

(No Model.)

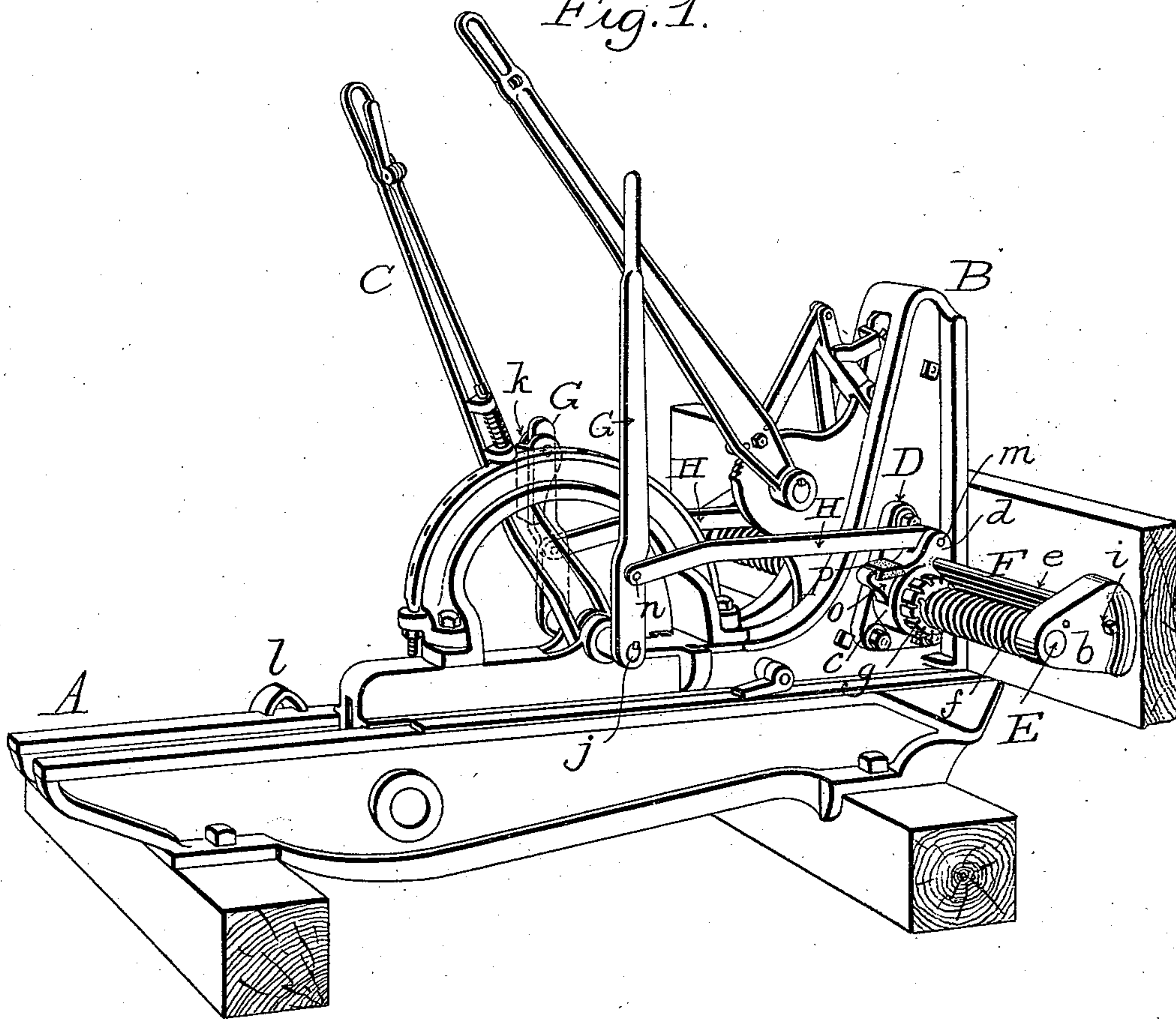
3 Sheets—Sheet 1.

G. M. HINKLEY & E. E. FITZGERALD.  
SAWMILL APPLIANCE.

No. 551,636.

Patented Dec. 17, 1895.

