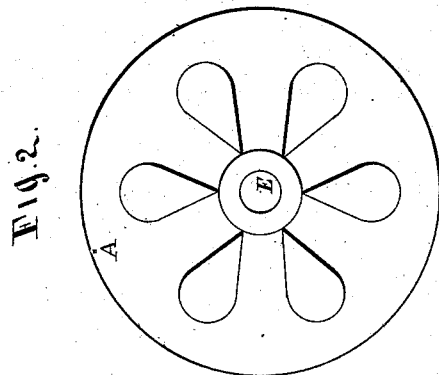
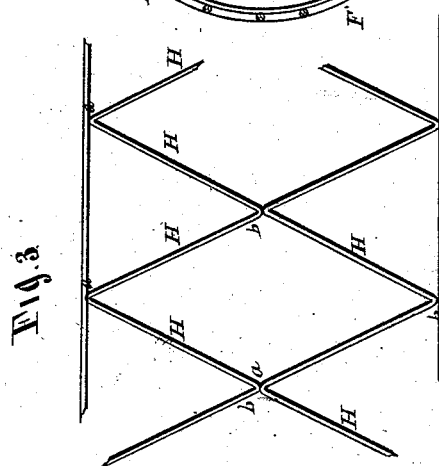
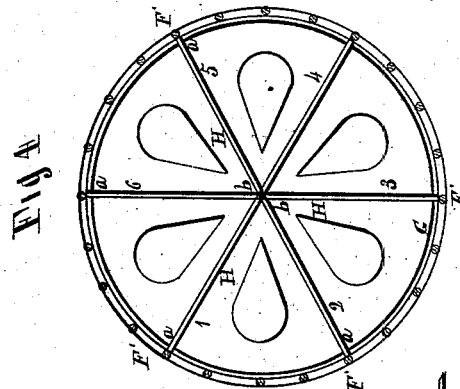
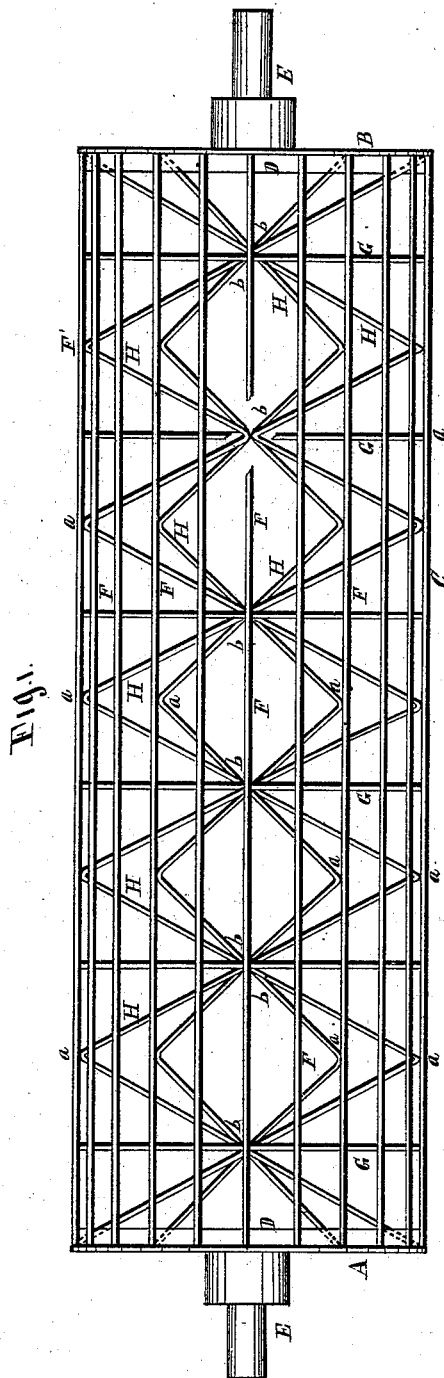


W. S. TYLER.  
Dandy-Roller for Paper-Machines.

No. 216,914.

Patented June 24, 1879.



Witnesses.

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# UNITED STATES PATENT OFFICE

WASHINGTON S. TYLER, OF CLEVELAND, OHIO.

## IMPROVEMENT IN DANDY-ROLLERS FOR PAPER-MACHINES.

Specification forming part of Letters Patent No. **216,914**, dated June 24, 1879; application filed May 19, 1879.

*To all whom it may concern:*

Be it known that I, WASHINGTON S. TYLER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Dandy-Roller for Paper-Machines; and I do hereby declare that the following is a full, clear, and complete description of the same.

The nature of this invention relates to an improvement in the construction of dandy-rollers for paper-machines; and the object thereof is to obtain a less expensive structure with greater lightness and strength than those in ordinary use.

The dandy-roller, as usually constructed, consists of a hollow shaft, having secured thereon a certain number of wheels or centers, to which are attached the bars or ribs constituting a frame or skeleton roller, on which is laid the wire-gauze for the exterior surface thereof. Instead of the tubular shaft and centers above alluded to, I make the frame of the roller of wire or of small tubing, without a shaft. Said frame consists of a number of straight bars or ribs arranged parallel to each other. The ends of the ribs are respectively secured to circular heads, thereby forming a cylindrical wire frame or roller.

