C. C. CHAMBERLAIN.

CORD BURNISHING DEVICE.

APPLICATION FILED MAY 24, 1919.

1,328,943.

Patented Jan. 27, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

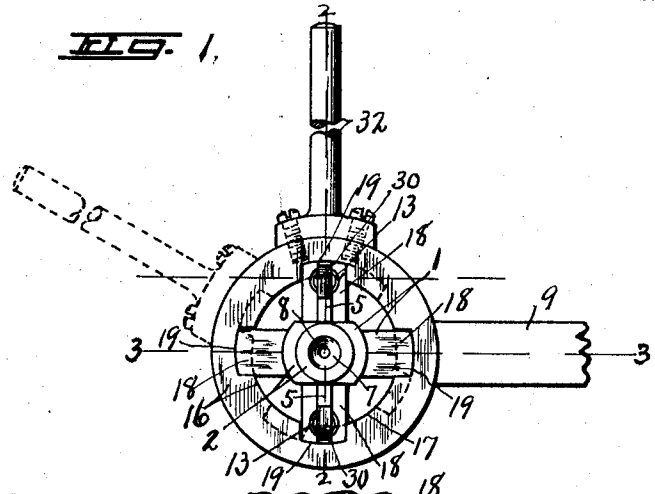


Fig. 2.

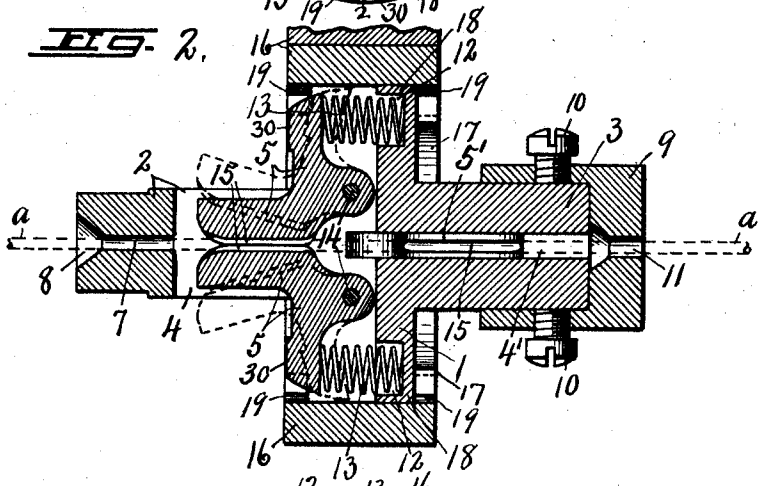
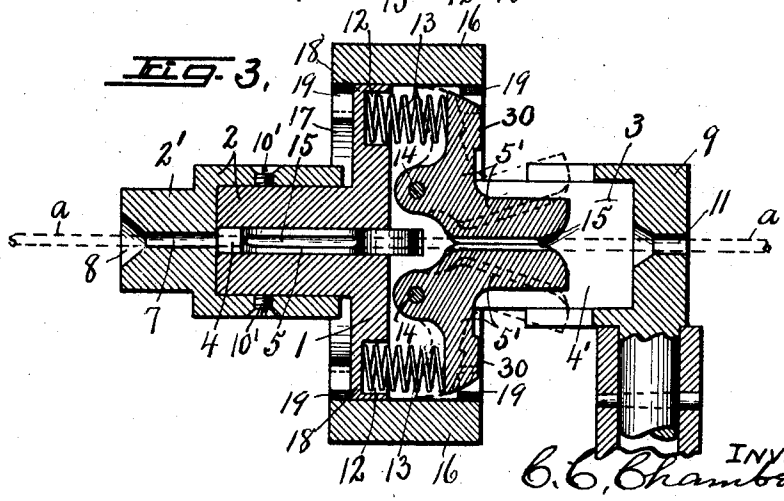


Fig. 3.



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Fig. 4.

