

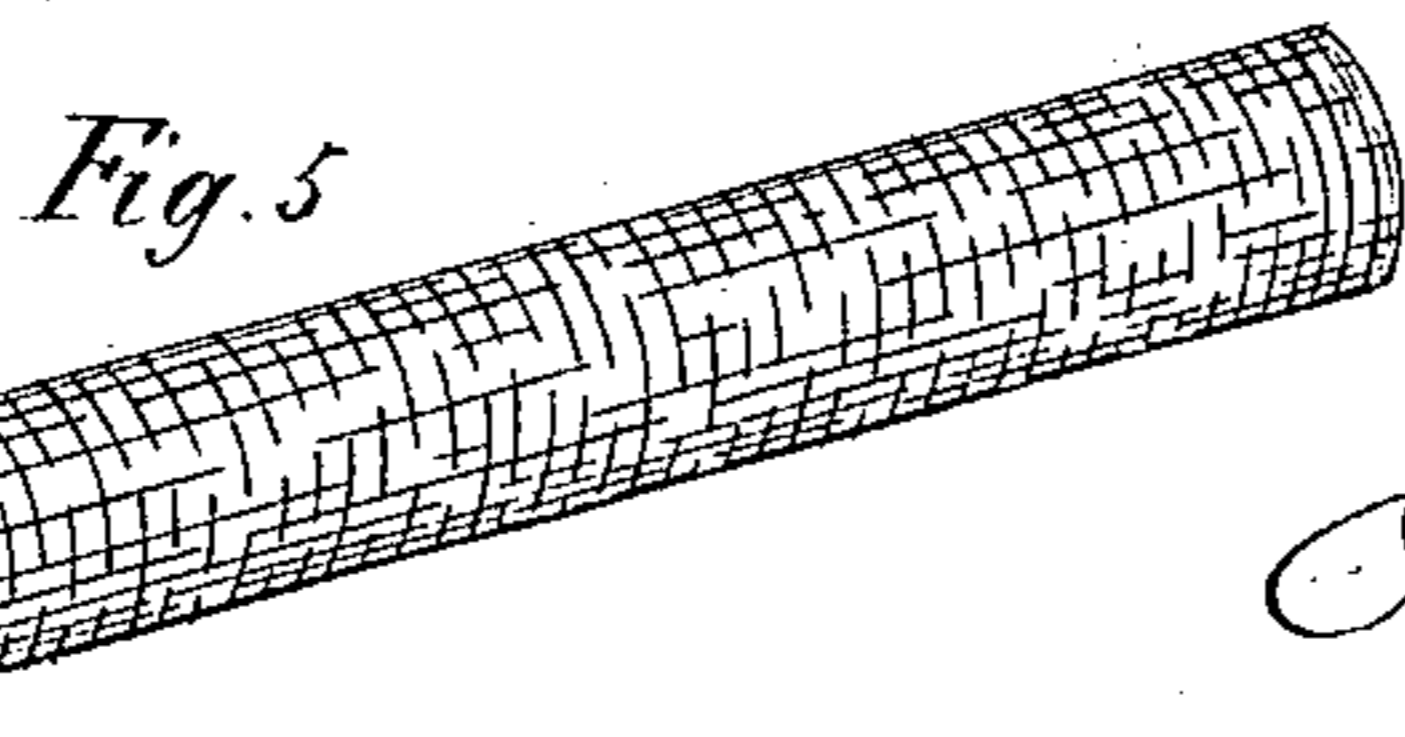
