

(Model.)

A. H. P. S. WORTLEY.

2 Sheets—Sheet 1.

TYPE WRITING MACHINE.

No. 286,161.

Patented Oct. 2, 1883.

Fig. 1.

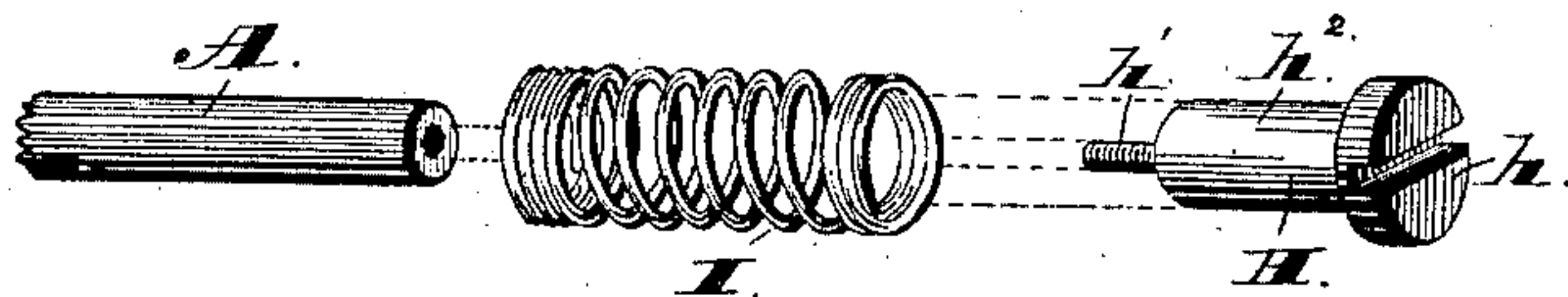
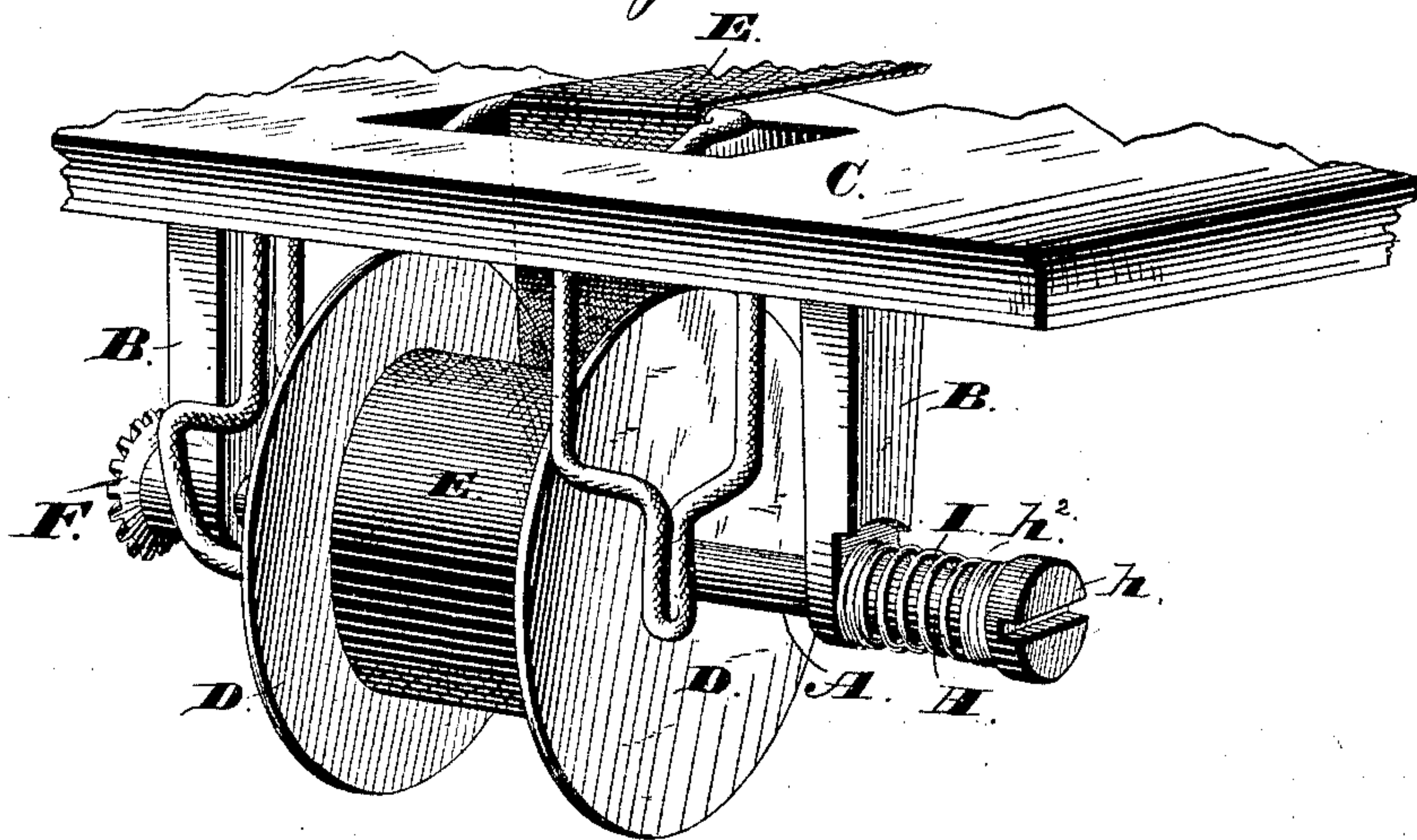


