

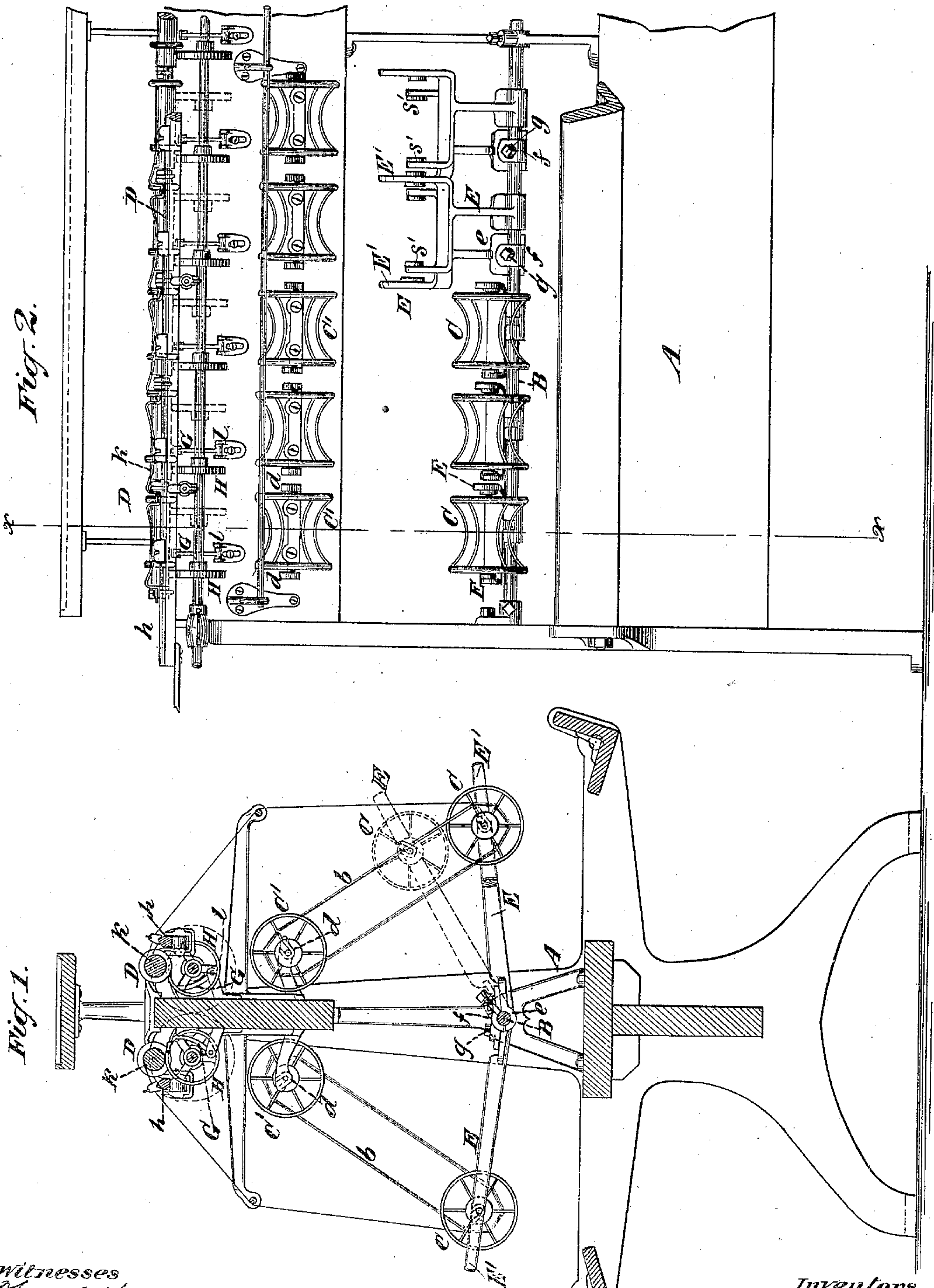
(No Model.)

3 Sheets—Sheet 1.

J. E. & E. ATWOOD.

MACHINE FOR WINDING SILK AND OTHER FIBROUS MATERIALS.  
No. 257,269.

Patented May 2, 1882.