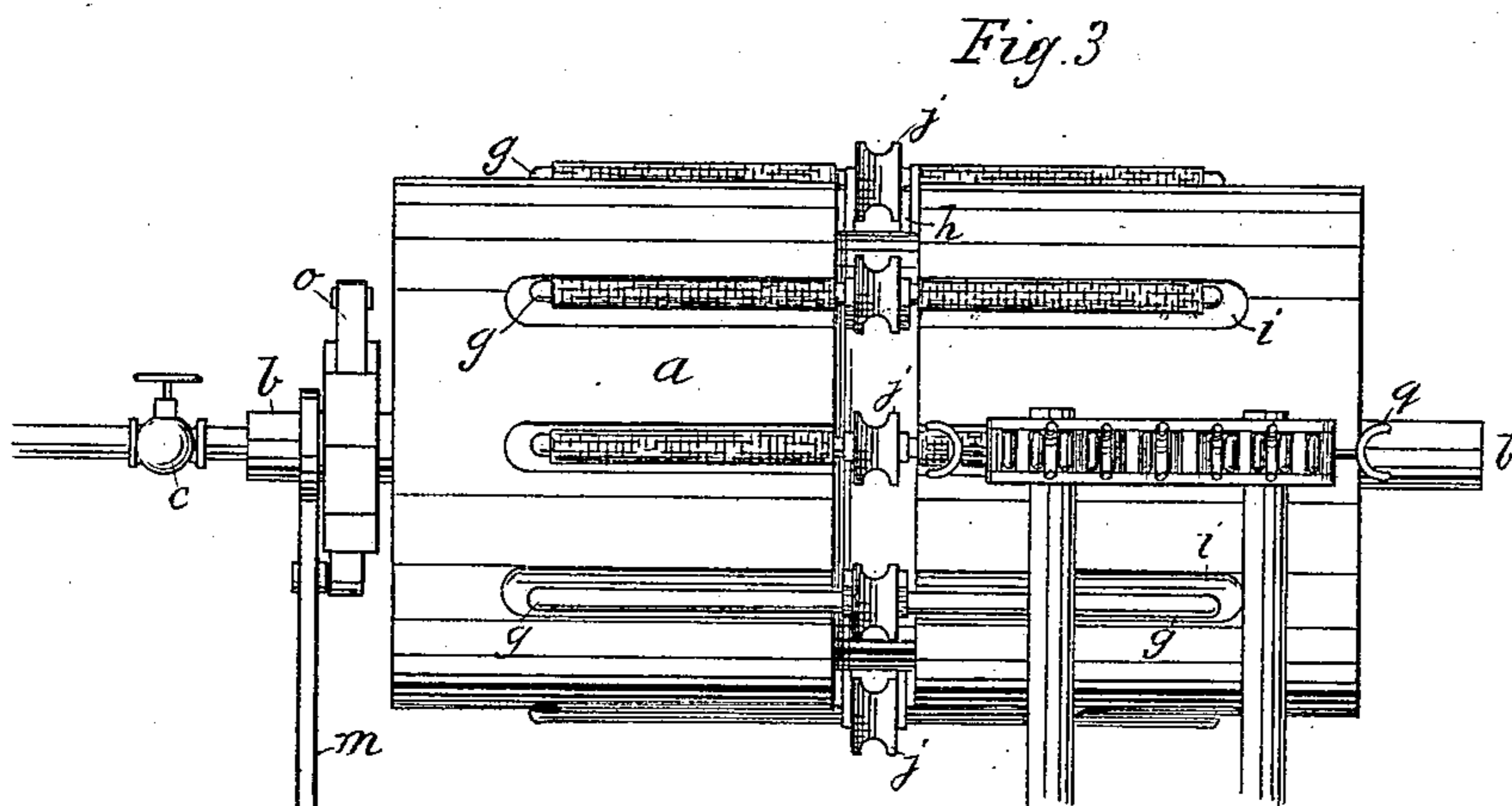
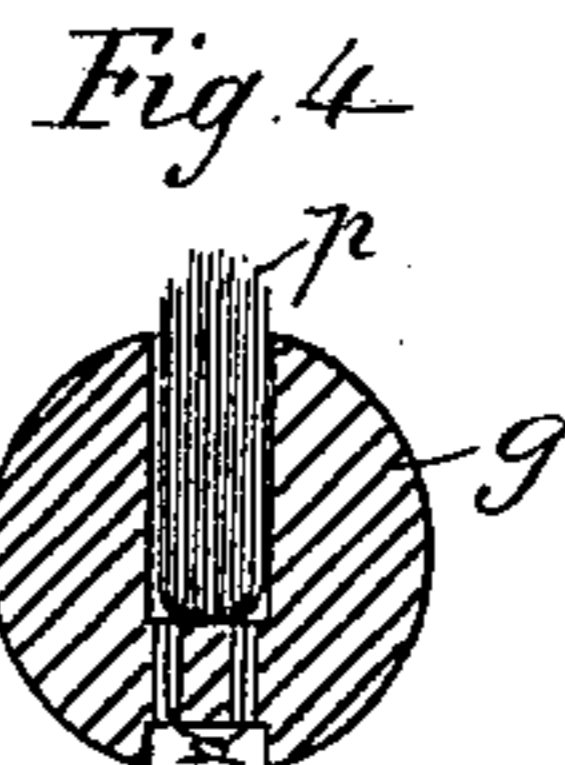
