

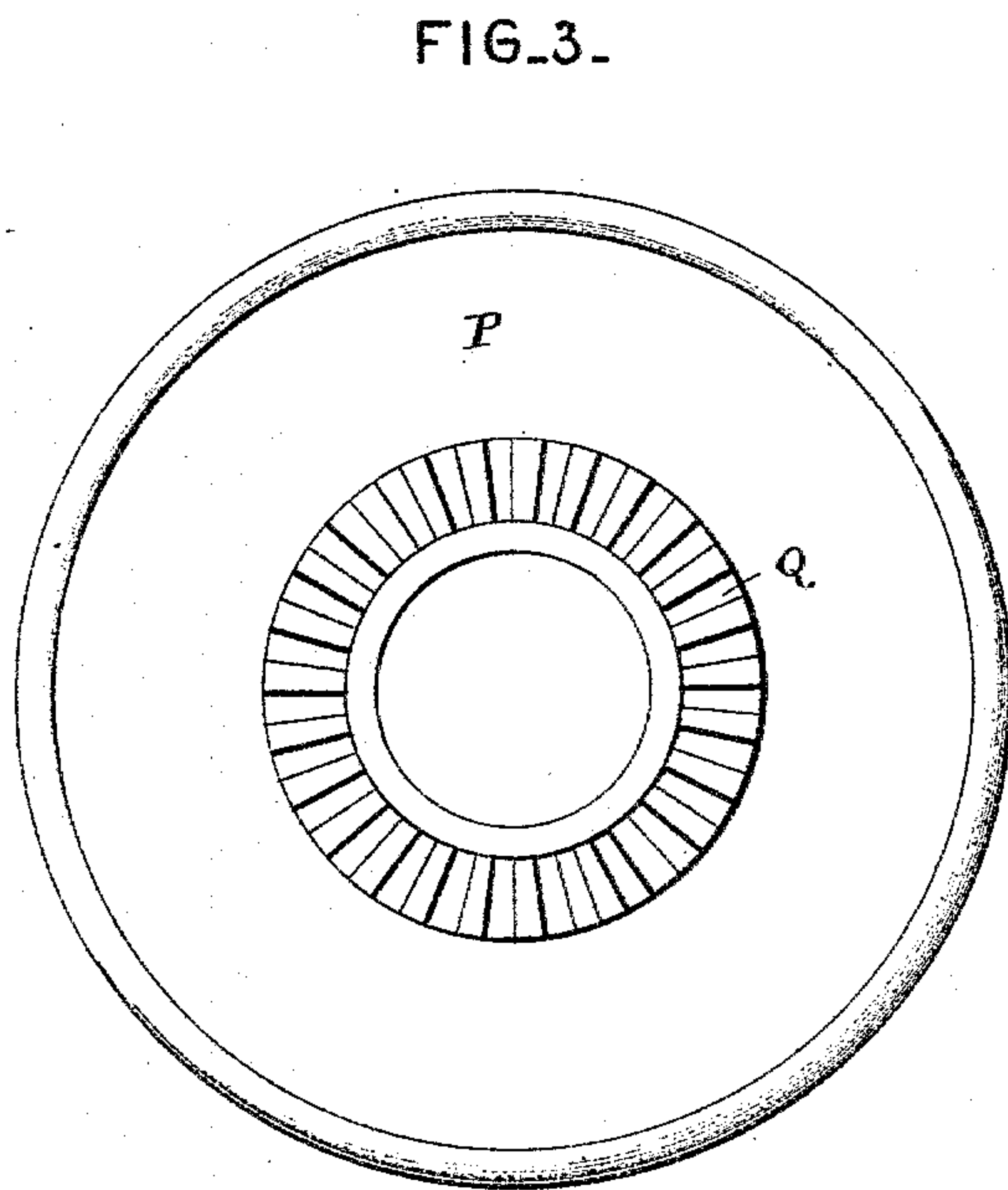
