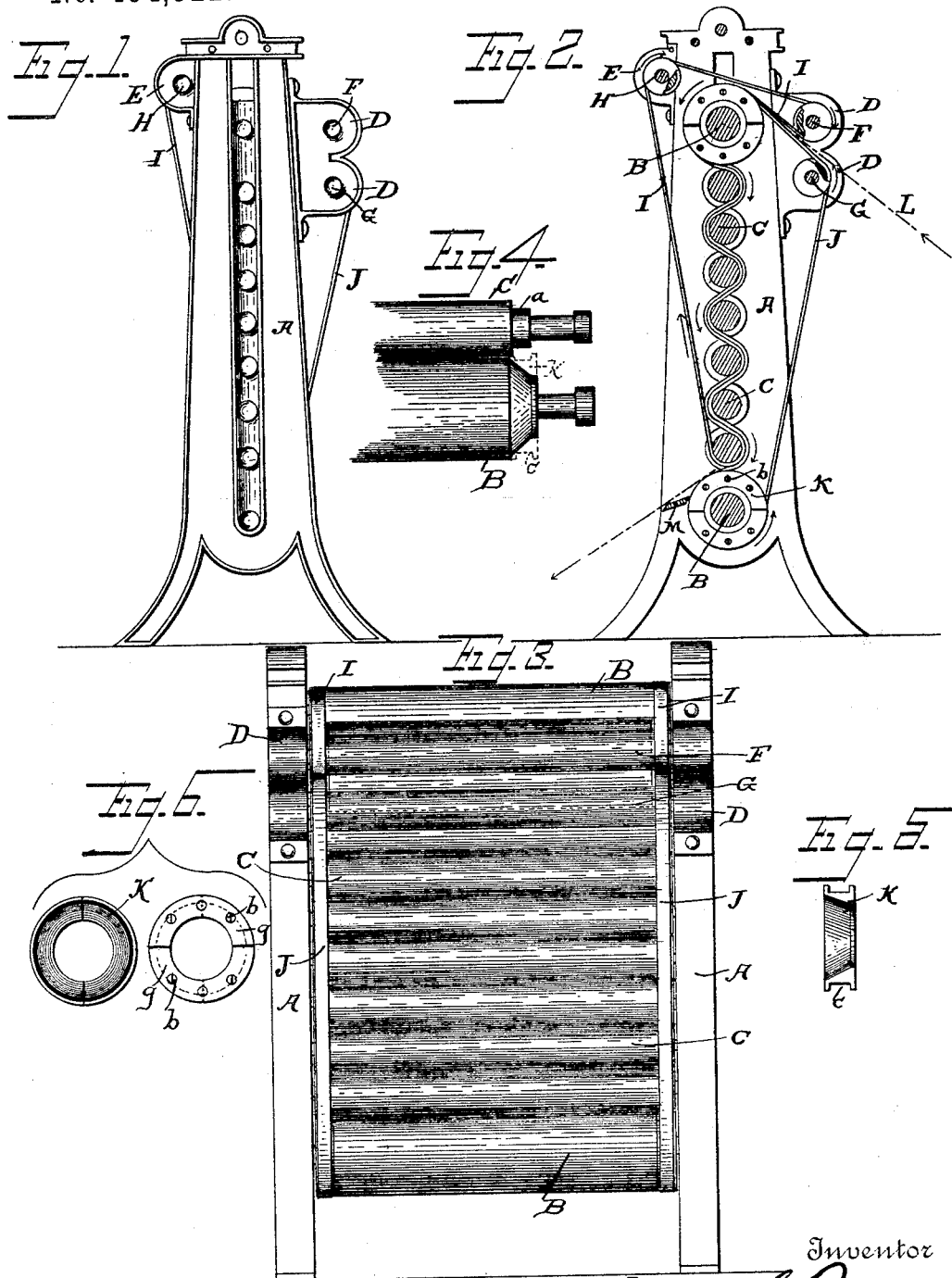


(No Model.)

A. S. BACON.
PAPER CALENDERING ROLLS.

No. 454,322.

Patented June 16, 1891.



Witnesses
C. E. Hunt.
Alfred T. Sage.

Inventor
Albert S. Bacon,
by *W. Henderson,*
his Attorney,

UNITED STATES PATENT OFFICE.

ALBERT S. BACON, OF MANCHESTER, VIRGINIA.

PAPER-CALENDERING ROLLS.

SPECIFICATION forming part of Letters Patent No. 454,322, dated June 16, 1891.

Application filed November 17, 1890. Serial No. 371,698. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. BACON, a citizen of the United States, residing at Manchester, in the county of Chesterfield and State of Virginia, have invented certain new and useful Improvements in Paper-Calendering Rolls; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to paper-calendering rolls, and has for its object to produce improved means for feeding the paper to the rolls, which may be used in connection with rolls already in use.

The invention consists in the construction and the combination of parts hereinafter particularly described and claimed, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a side elevation of a stack of rolls with my invention applied thereto; Fig. 2, a vertical cross-section through the same; Fig. 3, a front elevation of the same; Fig. 4, a front view of a portion of the bottom roll and one of the small rolls, showing in dotted lines the cap or socket, hereinafter described, applied to the bottom roll. Fig. 5 is a side view of one section of said cap. Fig. 6 is a front and also a rear view of said cap.

