

No. 736,395.

PATENTED AUG. 18, 1903.

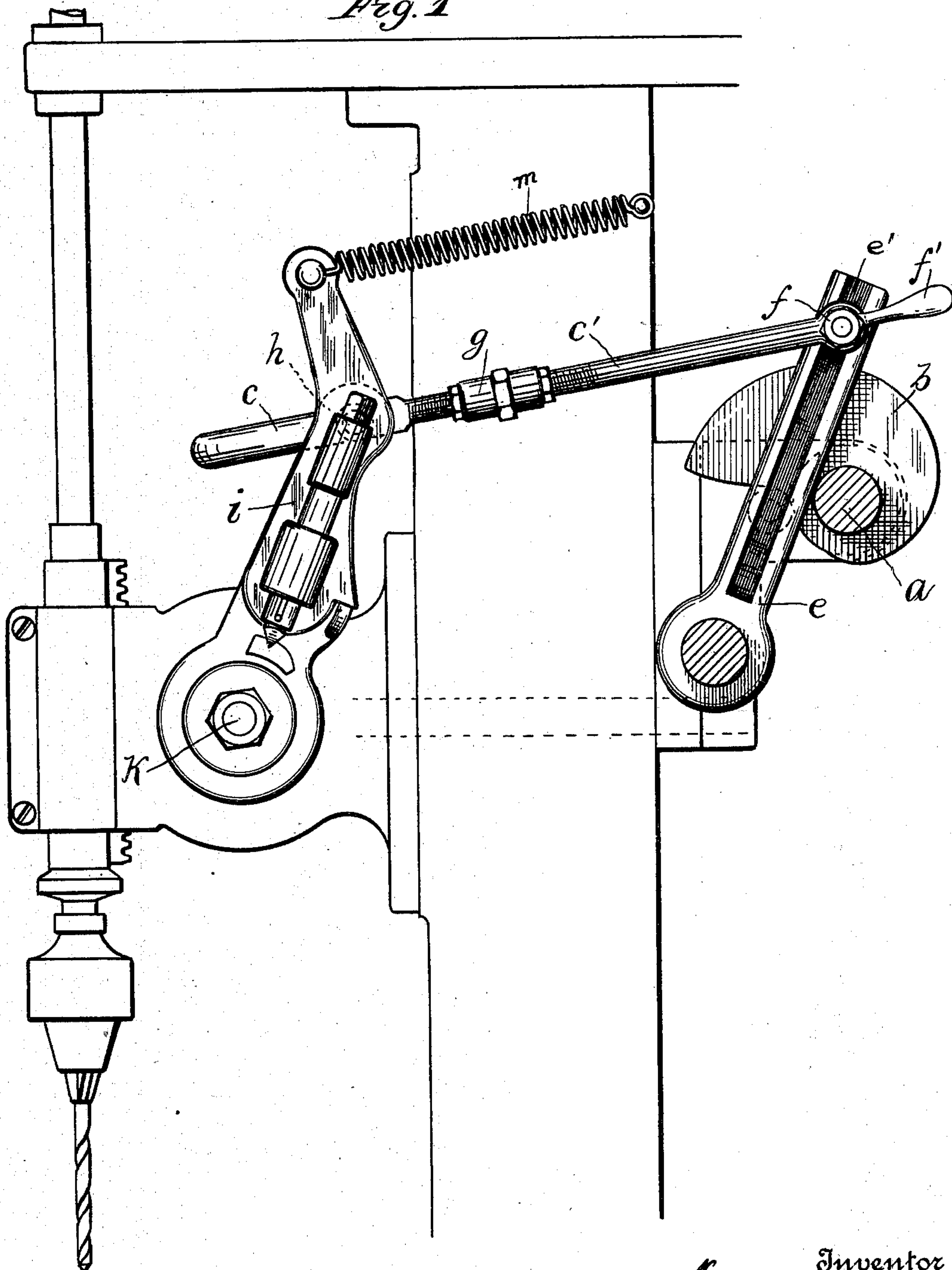
H. N. HINCKLEY.  
DRILL PRESS ATTACHMENT.

