

No. 763,251.

PATENTED JUNE 21, 1904.

J. H. BRECK.
EXPANSIBLE ROLL.
APPLICATION FILED MAR. 7, 1904.

NO MODEL.

FIG. 1.

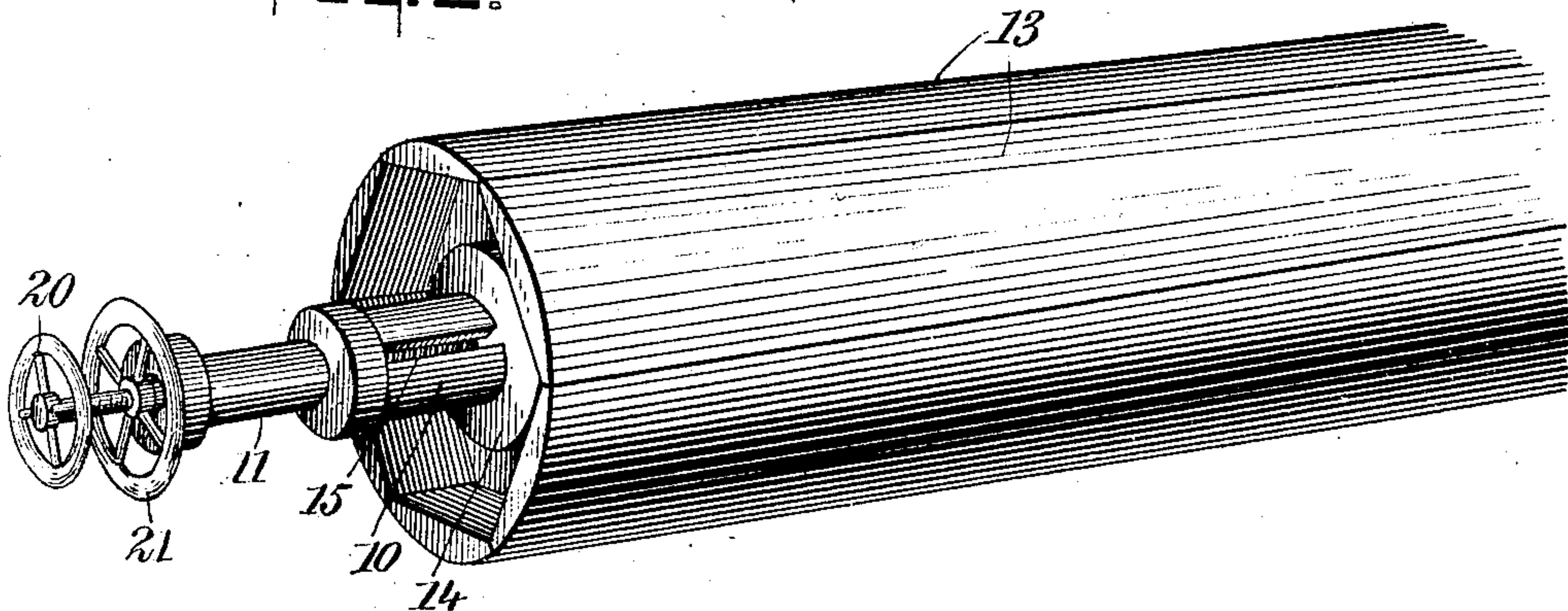


FIG. 2.

