No. 689,834. Patented Dec. 24, 1901.

C. F. TILTON.

MOUNTING ROLLS ON SHAFTS.

(Application filed May 15, 1901.)

(No Model.)

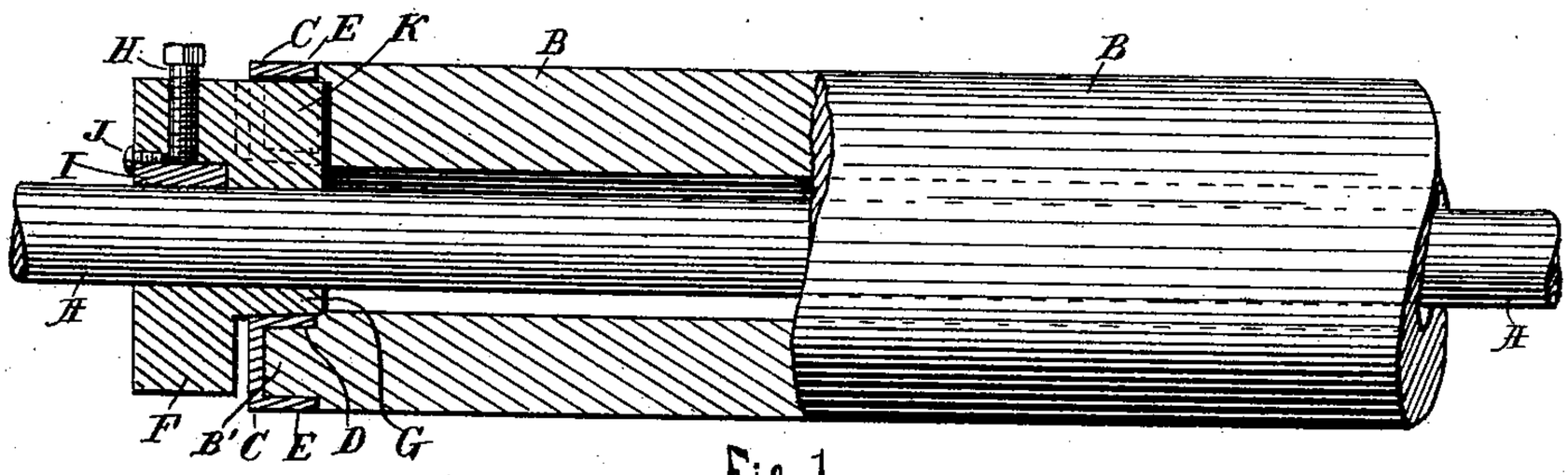

Fig. 1.

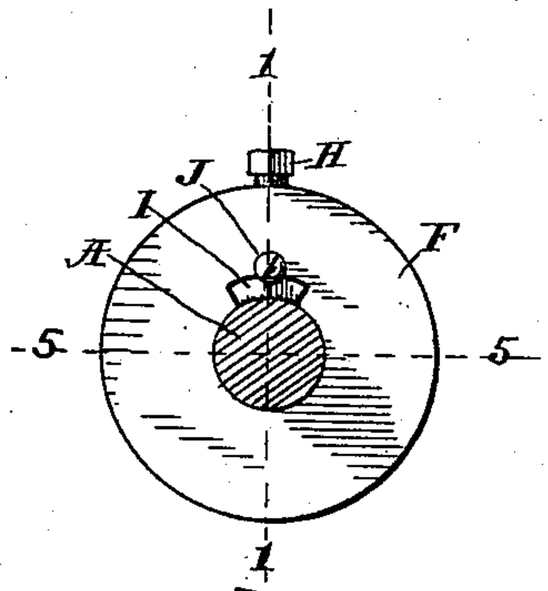

Fig. 2.

