

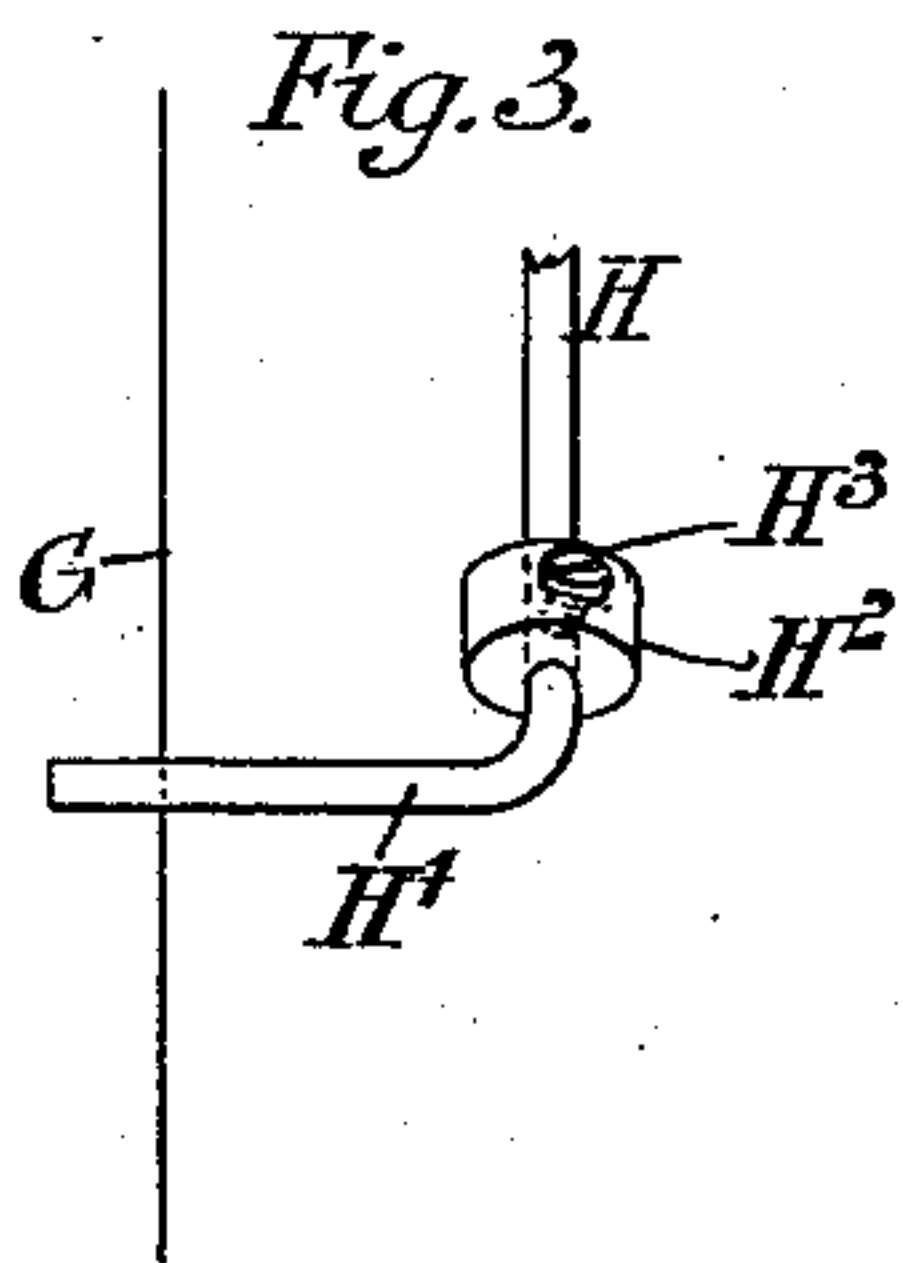
