

(No Model.)

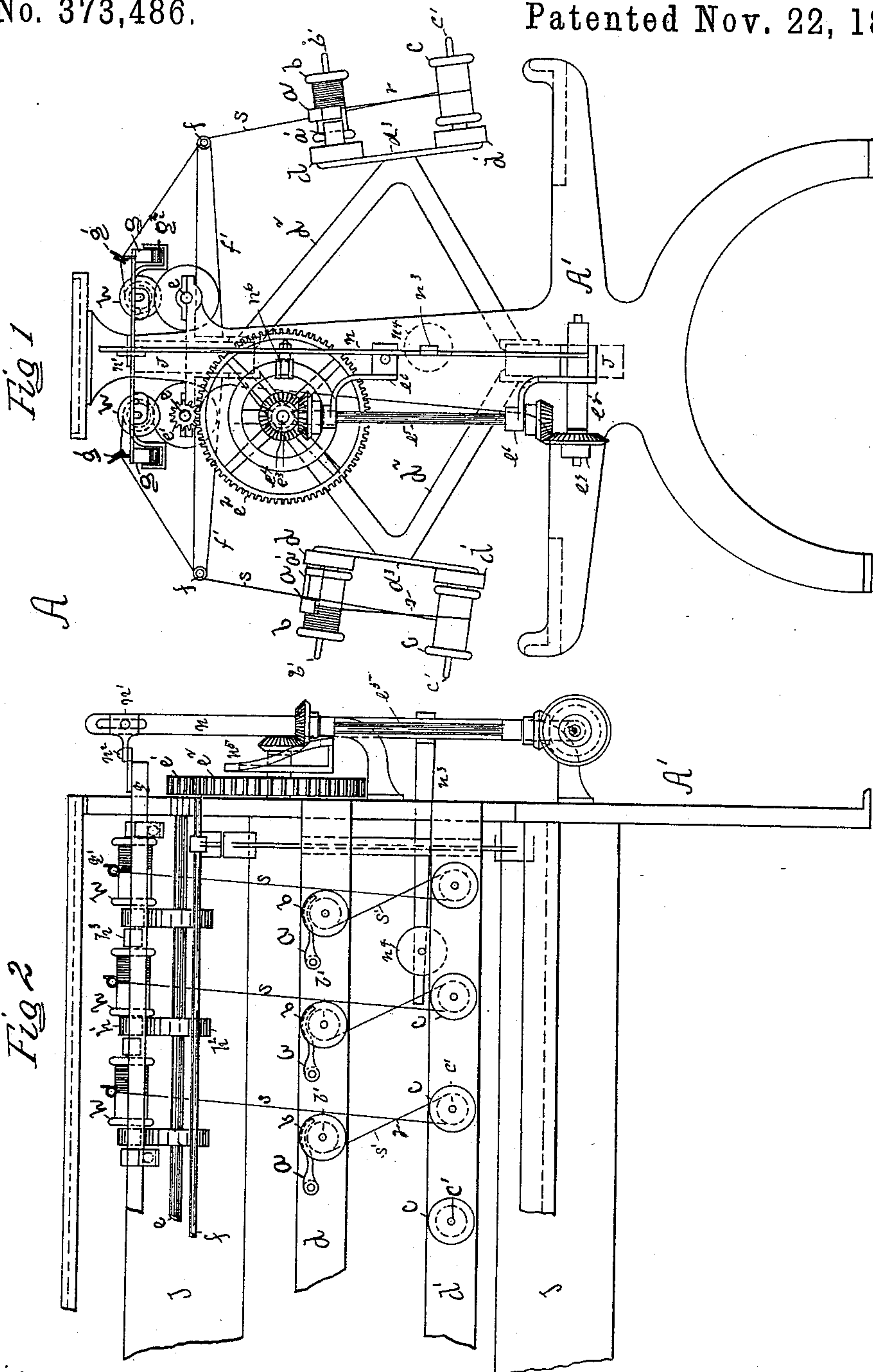
3 Sheets—Sheet 1.

J. RYLE.

MACHINE FOR STRINGING SILK.

No. 373,486.

Patented Nov. 22, 1887.



Witnesses

Alfred B. Watson
William Ryle

Inventor
John Ryle
John Inglis Atty

(No Model.)

