

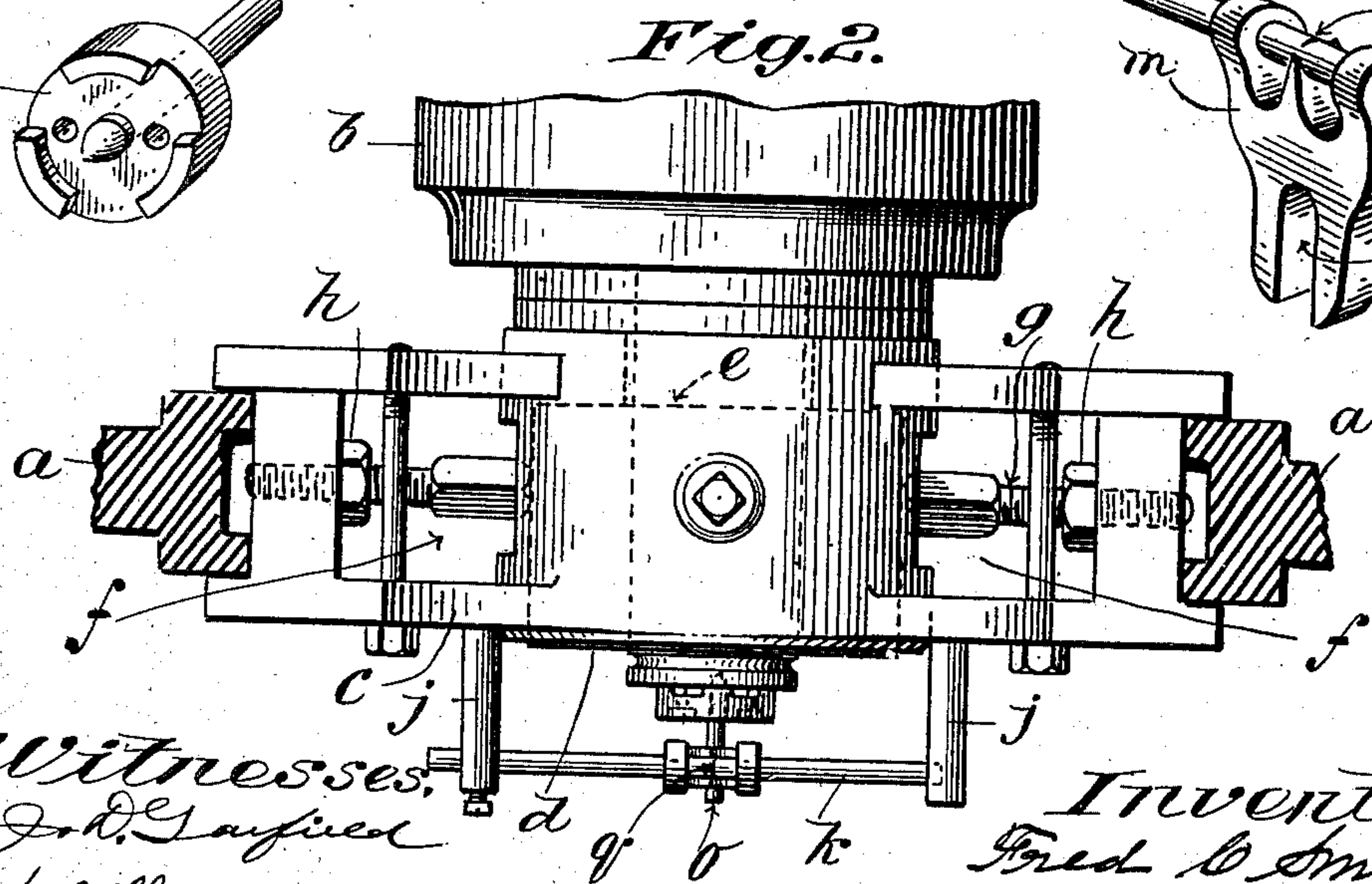
