(No Model.) 2 Sheets—Sheet 1.

A. URBAHN.

MACHINE FOR MAKING ORNAMENTAL LOOPED CORD.

No. 266,928. Patented Oct. 31, 1882.

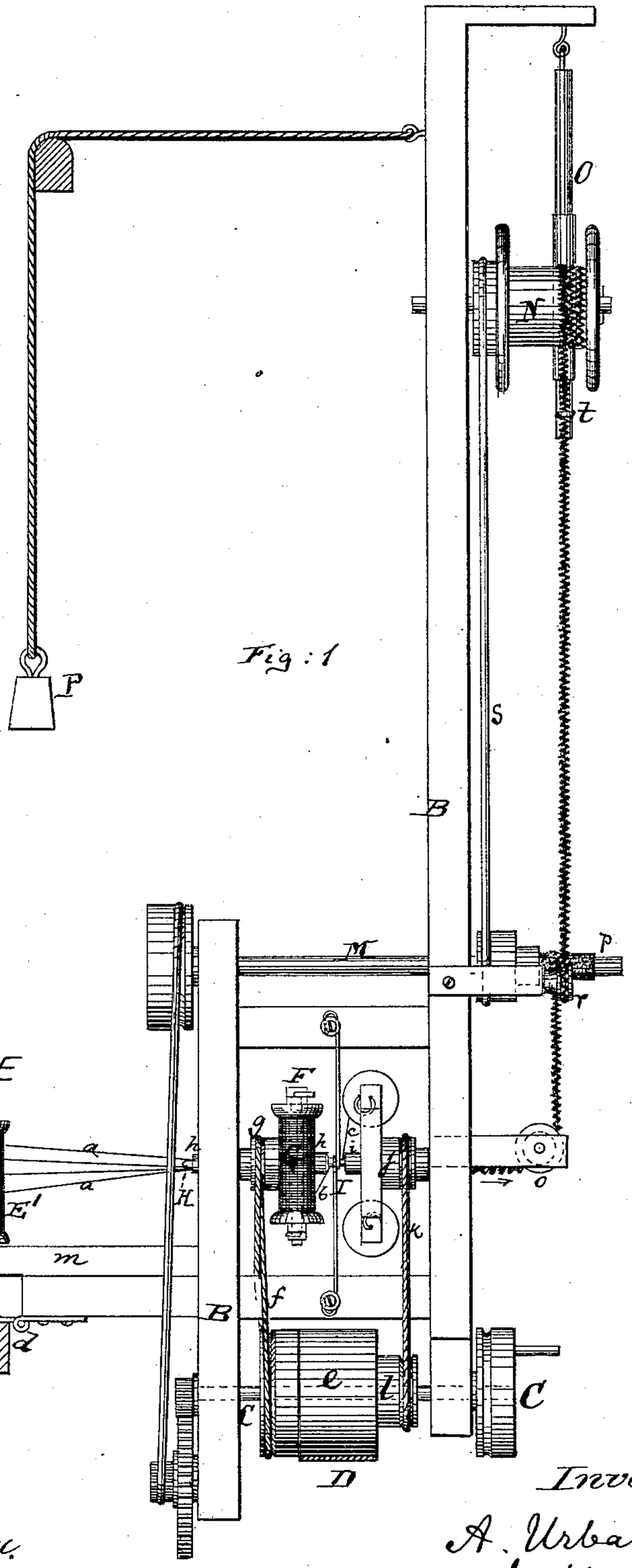

Fig: 1

Witnesses.
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John C. Tunbridge.

Inventor:
A. Urbahn
by his attorneys
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N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. URBAHN.