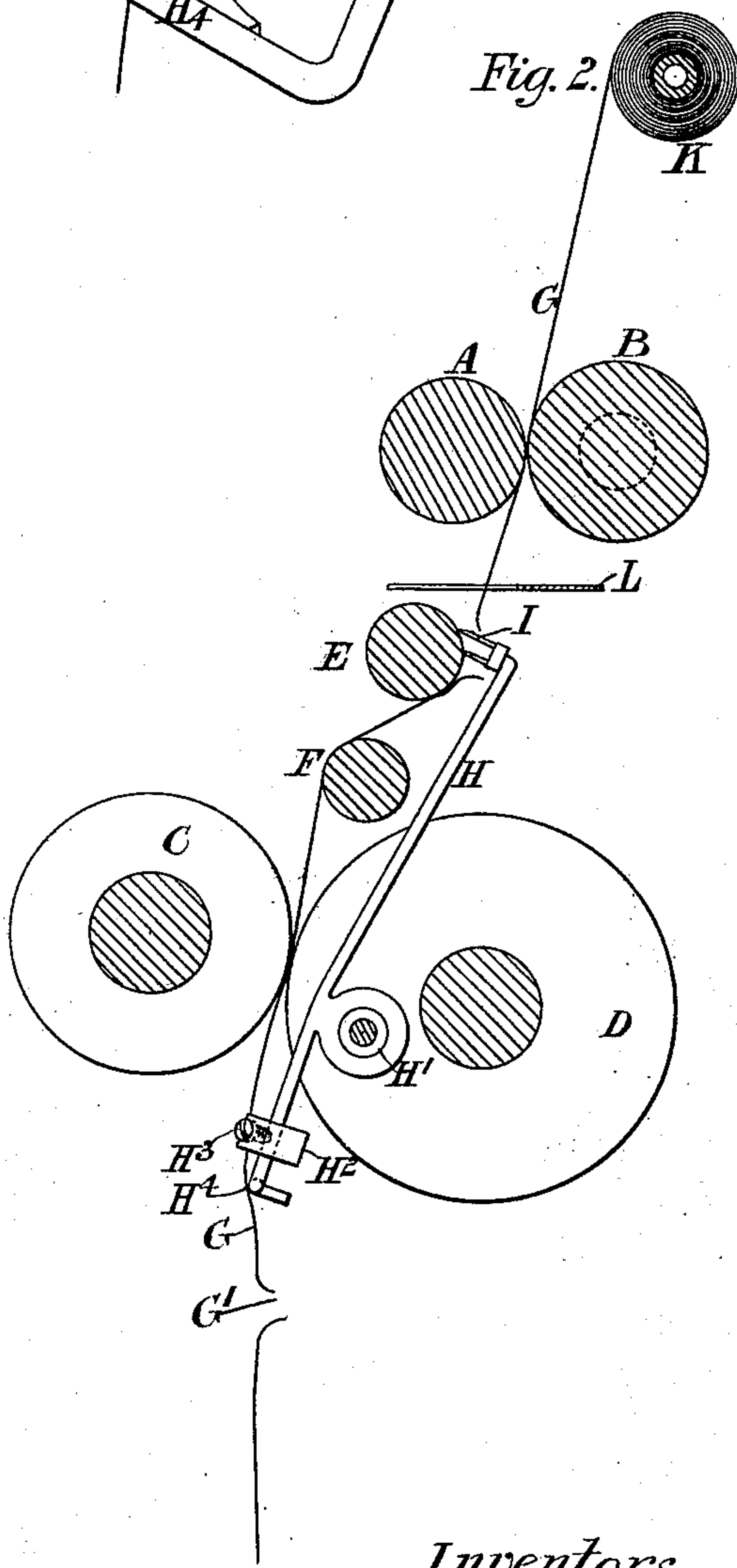
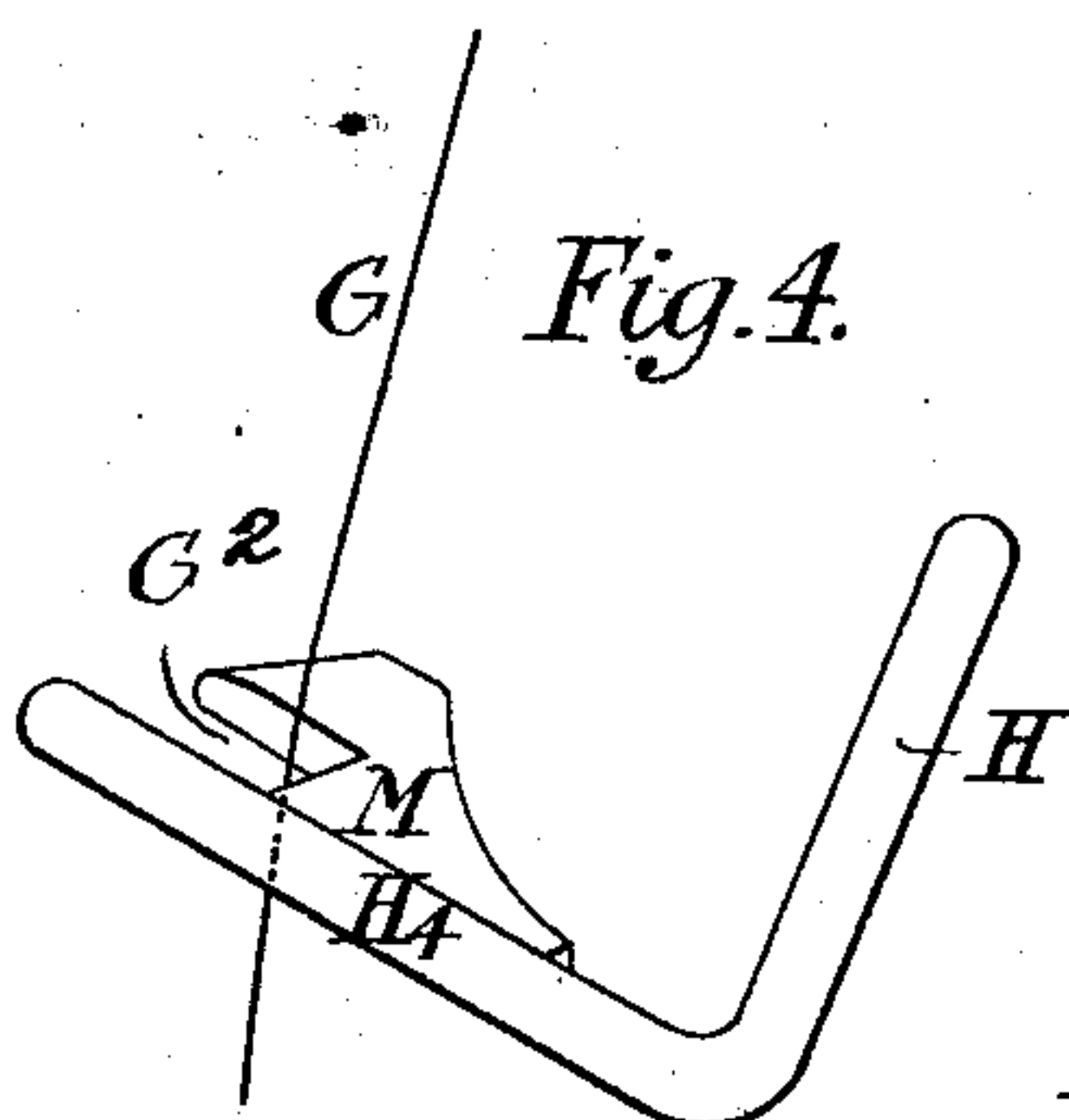
