No. 895,298. PATENTED AUG. 4, 1908.

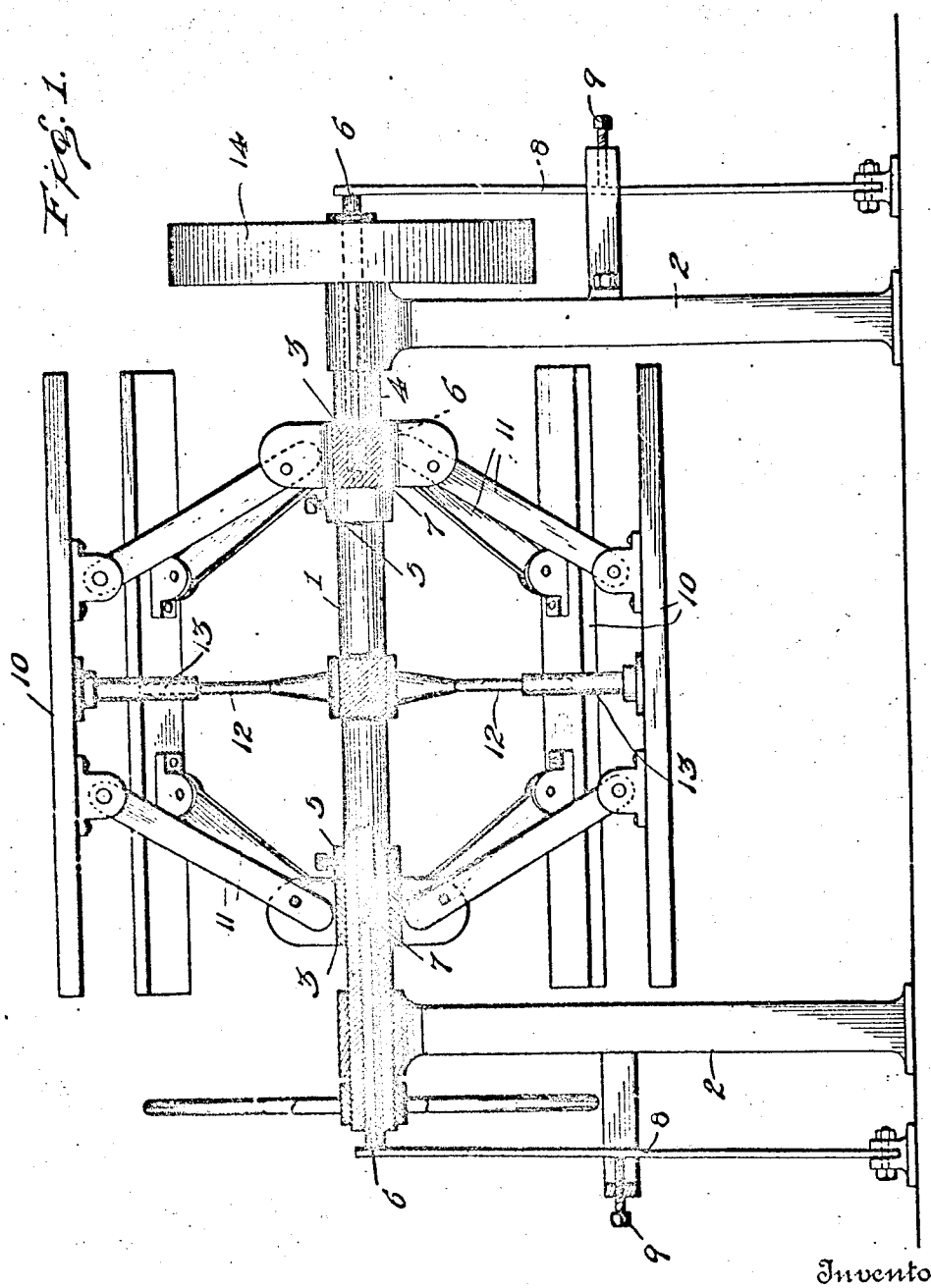
E. J. POPE.

REEL FOR PAPER MAKING MACHINES.