In the drawings, the letter A designates the usual standard or frame for supporting the stack of calender-rolls B and C, and having bolted or otherwise secured thereto the brackets D at the front and the brackets E at the rear, located near the top of the frame. In the front brackets I journal two rolls F and G, one above the other, and in the rear bracket I journal a roll H. These rolls are preferably arranged as shown, and are intended to guide the two belts or bands I and J, hereinafter more particularly described, and intended to feed the paper to and through the stack of rolls.

By locating the rolls F, G, and H as described I am enabled to bring the feed of the paper as low down as desired, depending on the point of application of the rolls F and G,

so that the attendant is not obliged to reach to the height of the top roll of the stack, which, if many rolls be used in the stack, is exceedingly inconvenient, and necessitates the attendant standing on a platform to the required elevation; but by arranging the rolls as described the attendant can stand on the floor to make the feed, as the feed bands or belts will be within easy reach and will carry the paper from his hands upward to the top roll and over the same. By this arrangement, also, the two belts are all that are necessary not only to carry the paper up to the top roll of the calender-rolls, but also for directing the paper between the rolls. The advantages will be apparent to the trade without further amplification.

The ends of the small calender-rolls C are grooved or reduced in diameter, as illustrated at *a* in Fig. 4, so that when the belts or bands are therein the paper between the bands or belts will be on about the plane of the surface of the rolls. The large rolls B at the top and bottom of the stack of rolls are, as usually made, formed with tapering or conical ends, as illustrated in Fig. 4. In order that a proper bearing may be provided at these conical ends for the belts or bands, I place caps K on the conical ends of these rolls, the caps being conical on the inside, so as to fit to the ends of the rolls, and plane on their periphery, so as to afford a flat bearing for the belts or bands. These caps are made in sections, preferably in two parts, so that they may be placed in position without removing the rolls. The sections may be secured together by suitable means—for instance, by screws *b*, passed through plates *g*, which are made to lap the joint of the two sections of the cap, the screws entering the end of the cap and the caps loose enough to turn on the rolls. The peripheries of these caps are preferably formed with a groove *c*, so that the belts or bands may lie therein and be prevented from slipping off. These caps bring the belts or bands up to about a level with the surface of the rolls, and being loose they cause the friction between the belts and rolls to be greatly reduced at the point where the belts pass from the larger to the smaller rolls. If the caps were not loose, the belts at the points mentioned would soon wear out and be rendered

useless, as has been demonstrated in actual practice, but by reducing the friction at such points, as I have done, the life of the belts is greatly increased.

5 The ends of the rolls F, G, and H are likewise preferably grooved, as illustrated by the broken-away portions in Fig. 2; so as to prevent the bands or belts from slipping off.

10 The band or belt I passes over the roll F, thence to the rear of the frame and over the roll H, thence down and around the bottom small roll C and upward, back and forth, between the other small calender-rolls, and thence over the cap to the upper roll B and
15 again to the roll F. The belt J passes over the roll G, thence over the cap to the upper roll B, thence down and back and forth between the series of small calender-rolls C, and at the bottom around the cap to the lower roll
20 B, and thence up to the roll G, thus completing its circuit. The two belts travel in the direction indicated by the arrows, and the rolls turn by frictional contact and derive motion as under ordinary and well-known
25 constructions.

In operation the paper L is fed between the two rolls F and G, and, entering between the two belts, is taken by them and carried down the stack between the series of rolls composing the same and delivered at the bottom from
30 the bottom roll onto the doctor M, from which it passes in its calendered condition.

Under the construction described only two belts and three additional rolls are necessary
35 to form a satisfactory and complete feed for the paper, and the same can be applied at little expense to calender-rolls already in use.

I have shown the belts or bands placed at

each end of the rolls, but I intend this invention to cover arrangements of bands and rolls, 40 even though the bands at one end be omitted.

Having described my invention and set forth its merits, what I claim is—

1. In calender-rolls, the combination, with the stack of rolls, of the two belts or bands, 45 both of which pass around rolls arranged in front of the stack and then over the upper roll of the stack and one of them around a roll at the rear of the stack, said bands being close together to grip the paper at the front 50 of the stack and feed it to the upper roll of the stack and direct it between the rolls of the stack in its passage from one end to the other of the stack, and loosely-fitting caps to some of the rolls, around which caps at least 55 one of said bands passes, substantially as and for the purposes set forth.

2. In a calender-roll, the combination, with the stack of rolls, some of the rolls of which have conical ends, of caps loosely fitting to 60 said conical-end rolls to form a loose bearing for carrying bands or belts substantially level with the surface of the rolls, rolls F and G in front of the stack, roll H at the rear of the stack, and belts or bands passing around said 65 front and rear rolls, the caps to the conical-end rolls and between the intermediate rolls of the stack, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in 70 presence of two witnesses.

ALBERT S. BACON.

Witnesses:

A. R. COURTNEY,
J. L. ANDERSON.