*Fig. 1.*



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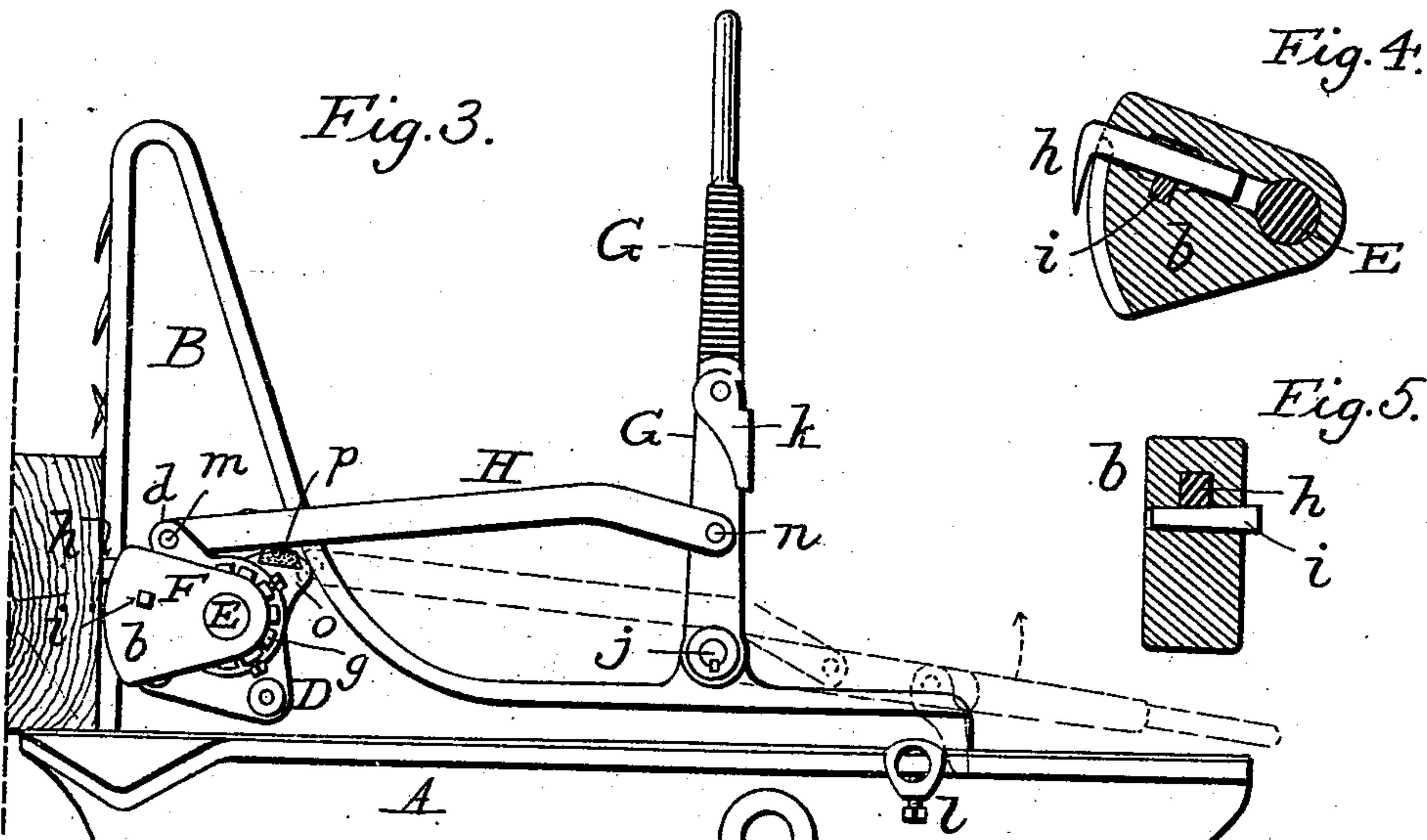