Fig. 2.



Witnesses.
 Jas. E. Hutchinson.
 Henry C. Hazard

Inventor.
 A. H. P. Stuart Wortley.
 by Geo. S. Pinnelle, his Atty.

(Model.)

2 Sheets—Sheet 2.

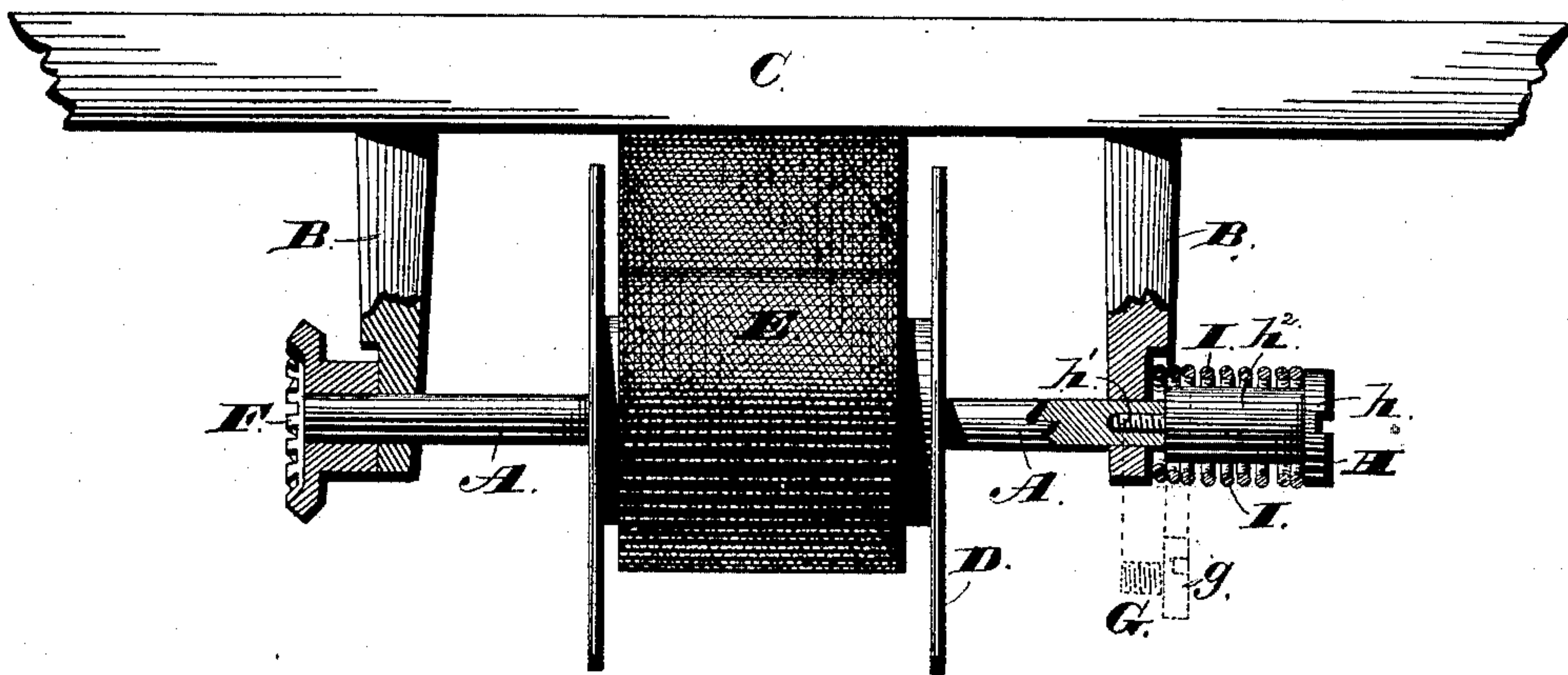
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Fig. 3.



