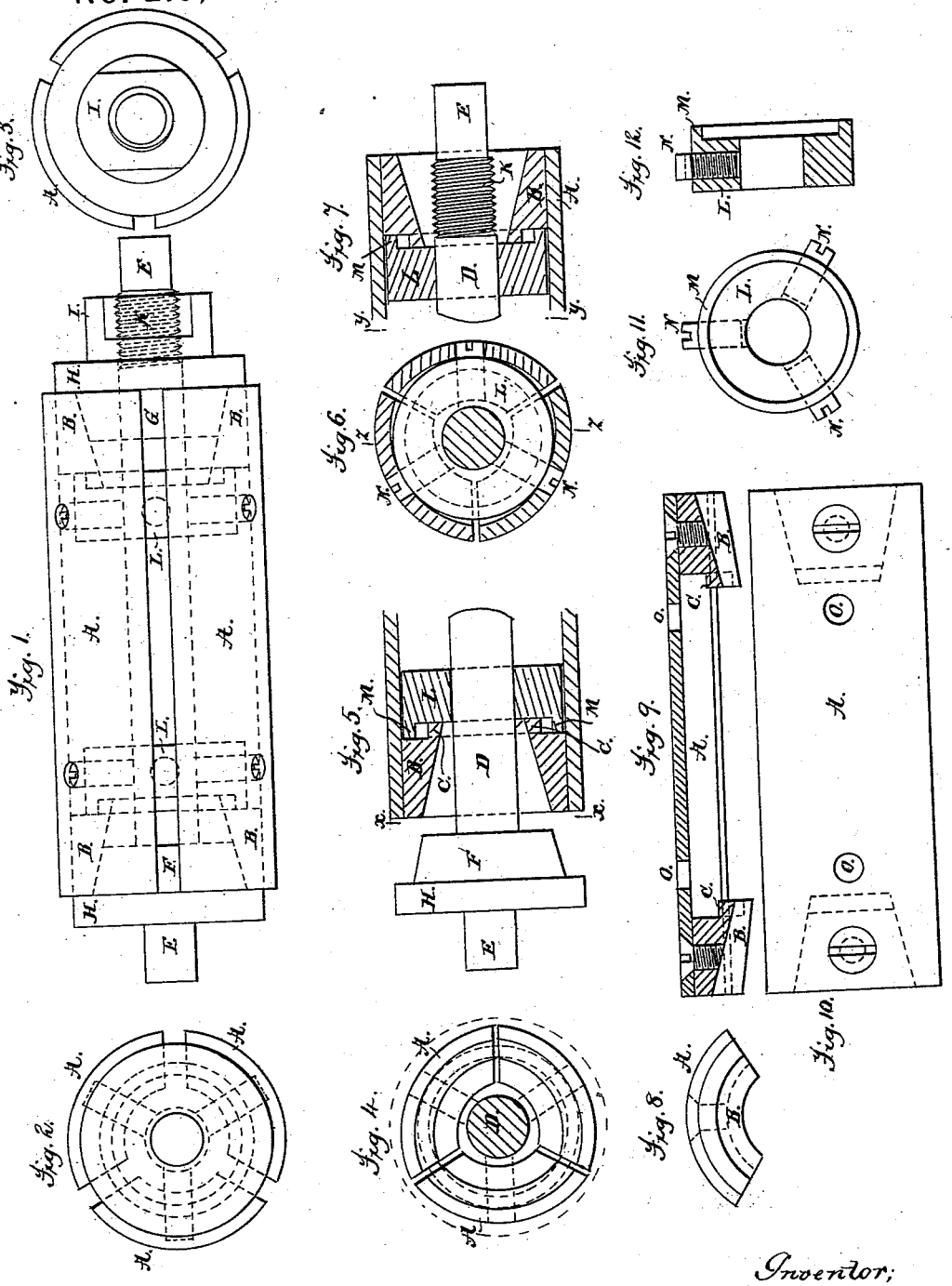
J. P. VIENOT.

Expansible and Contractible Cores for Rolls of Paper.

No. 213,262 Patented Mar. 11, 1879.



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IMPROVEMENT IN EXPANSIBLE AND CONTRACTIBLE CORES FOR ROLLS OF PAPER.

Specification forming part of Letters Patent No. **213,262**, dated March 11, 1879; application filed December 3, 1878.

To all whom it may concern:

Be it known that I, JULES P. VIENOT, of the city, county, and State of New York, have invented certain new and useful Improvements in Expansible and Contractible Cores; and I do hereby declare the following to be full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

Heretofore webs of paper used in what are known as "web" or "perfecting" printing-presses have been wound upon wooden or iron cores having an opening running through them, and then shipped in the roll to printing-offices. A bar of iron is there inserted in the opening of the wooden or iron core, and there held by a stationary flange on one end of said bar and a screw-flange on the other, between which the roll or core is clamped. This bar has journals, so that the roll can be raised into the usual wetting-machine, and turn in the boxes of the latter. The roll is then unwound, dampened, and rewound upon another core in this machine. After this damping and rewinding of the roll has been effected the iron bar is removed from the wooden or iron core and the latter placed at one side, when another roll is treated in the same manner. In course of time the wooden or iron cores accumulate, sometimes as many as fifty or more in a week, and then they are shipped back to the paper-mill, where they are again used to wind rolls of paper upon, and then again shipped to the newspaper-offices. Then the above operation is again repeated, and these wooden or iron cores again shipped to the paper-mill, and again used as before.