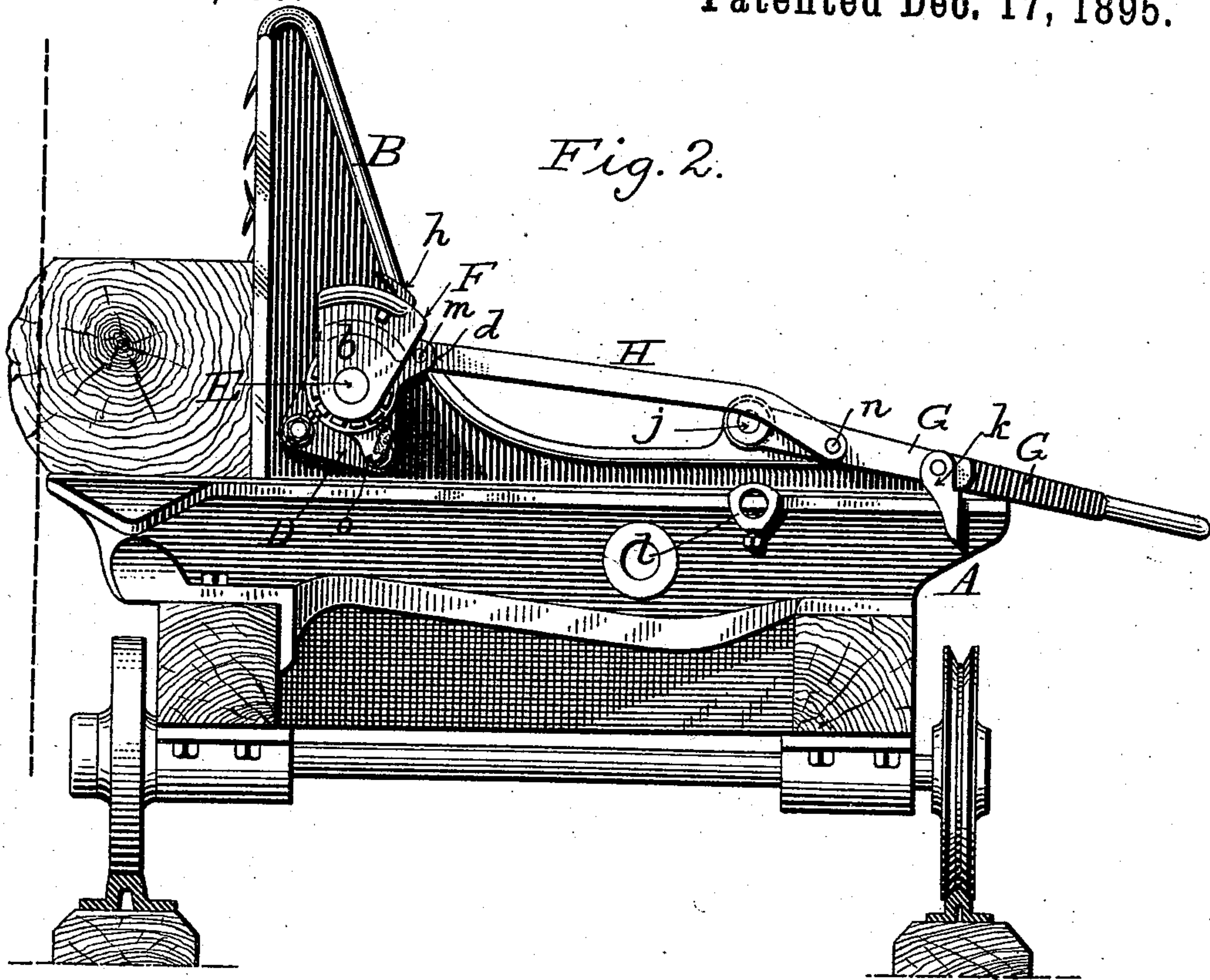
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Fig. 6.