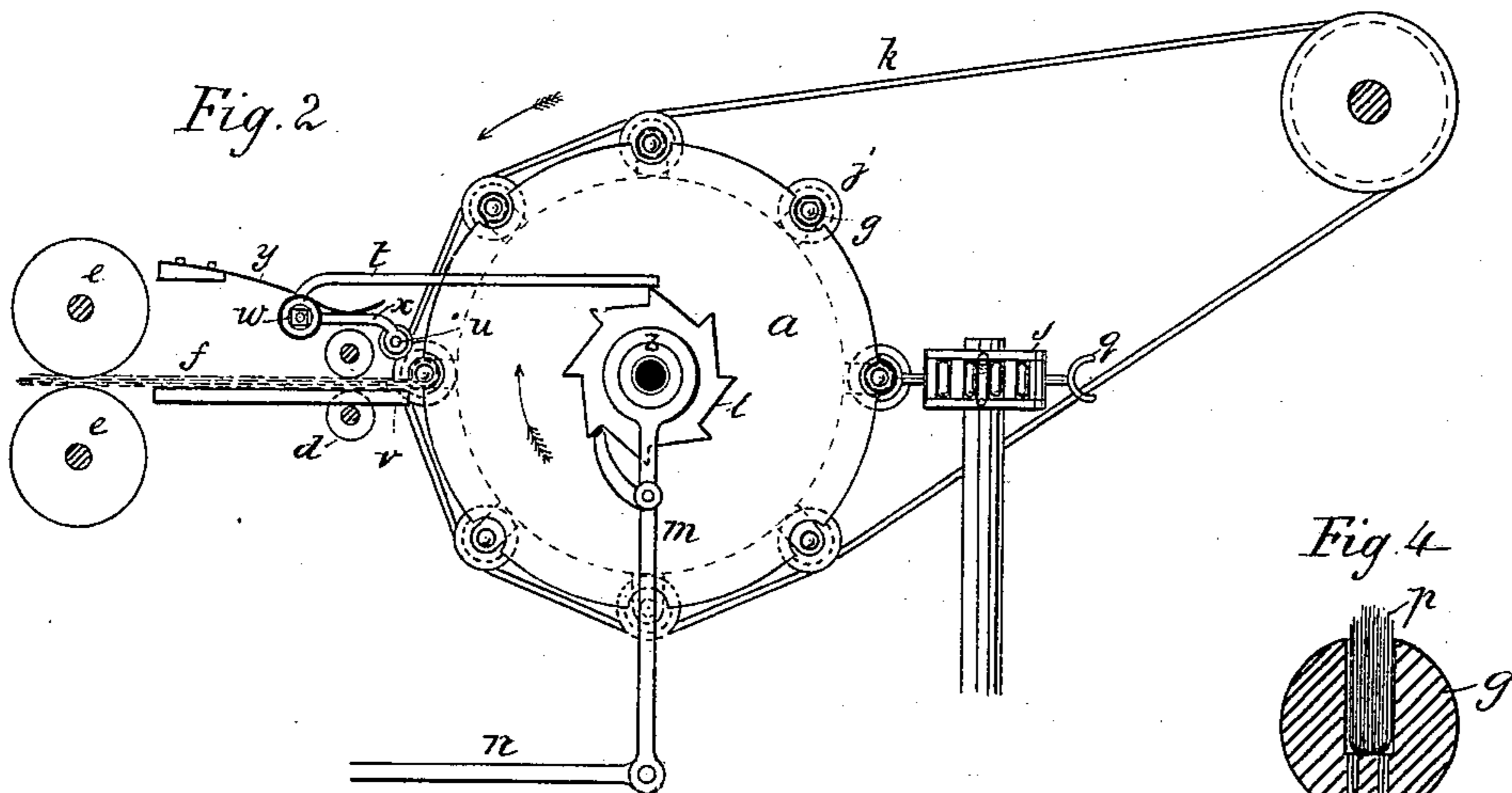