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Fig: 2

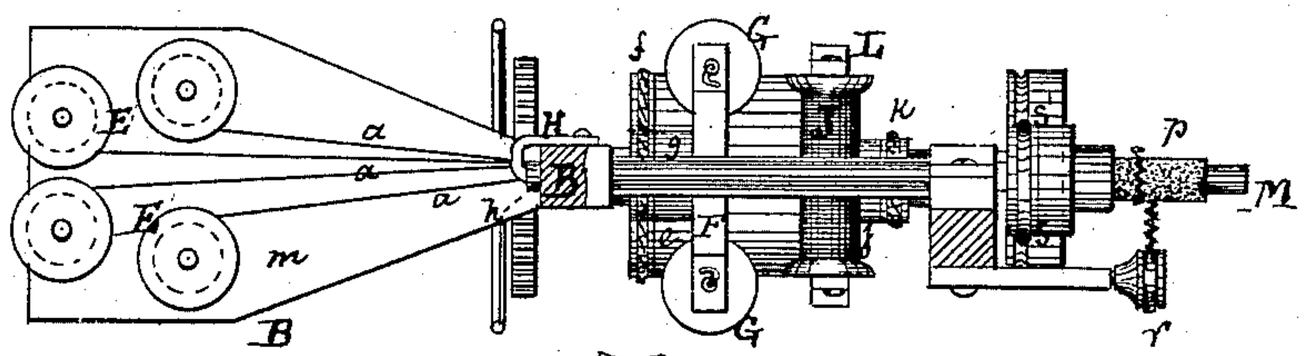


Fig: 3

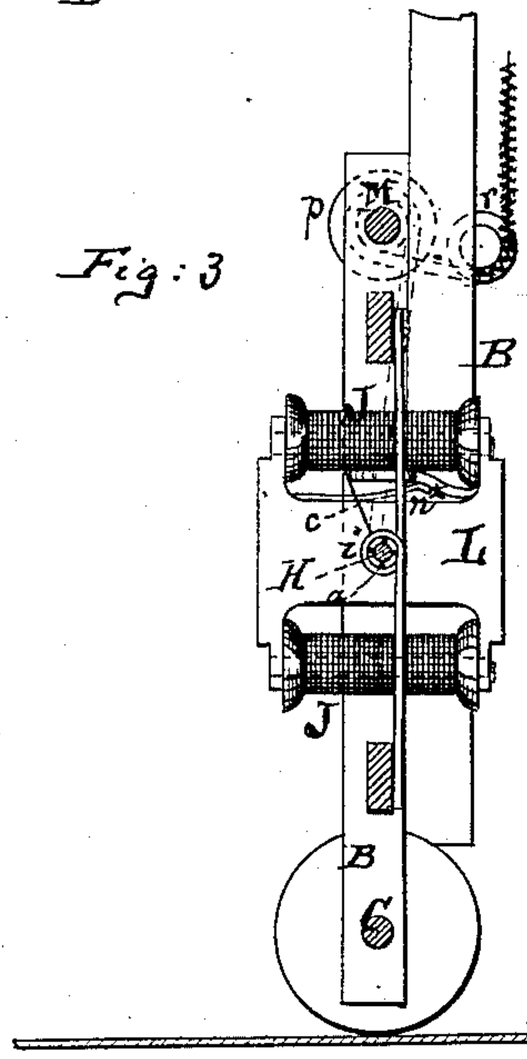


Fig: 6

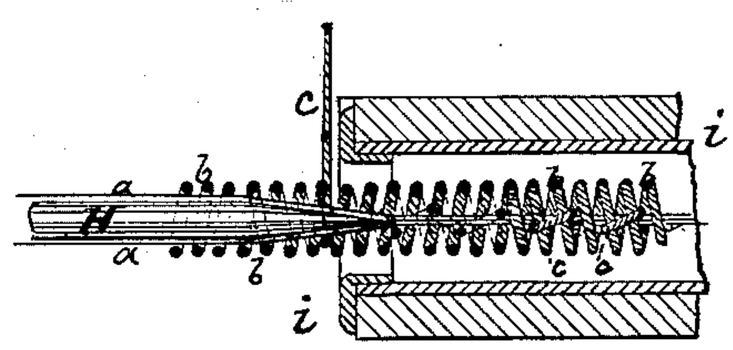


Fig: 4

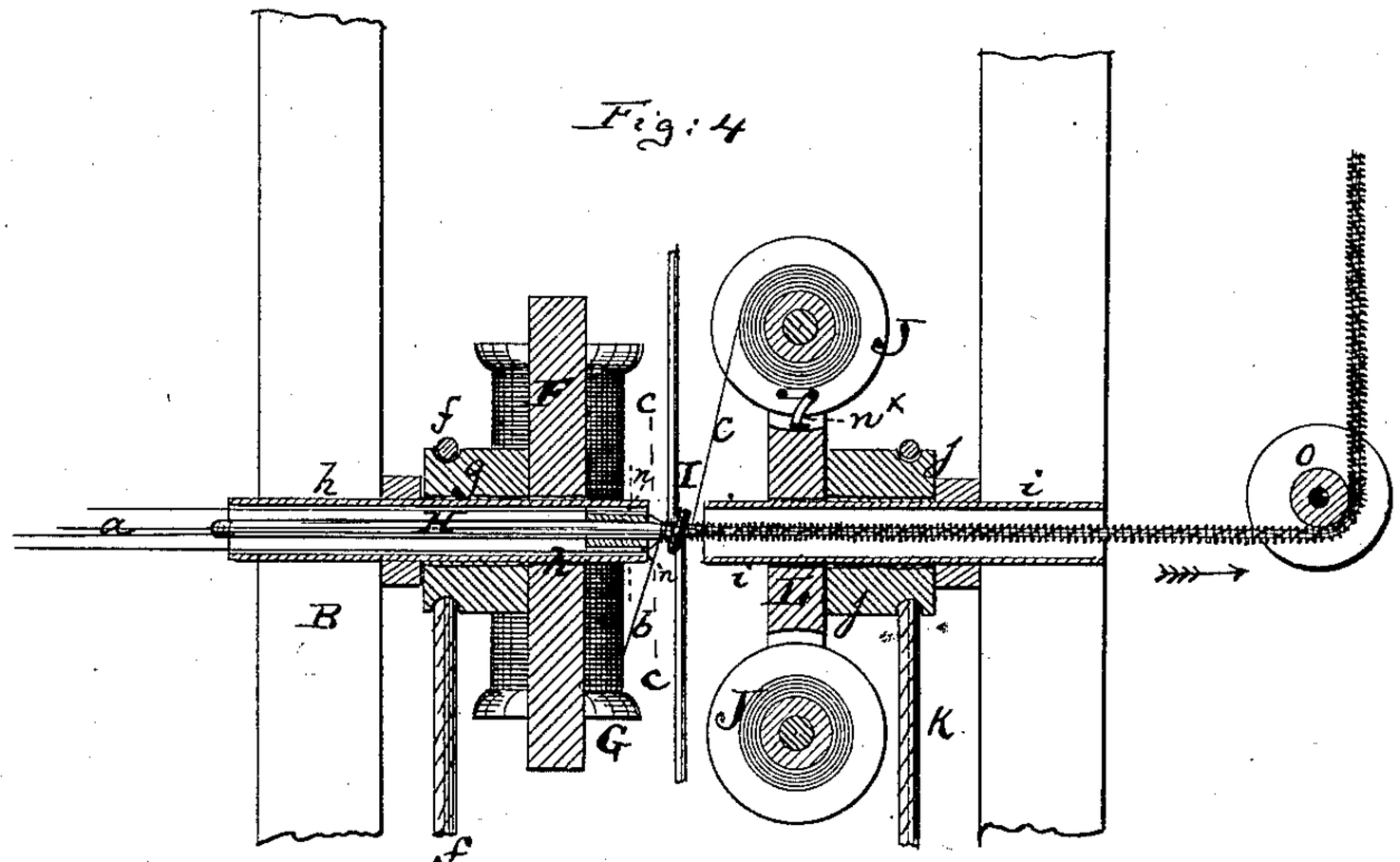
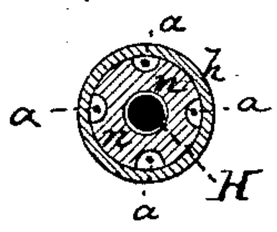


Fig: 5



Witnesses:
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UNITED STATES PATENT OFFICE.

ALWILL URBAHN, OF PATERSON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO ABRAHAM G. JENNINGS, OF BROOKLYN, NEW YORK.

MACHINE FOR MAKING ORNAMENTAL LOOPED CORD.

SPECIFICATION forming part of Letters Patent No. 266,928, dated October 31, 1882.

Application filed February 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALWILL URBAHN, of Paterson, in the county of Passaic and State of New Jersey, have invented an Improved Machine for Making Ornamental Looped Cord, of which the following is a specification.

Figure 1 is a side view of my improved machine for making ornamental looped cord. Fig. 2 is a plan view, partly in section, of the same. Fig. 3 is a vertical cross-section on the line *c c*, Fig. 4. (Figs. 1, 2, and 3 are drawn on the same scale.) Fig. 4 is a vertical longitudinal central section of the main portion of the machine, showing the parts of said portion on an enlarged scale. Fig. 5 is a vertical cross-section through the inner portion of the tube for guiding the core-threads, this figure being on a still larger scale than Fig. 4. Fig. 6 is a longitudinal central section, showing the core-spreading pin and some of the parts immediately adjoining thereto on a still larger scale.

This invention relates to a new machine for making an ornamental looped cord with straight core and looped covering of the kind described in another application filed by me at the same time with this and bearing Serial No. 51,804. Said ornamental looped cord as there described consists of an interior core of common cotton or other threads, an enveloping thread, of silk or other costly fabric, loosely wound around said core, and another thread wound tightly around the core and partly around the silk envelope to hold the latter in place.