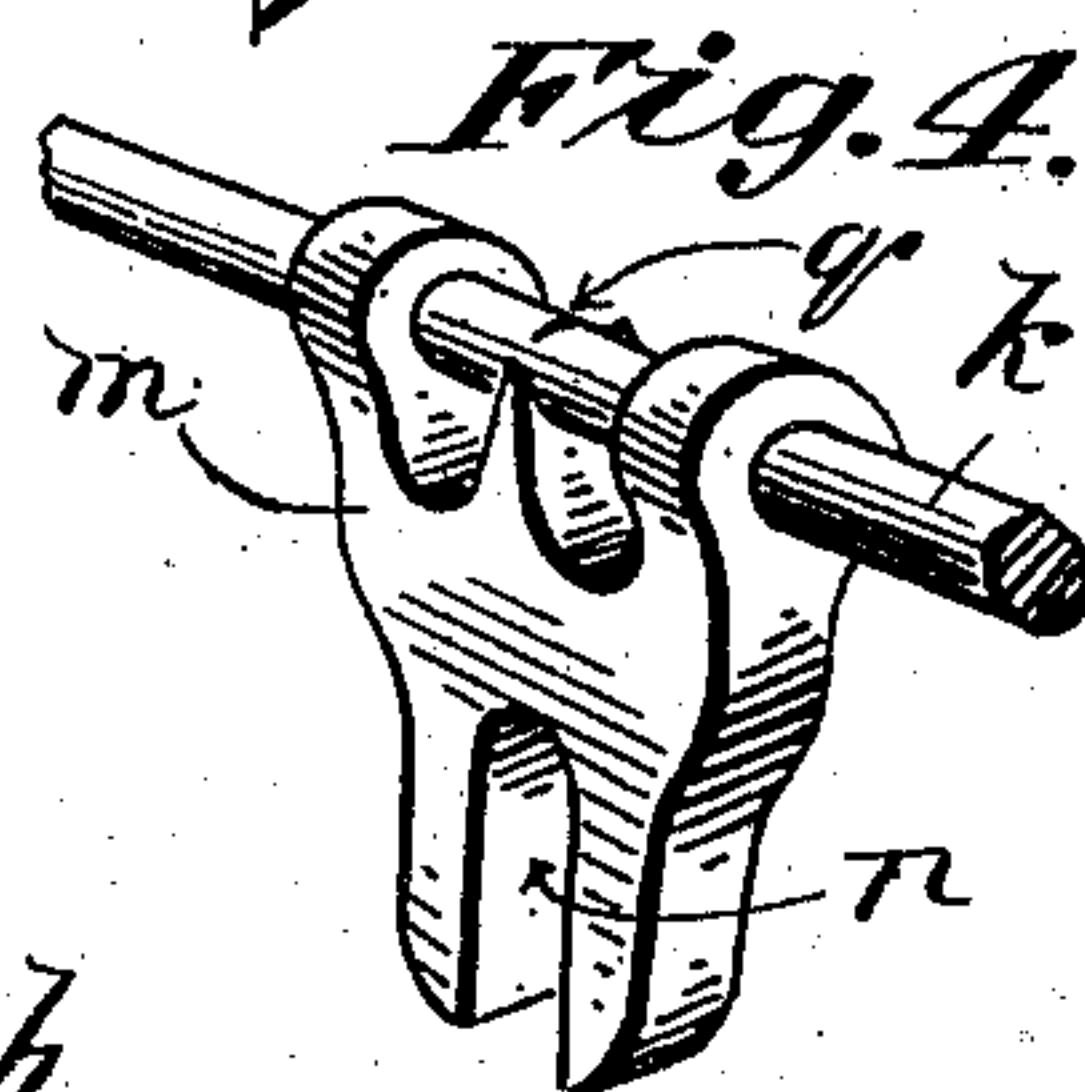