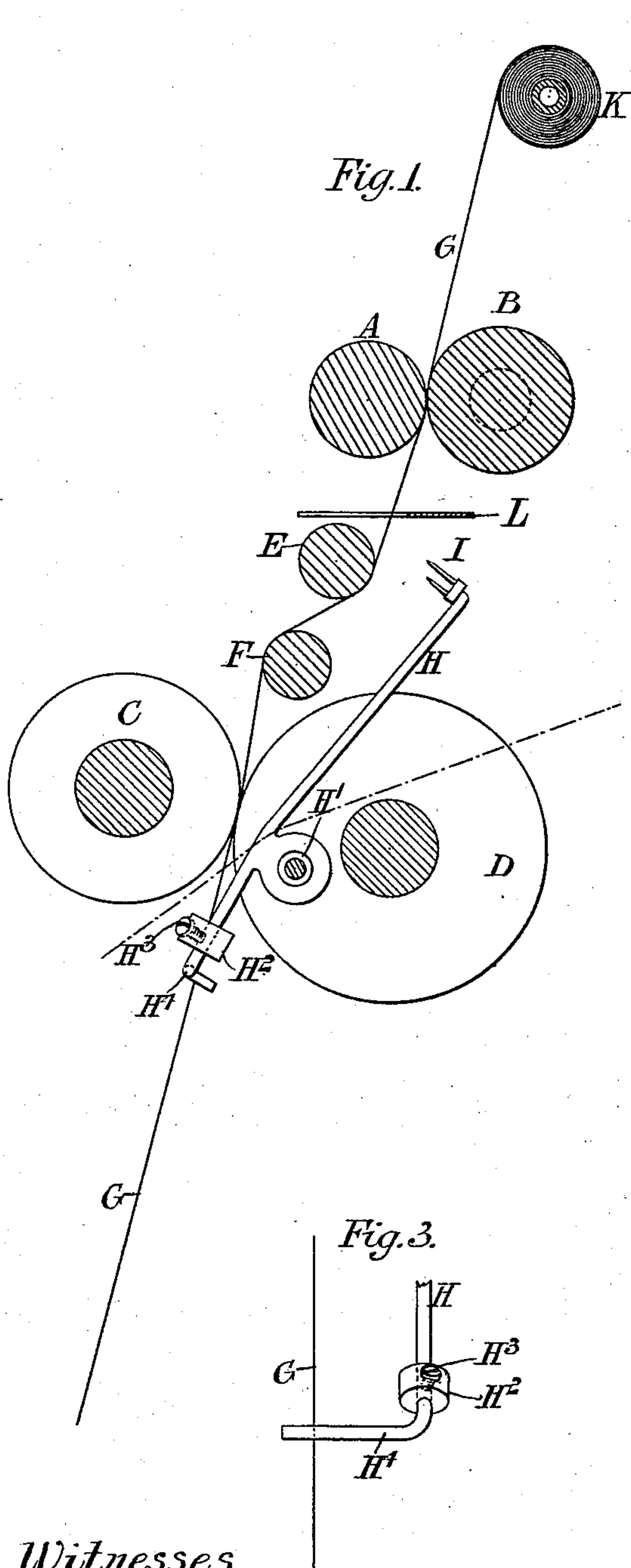
(No Model.)