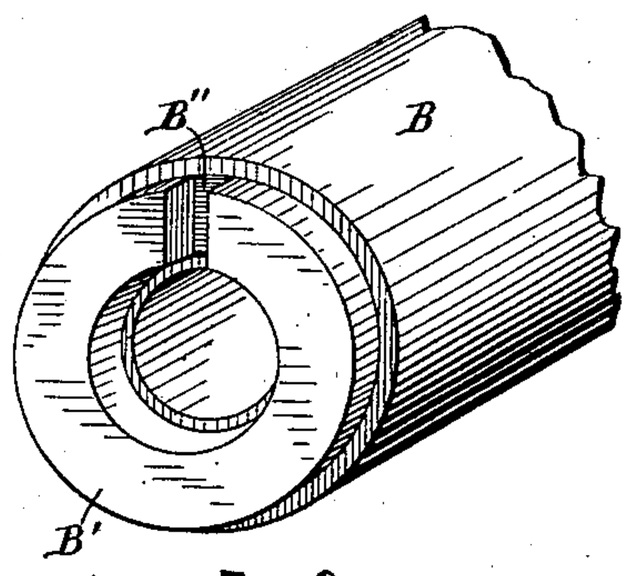

Fig. 3.

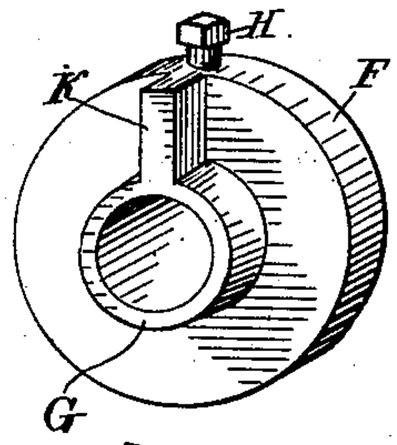

Fig. 4.

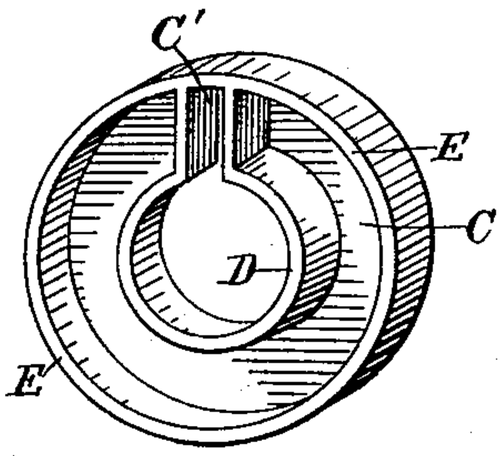

Fig. 6.

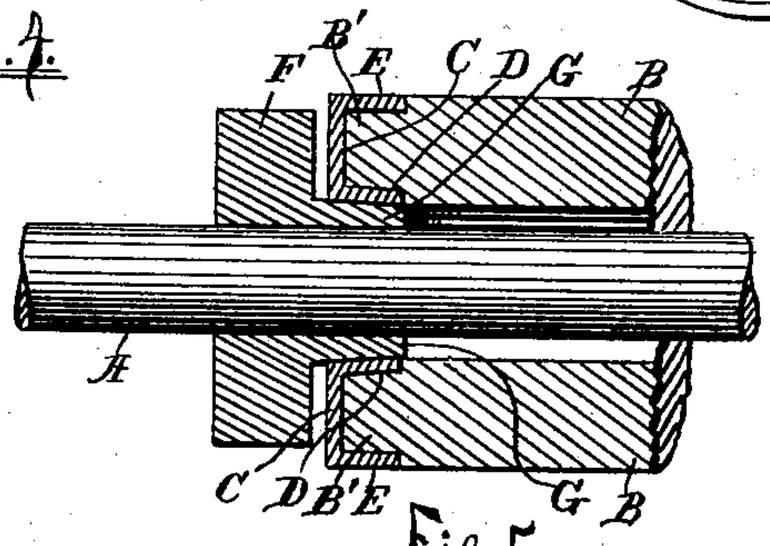

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES F. TILTON, OF GRAND RAPIDS, MICHIGAN.