APPLICATION FILED FEB. 17, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

*Fig. 1*



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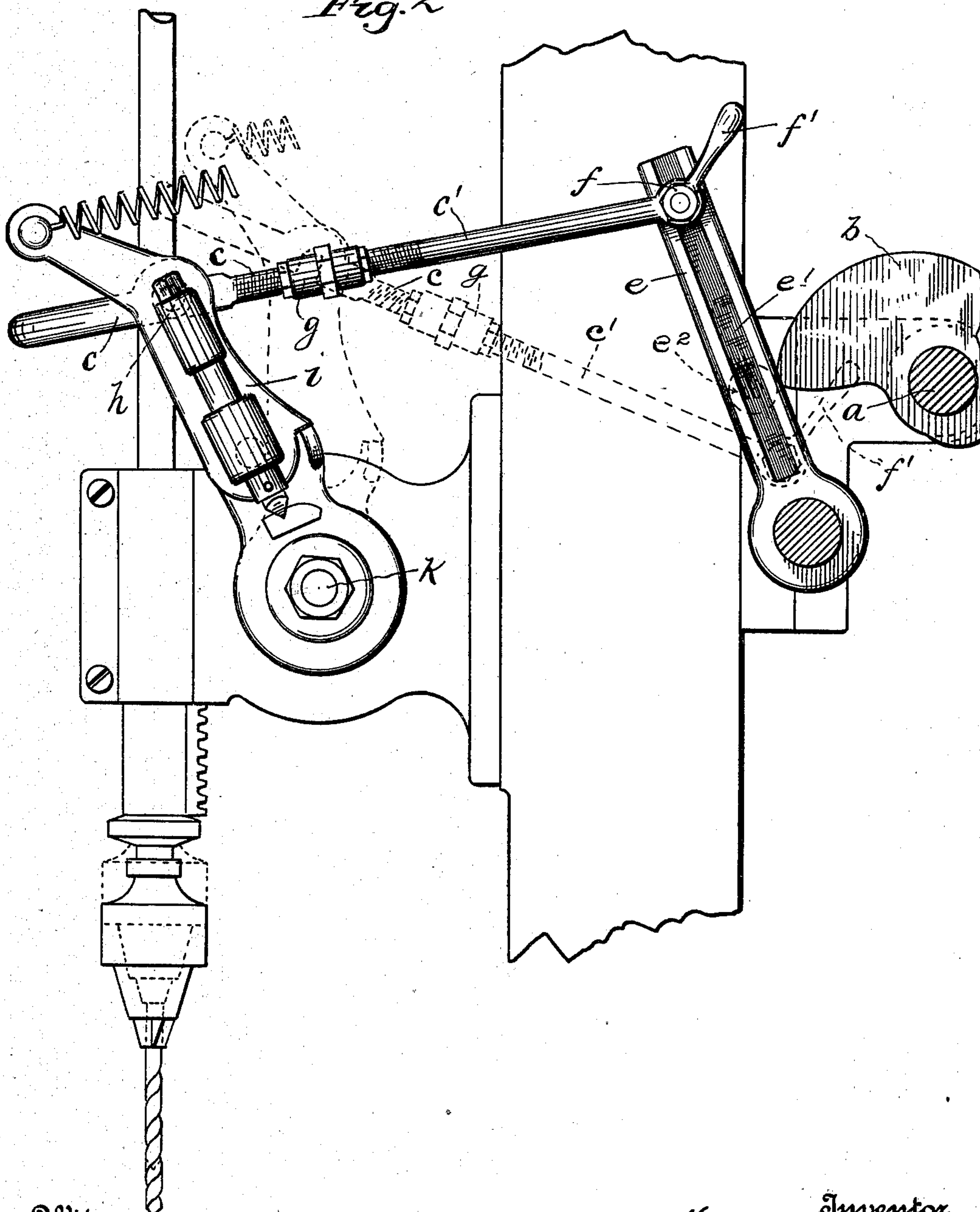
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3 SHEETS—SHEET 2.