C. B. HOLLAND & J. FRASER.

AUTOMATIC STOP MOTION FOR SPINNING OR SIMILAR MACHINES.

No. 539,869.

Patented May 28, 1895.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES BARCLAY HOLLAND AND JAMES FRASER, OF ABERDEEN,
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AUTOMATIC STOP-MOTION FOR SPINNING OR SIMILAR MACHINES.

SPECIFICATION forming part of Letters Patent No. 539,869, dated May 28, 1895.

Application filed September 25, 1894. Serial No. 524,105. (No model.)

To all whom it may concern:

Be it known that we, CHARLES BARCLAY HOLLAND and JAMES FRASER, subjects of the Queen of Great Britain, residing at Aberdeen, Scotland, have invented certain new and useful Improvements in or Relating to Automatic Stop-Motions for Spinning or similar Machines, of which the following is a specification.

This invention relates to automatic stop motions for spinning and similar machines the object being to prevent the continued feed of the thread after it has broken, which, if it takes place, frequently brings down the adjacent threads or produces "double spinning."

The invention will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical section through the machine, showing the apparatus out of operation and the thread in working condition. Fig. 2 is a similar view, but showing the thread broken and the apparatus in operation to prevent a continuance of the feed. Fig. 3 shows a front view of the lower end of the thread-parting arm. Fig. 4 is a modification in detail of a portion of Fig. 3.

Like letters represent like parts through out the drawings.

In this specification and claims the term "thread" is intended to include a thread or filament whether technically known as a "rove," "yarn," or by some other name. By the term "drawing rolls" we mean the pair of power-driven rolls nearest to the spinning bobbin.

