

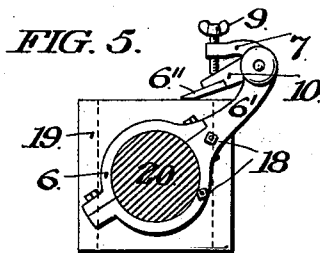
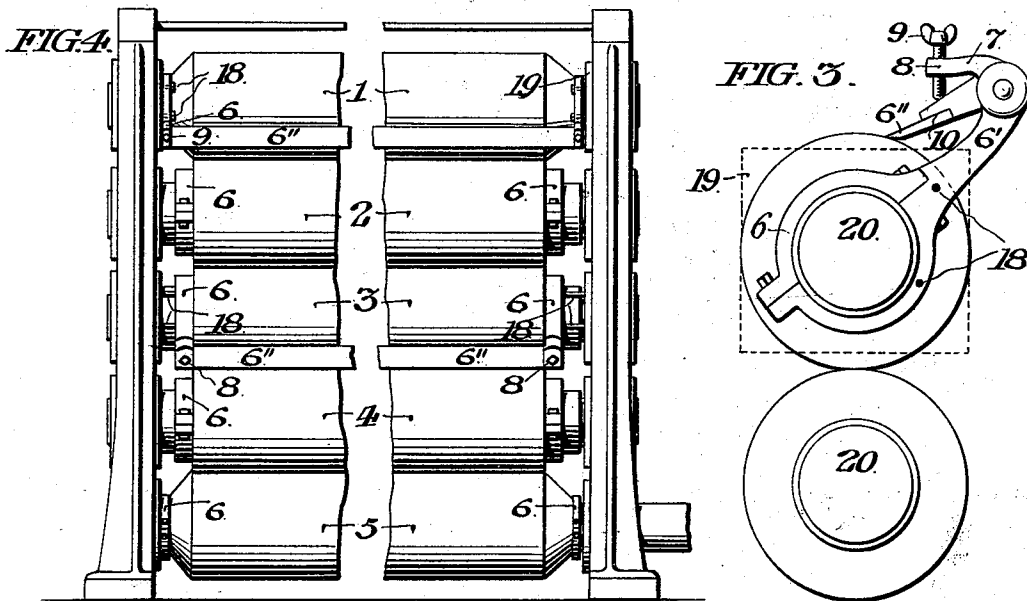
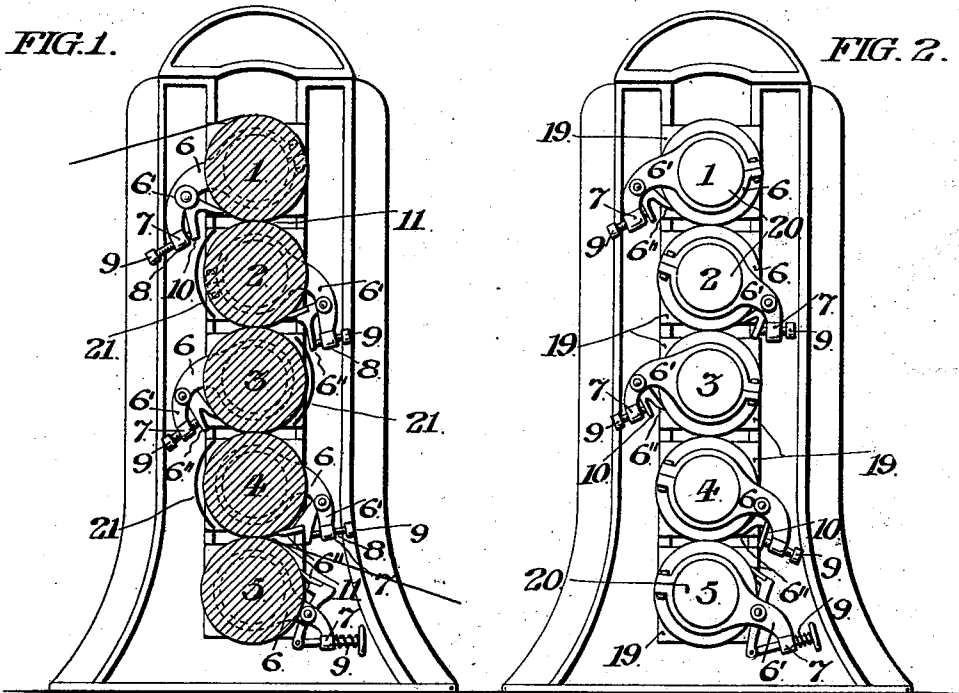
(No Model.)