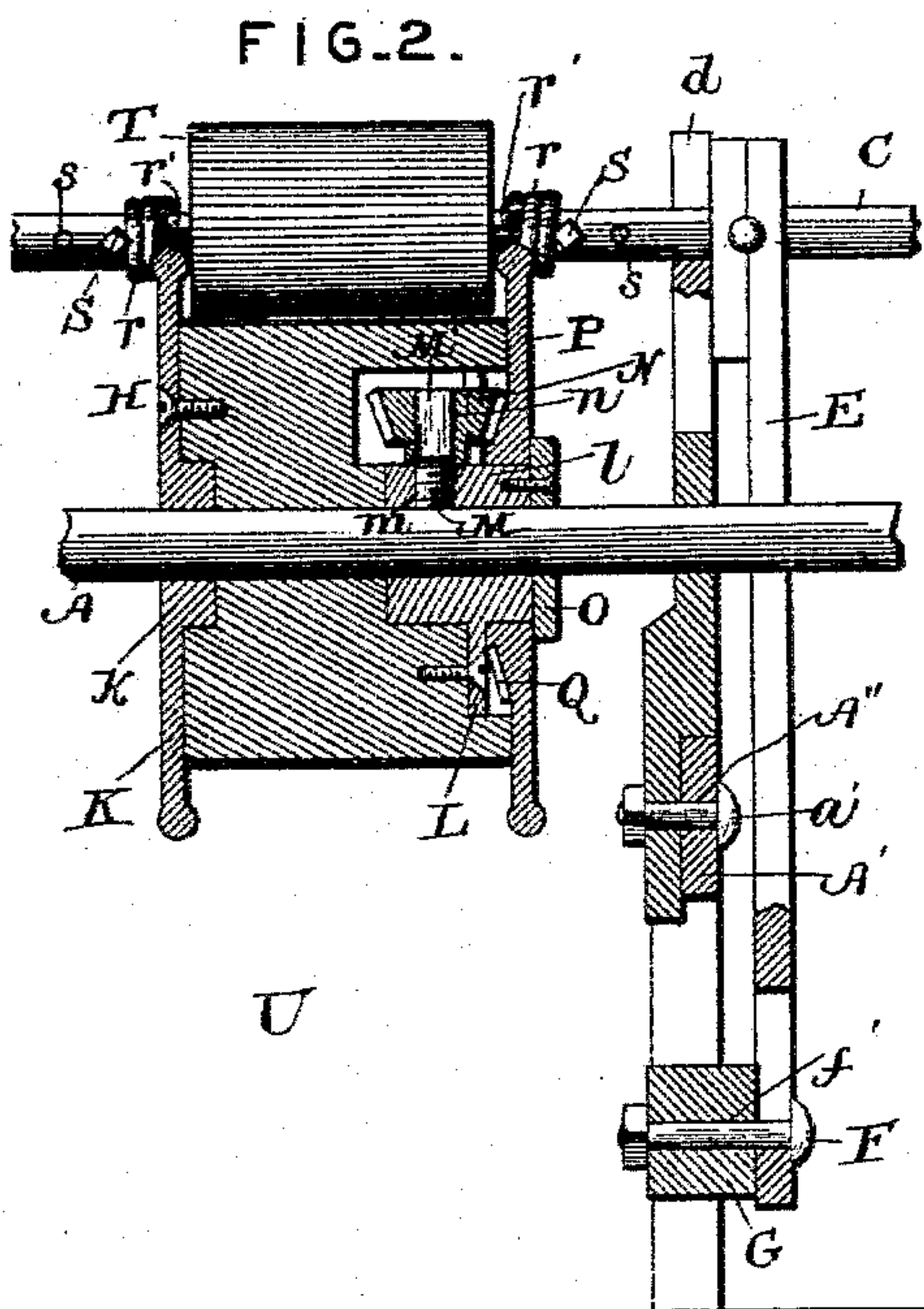
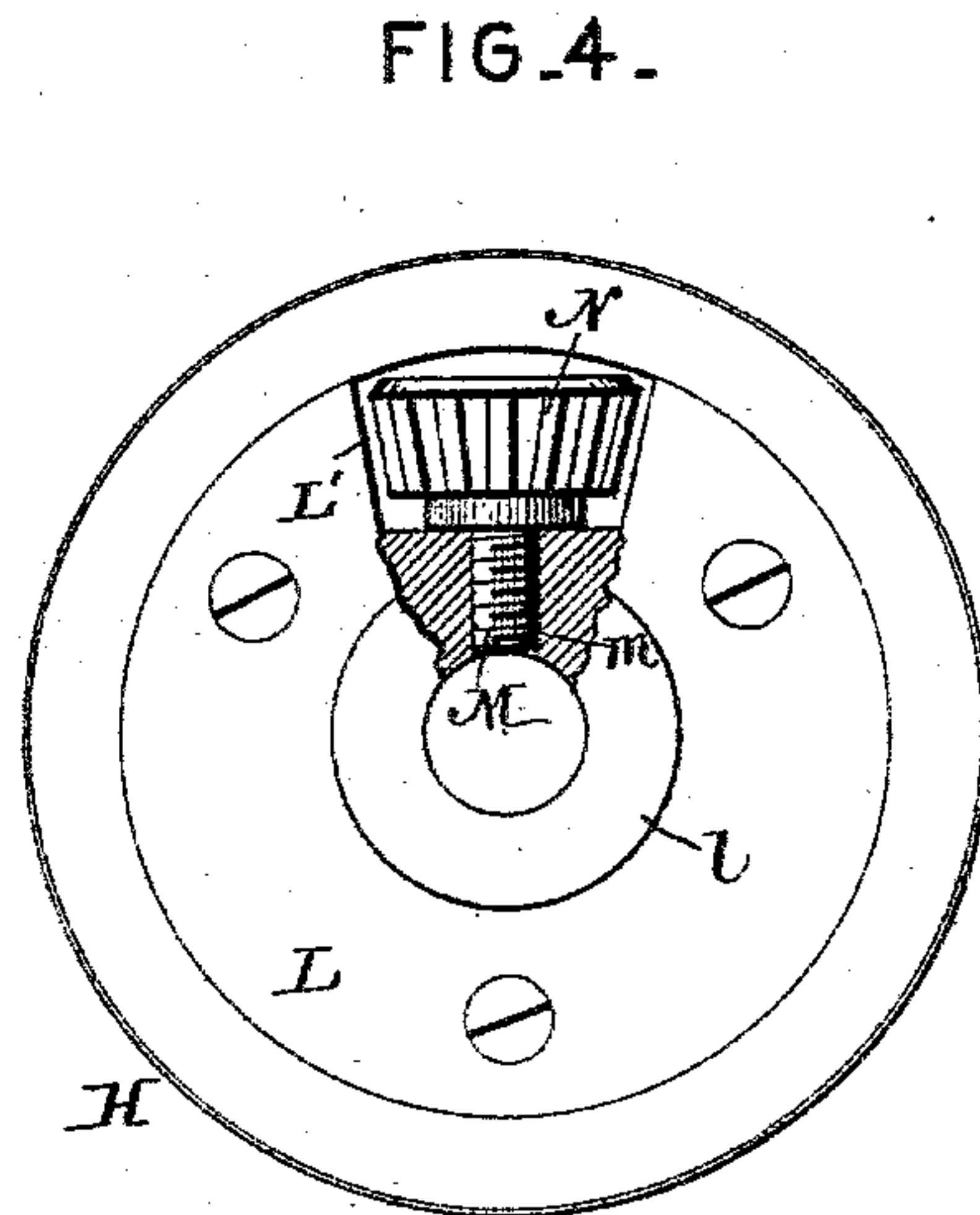