Witnesses  
Fred Haynes  
Ed. Glatzmeyer

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John E. Atwood  
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By their Attorneys  
Brown & Brown

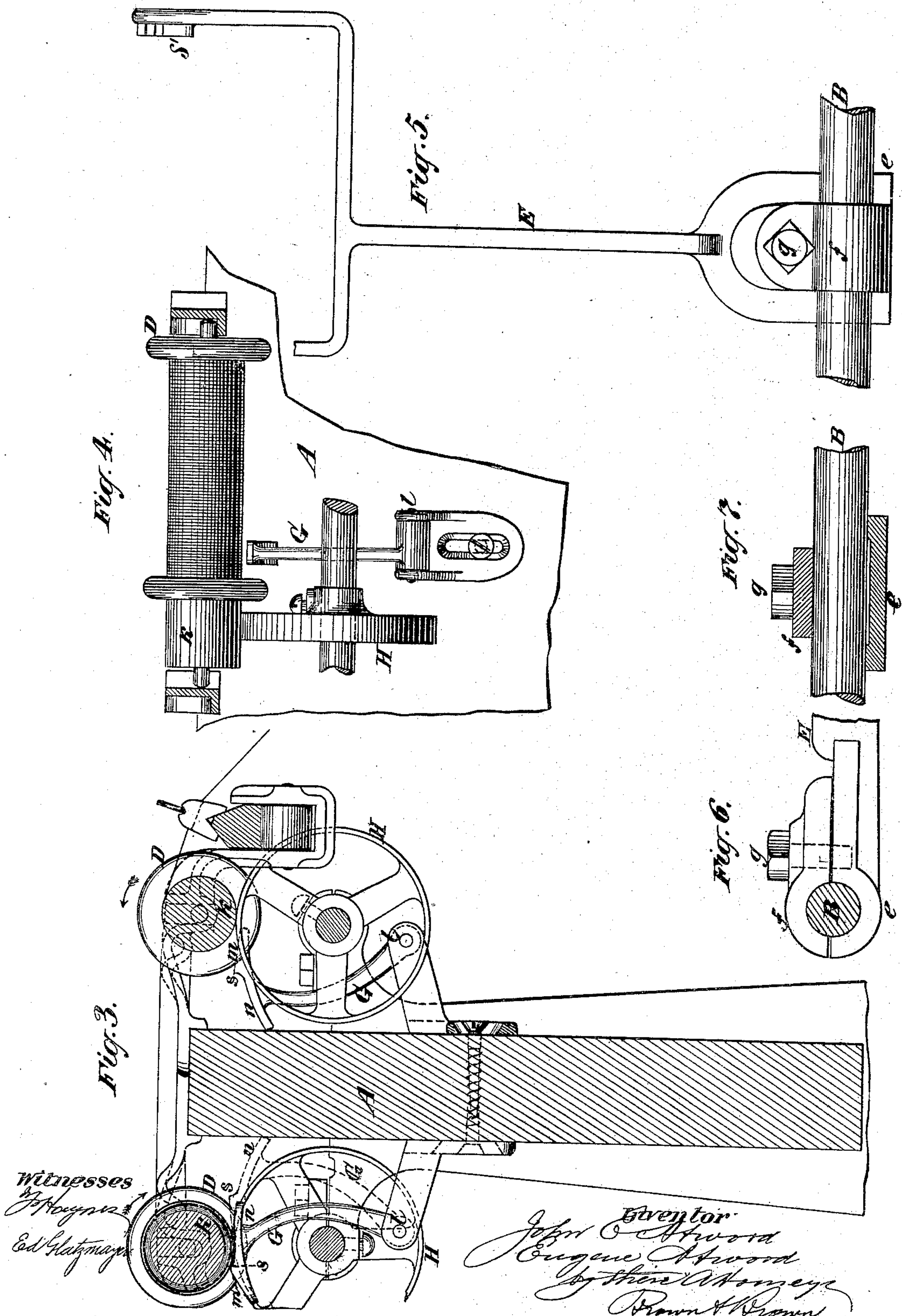
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Fig. 9.

