

(No Model.)

L. O'NEILL.
PAPER MACHINE.

No. 412,656.

Patented Oct. 8, 1889.

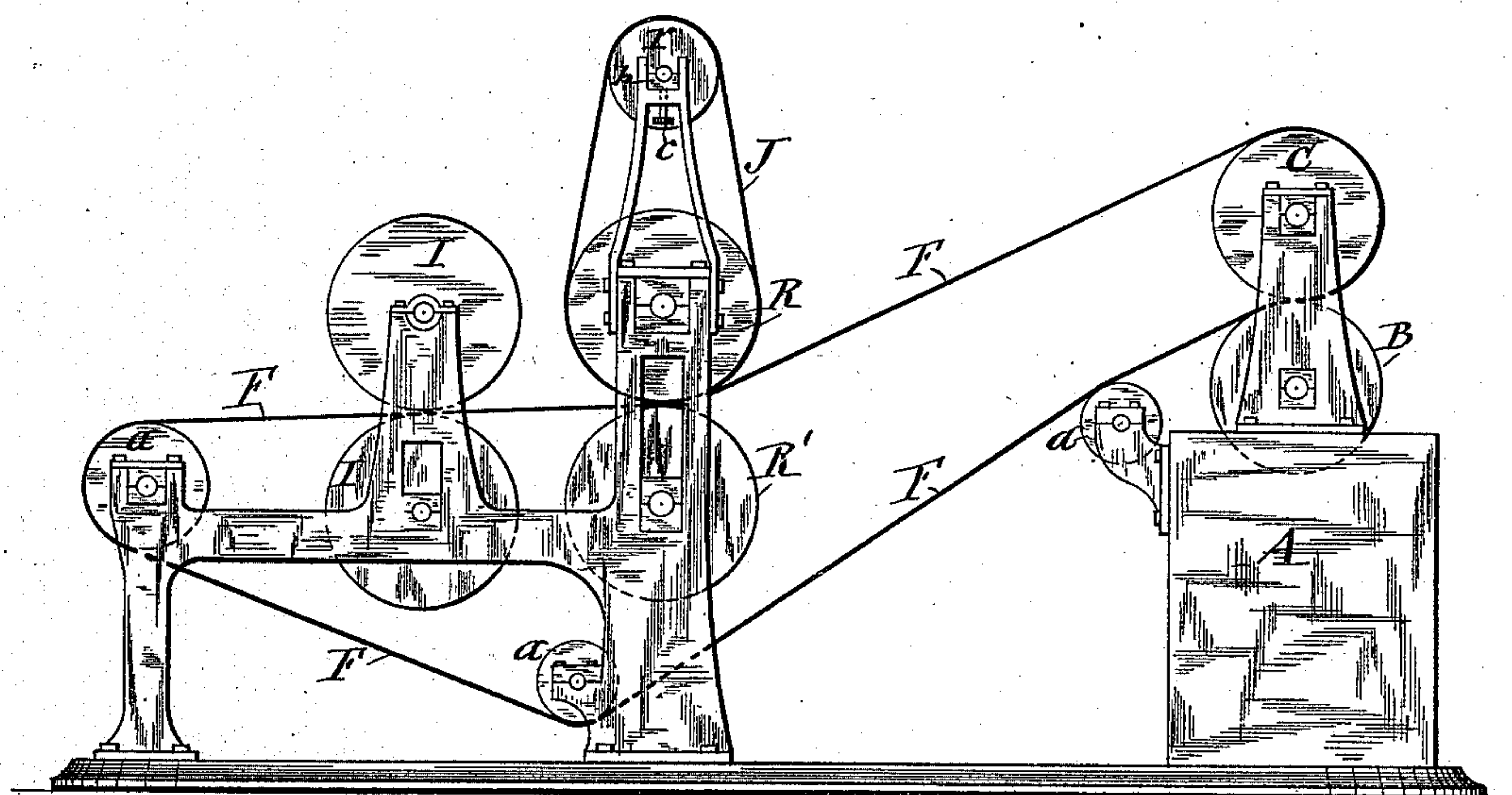


Fig. 1