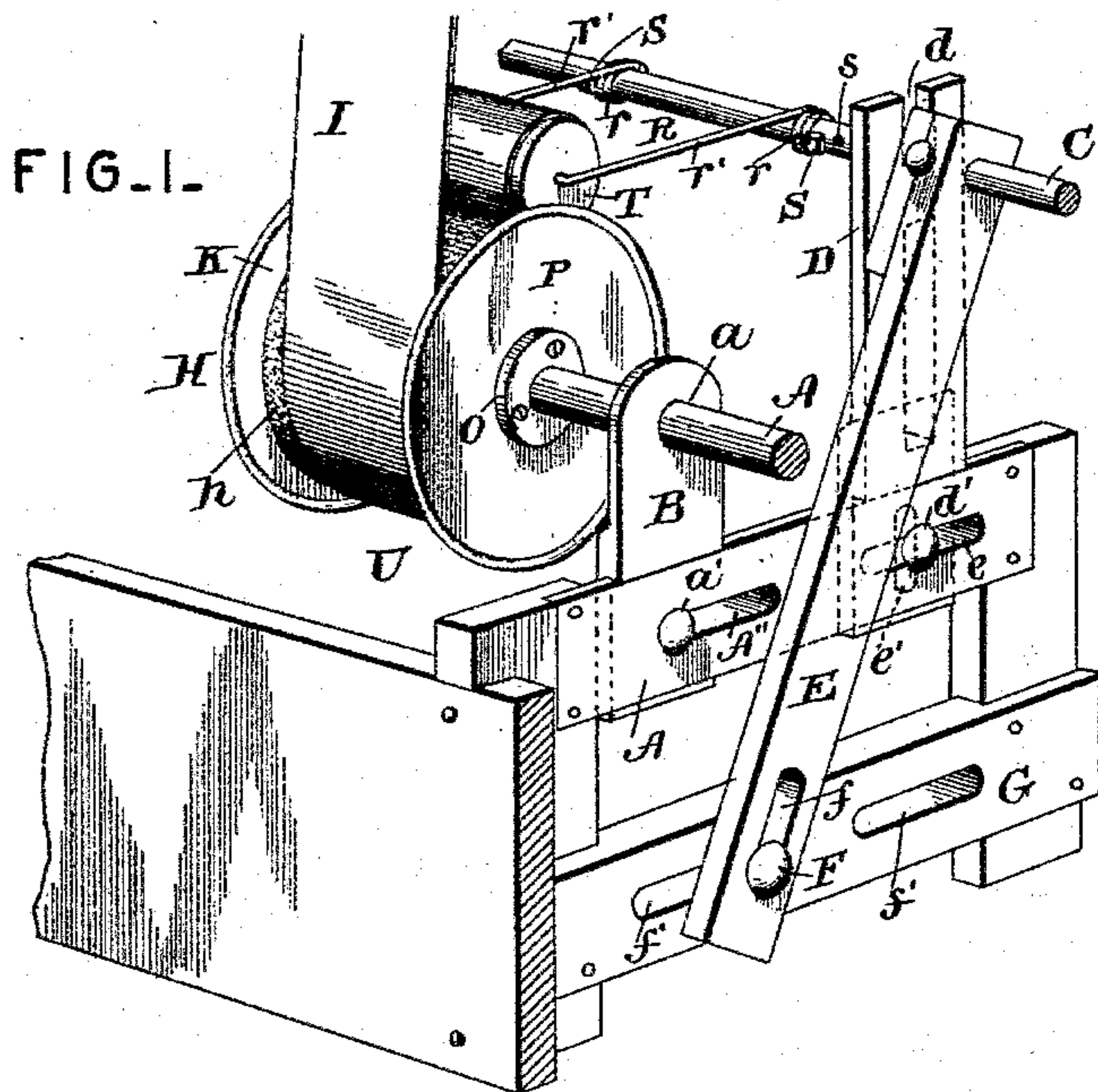
(No Model.)