APPLICATION FILED DEC. 28, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

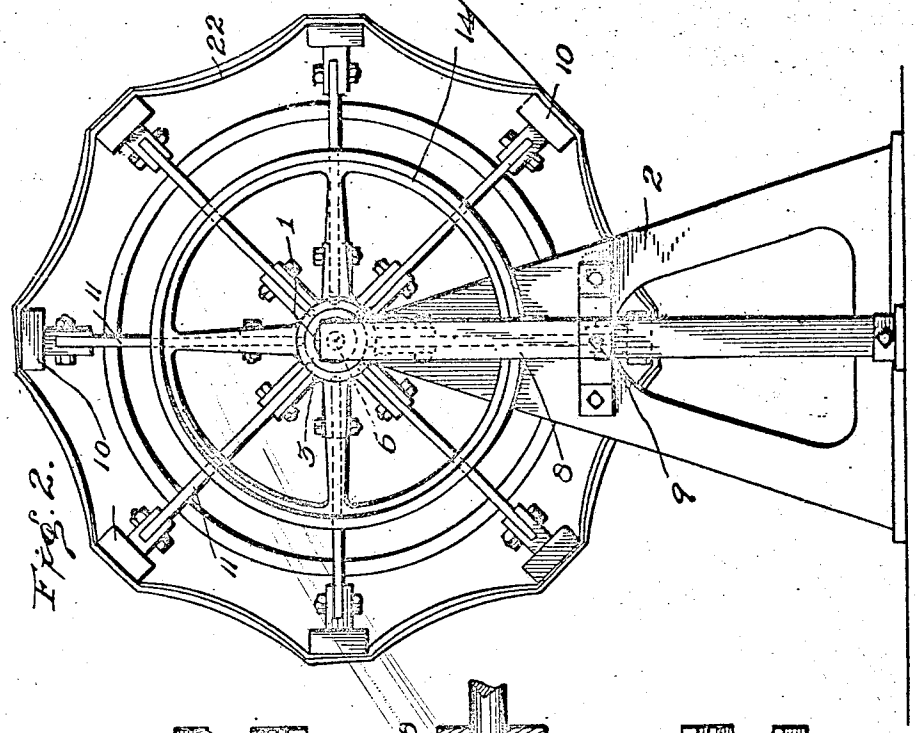


Fig. 2.

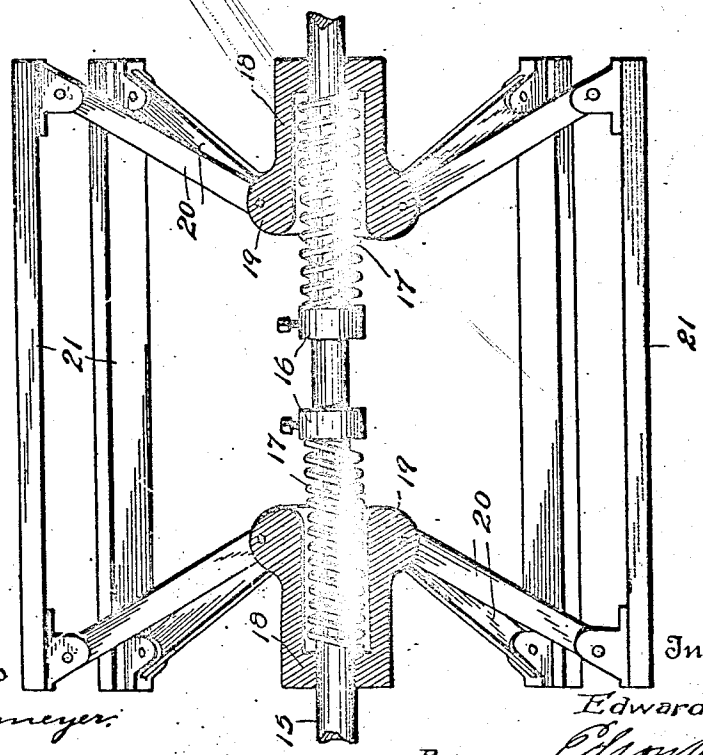


Fig. 3.

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UNITED STATES PATENT OFFICE.

EDWARD J. POPE, OF HOLYOKE, MASSACHUSETTS.

REEL FOR PAPER-MAKING MACHINES.

No. 895,298. Specification of Letters Patent. Patented Aug. 4, 1908.

Application filed December 26, 1907. Serial No. 408,090.

To all whom it may concern:

Be it known that I, EDWARD J. POPE, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Reels for Paper-Making Machinery; and I do hereby 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.

My invention relates to improvements in reels for use in paper making.

It has for its object, among others, to wind the web of paper or other material in such a manner that the outside layer is always the same length as each of the under layers whereby the strain on the material does not increase as it winds up and an even thickness of material is produced.

To this end the invention consists in constructing the reel so that it will contract or grow smaller as the web is wound upon it as hereinafter described and specified in the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention: Figure 1 is a broken longitudinal sectional view of a reel constructed in accordance with my invention. Fig. 2 is an end view of said reel showing several rounds of paper web wound thereon, and Fig. 3 is a longitudinal section of a modified construction of reel.

In carrying out my invention, I mount the reel on a hollow shaft or spindle 1 journaled in uprights or stands 2. Mounted to slide on said shaft are sleeves 3 keyed in slots 4 of said shaft and limited in their inward movements by collars 5. Rods or pins 6 are arranged in the ends of the shaft and connect with the keys 7 of said sleeves, which are arranged in the slots 4. Said sleeves are normally pressed inward by springs 8 engaging the ends of said rods 6 and adjustable by means of the set screws 9.