The improved machine belongs to the class known as "chenille-machines," but differs from such machines as were heretofore used in the particulars hereinafter specified, by which it is enabled to leave the core-threads straight, and to loop one set of threads loosely around them, and then tie the same to the core by a spirally-wound binding-thread.

The invention consists in combining core-supplying means with a receiving-tube, and with a spreading center therein, which is so placed with reference to the enveloping silk-supplying spool that the said silk will be wound around the core, while the latter embraces the central obstruction that protrudes from said tube, and in further combining said parts with the spool or spools that apply the binding-thread, which spools are so placed with reference to the central obstruction that they apply the binding-thread to the core-threads after they have entirely or almost wholly left said obstruction, so that thus the binding-thread will tightly draw the core-threads together and fasten the silk threads thereto without in the least interfering with the looseness and puffy character of the silk yarn that has previously been applied to the core.

The invention also consists in other details of improvement, that are hereinafter more fully described.

In the accompanying drawings, the letter A represents a table or frame, to which the frame B of my improved machine is hinged or otherwise fastened at *d*. The frame B carries in its lower part a shaft, C, that carries a driving-pulley, *e*. This driving-pulley rests, under the weight of the frame B when said frame B is hinged to the table A, on a driving-belt, D, that is placed around pulleys in the usual manner, and when this belt D is moved it will of course revolve the pulley *e*, and thus impart motion to all parts of the machine. The frame B, being hinged at *d*, rests with its whole weight on the belt D, and thus insures the proper transmission of power from said belt to the pulley *e*.

Whenever the action of the machine is to be arrested the operator has only to swing the frame B back on its hinge *d*, off the belt D, whereupon all operation will be arrested in the parts carried by the frame B. This arrangement of the hinged frame, with its actuating-pulley resting on a long belt, is advantageous where a series of machines having the construction indicated, or analogous construction, are to be used in rows. All of the machines can be driven by one belt, and any one of said machines can be instantly thrown out of action by simply swinging it back on its hinge. When the frame B is not hinged to the table A, but rigidly fastened thereto, the same result can be obtained by lifting the belt by a tightening-pulley against the pulley or pulleys *e* of one or more such machines. The pulley *e* drives by another belt, *f*, another pulley, *g*, which turns around a tube, *h*, that is fixed in the frame of the machine, as more clearly indicated in Fig. 4. Another tube, *i*, is fixed in the frame of the machine in line with the tube *h*,

and the two tubes above mentioned are near to each other, as shown in Fig. 4, but are nevertheless out of contact. Around the tube *i* is placed a revolving pulley, *j*, which, by a belt, *k*, connects with a smaller pulley, *l*, that is attached to the pulley *e*.

It will be seen that the belt *f* in Fig. 1 is shown crossed and the belt *k* open, and it follows that the pulley *g* is revolved in opposite direction to the pulley *j*, which is a preferable arrangement. Moreover, it will be noticed that the belt *f*, by passing around a larger pulley on the shaft C than does the belt *k*, is moved faster, so that thus the pulley *g* is moved faster than said pulley *j*.

Behind the tube *h* is supported on the frame B a platform, *m*, carrying a series of posts or spindles, E. These spindles E, of which four are shown in Fig. 2, (but any greater or less number may be used in their stead,) are receptacles of spools E′ of common thread—such as coarse cotton thread. The threads *a*, that are unwound from the spools E′ on spindles E, are passed into and through the tube *h*, which at or near its inner end is partly closed by a notched or perforated disk, *n*, the notches or perforations of which are equidistant from each other, and preferably circumferential thereon, and through these notches or apertures the several threads *a* pass, in or before issuing from the inner end of the tube *h*. Thus by means of this notched or perforated disk, or equivalent guides in the tube *h*, the threads *a*, as they issue from said tube, are held more or less apart from each other; but said notched or perforated disk may be omitted in many cases.