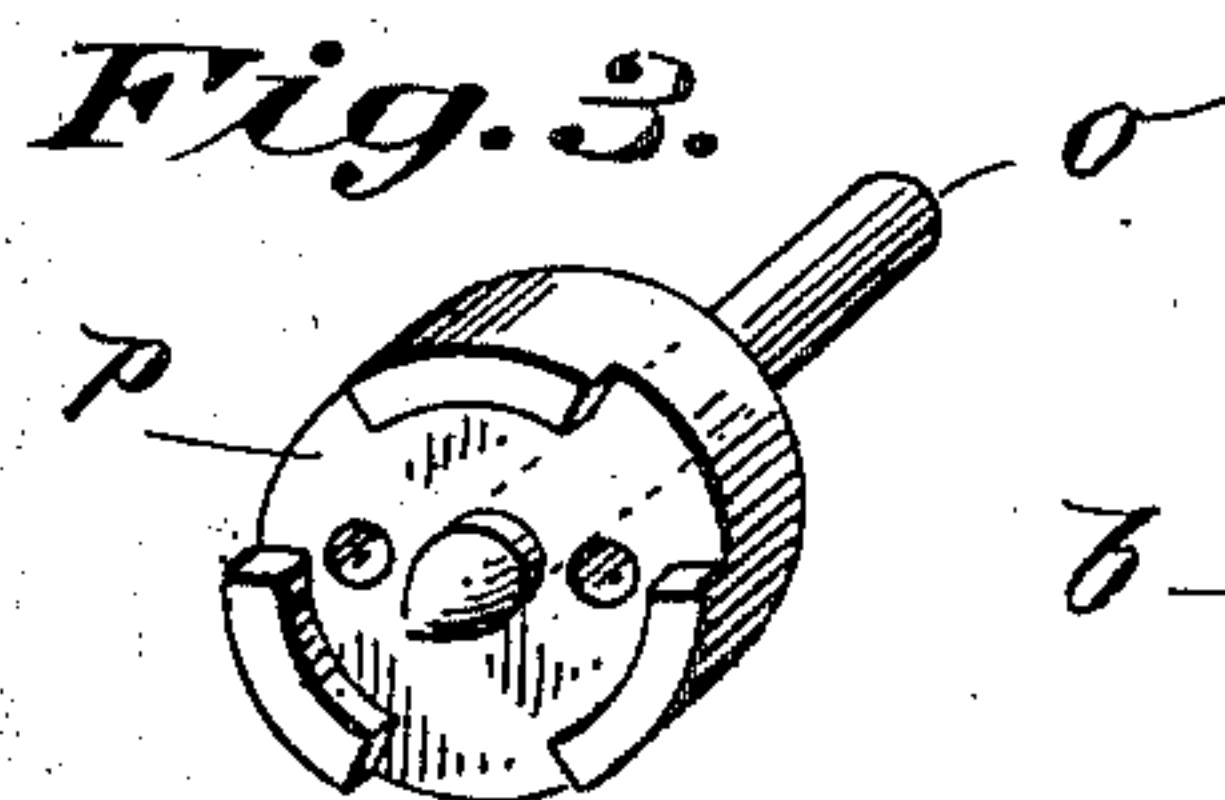