*Fig. 2*



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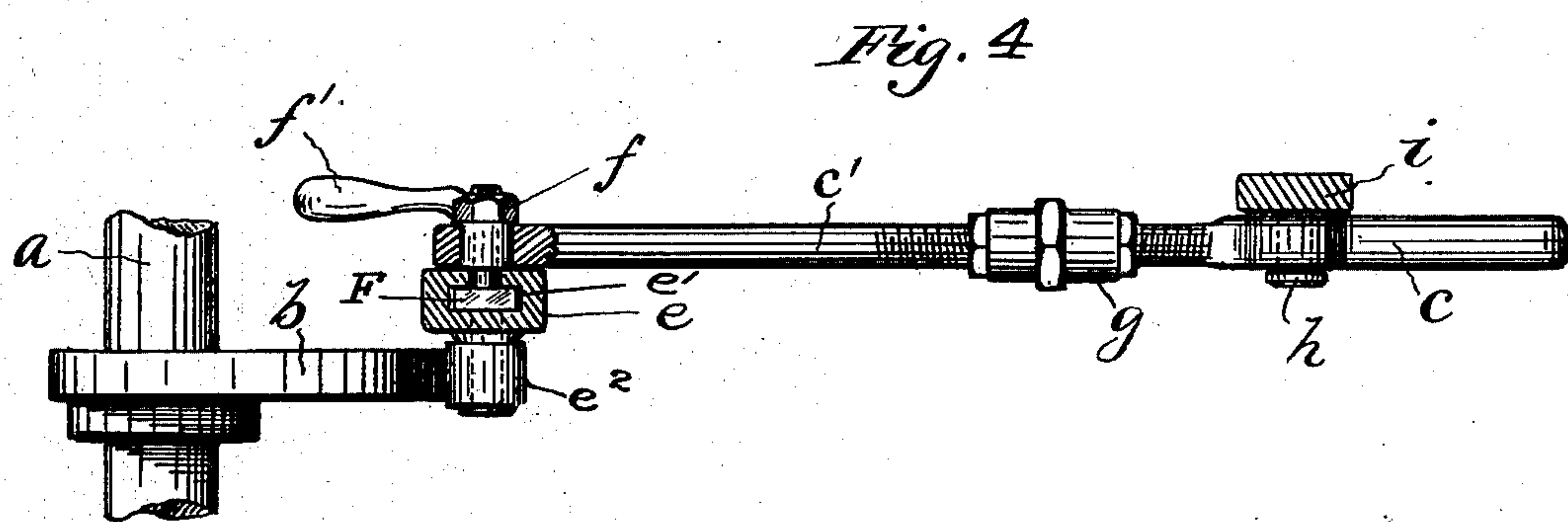
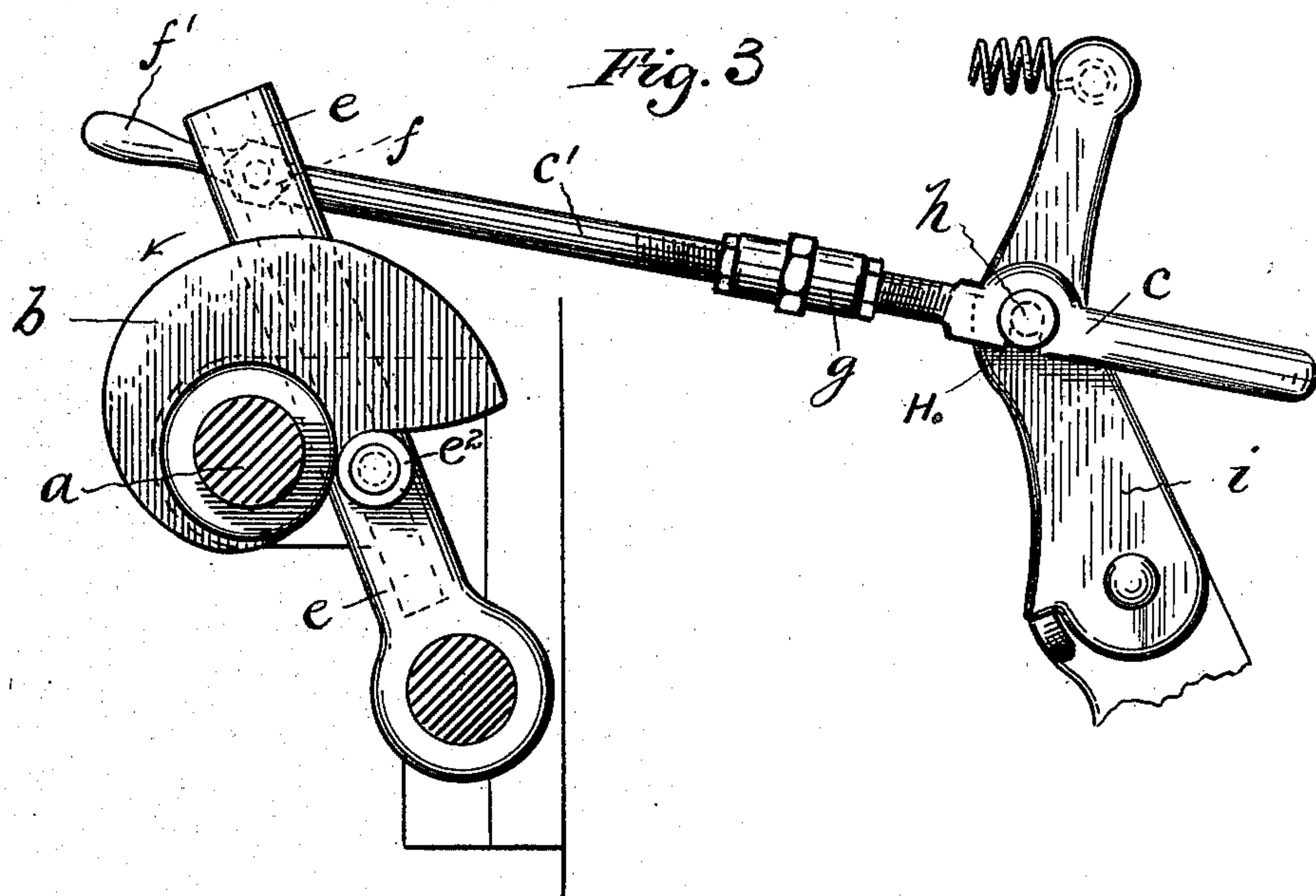
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NO MODEL.