The ribs 10 of the reel are pivotally mounted on the ends of arms or links 11 also pivoted at their opposite ends to the sleeves 3. Said arms or links are inclined inwardly from each end of the reel so that when the ribs are pressed in, said sleeves will slide towards the ends of the shaft against the influence of the springs. On the central portion of the shaft 1 there are mounted guide arms 12 having their ends arranged in socket pieces 13 secured to the ribs 10, whereby said ribs are held in proper alinement. The reel is driven by a pulley 14 or any other suitable means.

In the modified construction of reel, illustrated in Fig. 3, a solid shaft 15 is employed. Near the middle of said shaft there are mounted two adjustable collars 16 against which bear coiled springs 17 mounted on said shaft, the other ends of said springs abutting against sliding sleeves 18. As shown in the drawing, said sleeves have horizontal extensions 19 projecting inward over the coiled springs. The links or arms 20 supporting the ribs 21 are pivoted to the inner ends of said extension and diverge outward. It will be noted that pressure on the ribs will tend to slide the sleeves toward each other against the springs. It will be noted that it is not necessary to provide the extensions 19 if the reel or ribs thereof are long enough to give the proper incline from their ends to the sleeves themselves.

It will be observed by reference to Fig. 2 that as the material 22 is wound upon the reel, the latter gradually contracts or shrinks so that the outside diameter of the roll remains constant and the under folds or rounds become slack and extend inward between the ribs toward the shaft. The degree of contraction of both forms of reel may be regulated by means of the tension screw 9 acting upon the springs 8, and the adjustable collars 16, respectively.

I claim:

1. A reel of the character described, consisting of a shaft, a sleeve mounted to slide on said shaft, obliquely arranged arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, and a spring effective to yieldingly hold said sleeve so that said ribs will be supported in extended position.

2. A reel of the character described, consisting of a shaft, a sleeve mounted to slide on said shaft, obliquely arranged arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, a spring effective to yieldingly hold said sleeve so that said ribs will be supported in extended position, and means to retain said ribs in proper alinement.

3. A reel of the character described, consisting of a shaft, a sleeve mounted to slide on said shaft, obliquely arranged arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, a spring ef-

fective to yieldingly hold said sleeve so that said ribs will be supported in extended position, means to retain said ribs in proper alinement and means to regulate the tension of said spring.

4. A reel of the character described, consisting of a shaft, sleeves mounted to slide on said shaft, oppositely inclined arms pivoted on said sleeves, ribs pivotally mounted on the other ends of said arms, and springs effective to yieldingly hold said sleeves so that said ribs will be supported in extended position.

5. A reel of the character described, consisting of a shaft, sleeves mounted to slide on said shaft, oppositely inclined arms pivoted on said sleeves, ribs pivotally mounted on the other ends of said arms, means to retain said ribs in proper alinement, and springs effective to yieldingly hold said sleeves so that said ribs will be supported in extended position.

6. A reel of the character described, consisting of a shaft, sleeves mounted to slide on said shaft, oppositely inclined and outwardly converging arms pivoted on said sleeves, ribs pivotally mounted on the other ends of said arms, and springs effective to yieldingly hold said sleeves so that said ribs will be supported in extended position.

7. A reel of the character described, consisting of a hollow shaft, a sleeve mounted to slide on said shaft and having a key arranged in a slot in said shaft, arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, a rod arranged in said shaft and connected with the key of said sleeve, and a spring bearing on said rod for the purpose specified.

8. A reel of the character described, consisting of a hollow shaft, a sleeve mounted to slide on said shaft and having a key arranged in a slot in said shaft, arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, a rod arranged in said shaft and connected with the key of said sleeve, a spring bearing on said rod for the purpose specified, and means to regulate the tension of said spring.

9. A reel of the character described, consisting of a hollow shaft, a sleeve mounted to slide on said shaft and having a key arranged in a slot in said shaft, arms pivoted on said sleeve, ribs pivotally mounted on the other ends of said arms, a rod arranged in said shaft and connected with the key of said sleeve, a spring bearing on said rod for the purpose specified, and means to retain said ribs in proper alinement.

10. A reel of the character described, consisting of a hollow shaft, sleeves mounted to slide on said shaft and having keys arranged in slots in said shaft, oppositely inclined and outwardly converging arms pivoted on said sleeves, ribs pivotally mounted on the other ends of said arms, rods arranged in the ends of said shaft and connected with the keys of said sleeves, and springs bearing on said rods for the purpose specified.

11. A reel of the character described, consisting of a shaft, sleeves mounted to slide on said shaft, oppositely inclined and outwardly diverging arms pivoted on said sleeves, ribs pivotally mounted on the other ends of said arms, and springs effective to yieldingly hold said sleeves so that said ribs will be supported in extended position.

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

EDWARD J. POPE.

Witnesses:
W. L. EATON,
H. C. SMITH.