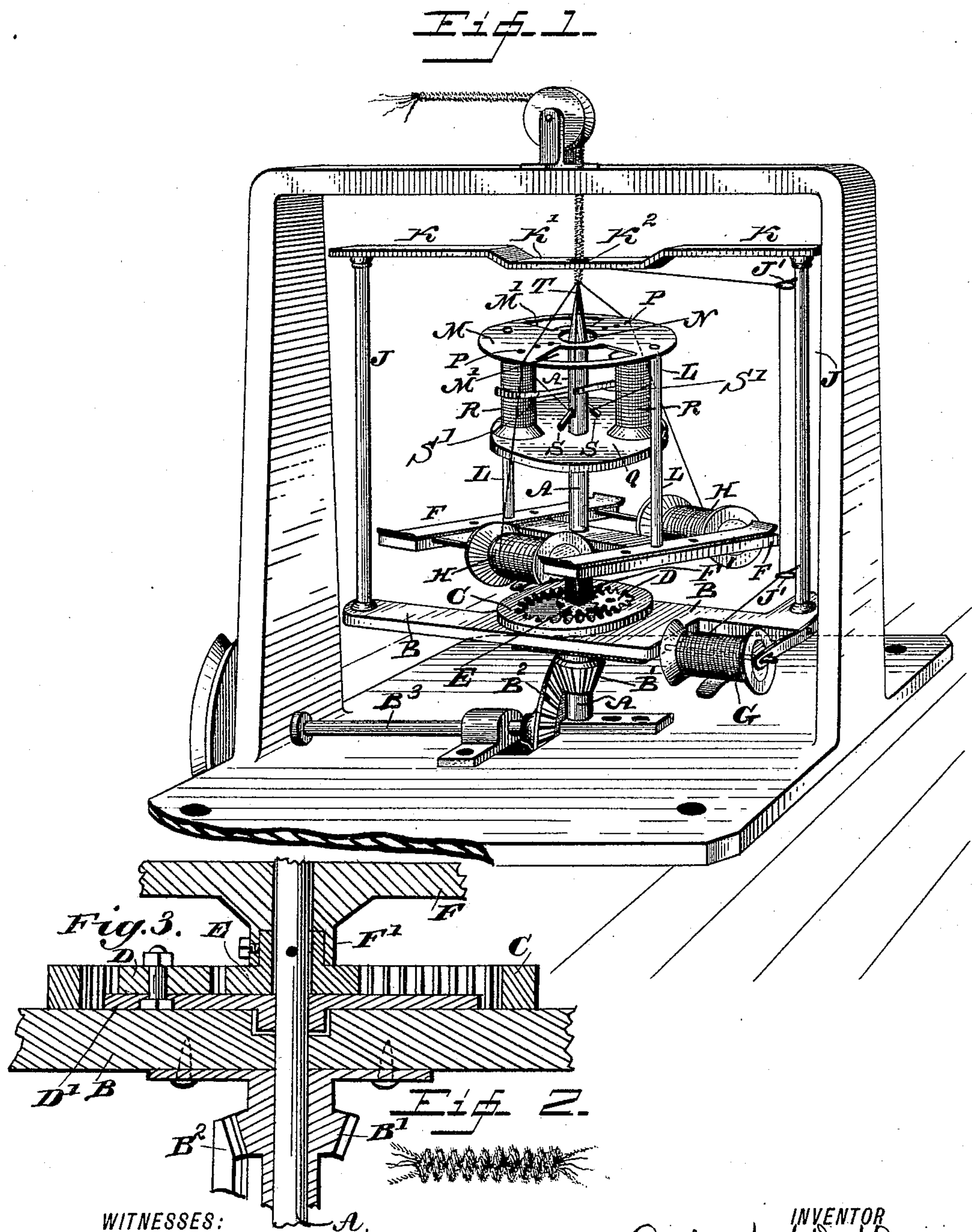


(No Model.)

A. W. DURR.  
MACHINE FOR MAKING ORNAMENTAL CORD.

No. 449,038.

Patented Mar. 24, 1891.



WITNESSES:  
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## MACHINE FOR MAKING ORNAMENTAL CORD.

