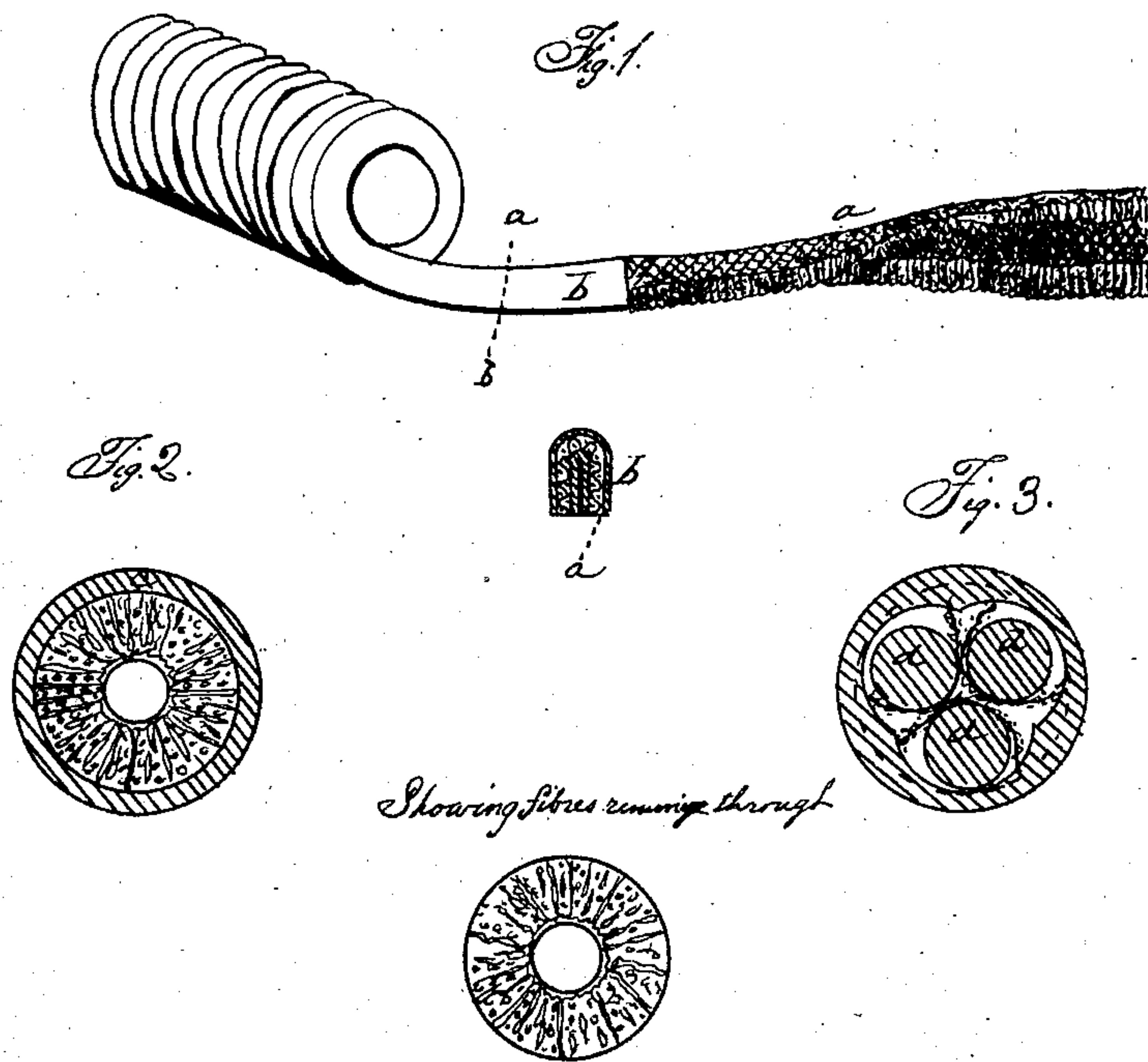


J. MOULTON.
MANUFACTURE OF ELASTIC ROLLS.



Showing fibres running through

Witnesses

W. B. Adams
Edward Griffith

Inventor
Joel Moulton

by his Attorney
Frederick Curtis

JOEL MOULTON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 75,292, dated March 10, 1868.

IMPROVEMENT IN THE MANUFACTURE OF ELASTIC ROLLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, JOEL MOULTON, of Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful Manufacture of Elastic Rolls for various purposes; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a perspective view of a partially-finished roll, showing different stages in its manufacture.

Figure 2 is a transverse section of a finished roll as made in accordance with my invention.

Figure 3 is a transverse section of a roll made as by my invention, and applied to its shaft in a peculiar manner, or as hereinafter referred to and explained.

The purpose of this invention is the production of an elastic roll for adaptation to clothes-wringers and various other purposes, which shall combine advantages not found in others now in use, its chief characteristics, as compared with others, being a body of firmer texture, and much more enduring qualities, and capability of being manufactured at less cost.

The invention consists in the employment of a woven webbing covered with India rubber, or other analogous gum, and wound spirally about an axis, and subsequently vulcanized, by which the webbing is saturated or permeated with the gum, and the whole made into a firm, compact mass, substantially as hereinafter explained.

In carrying out my invention, I take a strip, *a*, of stout woven webbing, about three-quarters of an inch in width, with its woof running transversely of its length, and I apply to one or both sides of this webbing a thin strip or sheet, *b*, of India rubber, of the same or about the same width as the webbing, and subsequently fold the two in the centre, as represented. I then wind this folded combined strip edgewise and spirally about an axis or rod of about the size of the shaft upon which the roll is to be finally fixed, the layers thus formed lying closely upon each other. I continue this winding until I form a roll of a length sufficient or more than sufficient for the finished roll. As the roll thus formed is rough or irregular upon its outer circumference or surface, I apply to such surface a cylinder or casing, *c*, of India rubber, in a comparatively highly-finished state, and subject the whole to the ordinary vulcanizing process, which causes the rubber to penetrate and saturate the webbing, and convert the whole into a compact and comparatively homogeneous mass, and one highly favorable for the purposes intended, as it combines much greater strength and tenacity than rolls heretofore made for the same purposes, while it possesses at the same time the requisite elasticity. As the fibres of the webbing run in a radial direction or thereabouts from the centre or inner circumference of the roll to or toward its outer surface, I obtain great tenacity and resistance to a radial as well as a circumferential strain without destroying or impairing its elastic properties, such properties being of the greatest importance in the use of such rolls as applied to clothes-wringers, printers' rolls, &c. The employment of the webbing with its filling in a radial direction from its centre outward, retains the roll in a firm unyielding position upon its shaft, thus obviating a great and almost insurmountable objection to the ordinary construction of these rolls, in which the soft, yielding nature of the rubber constantly causes it to slip and move about upon their shafts. It will be apparent that the roll thus formed need not necessarily have a hole through its centre, as it may be solid through its entire diameter.

Fig. 3 of the accompanying drawings shows a plan I have contemplated of preventing possibility of slipping of the roll upon its shaft, which consists in constructing such shaft between its journals in three parts *a d d*, or rods, and introducing the fibres between and about these rods, and subsequently applying about the whole a mass of rubber, and vulcanize it, thus rendering any slipping of such mass or roll about them impossible. In practice, however, this will probably not be found necessary or expedient.

I claim, as an improved manufacture, the elastic roll or tubing, made substantially as herein shown and described, that is, as composed of India rubber, or other analogous gum, and a suitable webbing, with the fibres of the latter radiating from the centre or about the centre of the roll outward, as explained.

JOEL MOULTON.

Witnesses:

C. W. BALDWIN,

FRED. CURTIS.