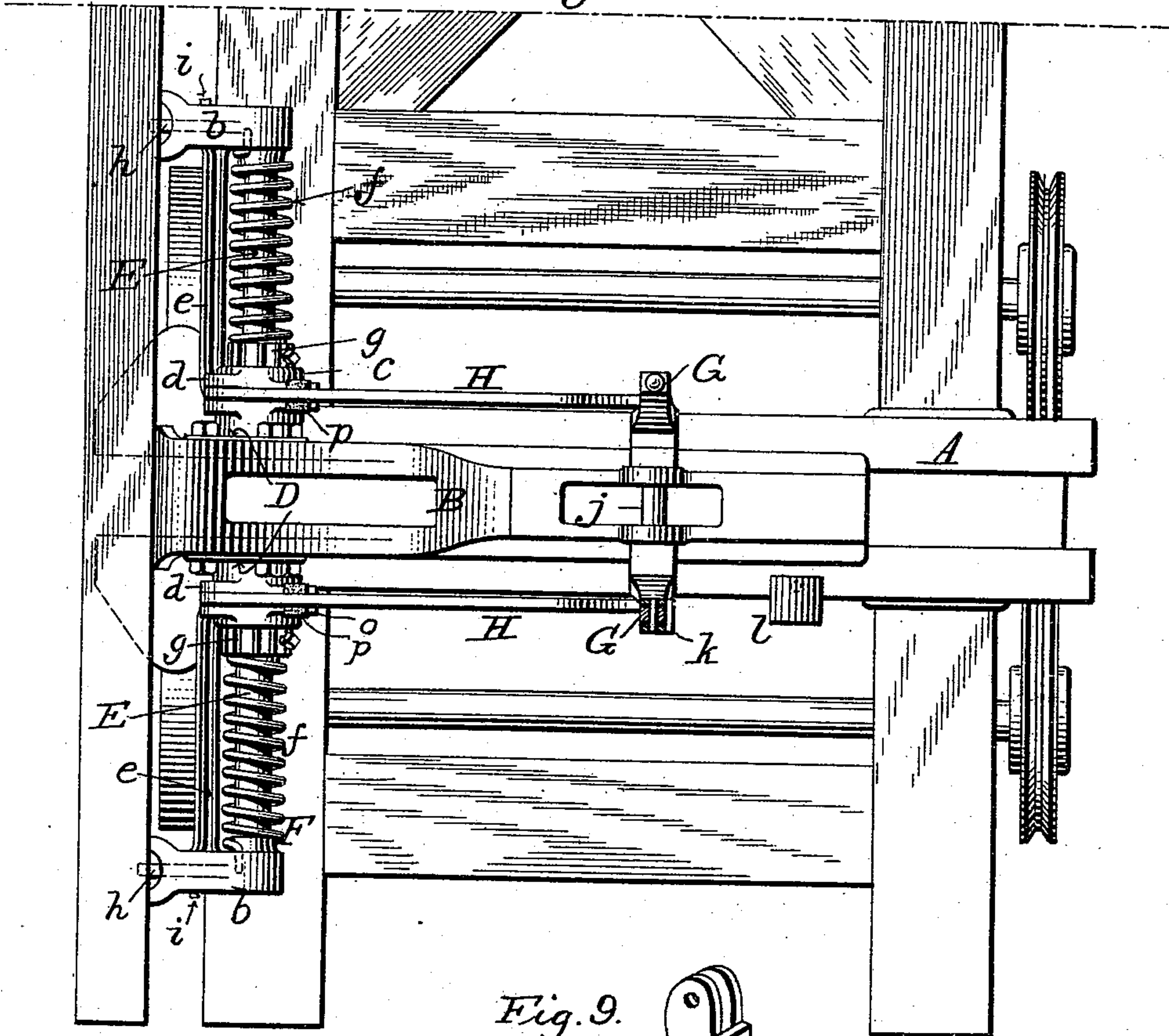


Fig. 9.

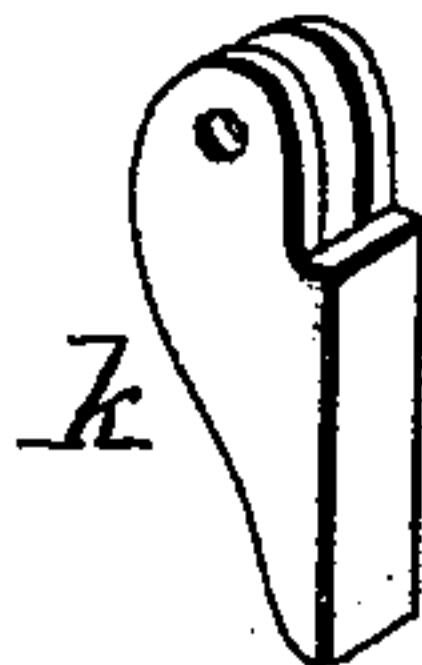


Fig. 7.

