

G. Goulding. Spinning Twisting Head.

N^o. 1,055.
32,059.

Patented Apr. 16, 1861.

Fig. 1.

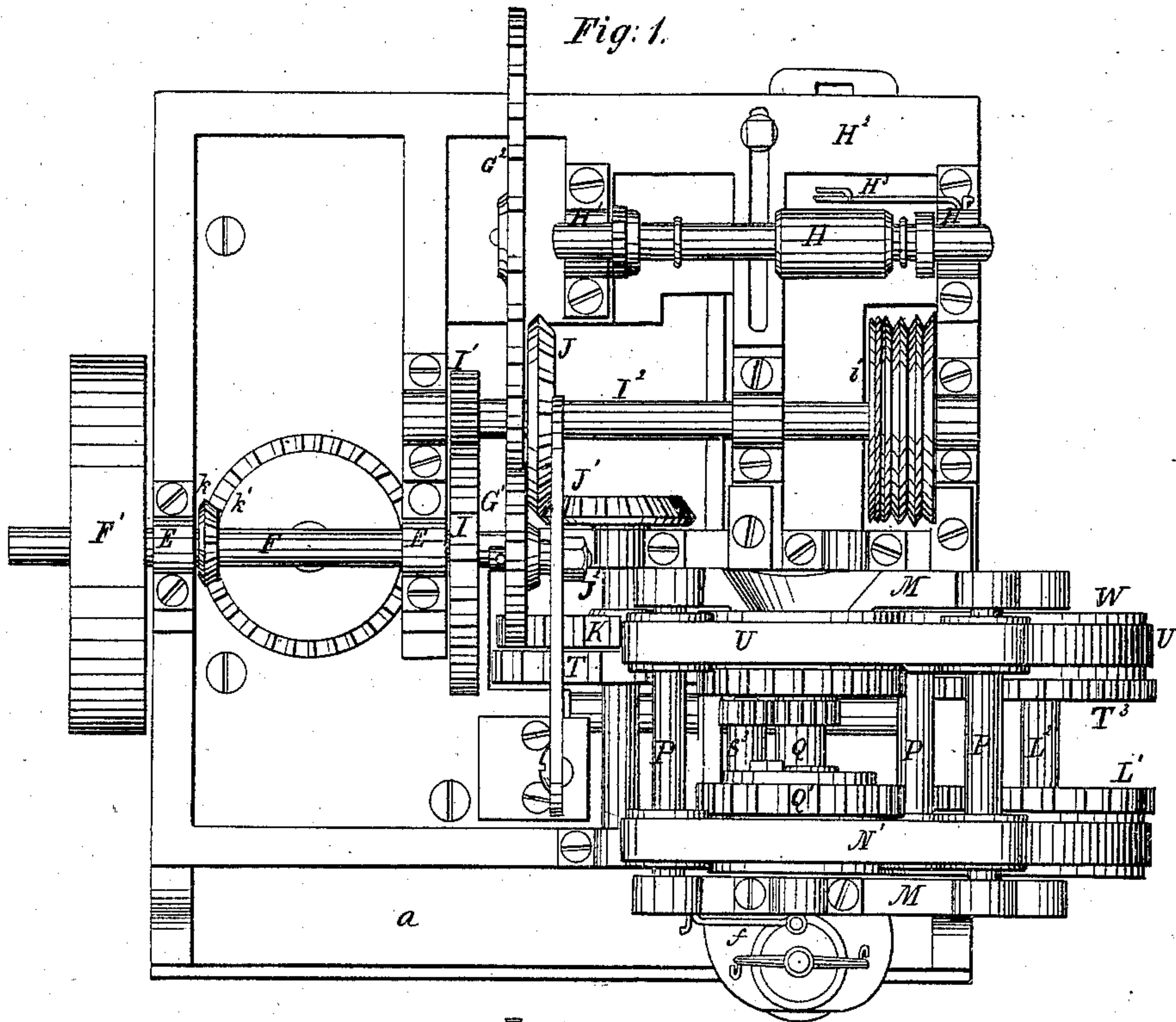
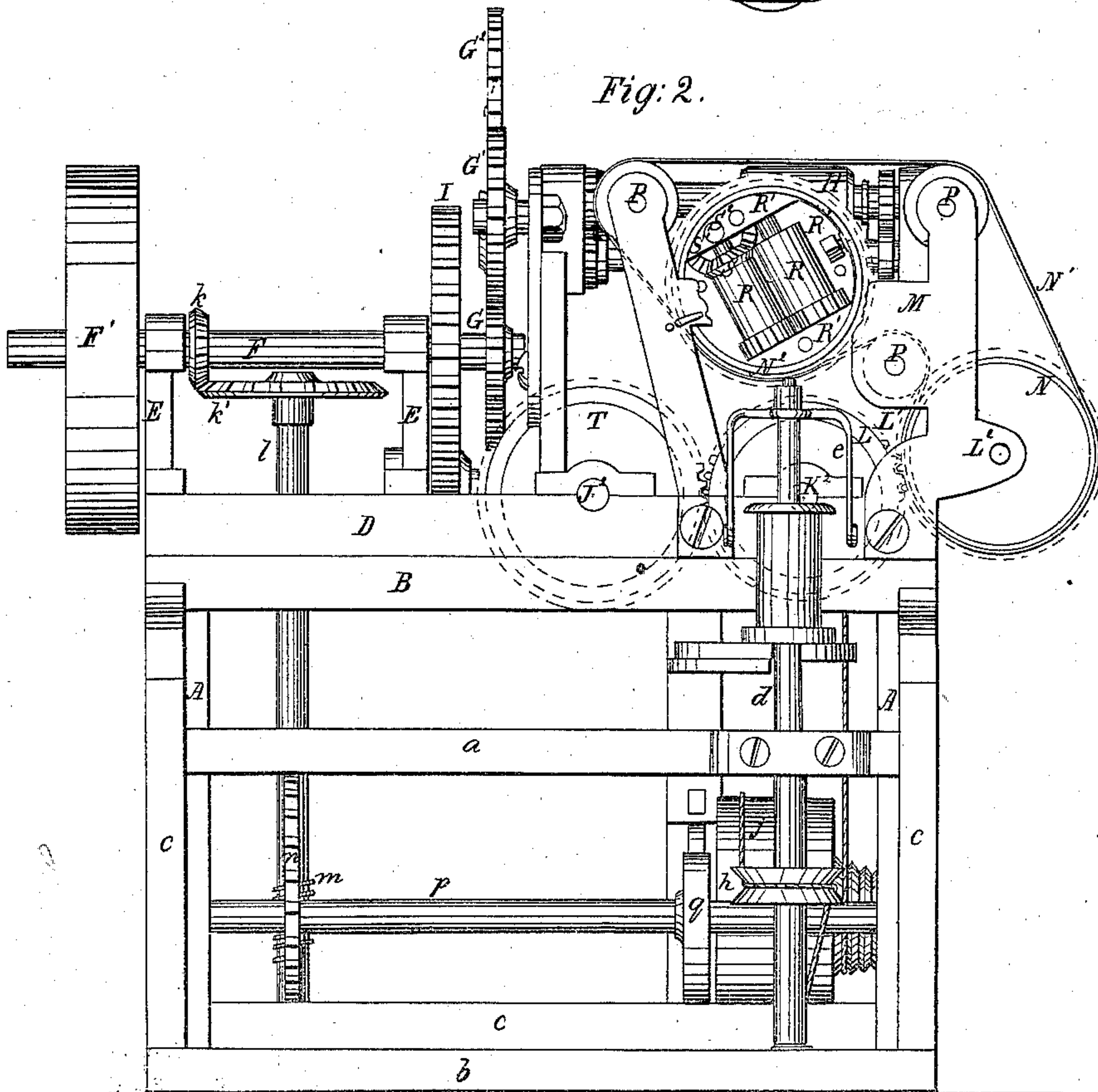


