

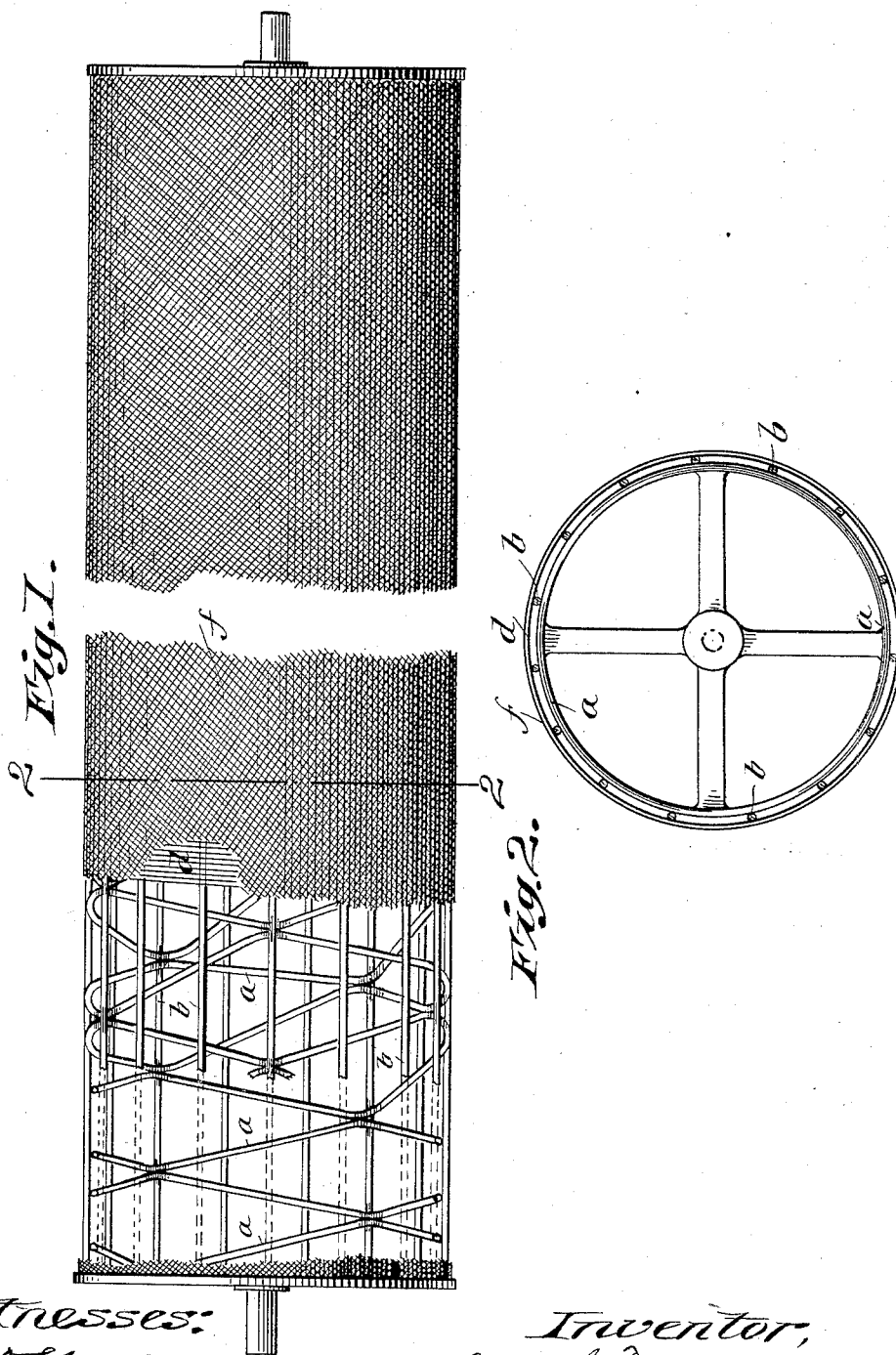
(No Model.)

2 Sheets—Sheet 1.

A. J. TUCKER.
DANDY ROLL.

No. 476,968.

Patented June 14, 1892.



Witnesses:

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Fig. 3.