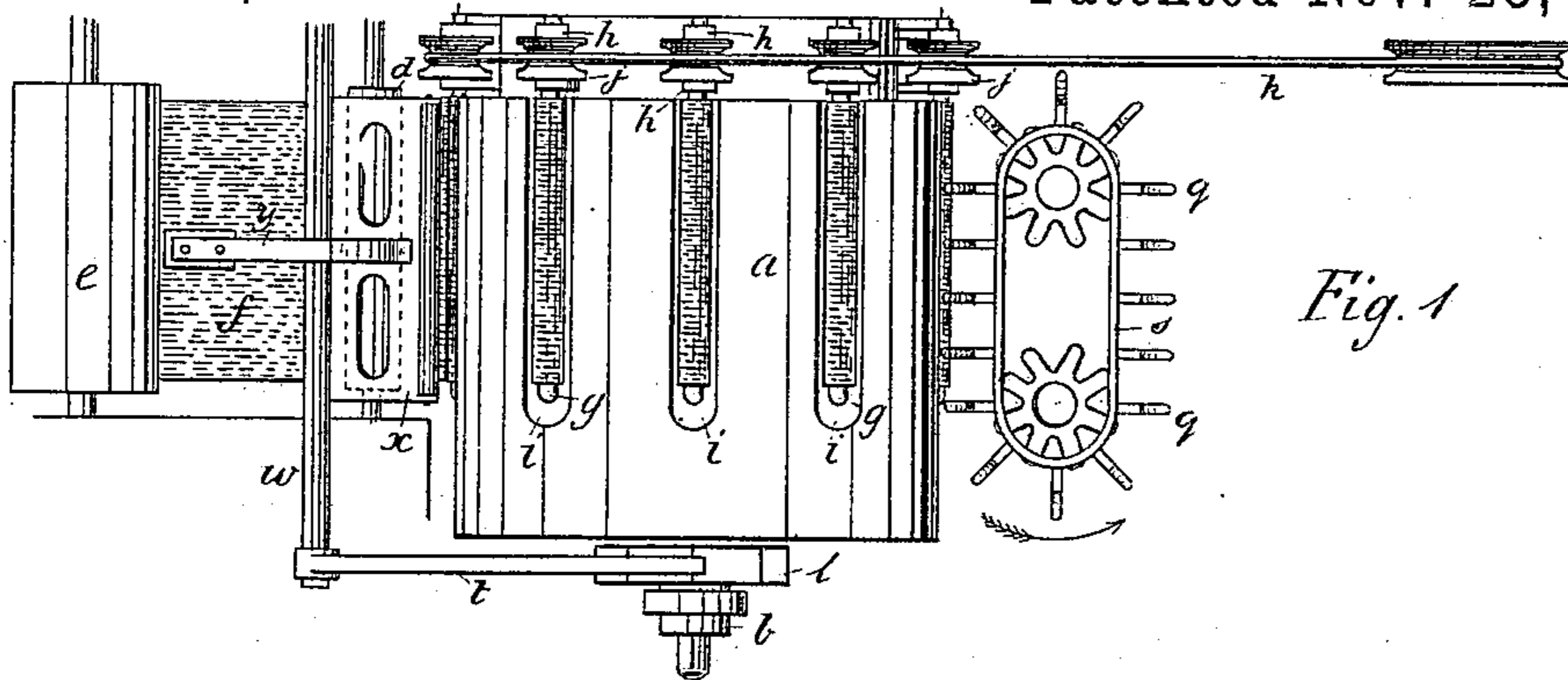
(No Model.)