The ribs between the heads are supported interiorly by a series of rings and a system of trestle-braces arranged lengthwise the roller, and radiating from the axial line thereof to the ribs. The arrangement of the braces in relation to each other and to the said ribs is such as to dispense with a shaft through the roller as an axis of rotation and support. The roller is provided at either end with a journal, on which it revolves.

I am aware that dandy-rollers have been made of wire, with an internal structure of bracing. The construction of my roller, however, differs materially from such rollers, and will be clearly understood by the following further description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the roller. Fig. 2 is an end view. Fig. 3 is a detached section of the supporting-braces. Fig. 4 is a transverse section.

Like letters of reference refer to like parts in the several views.

In the drawings, A and B represent the heads of the wire cylinder or roller C. Said heads are made of metal, and are provided on their inner sides with a peripheral flange, D, and on their outer sides with journals E, on which the roller revolves. The flange alluded to is less in diameter than the heads of which they form a part, so that on placing the ends of the bars or ribs F thereon, as shown in Fig. 1, (and to which they are secured by soldering or otherwise,) said ends will be flush with the edge of the heads, thereby making a uniform surface to the roller.

The ribs are twenty-four in number, but may, however, be more or less, according to the size of the roller required. This circular series of ribs are, in part, supported interiorly by the rings G, to which they are soldered or otherwise made fast. The inner supporting device, however, consists of a series of struts or braces, H. Said series of braces are six in number, 1, 2, 3, &c., Fig. 4, either more or less, according to the size of the roller.

Each series of braces consists of a single piece of wire, or they may consist of small tubing; and instead of being of one entire piece, each series of braces may be composed of several lengths of wire or tubing. It is preferred, however, to construct the braces of one piece. Said piece is so bent as to form the oblique braces inclining lengthwise the roller. The length of each brace from the bend *a* to the bend *b*, Fig. 3, is such as to permit it to extend from the ribs F', Fig. 4, (to which they are respectively secured,) to the axial line of the roller, at which line the several braces are joined together, thereby mutually supporting and bracing each other along the sides of the axial line, forming braces and counter-braces for supporting the ribs to which the outer ends of the braces are secured, the intervening ribs, F, being supported by the rings.

It will be observed on examination of Fig. 4 that the oblique braces of the several series of braces radiate from the axis of the roller in the same diametrical line—that is to say, the oblique braces extending along on one side

of the axial line radiate in the same diametrical line as the braces along the opposite side of the said line; hence there is a direct abutment for each of the braces at the axial line counterbracing each other, thereby preventing an inward crushing or outward deflection of the ribs, as the braces are all united at the axial line.

The extreme ends of each of the series of braces are respectively secured, by soldering or otherwise, to the heads A and B. In view of the oblique position that the said ends hold in respect to the heads, the heads are firmly sustained in their relation to the ribs and braces, making the structure strong and substantial for supporting the weight of the roller and the journals on which it revolves.

A wire frame or roller constructed, as above described, without a shaft is not only light, but also of great strength, as the bracing adopted to strengthen and support the frame of the ribs is of the nature of a trestle-work, thereby making a strong and durable skeleton rotating trestle-structure on which to lay the wire-gauze for the exterior surface of the roller.

The above-said roller is more particularly described as being constructed of wire; but it, however, may be made of tubing in the event a lighter roller is needed. The described structure is especially intended for a dandy-roller for paper-machines; but it may be used for other purposes.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A shaftless dandy-roller for paper-machines, having heads provided, respectively, with journals forming a part of said heads,

and on which the roller revolves, and having on the inner side of said heads a circular flange, to which the ends of the ribs and braces of wire or tubing are respectively secured, forming a trestle-supported roller, substantially as described, and for the purpose specified.

2. In dandy-rollers for paper-machines, a series of braces, 1, 2, 3, &c., arranged within the said roller around the axial line thereof, or nearly so, and the inner ends of the oblique braces H concentrating in the axial line, and united thereat to each other, whereas the opposite or outer ends of the said braces radiate to the parallel ribs F' of the roller, forming a series of braces and counter-braces radially around the axial line of the roller, in the manner as described, and for the purpose set forth.

3. For paper-machines, the dandy-roller herein described, consisting of the flanged heads A and B, provided, respectively, with journals, ribs, rings, and trestle-braces arranged around the axial line of the roller, forming oblique braces radiating from and around said axial line to the ribs, constituting a wire or tubular-cylinder skeleton-roller, on which to place wire-gauze for the surface of the roller, substantially as and for the purpose specified.

4. A skeleton roller or cylinder having the braces or frame-work thereof constructed or made up of tubing, whereby the weight of the structure is diminished without impairing its strength, substantially as and for the purpose set forth.

WASHINGTON S. TYLER.

Witnesses:

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