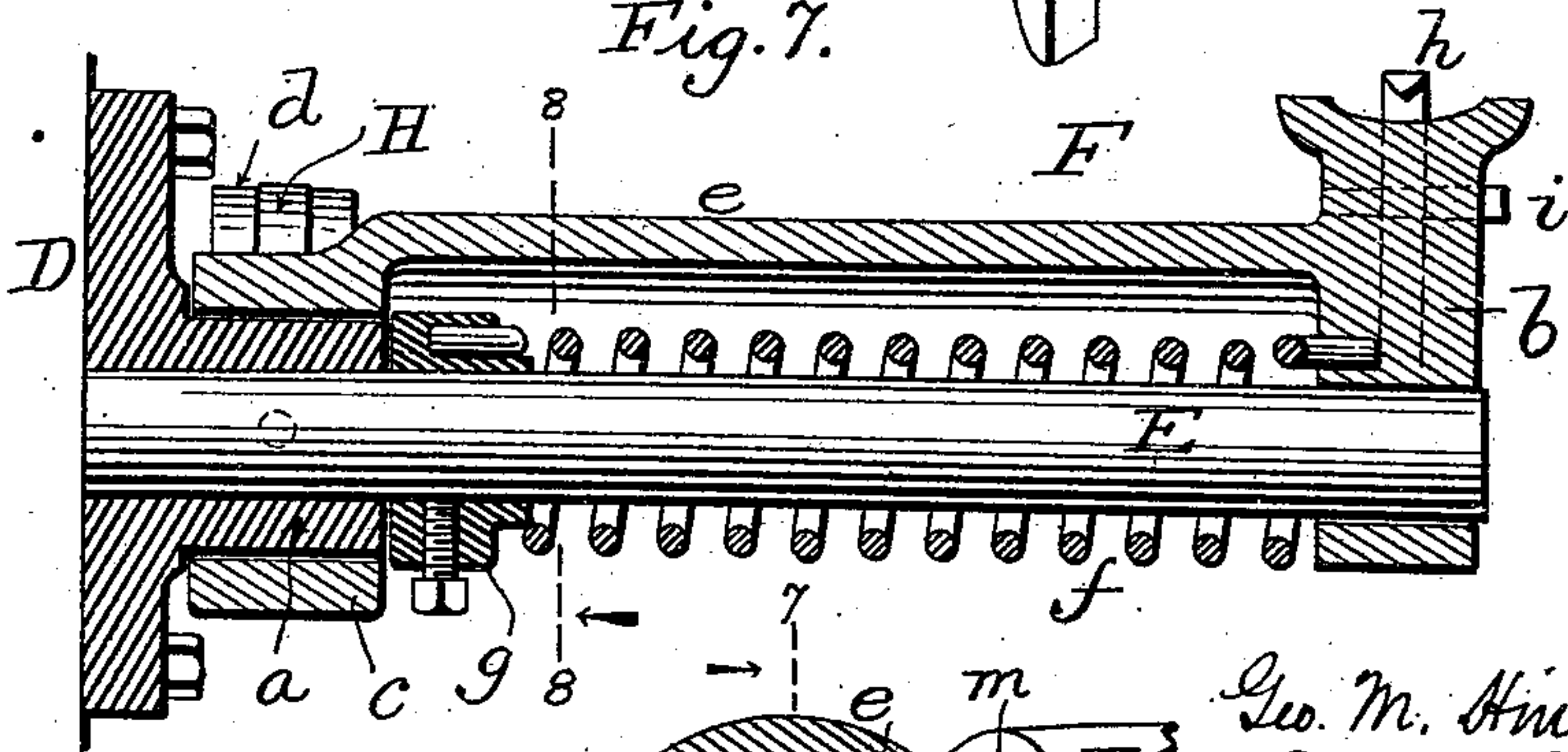