O. C. FLICK.

MACHINERY FOR CURLING FIBERS FOR UPHOLSTERING PURPOSES.

No. 308,351.

Patented Nov. 25, 1884.



WITNESSES:

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MACHINERY FOR CURLING FIBERS FOR UPHOLSTERING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 308,351, dated November 25, 1884.

Application filed November 18, 1882. Renewed April 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, OTIS C. FLICK, a citizen of the United States, and a resident of Brooklyn, Kings county, and State of New York, have invented new and useful Improvements in Machinery for Curling Fibers for Upholstery Purposes, of which the following is a specification.

My invention consists of a drum having a series of spindles located on its periphery parallel to its axis and contrived to rotate intermittently and cause the spindles to successively wind on a quantity of fiber from a bat being suitably delivered to the spindles, roll and press the fibers against heated surfaces to form coils, and permanently fix and set the fibers in the coiled form and deliver the same automatically from the spindles, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of a portion of my improved machine. Fig. 2 is a side elevation. Fig. 3 is a rear elevation. Fig. 4 is a transverse section of one of the curling-spindles, and Fig. 5 is a perspective view of a coil of fiber as discharged from one of the spindles.

I mount a hollow drum, *a*, of any approved size and material, in any suitable bearing-supports by the hollow journals *b*, suitably connected with steam-pipes *c*, for being heated thereby, arranging the same in front of suitable delivery-rolls, *d* and *e*, for the delivery of a bat of fiber, *f*, from a carding or other preparatory machine, and arrange a series of coiling-spindles, *g*, on said drum at suitable intervals of distance apart, arranging them to revolve in their own bearings *h*, and in the hollow spaces or grooves *i* in the shell of the drum, as well as to be carried around by the drum. I prefer to make the spindles double, mounting them at the middle in the bearings *h*, and fitting the driving-pulleys *j* on them thereat for imparting the motion to them by a belt, *k*, in order that by using double feed-rolls *d e* two bats may be coiled or curled at the same time with only one drum and without duplication of some of the other parts.

Any other approved contrivance of means for causing the spindles to revolve may be employed, if desired, and the drum may be caused to shift along from time to time to successively present the spindles *g* to the place for receiv-

ing the fibers from the rolls *d*; but I have here shown a ratchet-wheel, *l*, and pawl-lever *m*, to be worked by a rod, *n*, or any other means by which the drum is to be turned a distance equal to the space between the spindles at each operation. The holding-pawl *o* is to prevent any back-action of the drum, and any approved stop device may be employed to arrest the drum and hold it in the required position. The spindles are to be armed with a brush, *p*, of bristles, wire, or other approved material, the same being located in a deep longitudinal groove the whole length of the coiling portion, or thereabout, for catching on the fibers of the bat when the spindles arrive at the place for taking up and winding on the end of the bat, the said end being left by the tearing or breaking away of the coil previously formed on the spindle in advance, and being carried thereon to the place of delivery, where it is to be stripped off the free end of the spindle by a forked stripper, *q*, running on an endless carrier, *s*. The brush *p*, being located in the groove of the spindle, is supported by the rear wall of the groove near the outer ends of the bristles, and is thereby strengthened sufficiently to have ample power when revolving to catch on the fibers, while it will yield readily in the lengthwise direction to allow the fibers to strip off readily, the bristles being only supported in that direction at the bottom of the groove; but, if desired, the brush may be arranged so as to be pressed back in the groove when the coils are to be discharged.