Fig. 2.



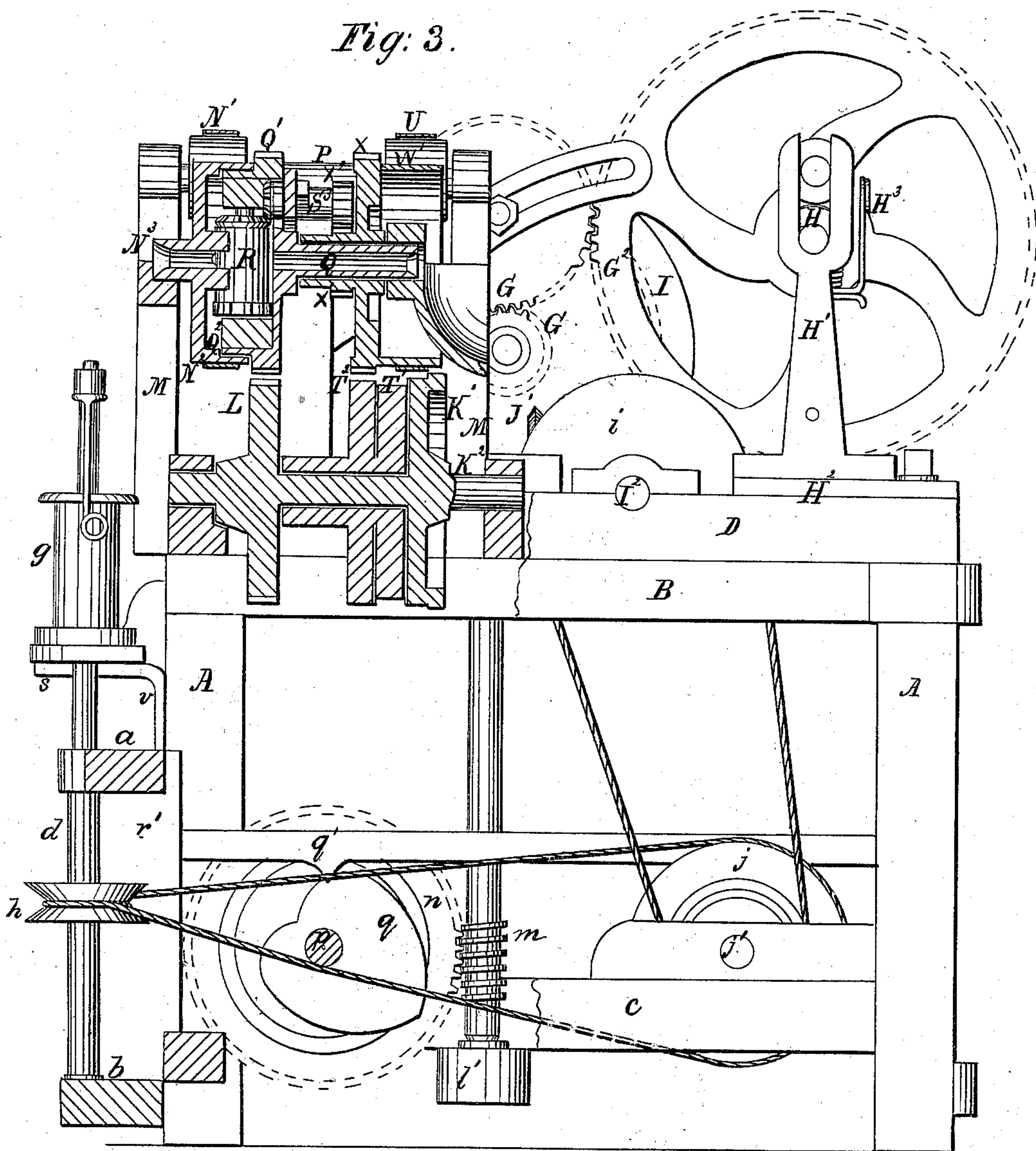
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Fig. 3.



UNITED STATES PATENT OFFICE.

GEORGE GOULDING, OF WATERTOWN, NEW YORK.

SPINNING MACHINERY.

Specification of Letters Patent No. 32,059, dated April 16, 1861.

To all whom it may concern:

Be it known that I, GEORGE GOULDING, of Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Machinery for Drawing and Spinning Wool, Flax, Hemp, and other Fibrous Substances; and I do hereby declare that the same are described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my improvements I will proceed to describe their construction and operation referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1, is a plan or top view of a machine. Fig. 2, is an elevation of the front with the end of the twisting tube removed to show the drawing rollers. Fig. 3, is a side elevation showing the twisting tube and gearing which operates it in section.

The nature of my invention and improvements in machinery for drawing and spinning wool flax hemp and other fibrous substances, consists in the construction and arrangement of the shaft and gears that operate the drawing and delivering rollers.

In the accompanying drawings A, A, are the posts of the frame connected at the top by the rails B, B, and bars B', and near the bottom by the bars C, C, the whole forming a strong frame. On the top of this wooden frame, I fasten the iron platform or frame D, made in the form shown in the drawing and fitted to receive such other parts of the machine as are fastened to it.

The stands E, E, are fastened to the frame D, to support the shaft F, which is provided with a pulley F', for a belt to drive and operate the machine.

G, is a pinion fastened to the shaft F, to turn the stud gear G' which drives the gear G², and turns the receiving or feed roller H, which is provided with a pinion meshing into a similar pinion on the top feed roller as shown in the drawing. These feed rollers are fitted to turn in the stands H', fastened to the sliding plate H², which is fitted to the frame D, and provided with a slot, so as that it may be adjusted and fastened in the position required, by the bolt passing through the slot in the plate H². And the stud of the gear G', may be moved in the slot of the stand which supports it, and adjusted between the pinion G, and the gear G², to connect them.

The top feeding roller is pressed against the other by weights or the spiral springs which hook over it and under a bar between the stands which support the rollers.

H³ is a guide for the sliver, and is fastened to the stand H'.

The gear I, on the shaft F, turns the pinion I' and shaft I², which turns in boxes on the frame D, and has the bevel gear J, fastened to it to drive the gear J', and shaft J², which turns in boxes fastened to the frame D. The shaft J², carries the gear K, which drives the gear K', and shaft K², which also turns in boxes on the frame D, and carries the gear L, which drives the gear L', and shaft L², which turns in the stands M, M, shown in the drawing.