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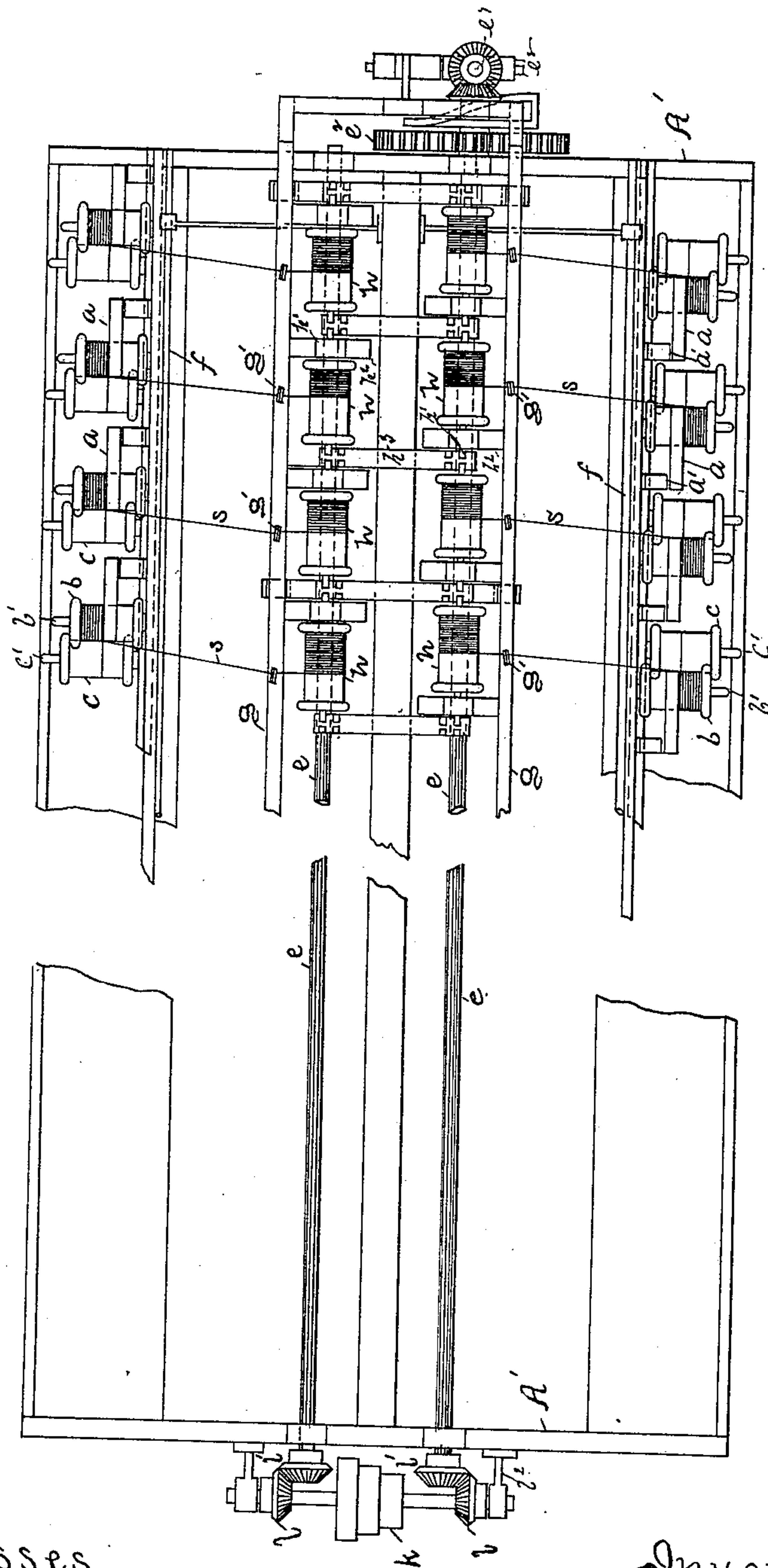
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Fig 3



Witnesses
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(No Model.)