3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

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## DRILL-PRESS ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 736,395, dated August 18, 1903.

Application filed February 17, 1902. Serial No. 94,386. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD N. HINCKLEY, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Drill-Press Attachments, of which the following is a specification.

The object of this invention is to provide an attachment for cam-actuated power-fed drill-presses whereby the length of the throw—that is, the vertical movement of the drill and its spindle—may be varied in a simple and convenient manner.

My invention is illustrated as applied to a single spindle; but it can of course be used in connection with any number of spindles.

Referring to the drawings, Figure 1 denotes a side view of a drill-press, showing my attachment applied thereto, the drill being shown in its raised position. Fig. 2 is a view similar to Fig. 1, but with the drill shown in its lowest position. Fig. 3 is a detail of the operating mechanism for the spindle in the reverse position to Figs. 1 and 2. Fig. 4 is a top view of the detail shown in Fig. 3.

Referring to the drawings, *a* denotes a shaft which is located at the back of the machine, carrying the cam *b*. This cam operates against a roller *e*<sup>2</sup>, secured to the arm *e*, said arm being pivoted to the machine, as is clearly shown. In this arm is a dovetail slot *e'*. An arm *i* is secured to a shaft *k*, on which is mounted a pinion which engages with the rack on the spindle. The arm *i* is united with the pivoted arm *e* through the connecting-rod, made up of two parts *c c'*, united by a turnbuckle *g*. One end of this connecting-rod is connected with the pivoted arm *e* by the cross-head *F*, which is adapted to move in the groove *e'* and may be fastened at any desired point by the nut *f*, having the handle *f'*. The part *c* of the connecting-rod has a recess *H*, which fits over a pin *h*, carried by the arm *i*. The upper end of the arm *i* is connected with the frame of the machine by the spring *m*.