I propose in practice to make the brush head or back to consist of a bar made separately from the spindle and to be applied by sliding in the groove, and be fastened therein in any suitable way, the object being to renew the brushes more cheaply when worn out. When a sufficient amount of fibers has been coiled on a spindle and the drum is set in motion to remove the same and present a new spindle, the bat connected with the coil on the spindle to be removed rises slightly with the spindle until the lever *t* escapes from one of the teeth of the ratchet *l*, which lets fall a roller, *u*, that presses the bat down on the next spindle as it comes into position, and causes it to take the bat from the spindle passing away, the bat being completely severed from the other spindle, which, continuing to revolve, winds on

and finishes up any loosely-hanging fibers. The roller *u* is supported on a shaft, *w*, by the plate *x*, or any equivalent device, so as to drop on the next spindle, *g*, as soon as the one having the coil passes said roller *u*, which will first rise a little to allow the spindle to pass. When the next spindle comes into position, roller *u* will rise a little by the effect of ratchet *l* on lever *t*, and will rest in close proximity to the spindle, where it will aid in causing the fibers to be securely held by the brush in the first part of the winding of the bat on the spindle. A spring, *y*, may be employed to press roller *u* down. It is to be noticed that the spindles continue to revolve for a time after having taken their quantity of fiber for a coil to rub and iron the fibers coiled on them against the heated surfaces of the cavities *i*, in which they work as long as may be required to thoroughly dry and set the substance of the fibers, so as to make the coils more rigid and lasting than when the rubbing ceases with the winding on of the fibers. It is also to be noticed that the whole breadth of the bat winds directly on the spindle the whole length of the coil to be made, thus taking on the bat in its thinnest form, and so making the best and most uniform coils, besides taking on the fibers more rapidly than when the bat is first reduced to a narrow sliver, and then wound on the spindle spirally from the point to the heel, which, I am aware, has been done. The subsequent rotation of the spindles may be allowed to continue as long as the belt *k* will have contact with them, if desired; or said belt may be carried over one or more guide-rollers that will sooner carry the belt free of the spindles.

For a double machine, as here represented, there will be duplicate stripping devices *q s*, although only one is represented in the drawings, the other being located on the other side of the spindle-pulleys *j*, similarly to the one represented.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum and a series of coiling-spindles located thereon, the drum and the spindles being arranged with re-

lation to the delivery-rolls *d*, and provided with suitable means to cause the spindles to successively receive and coil portions of the bat on them, substantially as described.

2. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum and a series of coiling-spindles located thereon, the drum and the spindles being arranged with relation to the delivery-rolls *d*, and provided with suitable means to cause the spindles to successively receive and coil portions of the bat on them, and said spindles and drum being in duplicate arrangement adapted to coil two bats simultaneously, substantially as described.

3. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum, a series of coiling-spindles, located on said drum, and a discharger, *q s*, substantially as described.

4. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum, a series of coiling-spindles located thereon, a pair of delivery or feeding rollers, *d*, and a detaching-roller, *u*, substantially as described.

5. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum, a series of coiling-spindles located on said drum, and a driving-belt, *k*, substantially as described.

6. The combination, in a fiber-coiling machine, of an intermittingly-rotating drum, a series of coiling-spindles located on said drum, mechanism for feeding or delivering the bat to the spindles, and suitable mechanism for revolving the spindles to coil the fibers thereon and to continue the rotation of the spindles for rubbing and ironing the fibers subsequently to the coiling of them on said spindles, substantially as described.

7. The combination, with a spindle, *g*, for coiling fiber thereon, of a brush, *p*, located in a groove in said spindle, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

OTIS C. FLICK.

Witnesses:

W. J. MORGAN,
A. P. THAYER.