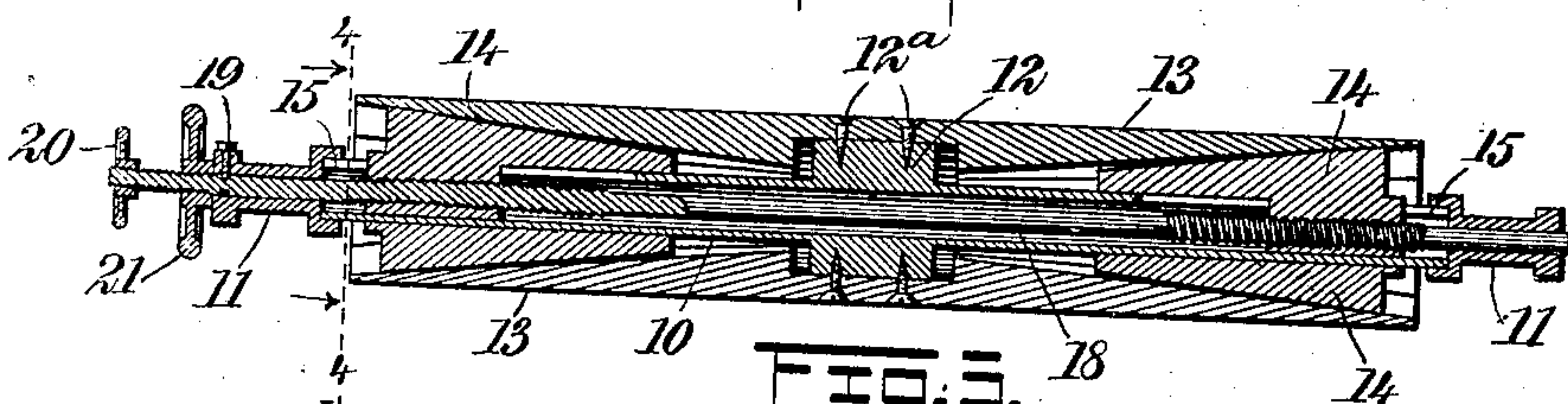


FIG. 3.

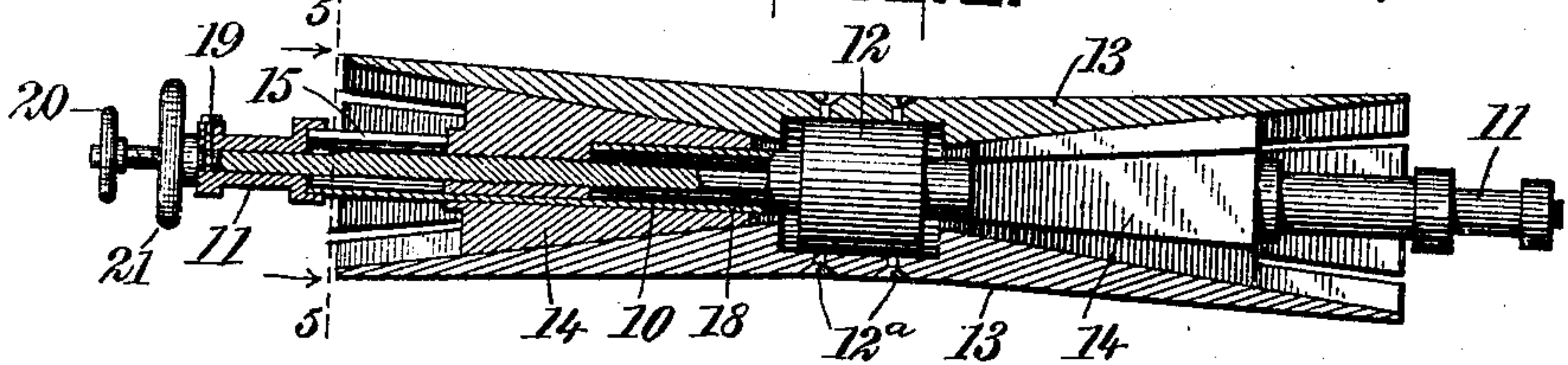


FIG. 4.