The operation of the device is readily understood. Assuming the parts being in the position shown in Fig. 1, the rotation of the cam *b* to the right gradually throws the arm *e* to the left. This motion is transmitted to

the arm *i* through the connecting-rod *c c'*. As the arm *i* moves to the left the pinion engaging the rack moves the spindle and drill down to the position shown in Fig. 2. Further rotation of the cam *b*, which carries its highest point past the roller *e*<sup>2</sup>, permits the arm *i* to be drawn back to the position shown in Fig. 1 by means of the spring *m*, this motion to the right being transmitted to the arm *e* through the connecting-rod *c c'*.

When the nature of the work which is being done by drill-presses is changed, the amount of movement of the spindle must generally be changed, and this is accomplished in my invention by moving the cross-head *F* in the groove *e'* of the pivoted arm *e*. In Fig. 2 the dotted lines show the cross-head moved to the end of the slot in the arm nearest the pivotal point. The dotted lines also show the corresponding position of the vibrating arm *e'* and the shortening of the throw of the spindle. Heretofore when the throw of the spindle was to be shortened it was necessary to have a specially-cut cam which would provide the proper amount of movement of the spindle. This, of course, was an expensive and very inconvenient arrangement, and by my invention I accomplish the same results in a far simpler manner. When the throw of the spindle is once accurately fixed, the cross-head is held in its position in the slot by the nut *f*, having the handle *f'*. When a fine adjustment of the throw of the spindle is necessary—as, for instance, after the sharpening of a drill or the insertion of a new one—this adjustment is obtained by the turnbuckle *g*, which unites the two parts *c c'* of the connecting-rod. At each end of the turnbuckle there are provided jam-nuts to hold it in position. The latch connection, comprising the pin *h* and the recess *H*, by which the connecting-rod is connected with the vibrating arm *i*, permits of readily disengaging the connecting-rod from the vibrating arm, so that the spindle may be raised or lowered with freedom whenever it is desired.

I claim as my invention—

1. In a drill-press the combination with the spindle and the cam-shaft, of means for delivering the power from the cam-shaft to the spindle to cause its longitudinal movement, said means comprising a vibrating arm con-



5 nected with the spindle, a second vibrating arm pivoted in operative relation to the cam-shaft and actuated thereby, and adjustable connections between the two said arms, substantially as described.

10 2. In a drill-press, the combination with the spindle and the cam-shaft, of means for transferring power from the cam-shaft to the spindle to cause its longitudinal movement, said  
15 means comprising a vibrating arm connected with the spindle, a second arm pivoted in operative relation to the cam-shaft and actuated thereby, a rod adjustably secured in the last-mentioned arm, and a latch connection be-  
tween said rod and the first-mentioned arm, substantially as described.

20 3. In a drill-press the combination with the spindle and the cam-shaft, of means for delivering the power from the cam-shaft to the spindle to cause its longitudinal movement, said means comprising a vibrating arm con-  
25 nected with the spindle, a second vibrating arm pivoted in operative relation to the cam-shaft and actuated thereby, and a rod connecting said two arms, said rod being made

up of two parts adjustably secured together, substantially as described.

4. In a drill-press the combination with the spindle and the cam-shaft, of means for de-  
30 livering the power from the cam-shaft to the spindle to cause its longitudinal movement, said means comprising a vibrating arm connected with the spindle, a second vibrating arm pivoted in operative relation to the cam-  
35 shaft and actuated thereby, and a rod connecting said two arms, said rod being made up of two parts secured together in such manner that the length of the rod can be altered, one end of said rod being adjustably secured  
40 to the last-named vibrating arm and the other end of the rod having a latch connection with the first-named vibrating arm, substantially as described and for the purposes set forth.

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

HOWARD N. HINCKLEY.

Witnesses:

D. S. KREIMENDAHL,  
H. E. HART.