E. BURGESS.

TAKE-UP MECHANISM FOR NARROW WARE LOOMS.

No. 494,755.

Patented Apr. 4, 1893.



Witnesses

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ERNEST BURGESS, OF PATERSON, NEW JERSEY.

TAKE-UP MECHANISM FOR NARROW-WARE LOOMS.

SPECIFICATION forming part of Letters Patent No. 494,755, dated April 4, 1893.

Application filed September 29, 1892. Serial No. 447,278. (No model.)

To all whom it may concern:

Be it known that I, ERNEST BURGESS, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Take-Up Mechanism for Narrow-Ware Looms, of which the following is a specification.

My invention relates to improvements in looms, of the class known as narrow-fabric or narrow-ware looms, and refers particularly to that part of the mechanism which receives and guides the ribbon or other fabric previous to its being deposited in the cradle, and known as the knee-roll.

The object of my invention is to provide a knee-roll capable of holding and drawing the ribbon or other fabric from the weaving mechanism and depositing it in the cradle without allowing it to be reeled upon the roll, the objection to the latter being that the accumulation of fabric upon the knee-roll causes the picking mechanism to pick the ribbon at gradually increasing intervals instead of evenly or at regular intervals.

A further object of my invention is to provide simple, efficient and easily operated means for adjusting the knee-roll upon its shaft, to take-up and let-out the fabric when the latter becomes too loose or too taut, as the case may be.