SPECIFICATION forming part of Letters Patent No. 449,038, dated March 24, 1891.

Application filed December 21, 1889. Serial No. 334,481. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT W. DURR, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Machines for Making Ornamental Cord, which improvement is fully set forth in the following specification and accompanying drawings.

This invention relates to machines for making ornamental cord; and it consists of means for feeding core-threads and operating the supports for the enveloping and binding threads, to cause the latter to be properly wound around the core-threads.

It also consists of the means employed for attaining the desired result, either as combined with mechanical actuating devices or to the individual formation and arrangement, as will be hereinafter more fully set forth.

Figure 1 represents a perspective view of a machine for making ornamental cord embodying my invention. Fig. 2 represents a detail view of the cord produced by the machine. Fig. 3 represents a vertical section, on an enlarged scale, of the internal gear or ring, the pinion meshing therewith, and adjacent parts, to be hereinafter referred to.

Referring to the drawings, A designates a stationary shaft, on which is mounted a rotating table B, having a bevel-pinion B' secured thereto, said pinion meshing with a bevel-pinion B<sup>2</sup> on the driving-shaft B<sup>3</sup>.

C designates a wheel or ring with gearing or teeth on the interior periphery thereof, the same being secured to the table B, so as to rotate therewith. Meshing with said gear-wheel C is a pinion or idler D, which is mounted on a support D', connected with the stationary shaft A.

E designates a pinion, which gears with the pinion D and is secured to the sleeve F', depending from the table F, which is loose on the shaft A and located above the table B, and by this means the said table F is rotated in a reverse direction to the table B. The table B supports the binding-thread spool or spools G, and the table F the enveloping-thread spools H, each having suitable tension devices of preferred construction.

On the table B are secured posts or pillars J, extending upward and supporting a guide

plate or strip K, having a central depression K', formed with a central guide-opening K<sup>2</sup>, one or both of the said posts or pillars J also having guides or eyes J' attached thereto, through which are passed the binding thread or threads from the spool or spools G, and which is then extended over against the under side of the depression K' to the opening K<sup>2</sup> of the said guide-strip K.

On suitable posts or pillars L, extending upward from the table F, is mounted a plate or disk M, having a central opening N and radial perforations P, which may or may not be employed, as may be desired, for the passage therethrough of the enveloping threads from the spool or spools H on the said table F, as the said threads can be fed over the peripheral edge of the said disk with equal efficiency. The said disk M is preferably formed with openings M', through which the core-thread spools may be removed from or placed upon their support, hereinafter referred to.

Above the table F on the shaft A is stationarily fixed a table Q, for supporting two or more core-thread spools R, which are held against slack movement by suitable tension-springs S', as shown. Suitable guides S are attached to the said shaft A above the table Q, and are adapted to engage the core-threads, which then pass up through the central opening N of the disk M. The upper end of the shaft A of itself is tapered to a point, as at T, and projects above the disk M, or a separate piece of the formation set forth may be rigidly attached thereto. Suitable cord tension and winding mechanisms will be employed, and will consist of any well-known constructions adapted for the purpose. The depression K' of the guide-plate K feeds the binding-thread at one point to produce a regularity of binding.

In operation the table B revolves reversely to the table F, through the medium of the gearing hereinbefore referred to. To start the machine, the core-threads are first drawn upward through the central opening N of the disk M and over the tapered point or tip T. The enveloping threads or yarn from the spools H are then brought upward over the edge of the said disk M or passed through opposite radial openings P in the said disk,



as may be desired, and wound around the upper portion of the point T and around the core-threads. The binding-thread from the spool or spools G is next wound around the core and enveloping threads and the mechanism is then set in motion. The tension exerted on the cord as formed will draw on and feed the core-threads. The revolution of the frame F will cause the enveloping threads or yarn to wind around the point T over the core-threads, and owing to the tapered construction of the said point the threads or yarn will be drawn therefrom in a loose condition by the tension exerted on the said core-threads. The table B will now be revolving in a direction reverse to the table F, and the binding-thread feeding from the said table B, close to the under side of the depression K' of guide-strip K, will be wound over the enveloping thread or yarn as it is drawn from the point T with a tension, and produce a spiral configuration by being drawn inward toward the core-threads, and bind portions of the said enveloping threads to form projecting loops in spiral form. By changing the feed of the enveloping threads from the periphery of the disk M to the opening P thereof, the form of the finished cord will be somewhat varied. It will be seen that the disk M revolves with the frame F, and tangling or twisting of the enveloping threads below the disk is thereby prevented. The texture and color of the enveloping threads may be varied, as may be desired.