The pulley *g* carries a frame, F, in which are hung one, two, or more spools, G, that contain the silk thread or yarn which is to be wound around the core-threads *a*. This silk thread or yarn *b* is wound around the core-threads *a*. In front of the inner end of the tube *h*, and at the place where this silk thread or enveloping yarn is wound around said core-threads, there is within the latter a wire obstruction or rod, H, which rod I prefer to pass through the entire length of the tube *h* and fasten, near the outer end of said tube, to the framing B, as indicated in Fig. 2. This wire H, as more clearly shown in Fig. 6, holds the threads *a* apart after they have left the tube *h*, and prevents them from closing together while being surrounded by the enveloping thread or threads *b*. After the thread *b* has been wound onto the core, the latter, on its forward motion, (it being necessary here to state that during the entire operation the core-threads and all the cord as it is being made is moved forward in the direction of the arrow shown in Fig. 4,) passes preferably through a wire loop, I, which is fastened to suitable bars connected with the frame B, and then on the other side of said wire loop I receives the binding thread or threads *c*. This binding-thread is taken from a spool or spools, J, that hang on a frame, L, which is connected with the pulley *j*. It follows that the binding-thread *c* is wound in the opposite direction around the core to that in which the thread *b* is wound, although it need not necessarily be so wound. The thread *c* should be wound around the fabric very tightly. Where it is applied the obstructing wire H is no longer within the core-threads *a*, or if it is yet within them at that place it is tapered down to such a fine point as to allow the thread *c* to contract the core-threads to an extent greater than that at the point at which the silk thread *b* is applied.

In order to insure the tight binding of the thread *c*, I prefer to apply a frictional spring, $n^{\times}$, against the spool J, as indicated in Figs. 3 and 4; or any other tension appliance may be used to the same purpose. The idle-spool J shown in the drawings requires no friction-spring. The ornamental looped cord, being now completed, is fed forward, passed around a friction-roller, *o*, thence up around a drawing-roller, *p*, which is on a shaft, M, that is driven by a belt either directly from the shaft C or from a shaft gearing into the shaft C, as clearly shown in Fig. 1, thence around another friction-roller, *r*, and up to the receiving-spool N, which spool N receives motion by a belt, *s*, from the shaft M.

In order to properly deposit the looped cord upon the spool N, I have suspended from the framing B, by a swivel or other flexible joint, a rod, O, having a loop, *t*, through which loop the cord is passed. The rod O, by its weight, leans against the side of the spool N, and as said spool is revolved the rod O will be gradually tilted and moved from a freshly-wound part of the spool to a part less fully covered, and will thus assist in applying the finished cord in regular and contiguous spirals around the spool N.

In the drawings is also shown a weight, P, which is connected by a cord with the upper part of the hinged frame B, and helps to pull the same off the belt D as soon as an impetus is given the frame B in the direction in which the said weight can become effective. The counter-weight also reduces the strain on the belt while the machine is in operation.

It is clear that the spools G and J, when the machine is in operation, are revolved around their own axes, and also around the core-threads.

I claim—

1. The combination of the frame B, carrying the winding mechanism, substantially as specified, with its driving-shaft C, having driving-pulley *e*, the hinge *d*, supporting the frame A and belt D, said belt serving to partly support the frame B and to revolve the shaft C, substantially as specified.

2. The frame A, hinged frame B, and driving-shaft C, combined with pulley *e*, driving-belt D, and with the counter-weight P, connected to the frame B, substantially as specified.

3. The combination of the core-supplying device E with the tube *h*, tapering core-spreading pin H within said tube, adapted to spread

the core-threads, means adapted to carry and wind enveloping threads around the core while spread by said pin, and means adapted to carry and wind binding-threads around the straight core, and around said enveloping threads beyond the thickest portion of said spreading-pin, substantially as herein shown and described.

4. The tube *h*, having the notched or perforated disk *n*, in combination with the tapering core-spreading pin H, spindles E, means adapted for carrying spools containing enveloping and binding threads, and mechanism for revolving said spools containing the enveloping and binding threads around the straight core, substantially as herein shown and described.

5. The combination of means adapted for carrying a spool or spools for supplying the core-threads with means adapted for carrying a spool or spools containing an enveloping thread, means for carrying a spool or spools containing a binding-thread, means for revolving said spools that carry the enveloping thread in one direction around the core, and said spool or spools containing the binding-thread in the opposite direction, but with less speed than the enveloping-thread around the core, and means for holding the core taut and for spreading it while the enveloping threads are wound around it, all without turning the core, substantially as described.

6. The combination of the tubes *h i*, that are in line, but not in contact with each other, with the intervening loop, I, inner wire, H, and with means adapted for carrying two sets of spools, and with mechanism, substantially such as described, for revolving said spools, substantially as specified.

7. The means adapted for supporting and revolving the spool carrying the binding-threads, and means for supporting and revolving the spool or spools carrying the enveloping thread, substantially as described, combined with means for spreading and supplying the core-threads, and the tension device $n^{\times}$, applied only to the spool that carries the binding-threads, to insure the tight binding of the thread that is discharged from said spool, and the loose coiling of the enveloping thread, substantially as set forth.

This specification signed by me this 7th day of December, 1881.

ALWILL URBAHN.

Witnesses:

WILLY G. E. SCHULTZ,

JULIUS HÜLSEN, Jr.