A further object of my invention is to provide means to adjust the tension of the friction or feed-roll by which the ribbon is held in contact with the frictional surface of the knee-roll.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view showing the middle casting or bracket of a loom, the knee-roll shaft (a portion thereof) and one of the adjustable knee-rolls mounted thereon. Fig. 2 is a longitudinal vertical section through the knee-roll and bracket taken in the plane of the shaft. Fig. 3 is a detail inside view of the rotary adjusting disk; and Fig. 4 is an end view of the knee-roll, with the adjusting disk removed and the hub partly broken away, showing the set-

screw and adjusting-pinon which is loosely mounted upon the squared shank of said screw.

Referring by letter to the drawings, A designates the knee-roll shaft, constructed, arranged and mounted as in other looms of this class, the same passing at an intermediate point through the intermediate bearing, *a*, which is formed upon the middle casting or bracket, B. The box, *A'*, in which said bearing is formed is forwardly and rearwardly adjustable by means of an adjusting-bolt, *a'*, which takes in a horizontal slot, *A''*, in the casting or bracket. The other bearing boxes at opposite ends of the loom frame, in which this knee-roll shaft is mounted, (said bearings not being shown in the drawings) are provided with similar means for forward and rearward adjustment.

C represents a horizontal feed-roll supporting-shaft, parallel with the knee-roll shaft, which is loosely mounted at an intermediate point in a bearing, *d*, in the upper end of the standard, D, and at its ends in similar bearings in the ends of the loom-frame. This standard, D, is forwardly and rearwardly adjustable to move the feed-roll shaft, and is secured at its lower end to a horizontal bar, *A'*, of the middle casting or bracket, said bar being provided with a horizontal slot, *e*, to receive a transverse bolt, *d'*, which engages the vertical slot, *e'*, in the lower end of the standard. By means of these intersecting slots and the adjusting bolt, the standard is capable of vertical as well as forward and rearward adjustment with relation to the knee-roll shaft. It is obvious that the bearings for the extremities of this shaft must be capable of similar adjustment, but as the forms of adjustable or sliding bearings are numerous, and as my invention relates solely to that portion of the mechanism which is directly connected with the knee-roll, I will confine myself in this description, to the construction of the middle casting or bracket, the bearings and attachments carried thereby, and one of the knee-rolls carried by the knee-roll shaft, it being understood that a series of these rolls extending from one end of the shaft to the other (and all constructed as herein specified) is employed. Only one intermediate or middle casting or bracket is necessary, as will appear from the following description.

The feed-roll shaft being loosely mounted in its several bearings, as above specified, it is capable of rotary adjustment to accomplish which I attach rigidly thereto the upper end of the tension-adjusting lever, E, the lower end of which is longitudinally slotted, as shown at *f*, to register with the horizontal slot or slots, *f'*, in the transverse bar, G, of the casting or bracket, an adjusting bolt, F, engaging said slots to lock the lever at the desired adjustment. Mounted loosely upon the knee-roll shaft is the knee-roll, H, provided with a roughened or frictional surface, *h*, to engage and prevent the slipping of the ribbon or fabric, which is shown in Fig. 1 at I. This roll is hollow, and is held in position upon the shaft at one end by a disk, K, having a hub, *k*, which extends into the bore of the roll and is mounted loosely upon the shaft, and at the other end by a head-plate, L, which is fixed to the roll and is provided with a hub, *l*, which, also, is loosely mounted upon the shaft. The hub, *l*, extends inward from the head-plate and is provided with a radial tapped socket, *m*, in which fits and operates a set-screw, M, having a squared or angular shank, M'. The head-plate is cut-away or recessed at L', and in this recess stands a beveled adjusting-pin, N, having a squared or angular bore, *n*, to receive and slide upon the shank of the set-screw. It will be noted that this adjusting pinion is held against lateral movement by the walls of the recess in which it is arranged and being fitted upon the shank of the set-screw is capable of rotation therewith, the longitudinal movement of the screw during said rotation not affecting the position of the pinion.

Secured to the outer end of the hub carried by the head-plate is a collar, O, which is held in place by screws taking into the hub, and mounted loosely upon the hub, between the collar and the adjacent side of the knee-roll is a rotary adjusting wheel or disk, P, provided upon its inner surface with an annular gear, Q, which meshes with the teeth of the set-screw pinion.