A and B represent the feeding rools of the machine and C and D the drawing rollers, E and F being rollers technically known as "binding rods," for putting the necessary tension upon the thread G.

H is an arm pivoted at H' to any convenient part of the framework and provided with an adjustable balance-weight H² which may be so fixed by the screw H³ that normally the arm H would lie in the position indicated in Fig. 2 with the cutting device I at its upper end in contact with the thread. This cutting device may be made in the form of a heckle with a number of pins or it may be a knife edge or any suitable form of cutting

or tearing device which will separate the thread G at the point where it strikes it.

The lower end of the arm H is turned up at right angles at H⁴ as indicated in Fig. 3 so as to provide a surface upon which the thread G may bear and when in its normal condition of tension as shown in Fig. 1 may hold the arm H in its backward position so that the cutter I is clear of the thread G. The lower end of the thread G passes to the other portions of the machine with which this invention is not concerned and the operation is that so long as the thread maintains its tension and does not break it bears upon the portion H⁴ of the arm H holding it in the position shown in Fig. 1 and thus preventing the cutter I from approaching the thread. Should however the thread break the tension on H⁴ is relaxed and the weight H² over-balances the upper end of the arm H bringing the cutter I into contact with the thread and parting it so that the drawing rollers C and D which are driven by the machinery have no further power to draw the thread from the feeding rollers or the reel or spool K on which it is carried.

The rollers A and B may be positively driven or merely allowed to turn as the thread passes through them. In the former case they will continue to feed the thread but as it would fall on to the plate or cover L it would not be in danger of catching the flier or doing any damage, or being itself damaged until the operator had time to repair it.

In Fig. 2 the thread G is supposed to have broken at G' and it has ceased to bear upon the arm H⁴ in consequence of which the cutter I has struck the thread and parted it at the tension roller E.

As indicated in the dotted lines in Fig. 1 the arm H may be turned with the cutter I removed to a considerable distance from the thread G and we find that the balance weight H² may be so adjusted that although when the arm lies in the position indicated in full lines in Fig. 1 and the thread breaks, the cutter I would be caused to approach the thread and sever it. Nevertheless when the operator is inserting or repairing a thread and moves the arm H into the position shown in the dotted lines it will remain in that position and out

of her way until she has finished with the thread. However, any suitable kind of catch may be employed for the purpose of holding the arm in the dotted position if required.

5 We have found that where the arm is too delicately balanced it is possible for the thread to kick it over from the position shown in full lines in Fig. 1 to the position shown in dotted lines in Fig. 1, and thus prevent its operating. To prevent this the thread G^2 is caused
10 to run in a recess G' formed in or upon the part H^4 of the arm H. This recess may be provided either directly in the part H^4 which may be divided for the purpose, but preferably it is formed by securing the plate or
15 guide M, which may be soldered or otherwise secured, to H^4 and its operative edge being preferably rounded so as not to damage the thread.

20 We find that it is not absolutely necessary to use a balance weight for strong threads but for weak ones it is desirable.

It will be understood that this device is for the purpose only of breaking the thread so
25 as not to stop the feed but to arrest the thread at that point where it might otherwise become dangerous, and it is not intended to stop the operation of the working parts of the machine.

We claim—

30 1. The combination in a spinning machine,

of the pivoted arm, provided with a cutter normally held out of contact with the thread by the tension of the latter, and adapted to engage the thread on the breakage thereof, the said arm having a right angle portion provided with a recess having front and rear walls, and through which recess the thread passes, substantially as described. 35

2. The combination in a spinning machine, of the pivoted arm provided with a cutter
40 normally held out of contact with the thread by the tension of the latter, and adapted to engage the thread on breakage thereof, the said arm having a right angle portion provided with a plate forming a recess therewith
45 through which the thread passes, the said recess being formed between the right angled portion and plate, substantially as shown and for the purpose set forth.

In testimony whereof we have hereto set
50 our hands in the presence of the two subscribing witnesses.

CHARLES BARCLAY HOLLAND.
JAMES FRASER.

Witnesses:

WM. MILNE,
Solicitor, Aberdeen.

JAMES WALKER,
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