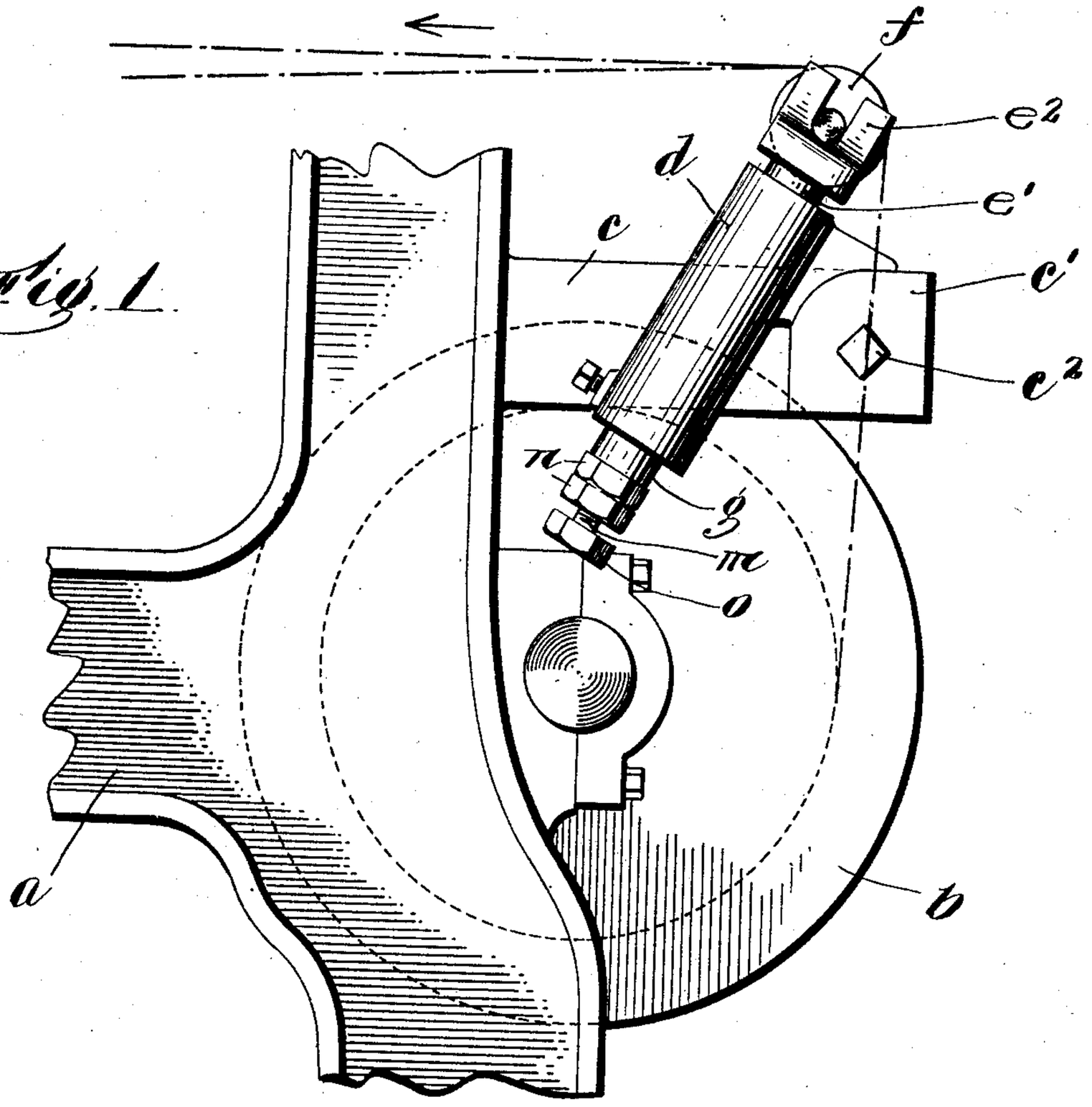
No. 866,841. PATENTED SEPT. 24, 1907.

G. S. COGSWELL.

ADJUSTABLE EASE-OFF FOR WHIP ROLLS.

APPLICATION FILED OCT. 18, 1906.

Fig. 1.



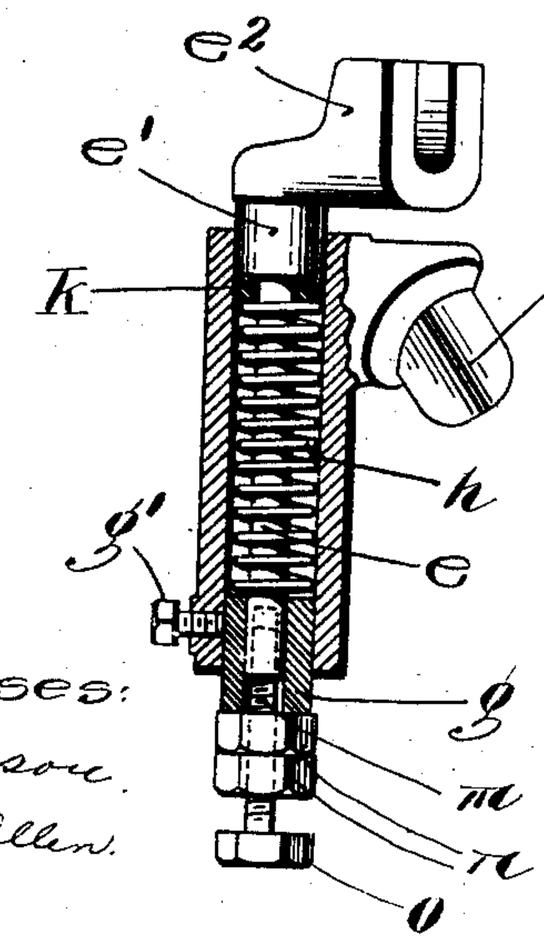


Fig. 2.