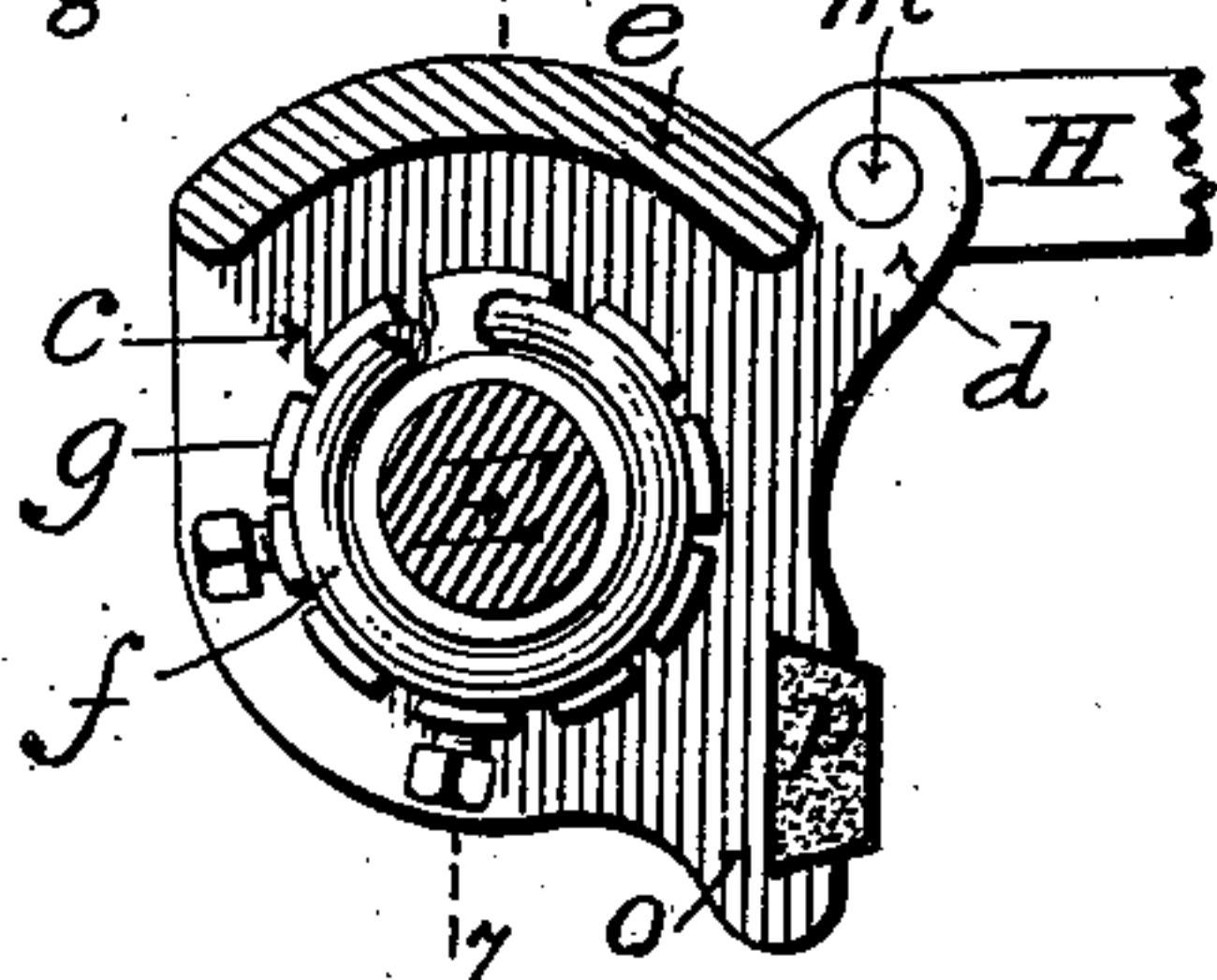