The pulley N, on the side of the gear L', carries the belt N', which drives the pulley N², or twisting head which supplies the sliver of fibrous material to the spindle which twists it into a thread. The belt N', passes over pulleys, on the shafts P, P, P, which turn in the stands M.

The twisting head consists of several parts which I will now describe, viz. Q, is a tube shown in section in Fig. 3, with a journal at one end to turn in the stand M, and a gear Q', on the opposite end with a flange Q², on it, and inside of this flange and gear the drawing and delivering rollers R, R, are arranged as shown in Figs. 2 and 3, with their journals arranged to turn in boxes R', R', fastened to the gear Q'. One of the rollers R, is pressed against the other by the spring R²; which acts on the journals of the roller, and is provided with an adjusting screw to graduate the pressure of one roller upon the other, and upon the sliver of fibrous material passing between the rollers. These rollers are provided with match gears at one end to insure them both to turn with same velocity, and one of them has the bevel gear S, fastened to it which is driven by the bevel gear S', on the shaft S², which turns in the stand S³, fastened to the gear Q'.

To turn the shaft S², and give the rollers R, R, the proper velocity, and also to be able to change the velocity with facility when required, I fasten the gear T, to the shaft J², to drive the gear T', which turns on the shaft K², and carries the gear T², which is fastened to it, to drive the gear T³, which turns on the shaft L², and carries the pulley W, and a belt U, from the pulley W,

passes over pulleys on the shafts P, P, P, and drives the pulley W', on the side of the gear X, which turns on the tube Q, and carries the gear X', which drives the pinion X², and turns the shaft S², to operate the delivering rollers R, R, in the twisting head.

The pulley N², of the twisting head is fitted to the flange Q², on the gear Q', and fastened to it with screws; and this pulley has a hollow journal N³ projecting from it which turns in the stand M, to support the front end of the twisting head as shown in the drawing.

All the pulleys on the shafts P, P, P, which the belt U passes over are made to turn freely on the shafts.

If it is desirable to turn the twisting head by gears the belts may be removed and the head lowered or the shaft K² raised so as to make the gear L, carry the gear Q', and the gear T² carry the gear X, when the gears will operate it.

The spindle frame consists of the rail a, step rail b, and ends c, c, fastened to the posts A, A, of the main frame. The spindle d, is arranged to turn in the rail and step rail right under the end of the hollow journal N³ and is provided with a flier e to twist the sliver of fibrous material as it is delivered by the rollers R, R, and draw it through the guide f, and wind it on the bobbin, g, on the spindle d, which is provided with a scored pulley h, for a band to turn it. To turn the spindle d, a pulley i' is applied to the shaft I², and a band from this pulley turns the pulley j, and shaft j', which turns in boxes on the bars C, C, and a band from the pulley j, to the pulley h, turns the spindle d.

To traverse the bobbin g, on the spindle the bevel pinion k, is fastened to the shaft F, to drive the gear k', and shaft l, which turns in the frame D, and in a stand l' fastened to the bar C, and carries a screw m, to turn the gear n, and shaft p, which turns in the boxes on the bars C, C, and carries the heart or traversing cam q; and the lever q',

is operated by the cam to traverse the bar v, and rail s, under the bobbin so that the thread twisted from the sliver will be laid uniformly from end to end on the bobbin g. The bar v, is arranged to traverse in the guide bar r'.

By the construction and arrangement above described the speed or motion of the delivering rollers may be varied and adapted to the material being worked by changing the gears on the shaft J², or K², or both when required. The sliver of fibrous material is supplied through the guide H³, to the feed rollers H, and then passes into the tube Q, which rotates, so as to twist the sliver the same time that it is drawn and reduced, by the surface of the delivering rollers R, R, moving faster than the surface of the receiving or feeding rollers H, H, and the sliver so drawn and reduced, is twisted by the spindle d, and drawn from the rollers R, R, through the hollow journal N³, and wound onto the bobbin g. I contemplate that two, three or more of these drawing and twisting tubes may be arranged in the same machine, in succession one behind the other, with, or without rollers like H, H, between them, so as to twist and draw the sliver of fibrous material successively, as much as may be necessary to produce a yarn or thread of the required fineness.

I believe I have described and represented my improvements in machinery for drawing twisting and spinning wool, flax, hemp and other fibrous substances, so as to enable any person skilled in the art to make and use them.

I will now state what I desire to secure by Letters Patent, to wit.

The construction and arrangement of the shaft S², stand S³, and pinion X², in combination with the gears that operate the rollers R, R, as described.

GEORGE GOULDING.

Witnesses:

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