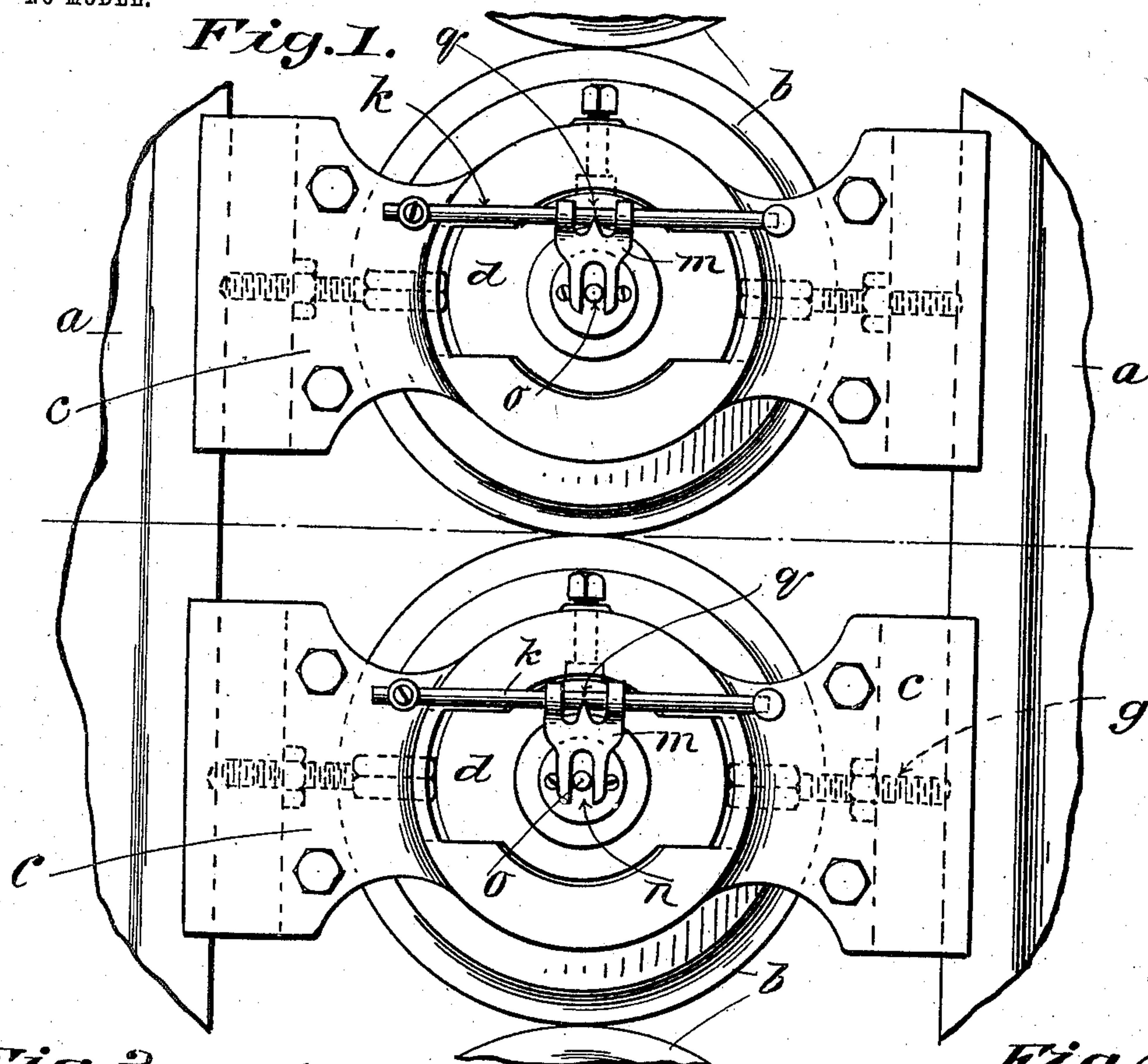
No. 722,190.