Fig. 8.



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# UNITED STATES PATENT OFFICE.

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COMPANY, OF SAME PLACE.

## SAWMILL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 551,636, dated December 17, 1895.

Application filed April 9, 1895. Serial No. 545,057. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE M. HINKLEY and EDWARD E. FITZGERALD, citizens of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Sawmill Appliances, of which the following is a specification.

Our invention relates to the knees of sawmill-carriages, and consists in providing the knee with one or more, preferably two, laterally-extending dogs, which, to distinguish them from the dogs usually carried by the knees, are termed "wing-dogs." After a log has been almost entirely sawed, the remaining portion is apt to spring toward or away from the face of the knee and thereby prevent its being properly held by the usual dogging mechanism of the knee, and to avoid this difficulty we employ the supplemental dogging mechanism comprising the wing-dogs which are designed to be turned or rotated, on a horizontal axis, toward and from the lumber. These dogs are designed to be automatic in their action—that is to say, they are normally held out of action—but when the knee is fed forward by any suitable mechanism, to present the thin piece of lumber to the sawing line, a trip device comes into action, releases the wing-dogs, and allows them to engage the lumber, drawing it toward the carriage if it is sprung away from the latter, or shoving it outward in case it is sprung toward the carriage, the wing-dogs in either case holding the lumber firmly against springing at either side of the knee.

In the drawings, Figure 1 is a perspective view of a head-block and knee of common form with our improvements applied thereto; Fig. 2, a side view showing only such parts as are necessary to illustrate our invention, the wing-dogs being in their normal or inoperative position; Fig. 3, a similar view showing the wing-dogs in use and also showing by dotted lines the parts in a position just prior to the operation of the trip mechanism; Figs.

4 and 5, sectional views through the head of one of the wing-dogs; Fig. 6, a top plan view; Fig. 7, a longitudinal sectional view through one of the wing-dogs on the line 7 7 of Fig. 8; Fig. 8, a transverse sectional view on the line 8 8 of Fig. 7, and Fig. 9 a perspective view of the pivoted trip-pawl.

A indicates a head-block, and B a knee, both of which may be of any usual construction. Bolted or otherwise rigidly secured to the side of the knee is a plate D, having a hollow boss *a*, to which is rigidly secured by a set-screw (shown by dotted lines in Fig. 7) or in any other suitable manner a fixed shaft or axle E which, as shown, projects horizontally from the side face of the knee. It is obvious that this supporting-boss, instead of being separate from the knee and bolted thereto, may be cast on the side of the knee, but we prefer the construction shown, because we are thereby enabled to apply the present invention to knees now in use.

F, Fig. 7, indicates the wing-dog as a whole, comprising a head *b*, which is journaled on the outer end of the shaft E, a thick collar *c* encircling the boss *a*, an ear or ears *d* on said collar, and a longitudinally-extending arm or member *e* connecting the head *b* with the collar. A coiled spring *f*, encircling the shaft, is secured at one end to the wing-dog head *b* and at the other end to a collar *g*, adjustably secured to the shaft or axle E. The front face of the head *b* is curved on the arc of a circle, and is slotted to receive a tooth *h*, which is conveniently held in place by a transverse key *i*, as shown in detail in Figs. 4 and 5. These parts are so constructed and arranged that the wing-dog may rock or oscillate freely upon its shaft or axle to throw its tooth *h* forward to engage the lumber, as in Fig. 3, or back in rear of the face of the knee, as in Fig. 2, the spring tending to throw the dog forward and to maintain it in such position.

G indicates a lever secured to a shaft *j*, journaled in the knee, said lever being con-



nected by a link II with the ear *d*, formed on the wing-dog. Pivoted to the lever is a pawl *k*, of the form shown in Fig. 9, which is designed to engage a stop *l*, adjustably secured to the head-block, as shown in Figs. 1, 2, 3, and 6. When the lever is thrown down, as in Fig. 2, the pivots *m* and *n* are in line with the shaft *j*, as shown in Fig. 2, the pawl *k* hanging downward from the lever. It will be noticed that when the lever is thus thrown down the wing-dog will be held out of action, against the force of its spring, by reason of the alignment of the pivots *m*, *j*, and *n*.