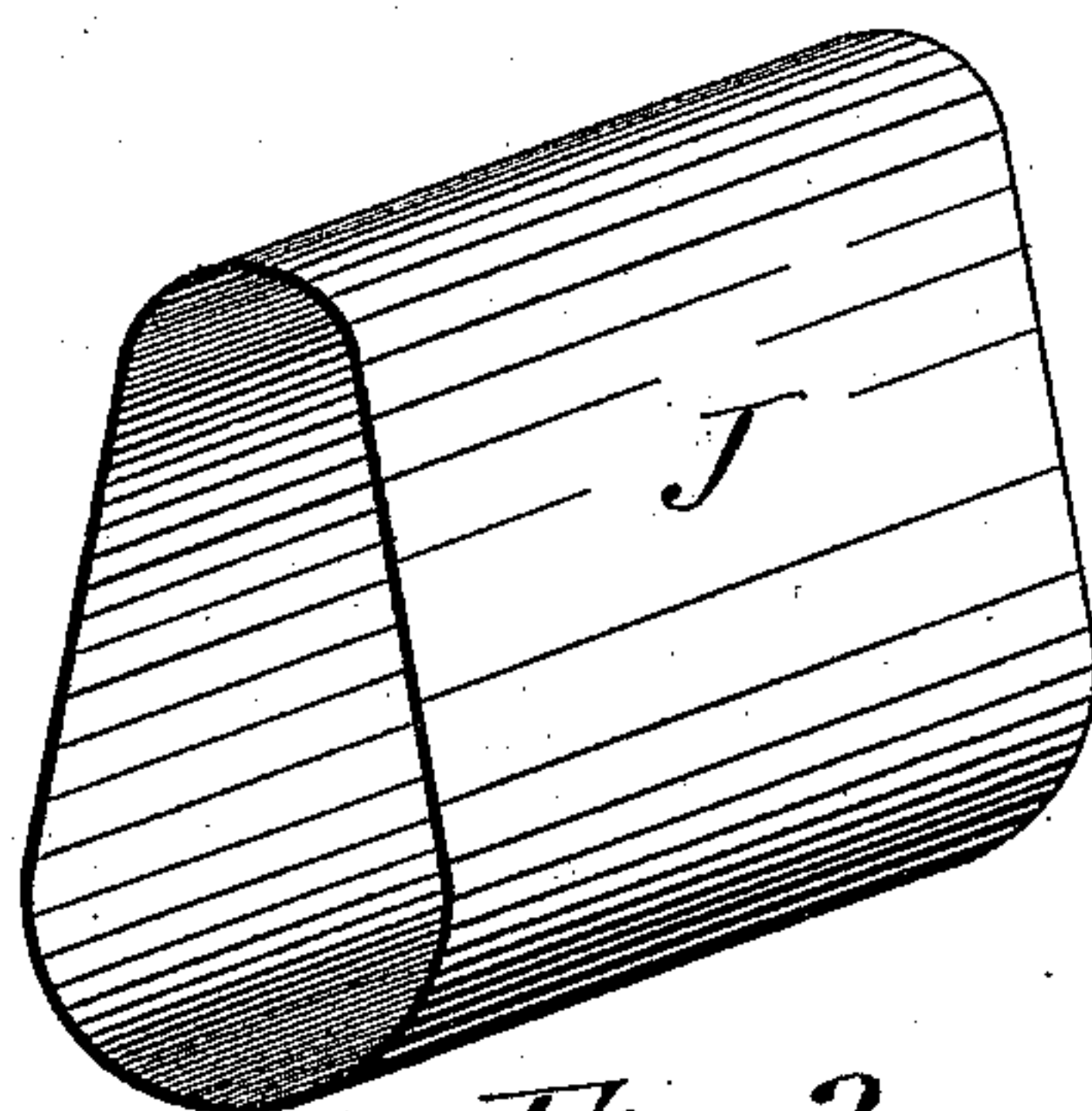


Fig. 2

WITNESSES:

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UNITED STATES PATENT OFFICE.