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

1. In a machine for making ornamental cord, a stationary shaft having a projecting end over which core-threads are fed, a disk revolving around said shaft, an enveloping-thread support below the disk having a rotary movement, and to which the said disk is rigidly attached, a rotary frame supporting the binding-thread and freely rotating around said shaft, and a main driving-shaft having suitable gearing connected with said parts to move the binding-thread supporting-frame reversely to the enveloping-thread support, substantially as described.

2. In a machine for making ornamental cord, a stationary core-thread support, a revolving binding-thread support having an annular gear secured thereto, an idler engaging therewith, and an enveloping-thread support having a pinion meshing with said idler to revolve the same in a reverse direction to said binding-thread support, and having a disk connected to and located above the core of the thread-support, said disk controlling the position of feed of the enveloping thread, substantially as described.

3. In a machine for making ornamental cord, a stationary shaft with a projecting end, a disk adjacent to, revolving around, and unengaged by said shaft end, and a guide-plate

with an opening therein beyond said shaft end to provide for a regular feed at one point for one of the threads, combined with a core-thread support, and reversely-rotating enveloping and binding thread supports, the said disk controlling the position of feed of the enveloping threads, substantially as described.

4. In a machine for making ornamental cord, a stationary shaft having a tapered point, a rotating disk with openings therein for passage therethrough of enveloping threads, and a guide above the said tapered point of the shaft, the said guide having an opening therein for passage of the completed cord, combined with a stationary core-thread support and reversely-rotating enveloping and binding thread supports, substantially as described.

5. In a machine for making ornamental cord, a stationary shaft having a tapered point, a disk adjacent to said tapered point with openings therein for the passage of enveloping threads therethrough, and a guide-plate having a depression to feed a binding-thread at a uniform distance above the said point, and an opening therein for the passage therethrough of the completed cord, combined with a stationary core-thread support and reversely-rotating enveloping and binding thread supports, substantially as described.

6. In a machine for making ornamental cord, a revolving table for the binding-thread, supporting a strip with a depression and an opening therein, said strip revolving with said table, a stationary core-thread support, and a frame for the enveloping threads, revolving reversely to the binding-thread table and supporting a feed-disk, substantially as described.

7. In a machine for making ornamental cord, a horizontally-disposed revoluble table for the binding-thread, a horizontal revoluble enveloping-thread frame above said table and supporting a disk for feeding the enveloping threads, a stationary core-thread support above the said enveloping-thread frame, a supporting-shaft having a tapered point, and a guide-plate attached to and revolving with the binding-thread table and located above said point of the shaft for continuously guiding the binding-thread to a point of winding, substantially as described.

8. In a machine for making ornamental cord, the combination of a shaft having a projecting end, a disk adjacent to, revolving around, and unengaged by said shaft, means for supporting the core-threads, means for supporting the enveloping thread, means for supporting the binding-thread, and a guide-plate supported at a point beyond the shaft end and connected to and revolving with the binding-thread-supporting means, substantially as described.

9. In a machine for making ornamental cord, a support for the core-thread spools, a shaft with projecting end, and to which said core-thread support is connected, a disk adja-



cent to, revolving around, and unengaged by  
said shaft end and having openings for the  
placing upon and the removal of the afore-  
said spools, an enveloping-thread support,  
5 and a binding-thread support, substantially  
as described.

10. In a machine for making ornamental  
cord, a shaft, a core-thread support, a disk,

an enveloping-thread support, and a binding-  
thread support having posts or pillars sup- 10  
porting a guide strip or plate above the end  
of said shaft, substantially as described.

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Witnesses:

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