MOUNTING ROLLS ON SHAFTS.

SPECIFICATION forming part of Letters Patent No. 689,834, dated December 24, 1901.

Application filed May 15, 1901. Serial No. 60,326. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. TILTON, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Mounting Rolls on Shafts; 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 improved means for mounting rolls on shafts, and more especially to mounting rolls on which paper is wound on shafts for printing-presses and other like machines; and its object is to provide means whereby a roll may be securely attached to a shaft and accurately adjusted thereon and at the same time readily detachable therefrom, to provide a cheap and durable device, and to provide the same with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My invention consists, essentially, in providing tubular wooden rolls with suitable metal caps at each end, each cap having an axial opening to receive a boss on a collar, said collar having an internal opening to fit the shaft, means for securing the collars on the shaft, and means for connecting the collars and caps, as hereinafter more fully described and as illustrated by the accompanying drawings, in which—

Figure 1 represents one end of a device embodying my invention shown mainly in longitudinal section on the line 1 1 of Fig. 2; Fig. 2, an end elevation of the same; Fig. 3, a perspective of one end of the roll; Fig. 4, a perspective of the collar; Fig. 5, a longitudinal section on the line 5 5 of Fig. 2, and Fig. 6 a perspective of the cap.

Like letters refer to like parts in all the figures.

A represents the shaft of the machine, on which the roll is mounted.

B is a portion of the roll, preferably made of wood, tubular in form, and having an opening considerably larger than the shaft A, and also provided at each end with a suitable tenon B′, to be inserted between the flanges of the cap and cut away at B″ to receive the socket for the fin K.

C is a metal cap having flanges D and E to engage opposite sides of the tenon B′. This cap is provided with a central opening to receive the boss G on the collar F. This opening and the boss G are preferably tapered to insure a close fit and accurate centering of the roll on the shaft. To connect the roll and collar, a socket C′ is provided in the cap and a radial fin K is provided on the collar to enter said socket. The collar and boss are bored to accurately fit the shaft A. The collar is also provided with a hardened and corrugated segmental key I, inserted in a recess in the collar. The engagement of the radial ends of the recess and key prevents the key from dropping inward when the collar is detached from the shaft. The key is inserted endwise in this recess and held therein by a screw J, inserted in the collar and having its head engaging the key.

H is a set-screw to force the key I against the shaft A, and thus adjustably and detachably secure the collar on the shaft.

From the foregoing description the operation of my device will be readily understood. The collars being accurately fitted to the shaft, when the bosses are inserted in the caps the roll will be accurately adjusted concentric with the shaft, and when the screws H are set the collars will be fixed on the shaft, and the engagement of the fins K with the sockets C′ will cause the roll to rotate with the shaft. If so desired, the screws H may be loosened, and the collars will then furnish suitable bearings to rotate on the shaft.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a tubular roll having a curved end tenon, a cap having flanges embracing the tenon and a tapered axial opening, a collar having an externally-tapered boss and an axial opening to receive a shaft, and means for adjustably securing the collar upon a shaft, substantially as described.

2. The combination of a tubular roll having a curved end tenon with a portion cut away, a cap having flanges to embrace the tenon,

and a socket in the cut-away portion of the tenon; and also having a tapered axial opening, and a collar having an externally-tapered boss and a radial fin, substantially as described.

3. The combination of a shaft, a collar adjustable on the shaft, a segmental key loosely mounted in the collar, a set-screw engaging the key, a boss and a radial fin on the collar, and a tubular roll having an axial opening to receive the boss and a socket to receive the fin, substantially as described.

4. The combination of a shaft, collars adjustable on the shaft, externally-tapered bosses and radial fins on the collar, means for adjusting and fixing the collar on the shaft, a tubular roll, and caps on the roll having tapered axial openings to receive the bosses and sockets to receive the fins, substantially as described.

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

CHARLES F. TILTON.

Witnesses:

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LUTHER V. MOULTON.