P. Wisdom.

Spinning Mach.

No. 98,135. Patented Dec. 21, 1869.

Fig. 1.

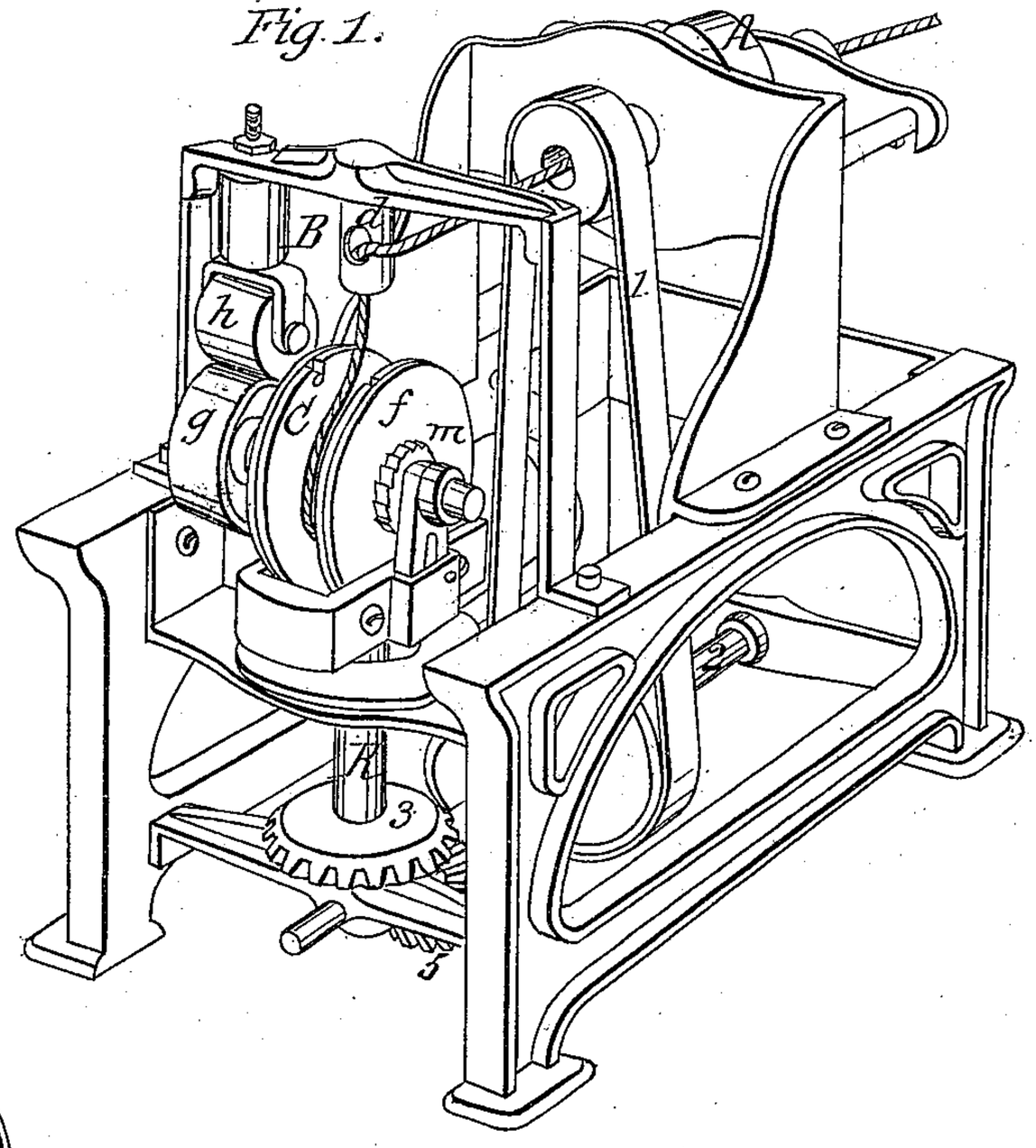


Fig. 3.