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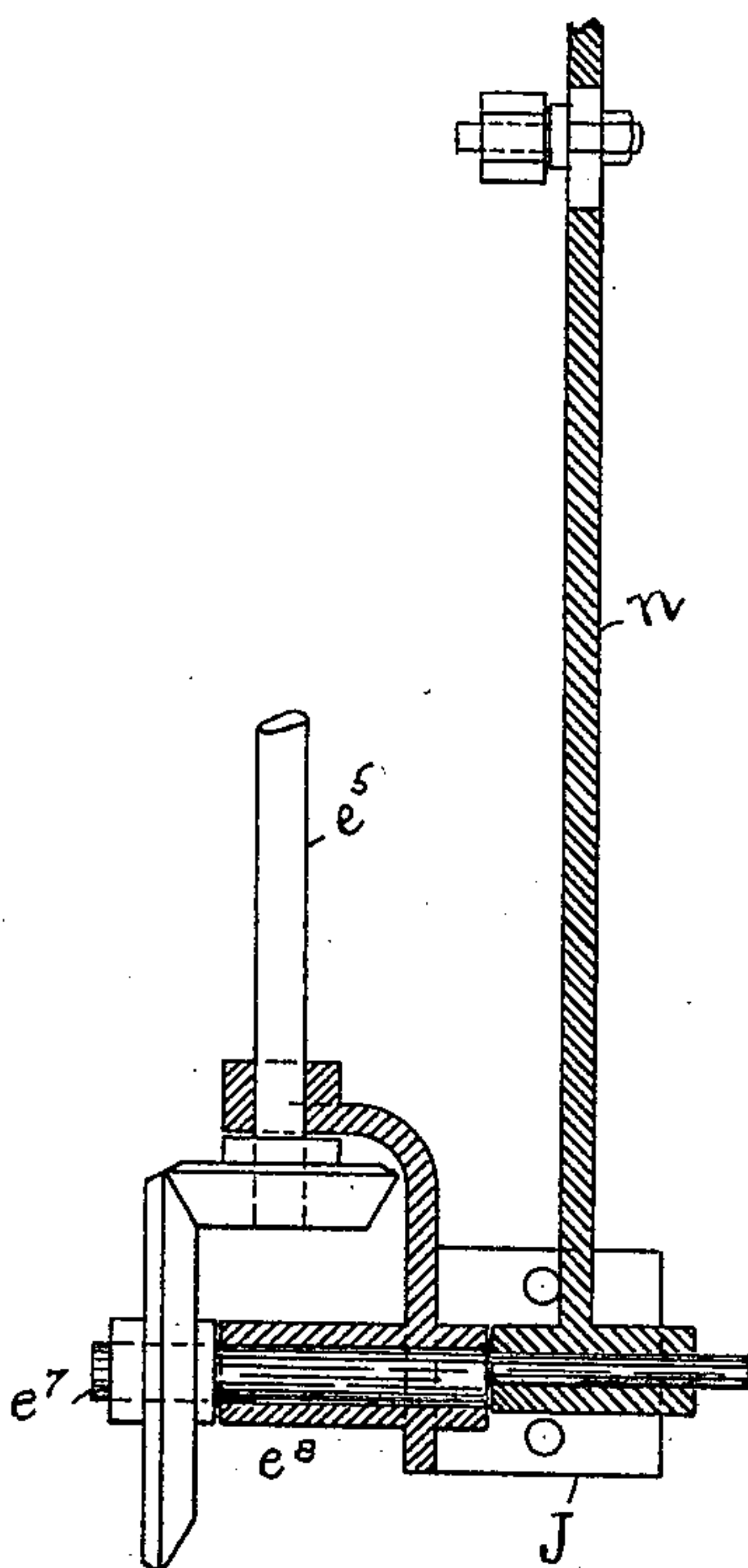
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Fig 4



Witnesses

Alfred B. Watson

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UNITED STATES PATENT OFFICE.

JOHN RYLE, OF PATERSON, NEW JERSEY.

MACHINE FOR STRINGING SILK.

SPECIFICATION forming part of Letters Patent No. 373,486, dated November 22, 1887.

Application filed June 28, 1887. Serial No. 242,756. (No model.)

To all whom it may concern:

Be it known that I, JOHN RYLE, a citizen of the United States, residing at Paterson, Passaic county, State of New Jersey, have invented a new and useful Improvement in Machines for Stringing Silk, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

It has been customary hitherto to string silk in the bunch or hank on a fixed stringing-bar by means of an additional pin or bar placed in the hands of the stringer to restore the silk by various acts of contortion—as twisting, wringing, and wresting—to the gloss the silk had before it was placed in the dye-tub. Silk thus stringed in the bunch or hank is rendered more difficult to wind, as the movements above referred to on the fibers cause the delicate filaments of silk to interlock each other, causing breakage and its consequent waste of costly material.

The object of my present invention is to provide means for stringing silk which shall possess the advantages of the twisting movements of the stringer, but which shall be free from their objectionable features.

With this end in view my invention consists in certain features of construction and combination of parts, as will be hereinafter fully described, and pointed out in the claim.