PATENTED MAR. 3, 1903.

F. C. SMITH.
CALENDER ROLL

APPLICATION FILED JULY 28, 1902.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

FRED C. SMITH, OF HOLYOKE, MASSACHUSETTS.

CALENDER-ROLL.

SPECIFICATION forming part of Letters Patent No. 722,190, dated March 3, 1903.

Application filed July 28, 1902. Serial No. 117,239. (No model.)

To all whom it may concern:

Be it known that I, FRED C. SMITH, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Calender-Rolls, of which the following is a specification.

This invention relates to improvements in calender-rolls, the object thereof being to provide means for detecting at a glance whether or not any of the rolls are out of line. As is well known, calender-rolls are run under exceedingly heavy pressure, and in order that they may remain true it is essential that their axes should be as nearly as possible in the same vertical plane. It sometimes happens, however, that one or more of the rolls may get out of line, and though out only to a slight degree the effect on the product and on the rolls is very injurious.

This invention consists in a provision of means whereby the slightest variation horizontally of the end of one or more of the rolls of a calender may be detected at a glance.

In the drawings forming part of this application, Figure 1 is an end view of two rolls to which my invention has been applied. Fig. 2 is a top plan view of the same. Fig. 3 is an enlarged view of a short shaft adapted to be fixed axially to the end of a calender-roll. Fig. 4 is an enlarged view of a sliding indicator-finger together with a part of its supporting-rod.

Referring to the drawings, *a* indicates a portion of the two uprights of a calender, between which the rolls *b* are supported one above another in suitable boxes vertically movable between these uprights, which boxes are indicated by *c*. As shown in the drawings, these uprights are planed off to provide a slideway for the boxes *c*, which are cored out centrally to receive the journal-brasses *d*, which are non-rotatably supported in the boxes, but may be laterally adjustable therein and preferably do not extend entirely through the journal-box, but, as shown by the dotted line *ee* in Fig. 2, extend far enough into the journal-box to afford a good bearing for the end of the roll *b*. Each side of the journal-box *c* is cored out, as at *f*, to permit the introduction between the end of the box next to the upright and the side of the jour-

nal-brass *d* of an adjusting-screw *g*, centrally located on each side thereof in a horizontal plane, whereby the axes of the calender-rolls may by the manipulation of these screws be brought absolutely into vertical alinement and then by means of check-nuts *h* on these screws *g* be locked in this position.

The foregoing description is that of a calender-roll bearing as usually constructed at the present time. As stated above, these rolls will for one reason or another get more or less out of alinement, and before this fact is discovered damage to a very considerable extent may be done to the rolls. To render the detection of this alinement easy and positive, I mount on the journal-boxes *c* two standards *j*. A rod *k* is supported in said standards near the end of each roll, transversely of the latter and slightly above the axis thereof. On this rod *k* is a sliding indicator-finger *m*, the lower portion of which is slotted, as at *n*, and axially secured to the end of each roll is a short shaft *o*, which is applied to the roll in such manner as to constitute practically a continuation of the roll's axis. Preferably this is effected by mounting the shaft in a block *p*, as shown in Fig. 3, the end of the shaft *o* projecting through the block and being tapered to enter the center point on the end of the roll, the side of the block *p* next to the roll being squared up, so that when the block and shaft are applied to the end of the roll and the block secured to the latter the axis of the shaft *o* will coincide with the axis of the roll. The slot *n* in the indicating-finger *m* fits closely the shaft *o*, so that there is practically no lost motion. Each roll of the stack is fitted in like manner.

From the above description it is seen that the boxes *c* are as immovable laterally as the uprights *a* themselves, and this rod *k* is mounted on this laterally-immovable support. The rolls *b* are laterally movable in this support. If a roll gets out of line, the journal-brass *d* will move laterally relative to the box, and therefore the shaft *o* on the end of the roll will slide the indicating-pointer *m* on the shaft *k* toward one side or the other of a center line *q* on the rod *k*, which is marked on the rod opposite the end of each roll by means of a plumb-line when the calender is set up. These center marks *q* having been

made, it is very easy to adjust the ends of each roll so that the indicating-finger will stand exactly on this center mark and the rolls thus be adjusted in perfect alinement
5 as to their axes. If after such adjustment a roll gets out of line, it may be instantly detected by a glance at these indicating-fingers.

While in the above description the construction of the component parts of the device have been specifically described, I do
10 not wish to be understood as confining myself absolutely to this construction, as the invention is one of those which is capable of being worked out in many different ways.

15 While the invention has been described herein as applied to calender-rolls, it obviously is equally applicable to other machines—as, for example, to the end of a crank or other shaft.

20 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with a roll or shaft, of an indicating-pointer adapted to be operated by the lateral movement of said roll, whereby
25 horizontal movement of the latter may be indicated.

2. In combination, a laterally-adjustable roll or shaft, a laterally-immovable support therefor, a sliding member on said support,
30 and means of engagement between said member and said roll, whereby the movement of the roll relative to its support may be indicated.

3. The combination with a laterally-adjust-
35 able roll or shaft, of an indicating-pointer adapted to be operated by the lateral movement of the roll, an immovable support for said pointer, and means for adjusting said roll laterally.

FRED C. SMITH.

Witnesses:

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