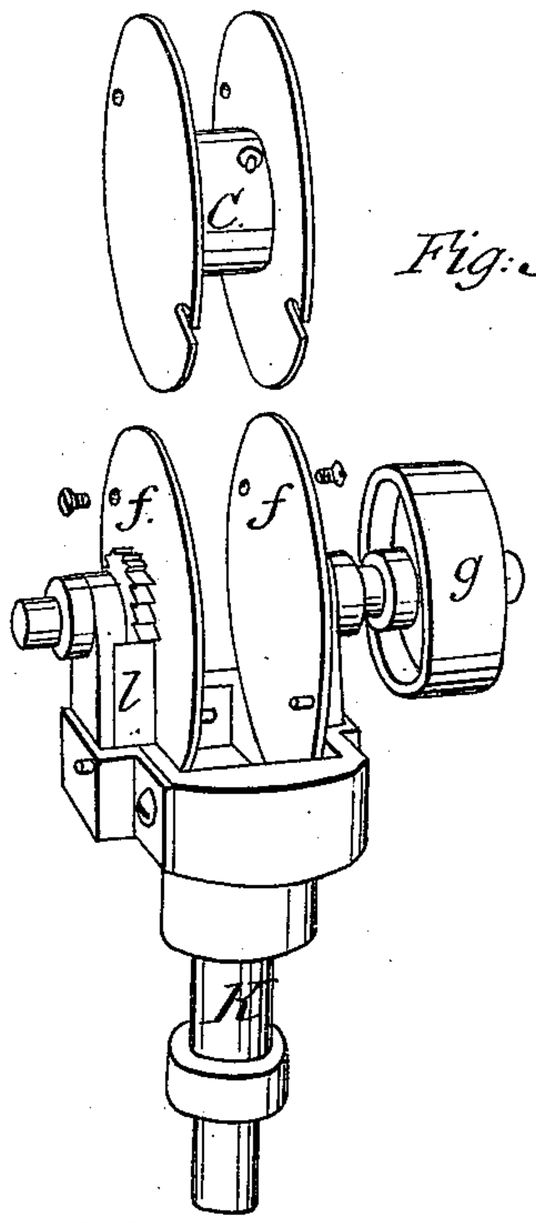
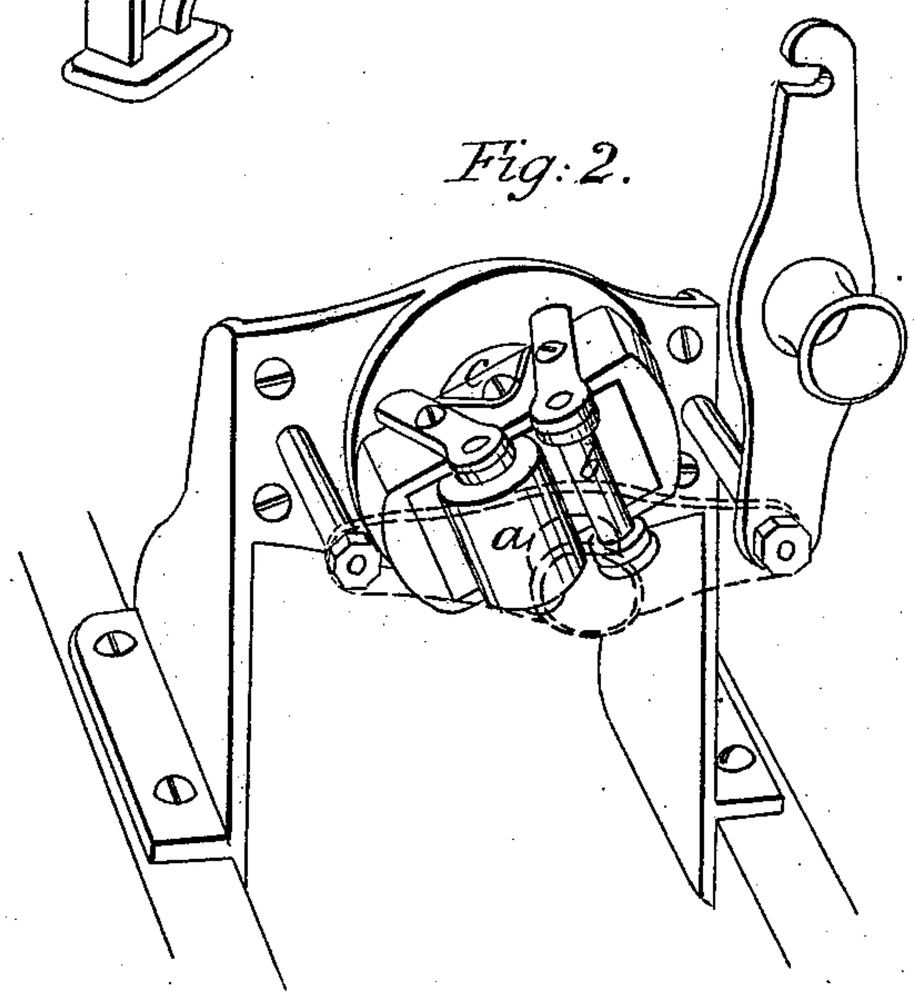


Fig. 2.



Witnesses.

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PHILIP WISDOM, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOHN SICKLES, TRUSTEE, AND JOHN SICKLES, TRUSTEE, ASSIGNOR TO PHILIP WISDOM AND JOHN H. WILCOX, OF NEW YORK CITY.

Letters Patent No. 98,135, *dated December* 21, 1869.