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE EASE-OFF FOR WHIP-ROLLS.

No. 866,841. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed October 18, 1906. Serial No. 339,465.

To all whom it may concern:

Be it known that I, GEORGE S. COGSWELL, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Adjustable Ease-Off for Whip-Rolls, of which the following is a specification.

The whip rolls or bars of looms over which the warp passes from the yarn-beams have heretofore usually been made stationary, although proposals have been made for mounting them in such a manner that they will yield to different tensions on the part of the warp, and allow a slight easing off as the lay beats.

The principal object of this invention is to improve the construction of such ease-offs, by providing means for adjusting the tension thereof, means for taking the strain off the yarn whether it be tender yarn, or whether the strain is caused by a combination of tight and loose weaves whereby any combination of weaves may be made to run well by properly adjusting the ease-off, in cases in which it would be impossible to make the fabric without it, and means for causing the let off to be easy; furthermore, to provide means whereby the ease-off can be very quickly adjusted to accommodate either a few or a large number of ends for any part or the whole of the warp, and to prevent the filling from the cutting off caused by the reed on tight weaves.

Further objects and advantages of the invention will appear in the course of this specification.

Reference is to be had to the accompanying drawings, in which

Figure 1 is a fragmentary elevation of a portion of a loom showing one way in which my invention may be applied thereto, and Fig. 2 is a longitudinal central sectional view of the ease-off.

On the loom frame *a* at a point above the yarn-beam *b* are shown brackets *c*. Fixed to each bracket is a casing *d* which is preferably located in inclined position, and is provided with a projection *d'* adapted to enter an opening in a projection *c'* on the bracket to hold the casing in place, a set-screw c^2 being employed to fix the parts in position. In this casing is supported a rod *e* which is provided with an enlarged cylindrical portion *e'* at the top thereof fitting the passage through the casing, and on which is located a U-shape bearing piece or yoke e^2 for the shaft of the whip-roll *f* or the end of a whip bar.

Adjustably located near the bottom of the passage through the casing is a bushing *g* secured in adjusted positions by a set-screw *g'*. On this bushing is supported a powerful spring *h* surrounding the rod *e*, and bearing on the cylindrical portion *e'* thereof, or on a washer *k* mounted below it. It will be seen that the two springs at opposite ends of the whip-roll provide a yielding support therefor, and accordingly, the whip-roll may move in or out to a certain degree in accordance with the tension of the springs. By adjusting the bushings up and down the position of the whip-roll may also be adjusted.

In order to provide for regulating the tension of each spring, and consequently, adjusting the device for use with warps of different strength, or when there is a combination of tight and loose weaves, a screw *m* is adjustably located in the lower end of the rod *e*. This screw is provided with an adjusting nut *n* and a lock nut *o* for holding the same in adjusted positions. It will be seen that when a strong tension on the spring is desired, the screw may be screwed in and the spring consequently compressed, and that this tension may be increased or lessened by proper manipulation of the screw.

By placing the casing in inclined position the let off will be easy and may be secured without materially changing the direction of the course of the warp either from the yarn-beam or to the loom as would be the case if the casing were horizontal or vertical.

While I have illustrated and described a particular form in which I at present prefer to embody my invention, I am aware that many modifications may be made therein by any person skilled in the art without departing from the spirit of the invention as expressed in the claims. Therefore, I do not wish to be limited to the particular construction shown, but

What I do claim is:—

1. In an ease-off for looms, the combination of a casing, a rod therein, a bushing into which the rod projects, a spring supported by the bushing and adapted normally to force the rod upwardly in the casing, and a whip-roll or bar-support carried by the rod.

2. In an ease-off for looms, the combination of a casing, a rod therein, a bushing into which the rod projects, a spring supported by the bushing and adapted normally to force the rod upwardly in the casing, a whip-roll or bar-support carried by the rod, means for securing the bushing in adjusted positions in the casing, and adjustable means co-acting with the bushing for limiting the upward motion of the rod.

3. In an ease-off for looms, the combination of a casing, a rod therein, a bushing into which the rod projects, a spring supported by the bushing and adapted normally to force the rod upwardly in the casing, a whip-roll or bar-support carried by the rod, and means for securing the bushing in adjusted positions in the casing to adjust the position of the spring.

4. In an ease-off for looms, the combination of a casing, a rod movably mounted therein, a bushing at the lower end of the casing, a spring supported by the bushing and adapted normally to force the rod upwardly in the casing, a support for a whip-roll or bar carried by the rod, and adjustable means co-acting with the bushing for limiting the upward motion of the rod to adjust the tension of the spring.

5. In a loom, the combination of a bracket located above the yarn-beam of the loom, a casing removably mounted on the bracket in inclined position, and a resiliently supported rod mounted in said casing having a U-shaped yoke for supporting a whip-roll or bar.

6. In an ease-off for looms, the combination of a movably mounted rod, a bushing at the lower end thereof, a spring supported by the bushing and adapted normally to force the rod in one direction, a support for a whip-roll or bar carried by the rod, and adjustable means co-acting with the bushing for limiting the motion of the rod to adjust the tension of the spring.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

GEORGE S. COGSWELL.

Witnesses:

ALVAH M. LEVY,

HARRY H. ATWOOD.