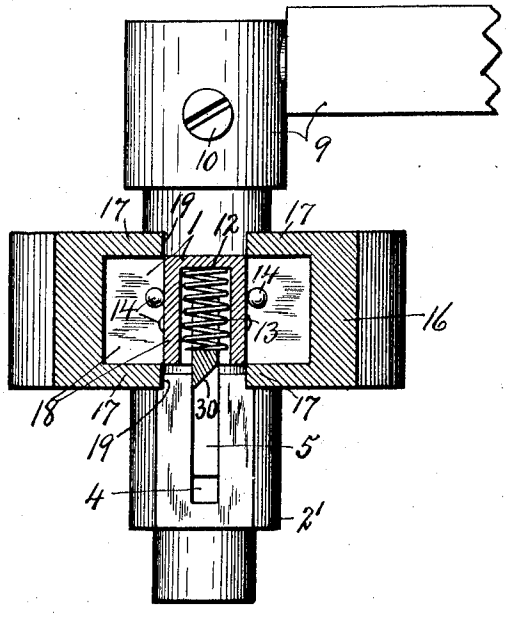
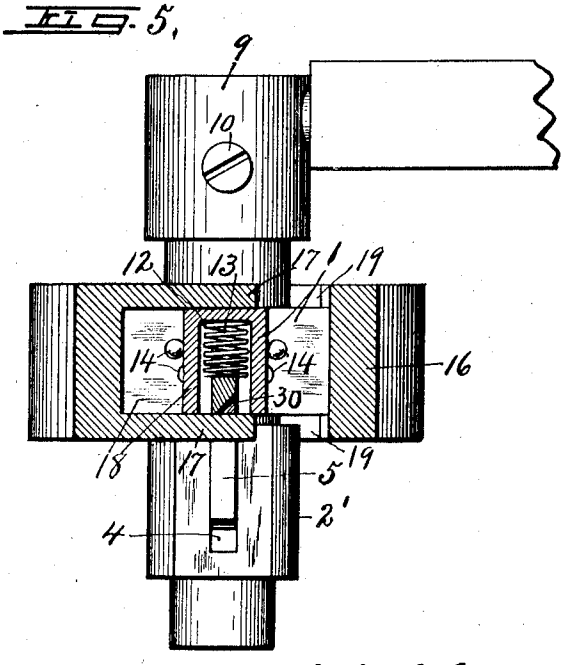


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHAUNCEY C. CHAMBERLAIN, OF IONIA, MICHIGAN, ASSIGNOR TO YPSILANTI REED FURNITURE COMPANY, OF IONIA, MICHIGAN, A CORPORATION OF MICHIGAN.

CORD-BURNISHING DEVICE.

1,328,943. Specification of Letters Patent. Patented Jan. 27, 1920.

Application filed May 24, 1919. Serial No. 299,641.

To all whom it may concern:

Be it known that I, CHAUNCEY C. CHAMBERLAIN, a citizen of the United States of America, and resident of Ionia, in the county of Ionia, in the State of Michigan, have invented new and useful Improvements in Cord-Burnishing Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in machines for making paper and similar fibrous cord, and refers more particularly to means for pressing and burnishing the cord as it issues from the spinning machine after drying.

This cord is usually made by twisting pieces of paper in such m. nner as to form a continuous unit of any desired length for use in the manufacture of furniture and other useful articles, and the main object of my present invention is to impart to the cord a greater degree of firmness, tenacity and smoothness than has heretofore been practised, and at the same time to reduce the cord to a substantially uniform diameter throughout its length, as it is delivered from the spinning machine and simultaneously with the spinning operation.

Another object is to provide means whereby the cord-compressing and burnishing jaws may be opened at will to permit the initial threading of the cord from the spinning machine therethrough.

A further object is to actively compress the jaws upon the cord under a yielding pressure sufficient to produce the desired firmness, tenacity, uniform thickness and burnishing effect, and at the same time to automatically compensate for wear of the jaws and varying thicknesses of the cord without in any way retarding the free delivery of the cord from the machine or overstraining its fiber.

Other objects and uses relating to specific parts of the device will be brought out in the following description.

In the drawings,—

Figure 1 is an end face view of one of the detached compressors and burnishers embodying the features of my invention, the handle for operating the jaw-opening means being partly broken away and shown by dotted lines in the position assumed for opening the jaws.

Figs. 2 and 3 are enlarged sectional views of the same device taken at right angles to each other in the planes of lines 2—2 and 3—3 Fig. 1, the handle being omitted in Fig. 2.

Figs. 4 and 5 are detail sectional views showing the jaw shifting member in different positions for permitting the jaws to close and for opening the jaws, respectively.

As illustrated, this device comprises a suitable head —1— having opposite coaxial end hubs —2— and —3— which together with the adjacent portions of the head are provided with diametrically extending slots or openings —4— and —4′— disposed at right angles to each other for receiving similar but reversely arranged pairs of jaws —5— and —5′—.

The hub —2— is provided with a central axially extending guide-opening —7— having a flaring mouth —8— through which the cord as —*a*— is fed from the spinning machine (not shown), said opening —7— communicating with the adjacent slot —4— for the passage of the cord to the jaws —5—.

For a similar reason, the inner ends of the slots —4— and —4′— extend beyond each other for intercommunication to permit the passage of the cord from one pair of jaws to the other pair and thence outwardly through the slot —4′— which extends through the outer end face of the hub —3—.