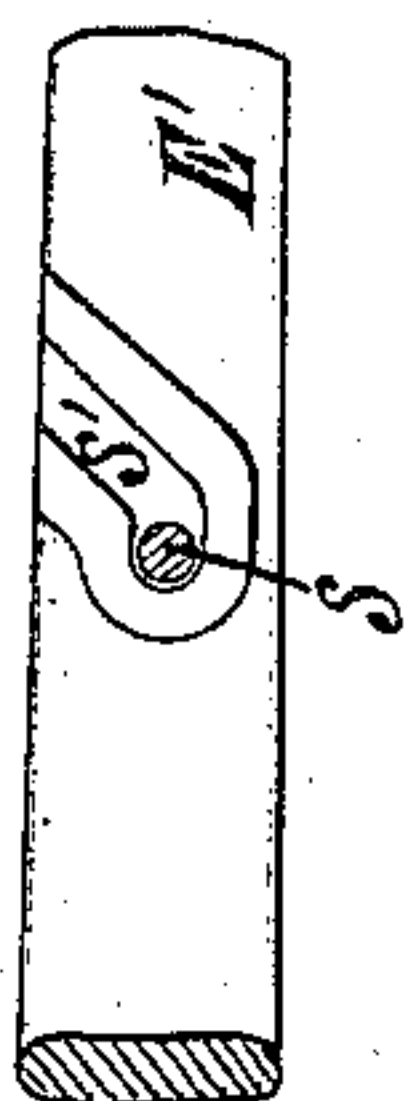
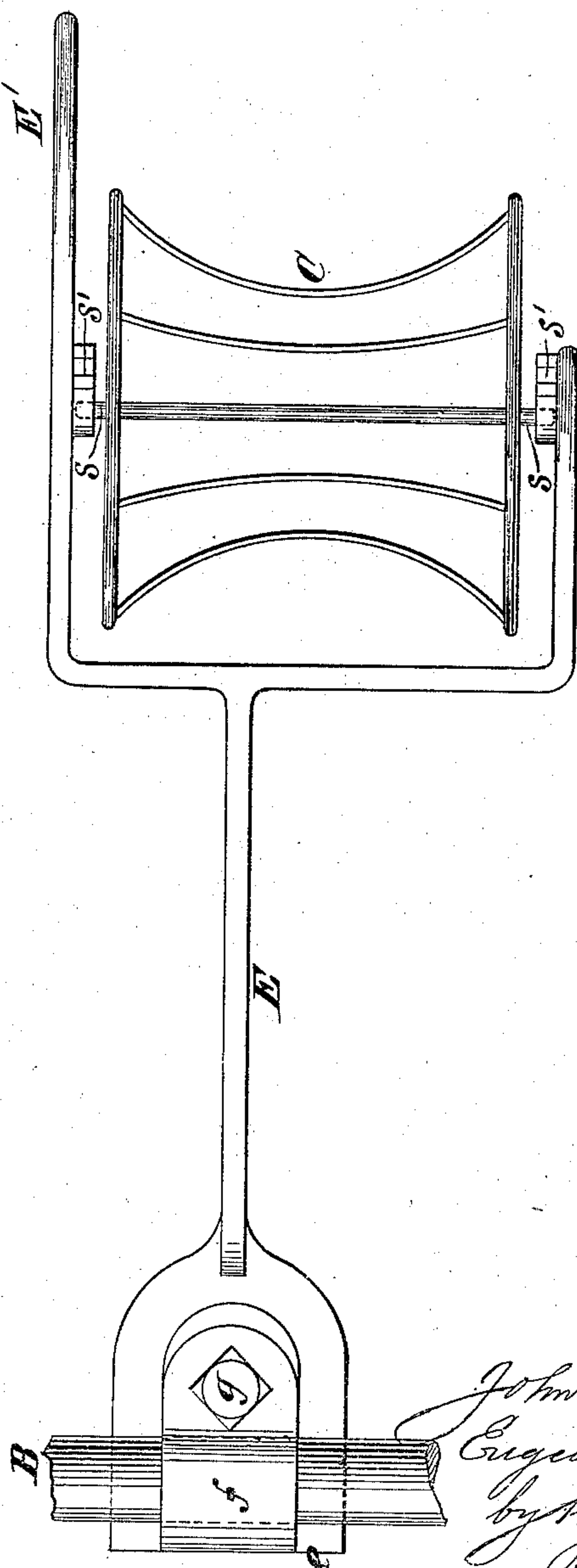


Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOHN E. ATWOOD AND EUGENE ATWOOD, OF STONINGTON, CONN.

MACHINE FOR WINDING SILK AND OTHER FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 257,269, dated May 2, 1882.