R. O. MOORHOUSE.

DOCTOR FOR PAPER MAKING AND CALENDERING MACHINES.

No. 507,746.

Patented Oct. 31, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT O. MOORHOUSE, OF PHILADELPHIA, PENNSYLVANIA.

DOCTOR FOR PAPER MAKING AND CALENDERING MACHINES.

SPECIFICATION forming part of Letters Patent No. 507,746, dated October 31, 1893.

Application filed July 20, 1892. Serial No. 440,699. (No model.)

To all whom it may concern:

Be it known that I, ROBERT O. MOORHOUSE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Doctors for Paper Making and Calendering Machines; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof as to enable others skilled in the art to make and use the said invention.

This invention relates to calender and other rolls used in the manufacture and finishing of paper, and has for its object the better guidance of paper through the calenders, and the better cleaning of the rolls during the operations of calendering, and the transfer of paper in its nascent state as it becomes a web from the pulp under compression, or in the finishing or final operation and smoothing of the surface in the process of calendering.

The invention consists in a mode of supporting the doctor or steel blade which skims against the surface of the roll by attaching it to the roll directly so as to follow all the deviations from the steady position of the roll which heretofore has been supported by attachments applied to the framing or bearing boxes of the rollers.

The application of the invention to a series of calender rolls is illustrated and shown in the transverse section in Figure 1. In Fig. 2, an end elevation of the rolls with the rear housing and boxes removed is shown with the doctor applied to it. Fig. 3, shows a set of press rolls with the invention applied thereto. Fig. 4, shows a front view of the calender with the length of the rolls shortened up for compactness in the drawing, and with the doctor applied according to this invention. Fig. 5 shows a separate view of one of the roll journals the bearing box for supporting the journal and the connection between the doctor support and the roll bearing box.

1, represents the top calender roll, 2, the second, 3, the third, 4, the fourth, and 5, the fifth calender roll.

6, represents a bearing attached to the neck or journal of said roll and the journal box thereof, having an arm 6' projecting outwardly therefrom, and to it attached an elas-

tic doctor blade 6'' which extends the length of the roll and is similarly supported by another bearing 6 from the journal of the opposite end of the rollers so as to always be with its edge in contact at a slight angle (almost a tangent) to the roll and constantly pressed against it.

7, is an arm having formed in it a nut 8, in which a set screw 9, is placed which operates upon the lever 10, and forces the doctor blade 6'' with increased pressure against the roll and the pressure is thereby graduated. The projections 18 may be made of screw bolts passing through holes in the bearing 6 into corresponding holes in the box 19; the heads of such screws are shown in Fig. 5 and marked 18. As thus applied, the paper 11, in passing around the rolls is prevented from carrying beyond the doctor, and is cleaned off and directed downwardly around the next roll, from which again it is directed by another doctor in like manner, so that the return or wrapping of the web of paper 11, around the roll is effectually prevented. As applied to the press roll, bearings 6 are secured to the journals 20 of the press roll, and the doctor blade 6'', similarly attached and pressed against the roll by the screw 9 working through the nuts 8, in the arm 7, so that the degree of pressure can be varied and adjusted. By connecting the supports directly from the journals of the several rollers a more intimate contact is secured at all times, notwithstanding the springing of the rolls themselves due to variations of pressure and resistance of foreign substances or double thicknesses of paper accidentally passing between the rollers. In conjunction with such doctor so applied guides 21 may be applied so as to direct the paper in its course around these several rollers, and reduce the labor of guiding the paper to a minimum on the part of the operator or attendant.

Having described my invention and the mode of operating the same, what I claim is—

1. In a doctor for calender rolls, the roll journals and the doctor blade and stops 18 in combination with the support directly attached to the roll journals and to the doctor blade for the purpose of compelling more intimate contact of the doctor at all times and

under all conditions of springing and variation of position of the rolls, substantially as and for the purpose set forth.

2. The doctor supported by bearings directly attached to journals or other concentric surface of the rolls and restricted from rotation therewith by stops 18 in combination with the set screw and arm arranged substantially as described for the purpose of regulating the pressure of the doctor against the roll surface as and for the purpose set forth.
3. A doctor for calendering rolls consisting

of a blade adapted to scrape foreign substances from a roll face in combination with arms and connected bearings adapted to be applied to concentric portions the roll and projections adapted to engage in the box supporting said roll and prevent rotation of the doctor with the roll substantially as set forth.

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Witnesses:

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