The outer end of the hub —3— is capped by one end of a shifting member —9— which is secured to the hub by clamping screws —10—, and is provided with a guide-opening —11— coaxial with the opening —7— and head —1—, and having its inner end flared as shown in Figs. 2 and 3 to permit the passage of the cord therethrough without excessive friction.

The object of the shifting member —19— is to move the burnishing device laterally to enable the cord to be properly laid out upon a suitable reel (not shown) upon which the burnished cord is wound as it emerges from the burnisher.

The head —1— is of greater diameter than the hubs —2— and —3— and is provided with a series of (in this instance four) sockets —12—, one for each of the jaws —5— and —5′—, extending axially from the basis of the slots —4— and —4′—, said sockets being located near the periphery of the head in alinement with the outwardly projecting arms of their respective jaws for receiving suitable compression springs —13— by

which the jaws of each pair are yieldingly held in their closed or pressing positions.

The jaws —5— and —5′— of both pairs are identical and interchangeable and are preferably made in the form of bell crank levers, those of each pair being opposed to each other in reverse order at opposite sides of the axis of the head —1—, and are pivoted at their angles at —14— to the walls of their respective slots —4— and —4′— in such manner that corresponding arms thereof, will extend longitudinally and outwardly from their pivots with their adjacent faces meeting in the plane of said axis, and their other arms extending radially from said axis in alinement with the corresponding sockets —12— to form abutments for the adjacent ends of their compression springs —13—.

The adjacent faces of the longitudinally extending arms of each pair of jaws are provided with lengthwise grooves —15— to form substantially semi-circular pressing faces of suitable diameter for compressing, sizing and burnishing the cord as it passes between them, the ends of the grooves —15— being preferably curved outwardly to enable the cord to pass more freely between the jaws with increased burnishing effect and without liability of abrasion.

If desired, the portion of the hub —2— in which the guide-opening —7— is formed may be made as a separate piece —2′— and clamped to the adjacent section of the hub by means of clamping screws —10′— as shown in Fig. 3 which permits the adjacent slot —3— to be more conveniently formed in the head —1—.

The means for opening the jaws —5— and —5′— simultaneously against the action of their respective springs —13— comprises a collar —16— rotatably mounted upon the periphery of the head —1— and having its opposite ends provided with inturned flanges —17— engaging opposite end faces of the enlarged portion of said head to hold the collar and head against relative endwise movement when adjusted for use.

These flanges —17— are preferably formed integral with the collar —16—, and in order that the head —1— may be inserted therein, it is provided with radial arms —18— in which the slots —4— and —4′— are formed while portions of the flanges —17— are cut away at —19— to a circumferential width at least equal to the width of the adjacent ends of the arms —18—, whereby when said arms are registered with the recesses —19—, the collar and head may be moved axially relatively to each other, and thereby displaced one from the other, if desired.

On the other hand, when the head and collar are assembled and relatively turned so as to bring the arms —18— out of registration with the recesses —19— they will be locked against relative endwise movement.

These recesses are also utilized to permit the radial arms of the jaws to move outwardly therethrough under the action of the respective springs —13— to cause said jaws of each pair to be simultaneously pressed against opposite faces of the cord as the latter passes through the burnishing device.

On the other hand, the flanges —17— are utilized to open the jaws against the action of their retracting springs, and for this purpose the radial arms of the several jaws are provided with cam faces —30— normally in circumferential alinement with the corresponding flanges so that when the collar —16— is adjusted rotarily by means of a handle —32— from the position shown in full lines Fig. 1 to the dotted position, the advancing ends of the flanges will ride against the cam faces —30— thereby rocking the radially extending arms of the pawls inwardly against the action of their respective springs —13— to open the longitudinally extending portions of said pawls out of engagement with the cord to permit the latter to be threaded through the burnishing device or near the jaws when desired; as for example, in the initial setting up of the machine, as soon as the cord is properly threaded into the burnisher and adapted to the winding reel, the collar —16— is restored to its normal position to allow the jaws to be spring pressed into engagement with the cord whereupon the machine is set in motion and the cord fed through the burnisher as it is delivered from the drying machine, it being understood that the jaws are pressed upon the cord with sufficient force to firmly compress the fiber to a substantially uniform size, and at the same time increasing its tenacity and produces a smooth burnished surface throughout its area as it is fed through the machine.

What I claim is:

In a burnishing device of the character described, the combination of a head having diametrically extending slots at right angles to each other, separate pairs of jaws movable in said slots, those of each pair being spring pressed toward each other, and means on the head for simultaneously opening all of the jaws simultaneously against the action of their closing means.

In witness whereof I have hereunto set my hand this seventh day of May 1919.

CHAUNCEY C. CHAMBERLAIN.

Witnesses:

JOHN L. MCNAMARA,

JAMES R. WHEATON.