The shipment of these wooden or iron cores is expensive, and their constant transmission, with the incident rough handling as freight, soon destroys them.

The object of my invention is to obviate the cost and wear incident to the transmission of these wooden or iron cores, and the first cost of making them. This I do by means of a sectional expanding and contracting core, upon which the paper is wound at the paper-manufactory, and which can be collapsed and removed, so that the roll can be shipped to the newspaper-offices without the extra weight of a core, where a similar sectional expanding and contracting core is inserted in the roll and expanded, so that the roll can be unwound in the wetting-machine, as will be hereinafter more fully pointed out and claimed.

In the accompanying drawings, Figure 1 is a plan view of one form of sectional expanding and contracting core, showing the same expanded. Fig. 2 is a view of one end of the same expanded. Fig. 3 is a view of the other end of the same expanded. Fig. 4 is an end view, partly in transverse section, taken through the line *x x* of Fig. 5 of the core collapsed. Fig. 5 is a view, partly in longitudinal section, of one end of said core collapsed. Fig. 6 is a view, partly in transverse section, of the other end of said core, taken on the line *y y* of Fig. 7, collapsed. Fig. 7 is a view, partly in longitudinal section, taken on the line *z z* of Fig. 6, of the other end of said core collapsed. Fig. 8 is an end view of one section. Fig. 9 is a longitudinal section of the same. Fig. 10 is a plan view of the same. Fig. 11 is an end view of a collar with its screws, to be described; and Fig. 12 is a sectional view of the same.

A are sections of the core, preferably three or more in number. Each section A is provided at each end with a sectional piece, B, firmly secured to the same, the innermost surface of which piece is a section of an inverted cone. Each of these pieces is provided with a flange, C, for a purpose to be described.

D is a shaft, having journals E at each end, of a size suitable for the boxes in the paper-mill or in the wetting-machine. This shaft is provided with cones F G, of a size proper to coact with the innermost surfaces of the pieces B, and with shoulders H, for a purpose to be explained. The cone F is rigidly secured to the shaft D in any suitable manner, while the cone G is bored out to slide over the end of the shaft, and has a screw-threaded nut, I, operating in connection with it, which engages with a screw-threaded portion, K, of the shaft D, for a purpose to be explained.

L are collars bored to allow the shaft D to pass freely through them, each provided with a flange, M, to surround the flanges of the pieces B. Each of these collars is provided with three or more screws, N, which are passed through holes O in the sections A, and screwed

into threaded sockets in said collars, so that their outer ends will just be flush with the outer surfaces of the sections A, when the latter are collapsed as far as required. These screws permit the expansion and contraction of the sections A, and yet retain the collars L in such positions that their flanges M are always about the flanges C on the pieces B, and prevent the sections A from moving endwise or from falling entirely apart.

The inner diameter of the flanges M is greater than the outer diameter of the flanges C, and thus allow the sections to expand until the flanges C meet the flanges M, while the collapsibility of said sections is controlled by the peripheries of the collars L.

In using this core in the paper-mill, the sections are expanded by the cone F, fixed to the shaft D, and the movable cone G, moved by the nut I and threaded portion K of the shaft D, the shoulders H coming into contact with the ends of the sections and firmly holding the same, the nut I being prevented from moving by any locking device desired. The core is then hung, by its journals E, in the boxes of the paper-mill, the leading end of the web is secured in any convenient way to the core, (as by a wire fitting the space between any two contiguous sections,) and the paper wound upon the core in the ordinary manner.

After the roll has been wound on the core to the proper size and weight, it and the core are removed from the machine; the nut I is unscrewed, thus allowing the cones F G to be moved away from the pieces B, the sections A thus being allowed to collapse; the device for holding the end of the web to the core is removed, and then the core is taken out of the roll and again used to wind another roll upon.

In using this core in newspaper-offices, it is inserted in the hole of the roll of paper received from the paper-mill, and its sections expanded, by the cones F G, nut I, and threaded portion K of shaft D, until it tightly fits said hole, when the nut I is again held from turning by any locking device. The roll with core is then hung, by its journals E, in the boxes or other journal-holding devices of the wetting-machine, is then unwound, dampened, and rewound either upon a similar core or the ordinary one used in web or perfecting presses.

If the roll of paper is very long it may be necessary to have more than one cone rigidly connected to the shaft D intermediate between the cones F and G, and pieces B connected to the sections in proper relation thereto to coact therewith.

I do not confine myself to the precise construction of core that I have shown and just described, as many changes may be made in the same without departing from my invention. Thus, the shoulders H may be dispensed with. The nut I may be in one piece with the cone G. The pieces B of each section A may be made in one piece with the same. Instead of set-screws N, pins may be driven in holes in the collars L. The shaft D may have its journals E extended, or may be provided with driving devices, if required, in the paper-mill, or friction devices in the wetting-machine. The core may be provided with more than three sections, if found desirable.

It is obvious that my invention may be used in other places and for other purposes than in paper-mills or newspaper-offices. By the same the cost and wear in transmission and inconvenience in the use and original cost of the ordinary wooden or iron cores in use are obviated, and the rolls are more accurately wound in the paper-mill and unwound in the wetting-machine than heretofore.

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

The combination, in an expansible and contractible core, of a shaft provided with two or more cones, one of which is rigidly secured to said shaft, with sections provided with pieces having inner conical surfaces and flanges, and collars having flanges and screws, the heads of which latter enter holes in the sections, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JULES P. VIENOT.

Witnesses:
GUSTAVE JAEGG,
THOMAS DOWNEY.