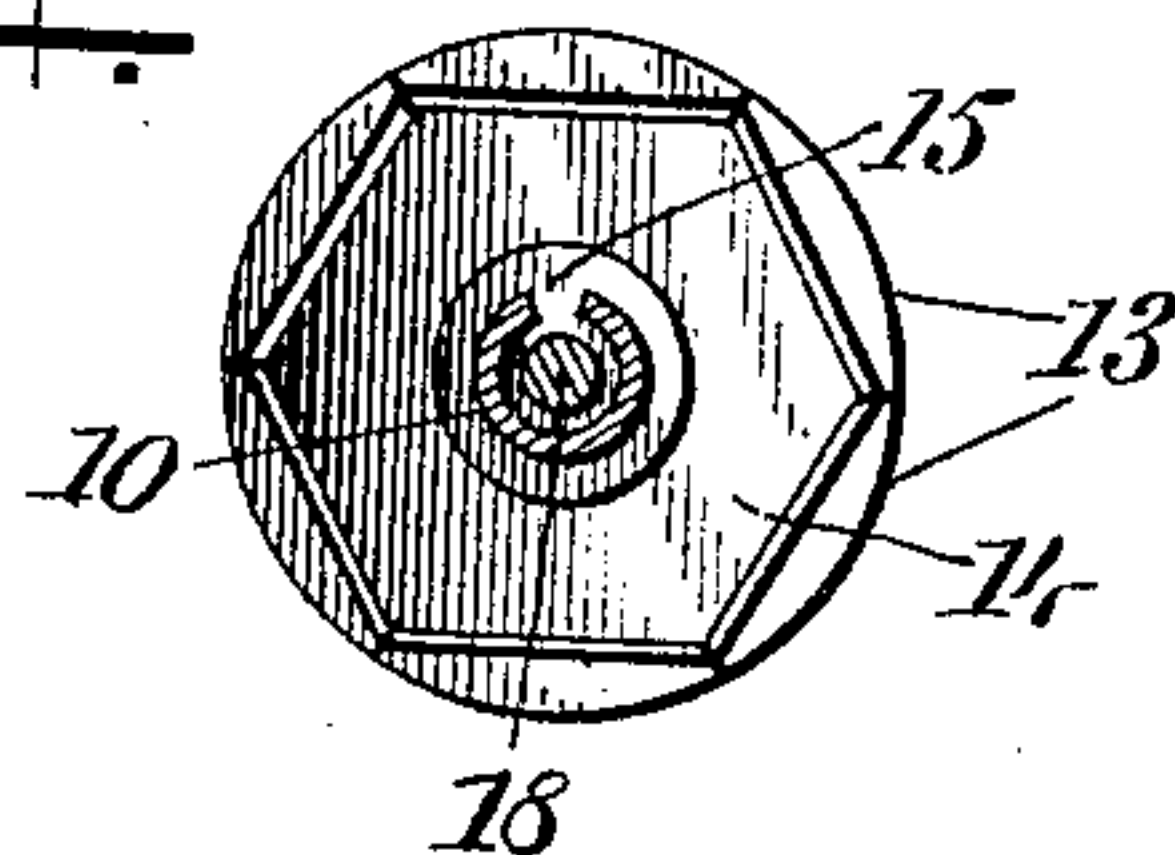


FIG. 5.