Application filed March 3, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN E. ATWOOD and EUGENE ATWOOD, both of Stonington, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Machines for Winding Silk and other Fibrous Materials, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention is more especially designed to be applied to machines for transferring soft silk in skeins to bobbins or spools; but it may also be used for transferring and winding other fibrous material. Such machines are usually provided with a pair of "risers" or skeleton reels for each bobbin or spool, one of each pair of said risers, reels, or swifts being in stationary bearings and the other in adjustable bearings to allow the skeins to be tightened as required, and to provide for working skeins of unequal length.

The invention consists in the combination, with risers or reels, of independent adjusting-levers containing or carrying bearings for the same, one or more stationary shafts upon which said levers may be turned, and devices for securing said levers to said shaft or shafts, so that they will be held in fixed position after their adjustment by frictional engagement with said shaft or shafts.

The invention also consists in the combination, with two series of risers, reels, or swifts on opposite sides of the machine, of a single stationary shaft arranged between said series of risers, reels, or swifts, two series of levers projecting in opposite directions from said shaft and carrying said risers, reels, or swifts, and devices for securing said levers to said shaft, so that they may be turned thereon, and yet will be held in fixed positions after their adjustment by their frictional engagement with the shaft.

The invention also consists in the combination, with a riser or reel and a lever for supporting and adjusting the same, of a stationary shaft for supporting said lever, and a box and adjustable cap on the fulcrum end of said lever for obtaining an adjustable hold of the said lever on said shaft.

The invention also consists in the combina-

tion, with a winding-bobbin provided with a spindle-head and a driving-wheel for operating on said spindle-head to drive the bobbin, of a sector-faced lever arranged opposite that portion of the bobbin on which material is wound, and adapted to be moved by the friction upon it of the material on the bobbin for the purpose of lifting the bobbin and taking its spindle-head out of contact with the driving-wheel when sufficient material is wound upon the bobbin.

The invention also consists in the combination, with the winding-bobbin provided with a spindle and the friction-wheel for driving the said spindle and bobbin, of a lever of novel construction, particularly hereinafter described and claimed, whereby the bobbin, after being filled, is stopped, and the lever, after the stoppage of the bobbin, is held in place by it.

In the accompanying drawings, Figure 1 represents a vertical transverse section on the line *xx* in Fig. 2 of a silk-winding machine having our invention applied; Fig. 2, a side elevation of the same in part; Fig. 3, a vertical transverse section, upon an enlarged scale, of the upper part of the machine; Fig. 4, a side view in part, also upon an enlarged scale, showing the bobbin driving and stopping devices. Figs 5, 6, and 7 represent a plan, side view, and section, respectively, of one of the levers which controls either one of the adjustable risers or reels, and of the box and adjustable cap for supporting and holding said lever on the shaft which carries it. Fig. 8 represents a plan of one of the forked levers carrying a riser or reel and a portion of the shaft on which it is fulcrumed, both upon a large scale; and Fig. 9 represents an inside view of one of the arms or sides of the fork, showing the bearing for the journal of the riser or reel.

Similar letters of reference designate corresponding parts in all the figures.

A indicates the main frame of the machine, and B a horizontal rod or fixed shaft arranged to extend lengthwise of the frame at or near the center of the machine.

C C' indicate the skeleton reels or risers in pairs on both or opposite sides of the machine for carrying the skeins *b* to be transferred to the bobbins D D. The upper one, C', of each pair of reels works in stationary bearings *d*;



but the other one, C, is adjustable up or down—that is, toward or from the other reel, C', of the pair, to allow for tightening the skein upon said reels and to provide for working skeins of different lengths.

To effect the necessary adjustment of each reel C it has its bearings in or is attached to a lever which is forked to receive the reel, and one arm or side of which, E', is extended beyond the periphery of the reel, as best shown in Fig. 8, to form a handle for adjusting the lever up and down. The journals *s* of the reel C fit in open bearings *s'* on the inner faces of the arms or sides of the fork, and the form of which is best shown in Fig. 9. The other end of this lever has its bearing on the fixed shaft B, and is held in position through friction obtained by pressure on its bearing, whereby each reel C may be readily raised or lowered and held at its required adjustment by the simple movement of the lever which carries it, and as each adjustable reel has a separate lever all of said reels may be independently adjusted by their respective levers.