The radial socket in which the set-screw is fitted extends to and communicates with the bore of the hub, whereby when the set-screw is screwed inward it will bind or engage the shaft and lock the knee-roll firmly thereto. Therefore, by turning the adjusting wheel or disk, which is connected by gearing to the set-screw, the knee-roll may be locked firmly to the shaft, or loosened therefrom, at will to permit the desired adjustment of said roll in taking-up slack of the fabric or letting-out the same.

The loose disk and the adjusting disk are arranged, as will be seen, at opposite ends of the knee-roll, and extend at their peripheries beyond the same to form guards or flanges to prevent the fabric from slipping laterally.

A yoke, R, is connected to the feed-roll shaft by means of spring-coils, *rr*, preferably formed integral with the arms, *r' r'*, of the yoke, the

extremities of said coils being provided with eyes, *r''*, through which are passed set-screws, S, which take in any of the series of perforations, *s*, in the shaft, whereby the feed-roll, T, which is mounted upon the closed end of the yoke, directly above the knee-roll, may be adjusted longitudinally of the feed-roll shaft.

By means of the tension adjusting lever, which, as above described is attached rigidly to the feed-roll shaft, and which is capable of angular adjustment by means of the intersecting slots and adjusting bolts, the pressure of the feed-roll upon the surface of the knee-roll may be regulated at the will of the operator.

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

1. In a loom, the combination with the knee-roll, of a rotary feed-roll shaft, a yoke provided with spring-coils which are secured to the said shaft, a feed-roll carried by the yoke, and an angularly adjustable lever attached to the shaft to adjust the tension of the spring-coils, substantially as specified.

2. In a loom, the combination with the knee-roll, of a rotary feed-roll shaft, a yoke provided with eyes, adjusting screws fitting in said eyes and taking in perforations in the feed-roll shaft whereby the feed-roll is capable of lateral adjustment, a feed-roll carried by the yoke, and means to adjust said shaft to regulate the tension, substantially as specified.

3. In a loom, the combination with the knee-roll shaft, of the knee-roll loosely mounted thereon, the set-screw carried by the knee-roll to engage said shaft, a rotary adjusting wheel or disk mounted loosely upon the roll, and means for conveying the rotary movement of said wheel or disk to the set-screw, substantially as specified.

4. In a loom, the combination with the knee-roll shaft, of the loose knee-roll, the set-screw mounted in a hub of the knee-roll to engage the shaft, a pinion attached to the shank of the set-screw, and an adjusting wheel or disk carrying a gear which meshes with said pinion, substantially as specified.

5. In a loom, the combination with the knee-roll shaft, of the loose knee-roll, the set-screw mounted in the hub of the knee-roll to engage the shaft and having a squared shank, a loose pinion provided with a squared socket engaging the shank of the set-screw, and a loose adjusting wheel or disk, mounted upon the hub of the knee-roll, and provided with a gear to mesh with said pinion, substantially as specified.

6. In a loom, the combination with the knee-roll shaft, of a hollow knee-roll, a loose disk mounted upon the shaft and provided with a hub which extends into the bore of the knee-roll, a head-plate attached to the opposite end of the knee-roll and provided with a hub, a set-screw mounted in a tapped socket in the hub and having a squared shank, a pinion

fitted loosely upon said shank, a collar fixed to the outer end of the hub, and an adjusting wheel or disk mounted loosely upon the hub, between the collar and the adjacent end of the knee-roll and carrying an annular gear which meshes with said pinion, substantially as specified.

7. In a loom, the combination with the knee-roll, of the intermediate or middle casting or bracket provided with horizontal adjusting slots, the standard provided with a vertical slot to intersect one of said horizontal slots, a feed-roll shaft mounted in a bearing in the upper end of said standard, the spring-actu-

ated feed-roll carried by said feed-roll shaft, an adjusting lever fixed to said shaft and provided at its free end with a longitudinal slot which intersects a horizontal slot in the casting or bracket, and adjusting bolts engaging said intersecting slots, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ERNEST BURGESS.

Witnesses:

THOMAS DAWSON,
WILLIAM FORCE.