IMPROVEMENT IN MACHINE FOR SPINNING AND CURLING HAIR.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, PHILIP WISDOM, of the city of Brooklyn, in the county of Kings, and State of New York, have invented a new and useful Improvement in Machines for both Twisting and Curling Hair, at one and the same operation; and I do hereby declare that the following is a full, clear, and exact description thereof, and of its mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and making a part of this specification.

My invention consists in the production of a machine, by which hair, such as is used for the stuffing of mattresses, furniture, &c., can be spun or twisted, and at the same time curled, both processes being performed by the continuous operation of the machine; such machine, also, at the same time, winding the curled-hair rope upon a reel or bobbin, convenient for further treatment or transportation.

Figure 1 is a general perspective view of the entire machine, showing most plainly the mechanism by which the hair is curled, and then wound upon the reel or bobbin.

Figure 2 is a detached view of the twisting-mechanism.

Figure 3 is a separate view of the reel-support, the reel being lifted therefrom.

The machine, as illustrated by the drawings, consists of a rotating-mechanism or spindle, by means of which the picked hair is spun or twisted, and a hollow tube or device by which the hair is curled, in connection with which is a mechanism for further twisting the hair rope, as it is passing through the curling-tube, and which also carries the reel upon which the twisted and curled hair is wound, after these operations have been performed.

The spinning or twisting-mechanism consists of a hollow shaft or spindle, A, into and through which the picked hair is passed, and which is rapidly revolved or rotated by means of a belt, 1, passing over a pulley on a shaft, 2, to which motion is given by any sufficient or convenient power.

Connected with the front end or mouth of such twisting-spindle, are two rollers, *a* and *b*, between which the hair passes before entering the spindle, one of which rollers, *a*, is fixed in position with respect to the spindle, and the other of which, *b*, is so attached to the spindle, that it can adjust itself to different distances from the other roller, so as to allow a larger or smaller quantity of hair to form a larger or smaller rope to be passed between such rollers, such roller *b* being kept in contact with the other roller, or against the hair between them, by means of a spring, *c*, or its equivalent.

To secure a more complete and effective action of the twisting-mechanism, and confine the twisting to that portion of the hair immediately within the spindle, the hair is passed once or twice around the smaller roller *b* before entering the spindle A. This, also, prevents the hair being drawn too rapidly through the twisting-spindle.

These rollers may be made of any suitable material, but, preferably, one is made of metal or some hard material, so that the hair passed around it will not bind too tightly, and will properly pay off from it, and the other may be made of some yielding substance, as vulcanized India rubber, or like material.

As the twisted rope leaves the spindle A, it is passed to the curling-mechanism, or tube B, which is firmly fixed to the frame of the machine, and is open at its lower end, and has in one side an opening, *d*, communicating with the interior cavity, and which opening is placed in the side of the tube opposite to the position or direction of the twisting-spindle.

As the twisted rope passes into the tube B through the opening *d*, it passes partially around such tube, and enters it with a short, sharp turn or bend, substantially or nearly at a right angle, and also takes another bend in passing down through such tube; and from thence it passes to and around the reel or bobbin C, which is supported on and by an upright shaft, *k*, which connects with the main shaft 2 by means of cog or other gearing 3, and by means of which such shaft and the reel with it is revolved, so that the hair rope is continually being twisted below the tube B, and as it is drawn through it.

The curling of the hair is effected or produced by the twisted rope being made to pass into and through the tube B, at a short, sharp turn or bend over the edge of the opening *d*, and by giving, in connection therewith, and by the rotation of the shaft *k*, a further twisting to the hair rope, as it is drawn through such tube, and before it is wound upon the reel C.

It is found, from actual experiment and trial, that such manner of curling the hair, by passing it through the tube B, at a short, sharp turn or bend, in connection with the twisting, while it is being drawn through such tube, gives a curl to the hair, which is more complete and permanent than when curled in the usual manner.

The reel or bobbin C is held and fastened between two disks, or plates, *f f*, or other device, so as to be capable of being detached and removed when filled, and another substituted in its place. Such reel is also so arranged as to be capable of being turned on its own axis, so as to wind upon itself the hair rope, after it has been twisted and curled.

Such movement of the reel is effected by the action of the two rollers, *g* and *h*, the former of which is fixed to the reel, and the latter to the frame of the machine.

As the shaft *k* is revolved, at each revolution the roller *g* comes in contact with and passes under the roller *h*, and in so passing is revolved, turning the reel a given distance, and winding the hair rope upon it.

As the reel is thus revolved upon its axis, a pawl, or click, *l*, fixed to the reel-support, drops into the teeth upon a ratchet-wheel, *m*, and holds such reel against any backward movement.

If, for any reason, desired, two or more twisting-spindles may be used before the rope is passed to the curling-mechanism.

What is claimed, is—

The combination of the twisting-spindle A, rollers *a b*, curling-tube B, and reel C, with the devices described for rotating it, all arranged and severally operating substantially as and for the purposes set forth.

PHILIP WISDOM.

Witnesses:

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