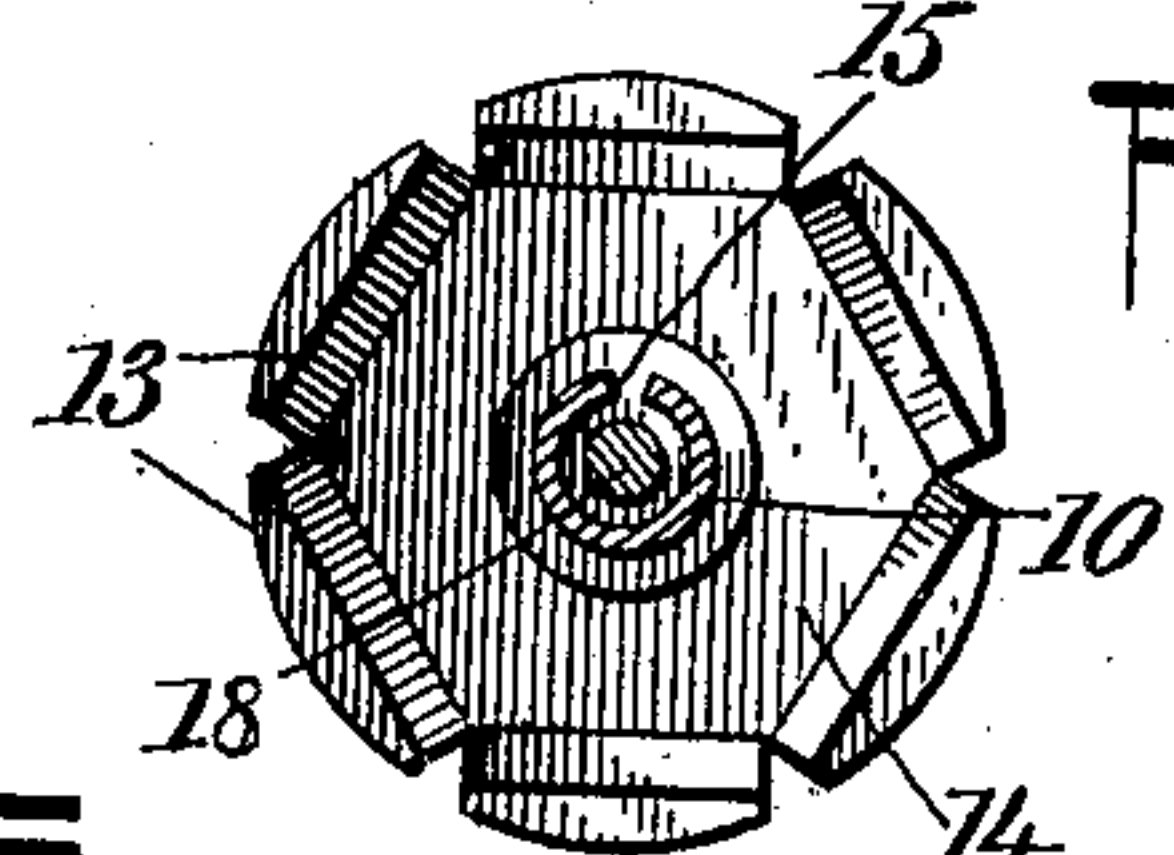
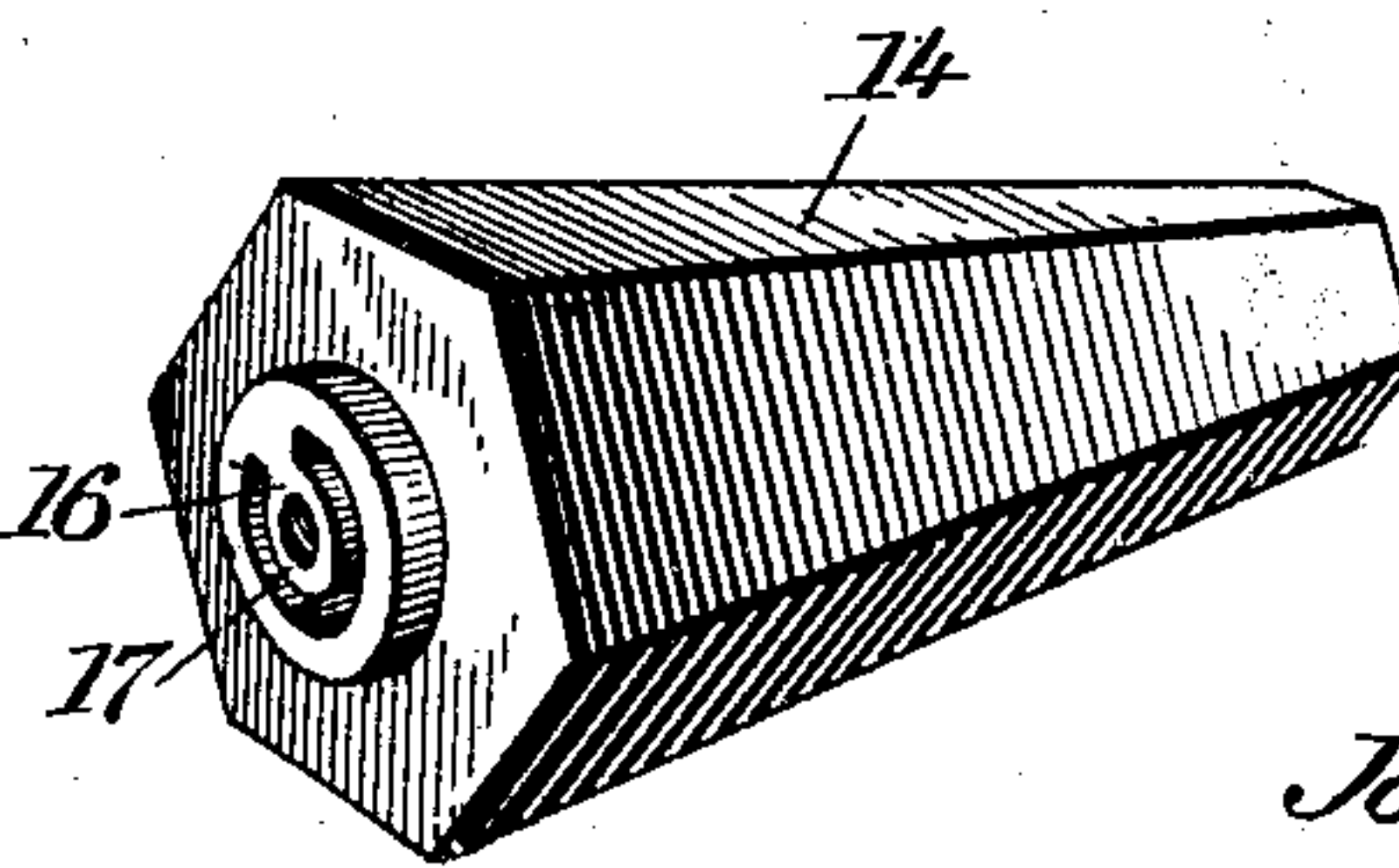


FIG. 6.



WITNESSES:
W. M. King
J. H. Cobb

INVENTOR
Joseph H. Breck
BY *Wm. M. King*
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH H. BRECK, OF BRISTOL, NEW HAMPSHIRE.

EXPANSIBLE ROLL.

