am aware of the fact that modifications can be made therein and that it can be used for other analogous purposes 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 reel for supporting a roll of paper for supplying the web to the press, a shaft on said reel pedestals supporting said shaft, roll supporting means carried by said shaft, a motor having connections for moving one of said pedestals with the movable shaft back and forth according to the direction of rotation of the motor, a pair of sources of light at a distance apart equal to the width of the web and located at opposite edges of the web, a pair of photo-electric cells located in registration with said lights, whereby, when the web is located out of center, one of the cells will be exposed to the light and energized, and means connected with each cell for causing the rotation of the motor in one direction to move the pedestal and shaft and web back into central position.

2. In a web supply device for a printing press, the combination with a reel for supporting a roll of paper for supplying the web to the press, a shaft for said reel, two standards for said shaft, one being fixed and the other movable, the shaft being fixed longitudinally with respect to the movable standard, a motor having connections for moving the movable standard according to the direction of rotation of the motor, a pair of sources of light fixed to the press at a distance apart equal to the width of the web, a pair of photo-electric cells connected with the motor and located in registration with said lights so that when the web is running centrally both cells will be shielded by the web from their respective lights, whereby when the web is running centrally the motor will not rotate, but if the web runs out of center one of the cells will be exposed to the light and energized and means connected with each cell for rotating the motor in opposite directions and thereby moving the movable standard and shaft into position to cause the web to shield the cell.

In testimony whereof I have hereunto affixed my signature.

OSCAR CHARLES ROESEN.