Figure 1 of the drawings is an end elevation of a stringing-machine. Fig. 2 is a part front elevation of the same, in which figure a portion of the creel, rails, rods, bars, shafts, &c., are removed; and Fig. 3 is a plan of the same, in which figure the shafts, rails, &c., are broken and the driving mechanism shown. Fig. 4 is an enlarged view of a portion of the transverse mechanism detached, part sectional.

A represents a machine for stringing silk in the single thread. On the rails d and d' , that are supported by frames d^2 , fastened to bars J , secured to frame A' , I arrange pins b' and c' . The pin b' supports loosely a supply-bobbin, b , which bobbin is filled with unstringed silk fiber. The pin c' supports loosely on it an idle or friction bobbin, c , down over and partly around which bobbin the filament passes from the bobbin b up to a receiving-bobbin, h , and is wound on the said bobbin h after being stringed, as here-

inafter stated. The pins b' and c' fixed in their respective rails d and d' and placed at a suitable distance above one another, are arranged in different vertical planes, the pin b' on a plane at the left-hand side of the pin c' , which position of the pins b' and c' and the bobbins b and c supported thereon causes a crossing of the filament at r , as shown. The bobbin h , which is fixed on a spindle, h' , journaled in bearings h^3 in the upper part of the machine, is revolved at a rapid rate of speed by contact of the wheel portion of the spindles with a friction-wheel, h^2 , fixed on a shaft, e , journaled in bearings secured to frame A' and rotated by shaft k and gears l l' on said shaft e and shaft k , which latter is journaled in cam-bearings l^2 , fastened to frame A' . The bobbin h , which is in rotation, unwinds from the supply-bobbin b the unstringed filament or thread s' , carrying the same downward over and partly around the bobbin c into frictional contact at r with the upward-moving portion s of the filament or thread, where, by the quickness of the speed of the filament and the tension to which it is subjected by the tension-arm a , pivoted to rail d and binding on bobbin b , the unstringed portion s' of the thread or filament is stringed at r by its contact with the opposite upward-moving portion s of the filament. The filament or thread s is wound on the length of receiving-bobbin h by traverse-bar g and guide g' , moving on rollers g^2 and connected to lever n by plates and bolts $n' n^2$. Lever n is arranged on the eccentric portion e^9 of stud e^7 , and is slightly moved up and down by the rotation of the stud in sleeve e^8 by the shaft e^5 to effect a crossing of the thread on the receiving-bobbin h . The lever is moved outwardly by cam n^5 and stud n^6 thereon, and it receives its inward motion by weight n^4 on arm n^3 , fixed on lever n . The cam n^5 is integral with gears e^2 , the first of which gears with and is actuated by pinion e' on shaft e and is journaled on stud e^4 , fastened to frame d^2 . Gear e^3 turns shaft e^6 , journaled in bracket-bearings e^6 , fastened to frame A' , while the shaft e^5 turns stud e^7 , journaled in sleeve e^8 , fastened to frame A' by bolts or otherwise.

By my invention silk is more perfectly stringed and restored to the silky appearance it had before dyeing than is possible when the

same is stringed in the bunch or hank. Besides, increased length of fibers is secured by reason of the tension placed upon the same while being stringed in the single thread. The
5 machine A may undergo various changes and machines of a different construction may be resorted to without changing the nature of my invention; hence I do not confine myself to machines of this particular construction.
10 Slight changes may also be made in the position of the pins b' c' and bobbins b and c thereon without changing the nature of my invention, as any position of the said bobbins and pins that would place a cross in the filament with
15 reference to the bobbin h , as at r , would answer equally well.

Having described my invention, what I claim as new, and desire to secure by Letters Patent in a machine for stringing silk in the single
20 thread, is—

The combination, with the frame A' , shaft e , and wheel h^2 thereon, adapted to rotate the receiving-bobbin, the guide-bar g , lever n , and mechanism for actuating said lever, of the bars J , frame d^2 , bar d^3 , rails d and d' , having pins b' 25 and c' , respectively, secured thereto in different vertical planes, said pins adapted to receive, respectively, a supply-bobbin and a guide or idler bobbin, and an arm, a , pivoted to rail d , whereby the portion of filament between 30 the guide and receiving bobbins is caused to effect a crossing upon the portion between the supply and guide bobbins, substantially as set forth.

JOHN RYLE.

Witnesses:

WILLIAM RYLE,
PETER RYLE.