To give a steady bearing to each lever E and ready adjustment of it when required, the same is secured to the shaft B by a box, *e*, at the inner end of the lever, and a cap, *f*, provided with a set-screw, *g*, whereby the cap is made to adjust the lever to the fixed shaft by the screw with the requisite degree of force to sustain it by friction of the cap and box on the shaft at any point of rise that may be desired; and every facility is afforded for merely moving the lever for adjusting the reel C to its required distance from the other reel, C', of the pair of reels.

The shaft B may be rigidly secured against torsional strain of the levers E by means of fastenings at the ends of it and at any number of intermediate supports through which it passes.

By employing a single more or less nearly central longitudinal fixed shaft provision is made for working the several series or sets of the levers E on both sides of the frame from the same shaft when the frame has reels on both sides of it; but, if desired, two or more independent fixed shafts may be used for the several levers.

Instead of the lower reels, C, being adjustable, they might be stationary, and the upper reels, C', be made adjustable and be carried by friction-levers for varying their distance from the lower reels, in like manner as described for the adjustment of the lower reels.

The silk may be transferred from the reels to the bobbins in the usual or any suitable manner and be evenly laid on the bobbins by the action of a traverse-bar, *h*, fitted with suitable thread-guides.

G is the sector-faced lever used for stopping each winding-bobbin, when filled, by the friction of the silk or material carried by the bobbin on the free end of the lever. Each bobbin has a separate lever, and the spindles of the

bobbins are fitted in their bearings so as to be capable of rising and falling.

The bobbins D are driven by lower friction driving-wheels, H, working against the spindle-heads *k* of the bobbins. Each lever G is arranged beneath the bobbin D which it controls, and opposite that portion on which the silk is wound, and it has its fulcrum or center of motion *l* below, while its upper or free end, against which the material on the bobbin acts, is of convex and preferably of partly eccentric construction, and of considerable length, its eccentric portion *m* being in front and serving as it is drawn by the friction of the material on the bobbin under the latter to stop the bobbin by raising it and lifting the spindle-head from contact with its driving friction-wheel, after which the bobbin drops over a shoulder, S, at the back end of the eccentric or wedge-like portion *m*, onto a reduced or lower back portion, *n*, of the free end of the lever. In doing this the filled bobbin falls into a locking position with the lever G at the shoulder S, thereby preventing the lever from falling back into its normal position till the filled bobbin, which remains at rest on the lever, is removed; also preventing the spindle-head of the bobbin from coming in contact with its driving-wheel. The two positions of the lever G are clearly shown at the right and left hand of Fig. 3. Said lever has its fulcrum-bearing made adjustable to adapt the lever to different amounts of fibrous material on the bobbin.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with the risers or reels, of independent adjusting-levers containing or carrying the bearings for the same, one or more stationary shafts upon which said levers may be turned, and devices for securing said levers to said shaft or shafts, so that they will be held in fixed positions after their adjustment by frictional engagement with said shaft or shafts, substantially as and for the purpose specified.

2. The combination, with two series of risers, reels, or swifts on opposite sides of the machine, of a single stationary shaft arranged between said series of risers, reels, or swifts, two series of levers projecting in opposite directions from said shaft and carrying said risers, reels, or swifts, and devices for securing said levers to said shaft, so that they may be turned thereon, and yet will be held in fixed positions after their adjustment by their frictional engagement with the shaft, substantially as specified.

3. The combination, with a riser or reel and a lever for supporting and adjusting the same, of a stationary shaft for supporting said lever, and a box and adjustable cap on the fulcrum end of said lever for obtaining an adjustable hold of the said lever on the said shaft, substantially as specified.

4. The combination, with a winding-bobbin provided with a spindle-head and a driving-



wheel for operating on said spindle-head to drive the bobbin, of a sector-faced lever arranged opposite that portion of the bobbin on which material is wound, and adapted to be  
5 moved by the friction upon it of the material on the bobbin for the purpose of lifting the bobbin and taking its spindle-head out of contact with the driving-wheel when sufficient material is wound upon it, substantially as  
10 specified.

5. The combination, with the winding-bobbin provided with a spindle and the friction-wheel for driving the said spindle and bobbin,

of the lever G, constructed at its free end, against which the material on the bobbin bears, 15 with an eccentric forward portion, *m*, terminating in a shoulder, S, and a reduced after portion, *n*, whereby the bobbin, when filled, is stopped, and after its stoppage the lever is held by it, substantially as described.

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