SPECIFICATION forming part of Letters Patent No. 763,251, dated June 21, 1904.

Application filed March 7, 1904. Serial No. 196,928. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. BRECK, a citizen of the United States, and a resident of Bristol, in the county of Grafton and State of New Hampshire, have invented a new and Improved Expansible Roll, of which the following is a full, clear, and exact description.

My invention relates to rolls the peripheries of which may vary in size, and more particularly to those adapted for use in paper-machines. In such apparatus it is of considerable importance that the seam of the felts be kept straight; otherwise the blowing of air through the pulp is liable to occur and the felts tend to narrow up, drawing the warp and decreasing their life. The seams are ordinarily ~~fixed~~ secured by the securing of pieces of cloth upon the rolls, which is difficult to properly carry out and which causes the loss of time and production, since it is necessary to stop the machine. Moreover, the tacks used are liable to get into the felts and cause damage. To obviate these difficulties and provide means for readily varying the rolls as is desired without the necessity for stopping the machine are the principal objects of my invention.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a portion of a roll embodying one form of my invention. Fig. 2 is a central longitudinal section therethrough with the periphery in its normal or unexpanded position. Fig. 3 is a similar view of the sections expanded. Figs. 4 and 5 are transverse sections on the lines 4 4 and 5 5 of Figs. 2 and 3, respectively; and Fig. 6 is a perspective view of one of the expanding members.

10 designates a shaft, which is here shown as hollow and provided at its ends with journal portions 11 11. Near the center of the shaft is an enlargement 12, which may be secured to or integral with it, and upon this enlargement are fastened, by screws 12^a or the like, peripheral sections 13, which are formed of some flexible material—for exam-

ple, wood. These sections are substantially in contact at their edges and the outer side of each is curved, so that the periphery as a whole is of cylindrical form. Upon their inner sides they are inclined from the center outward, being here shown as having plane surfaces for coaction with similar faces upon an operating or expanding member 14, one of said members being situated upon each side of the center of the shaft and movable along its exterior. These are here illustrated as of frustopyramidal form; but obviously with a corresponding curved countour of the inside of the sections they might instead be conical.

The shaft 10 is slotted at each end at 15, and though each slot projects a neck 16, connecting a nut 17 with the expanding member. These nuts are provided with internal right and left handed threads, respectively, which engage corresponding threads upon a rod 18, extending through the shaft and having a bearing in the journal portions 11 11. The rod may be retained against longitudinal movement by a screw 19, threaded through one of the journals and having its inner end located within a groove in the rod. At one end of the rod is secured an operating member or hand-wheel 20 for convenience in rotating it, and threaded upon the rod adjacent to this hand-wheel is a nut or hand-wheel 21, which may be forced against the end of the journal portion for locking the rod in its adjusted position.

In use the roll may be applied to the machine in which it is to be used with the parts in the position illustrated in Fig. 2, or somewhat expanded. Then if it is found that the seam of the felts does not run straight it is only necessary for the operator to release the locking-wheel and rotate the rod by its hand-wheel. This moves the expanding members along the shaft, forcing them into contact with the peripheral sections, which are bent outwardly, varying the diameter of the roll, and consequently the rate of travel of different parts of the felts thereon. This adjustment may be changed by moving the ends of the sections toward or from the shaft until the desired travel is obtained and the seam runs

true, when the rod may be again locked against rotation. It will be evident that this may be very readily accomplished without the stopping of the machine or decreasing its production and that there is no danger of in any way injuring the felts.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a shaft, of flexible peripheral sections fixedly secured near their centers to said shaft, and an expanding member which may be forced against the inner sides of the sections near each end.

2. The combination with a shaft, of flexible peripheral sections fixedly secured near their centers to said shaft and having inclined inner faces, an operating member having inclined faces coacting with those of the sections near each end, and means for moving the operating member along the shaft.

3. The combination with a hollow shaft, of peripheral sections mounted on said shaft, a threaded rod extending through the shaft, and

an expanding member engaging the rod and coacting with the sections.

4. The combination with a hollow slotted shaft, of peripheral sections mounted upon said shaft, a threaded rod extending within the shaft, and an expanding member movable along the shaft and having a nut connected through the shaft-slot and engaging the rod.

5. The combination with a hollow shaft having an enlargement between its ends, of flexible sections secured to the enlargement and provided with inclined inner faces, a threaded operating-rod within the shaft, an expanding member movable upon the rod and having a thread engaging that of the rod, and means for rotating the rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH H. BRECK.

Witnesses:

FRANK N. GILMAN,
FRANK P. FIELDS.