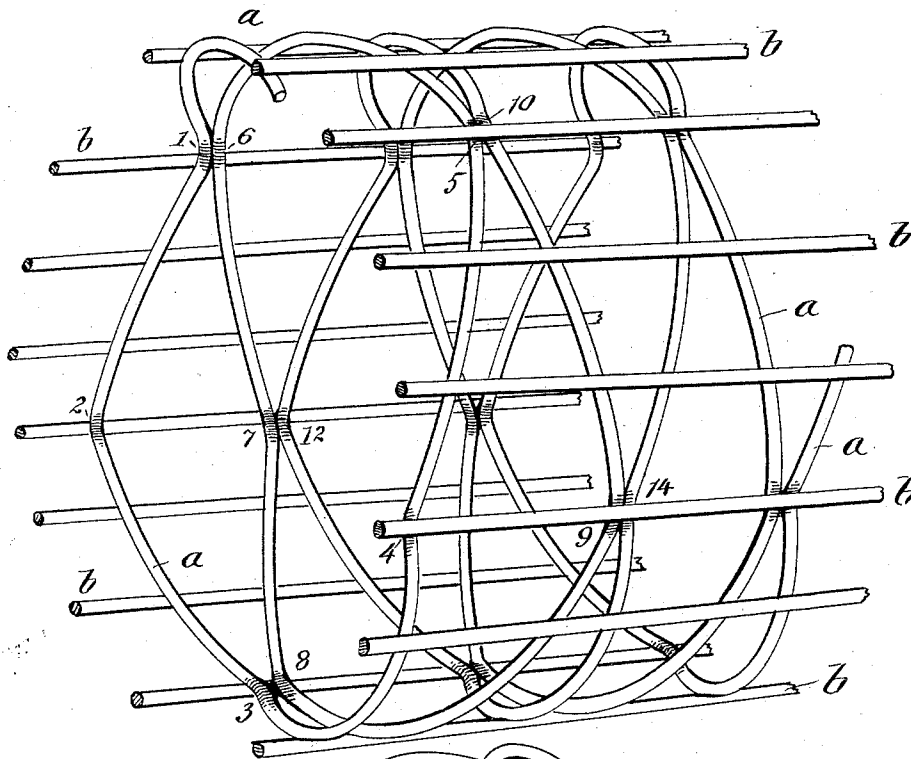
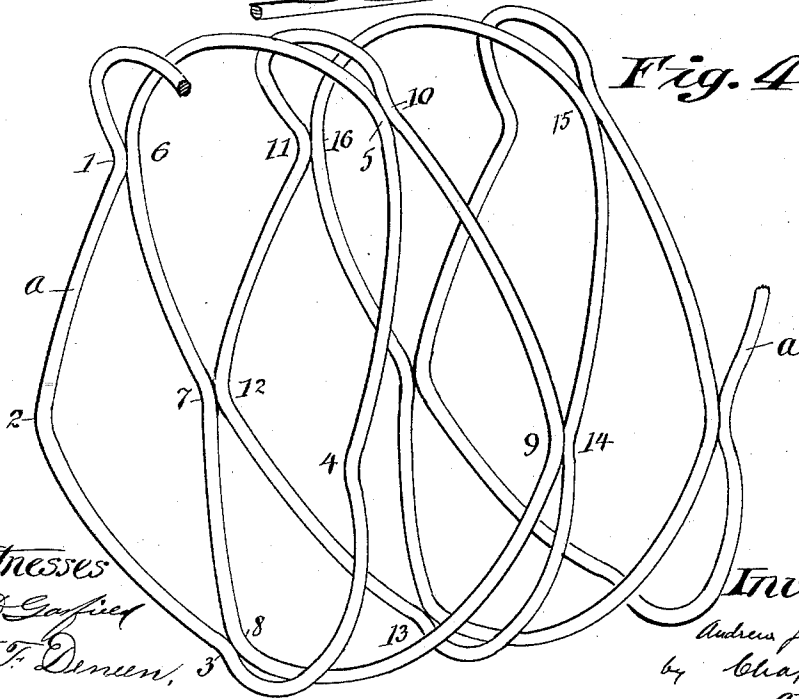


Fig. 4.



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UNITED STATES PATENT OFFICE.

ANDREW J. TUCKER, OF SPRINGFIELD, MASSACHUSETTS.

DANDY-ROLL.

SPECIFICATION forming part of Letters Patent No. 476,968, dated June 14, 1892.

Application filed December 7, 1891. Serial No. 414,242. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. TUCKER, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Dandy-Rolls, of which the following is a specification.

The object of this invention is to produce a dandy-roll which, while possessing all requisite strength and rigidity, embodies an unusually small amount of material, and is consequently very light and inexpensive and is, furthermore, easy of construction.

The invention essentially embodies a shell constituted by a single length of suitable wire, which is formed into a series of convolutions wound to conform to the periphery of a cylinder, and said wire having, ultimately, a course from end to end of the roll-shell, each of the coils, however, having detours from the regular helical course, whereby portions of each coil at different points around the shell are brought to connection with a preceding and a succeeding coil.