The knee is advanced a predetermined distance after each cut, as usual, during which advancement the wing-dog and its operative mechanism remain in the same relative position they occupied previous to such advance. Just before the knee reaches the position shown in full lines in Fig. 3 the pawl *k* will be brought up against the stop *l*, as indicated by dotted lines in said figure, whereupon, on the continued advance of the knee, the pawl will ride up onto the stop and raise the lever, throwing the three pivots *m*, *j*, and *n* out of line and permitting the spring to throw the dog and its lever into the position shown in full lines in Fig. 3. The pawl *k*, made as shown in Fig. 1, and embracing the lever, cannot yield when it comes into contact with the stop by the knees advancing toward the saw-line, and hence insures the raising or lifting of the lever, but readily yields, so as to pass over the stop without raising the lever when the knees recede. In order to reset or to throw the wing-dog out of action, it is only necessary to take hold of the lever and bring it to the position shown in Fig. 2. To prevent the parts from being carried too far forward, we arrange a projection *o* on the collar *c* to come into contact with the under side of the link II, said projection being advisably provided with an elastic cushion *p*. In practice we employ two of these wing-dogs, one on each side face of the knee, and in order that they may both be actuated automatically both operating-levers are keyed to the shaft *j*.

The setting-lever, which we have designated C in Fig. 1, is mounted loosely upon the shaft *j* and is not affected by and does not affect the shaft or the levers G keyed to said shaft.

Having thus described our invention, what we claim is—

1. In combination with a knee provided with the usual dogging mechanism; a secondary dog projecting from the side of the knee to engage and hold thin lumber; automatic means for throwing said secondary dog into engagement with the lumber; mechanism for normally holding said dog out of action; and automatic means for releasing the withholding mechanism and permitting said dog to go into action, substantially as set forth.

2. In combination with a knee, a dog to en-

gage and hold the lumber thrown into action automatically by the forward movement of the knee.

3. In combination with a knee, a dog to engage and hold the lumber thrown into action automatically at a predetermined point by the forward movement of the knee.

4. In combination with a knee; a shaft or support projecting horizontally and laterally therefrom; a rocking dog carried by said support; and means, operated through the advance of the knee, whereby the dog will be automatically rocked forward to engage and hold the lumber at one side of the knee.

5. In combination with a knee; a shaft or support projecting laterally therefrom; a rocking dog mounted on said support; a spring for throwing the dog forward; a lever for retracting the dog; and devices for automatically releasing the lever.

6. In combination with a head block; a knee; a dog carried by the knee and urged forward by a spring; a lever connected with the dog for retracting the same; a pawl carried by the lever and a stop to be engaged by the pawl to effect the release of the dog.

7. In combination with a knee, a dog carried thereby, a lever for retracting the dog adapted to lock or hold the same out of action; a pawl carried by said lever; and a stop adapted to engage the pawl as the knee advances, to move the lever, and thereby to release the dog and permit it to go into action.

8. In combination with a knee; a dog carried thereby; a lever connected with the dog by a link; a pawl carried by the lever; a stop to be engaged by the pawl, whereby when the pawl strikes the stop the pivots of the lever and link will be thrown out of line; and a spring to rock the dog when the lever is released.

9. In combination with a knee and its usual dogging mechanism; supplemental dogs carried by supports projecting laterally from the sides of the knee; a rock-shaft *j*; and a pair of levers secured to said shaft and connected with the respective supplemental dogs.

10. In combination with a knee; a shaft or support secured thereto; a rocking dog comprising head *b*, collar *c* and connecting arm *e*, and spring *f* for rocking the dog in one direction.

11. In combination with a knee; a shaft or support secured thereto; a rocking dog comprising head *b*, collar *c* and connecting arm *e*; spring *f* for rocking the dog in one direction, and a hand lever connected with the dog by a link.

12. In combination with a knee and the shaft or support thereon; a rocking dog mounted on said support; hand lever G and link II for rocking the dog; and a stop on the dog to engage the link.

13. In combination with a knee; a vertically rocking dog on the side thereof; and

means for automatically releasing the dog, and also for rocking the same to cause the dog to engage and hold the lumber.

5 14. In combination with a knee; a vertically-rocking dog on the side thereof; a spring to cause the dog to rock to engage and hold the lumber; a lever for retracting the dog and putting the spring under stress; and means for automatically releasing the spring.

In witness whereof we hereunto set our hands in the presence of two witnesses.

GEORGE M. HINKLEY.  
EDWARD E. FITZGERALD.

Witnesses:

B. T. LEUZARDER,  
FRANK W. GREENLEAF.