LAWRENCE O'NEILL, OF PENN YAN, NEW YORK, ASSIGNOR TO A. CLINTON BROOKS, JOHN SHUTTS, AND JOHN T. ANDREWS, 2D, OF SAME PLACE.

PAPER-MACHINE.

SPECIFICATION forming part of Letters Patent No. 412,656, dated October 8, 1889.

Application filed February 6, 1888. Serial No. 263,092. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE O'NEILL, of Penn Yan, in the county of Yates, in the State of New York, have invented new and useful Improvements in Paper-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of paper-making machines designated "cylinder machines;" and the object of this invention is to more effectually prevent the adhesion of the pulp to the upper press-roll, and thus not only permit a much greater speed of the motion of the machine and a correspondingly accelerated manufacture of paper, but also produce a superior quality of paper, which is smoother than paper made by the ordinary machines of this class.

To that end my invention consists, essentially, in the combination, with the press-rolls and apron passing between said rolls in the usual manner, of a jacket composed either partly or entirely of rubber surrounding the upper press-roll and of greater circumference than said roll, and a roller supported adjustably vertically above said press-roll and carrying the said jacket, all as hereinafter more fully described, and specifically set forth in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a paper-making machine embodying my invention, and Fig. 2 is a detached perspective view of the jacket.

A represents the pulp-vat; B, the so-called "making-roll," and C the couching-roll, which rolls are journaled in boxes secured to pedestals mounted on the aforesaid vat.

R R' designate the first set of press-rolls, all of which press-rolls are mounted in boxes on the main supporting-frame of the machine, and F is the endless apron or felt, which passes from the couching-roll between the first set of press-rolls, thence between the second set of press-rolls, and is thence guided by rolls *a a* back to the couching-roll. The pulp being carried on top of that portion of the apron or felt F which passes from the couching-roll C between the press-rolls, and receiving its first compression between the rolls R R', the upper press-roll R therefore requires a suitable facing to prevent the pulp from adhering to it and to produce a

uniform smooth surface on the pulp, and for that purpose said upper press-roll has hitherto been either formed entirely of vulcanized rubber or formed of other hard material and faced with vulcanized rubber or cloth. In lieu of this form of construction, I employ my improved facing, consisting of an endless jacket J, composed either wholly of rubber or of rubber incorporated in textile fabric. This jacket surrounds the upper press-roll C, and is of considerably greater circumference than said roll, and is supported above the roll R by a suitable carrier, preferably of the form of a tightening-roller *r*, arranged above and parallel with the press-roll and having the jacket extending around the top of it. The tightening-roller *r* is journaled in boxes or suitable bearings *b*, which are supported adjustably vertically by set-screws *c*, or other suitable means, to allow the roller *r* to be elevated when required to tighten the jacket J. The tight hold of the jacket on the upper press-roller causes the former to move synchronously with the latter, and the tension of the jacket causes the same to run smoothly between the two press-rolls R R' and press the pulp down upon the felt and leave it lying smoothly upon the same.

By the described jacket I provide the upper press-roll with a facing which is more durable and more effective in its operation and can be readily renewed when required.

What I claim as new, and desire to secure by Letters Patent, is—

In a paper-machine, the combination, with the press-rolls R R' and felt F, passing between said rolls, of the endless rubber jacket J, surrounding the upper roll R, bearings *b b*, arranged adjustably vertically above said roll, and the roller *r*, journaled in said bearings and carrying the aforesaid jacket, substantially as described and shown, for the purposes set forth.

In testimony whereof I have hereunto signed my name, in the presence of two witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 31st day of January, 1888.

LAWRENCE O'NEILL.

Witnesses:

MARK W. DEWEY,
C. H. DUELL.