The invention further consists in the combination, with the roll-shell formed as above set forth, of longitudinally-running wires fixed and supported upon the exterior of the roll-shell and the usual roll-covering.

In the accompanying drawings, the construction of the roll is illustrated, Figure 1 being a side view of the dandy-roll, showing at one end the outer covering removed, exposing the roll-shell, and the latter toward the left indicated as being in sectional elevation back of a vertical plane coincident with the axis of the roll. Fig. 2 is a cross-section of the roll. Fig. 3 is a perspective view, on a larger scale, showing a portion of the length of the roll-shell, the longitudinal wires being included in the view, while Fig. 4 is a similar perspective view to Fig. 3, but with the longitudinal wires omitted.

It will be borne in mind that in this roll all points of the wire *a*, from which the inner open-work supporting annular shell for the dandy-roll is formed, are at equal distances from the roll-axis, as will of course be plain when it is understood that in forming the convolutions the wire is wound upon a "log" or cylindrical former. In the winding of the

said wire *a* around the cylindrical form the convolutions, in lieu of maintaining throughout the regular helical course, have some portions rearwardly deflected from such course and other portions forwardly deflected, as will be more readily apparent on reference to Figs. 3 and 4. Thus, tracing the wire from the left-hand end, (shown in said views,) it will be seen that it has a decided forward inclination and (always maintaining the same distance radially from the axis) alternately rearward and forward courses, bending quite abruptly at the points 2, 4, and 6, which points are rearward of an imagined true helical line around the roll, and also bending at the points 1, 3, and 5, which points are forward of the common helix. Having now traced one convolution of the wire, it being noted that the angle-point 6 is in abutment with the angle-point 1, the wire thence has the forward course to the angle-point 7, which forward-disposed point is contacted upon by a rearwardly-disposed angle-point 12 on a succeeding coil, and from said point 7 the wire continues around with the rearward deflection to the angle-point 8, which is in abutment with the forwardly-disposed point 3 of the preceding coil, and thence from point 8 the wire continues around with the forward deflection to the angle-point 9, with which a rearwardly-disposed angle-point 14 of the succeeding coil is brought to abutment, and thence this wire from point 9 proceeds around rearwardly to the angle-point 10, which is in abutment at the angle-point 5 of the preceding coil, and the wire continues so on around and along the entire length of the roll in the same way, with forward and rearward detours, whereby portions of all the coils are brought to connections alternately with portions of the preceding and succeeding coils.

At the points of contact of the wire where one of the detours thereof is brought upon or into proximity with another the said proximate portions are confined—the one upon the other—in any efficient manner, that of soldering being practicable and preferable, and in Fig. 3 the shaded portions are intended to represent the solder unions.

It is seen that the inner supporting-shell for the dandy-roll is formed of but a single wire,

no portion thereof crossing another portion, and so curved or bent as to constitute an annular open-work body comprising a multiplicity of nested diamond-formed or approximately-elliptical frames, the borders of each of which are formed by different sections or lengths of the said single wire, it being noted, however, that each section which forms one of the boundaries of one diamond also divides that from and forms the boundary of an adjacent diamond.

The longitudinal wires *b b* are supported and ranged along the outer periphery of the single-wire skeleton last described, being soldered thereon. Certain of the longitudinal wires preferably cross the inner wire at the angle-points, being soldered thereat, and other of the longitudinal wires cross intermediately of the apexes of the diamonds, being also soldered to the inner wire, and the diamonds or ellipses formed by the devious course of the wire *a*, together with the longitudinal wires acting as ties, constitute, with a minimum of metal, a series of very efficient trusses throughout the roll-shell. Over the shell thus formed, directly upon the longitudinal wires, is placed the winding-wire *d*, as usual, and indicated on Fig. 1, outside of and upon which winding-wire the gauze *f* is placed.

The dandy-roll has heads and journals at its ends, as usual or desirable.

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

1. An open-work supporting-shell for a dandy-roll, consisting of a single wire which is formed into a series of coils wound to conform to the periphery of a cylinder and having, ultimately, a course from end to end of the roll-shell, each of said coils having, however, detours from a regular helical course whereby portions of each coil are brought to and connected with portions of both the preceding and succeeding coils, substantially as described.

2. In a dandy-roll, an inner supporting-shell consisting of a single wire which is formed into a series of coils wound to conform to the periphery of a cylinder and having, ultimately, a course from end to end of the shell, each of said coils having detours from the regular helical course whereby portions of each coil are brought to and connected with both preceding and succeeding coils, the longitudinal wires supported on and secured to the outer side of the said single sinuously-coiled wire, and the usual outer roll-covering, substantially as described.

ANDREW J. TUCKER.

Witnesses:

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