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Henry C. Hazard

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A. H. P. Stuart Wortley,
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UNITED STATES PATENT OFFICE.

A. H. P. STUART WORTLEY, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 286,161, dated October 2, 1883.

Application filed January 22, 1883. (Model.)

To all whom it may concern:

Be it known that I, A. H. P. STUART WORTLEY; of Rosslyn House, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Type-Writing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my apparatus separated from the spool shaft or spindle. Fig. 2 is a like view of the same in place, and Fig. 3 is a partial central longitudinal section upon a line passing through the axis of said shaft.

Letters of like name and kind refer to like parts in each of the figures.

In the use of type-writers much difficulty has heretofore been experienced in producing clean impressions of the type, in consequence of the sagging of the inked ribbon and the movement of the same when lifted by said type.

To obviate this difficulty is the design of my invention, which consists in the spring-tension constructed and applied to the spool-shafts of a type-writer, substantially as and for the purpose hereinafter specified.

In the annexed drawings, A represents a shaft, which is journaled within suitable bearings, B, beneath the top plate, C, of a type-writer, and has upon its central portion a spool, D, for receiving and containing an inked ribbon, E.

Upon one projecting end of the shaft A is secured a bevel-pinion, F, which forms one end bearing for the same, and by means of which said shaft is connected with driving mechanism, while within the opposite end of said shaft there has heretofore been placed a flat-head screw, G, the head *g* of which formed a second end bearing for and limited the end movement of said shaft. In place of the screw G, I employ a screw, H, which, as seen by Fig. 1, has, between its head *h* and threaded portion *h'*, a plain cylindrical body, *h*², which has nearly the size of said head, and is larger

than the shaft. The end of this cylindrical portion usually stands at some little distance from the bearing, and also, as shown, from the end of said shaft. When the shaft is in its normal position, the portion *h*² of the screw does not quite touch the bearing for the shaft, even when the ends of this portion and the shaft are brought into contact by the turning of the screw. The end of this cylindrical portion will, as shown, obviously act as a stop to positively limit the distance that the shaft can be moved longitudinally against the yielding action of the tension-spring, to be next described, and which, besides applying tension to the shaft normally, tends to hold the same in place against end-play. The screw, adapted thus to perform the double function of adjustment for the tension and positive stop to limit end-play of the shaft, is, I believe, a novel feature in tension devices.

Surrounding the body *h*² is a spiral spring, I, which has its ends in contact with the head *h* and shaft-bearing B, and is compressed longitudinally, in order to place it in position, until its outward pressure produces such an amount of friction between its ends and the screw-head and shaft-bearing and between the bearing at the other end of the shaft and the inner end of the hub of the driving-pinion as to retard the revolution of the shaft and cause the ribbon E to maintain a horizontal position between the spools D, instead of sagging, as would otherwise be the case. The degree of tension of the ribbon E will be governed by the amount of compression of the springs I, and in no case should exceed the actual requirements of the case, as it adds to the work to be performed by the spring employed to move the paper-carriage, and if excessive will interfere with the freedom of motion of said carriage.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

As an improvement in type-writers, the combination of the ribbon-spool shaft with the screw H, having head *h*, cylindrical body portion *h*², of greater diameter than the shaft,

and threaded portion *h'*, adapted to screw into the end of the shaft, and the spiral spring *I*, surrounding the cylindrical portion of the screw, and bearing at one end against the
5 screw-head and at the other against the bearing for the shaft, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing I

have hereunto set my hand this 16th day of May, 1882.

A. H. P. STUART WORTLEY.

Witnesses:

CHARLES JOHN FRY,

THOMAS GEORGE COLLETT,

Clerks to Messrs. Milne Riddle & Mellor, Solicitors, Temple, London.