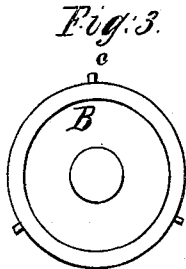
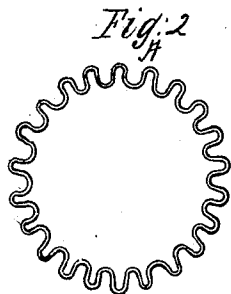
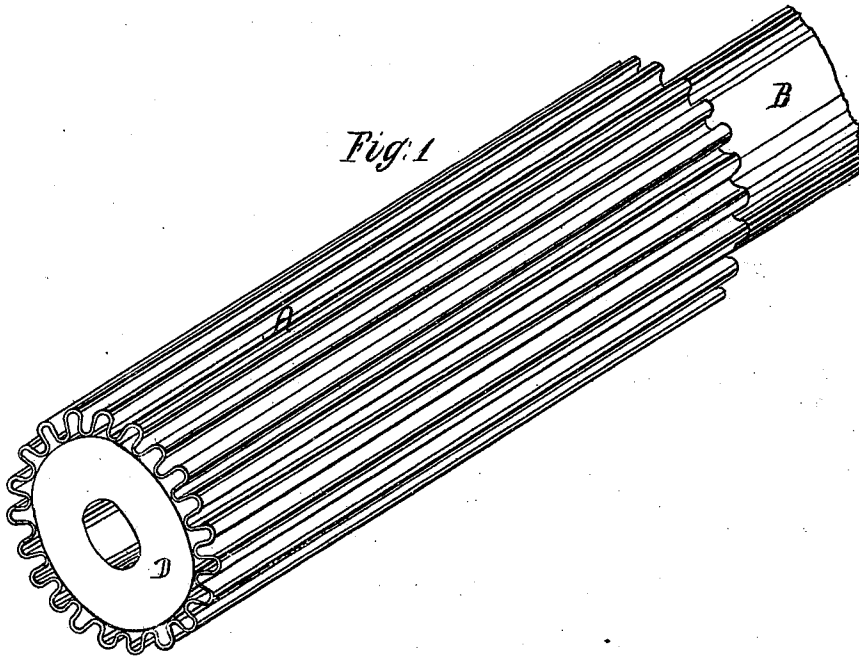


H. G. Pearson.

Fluting Roller.

N^o 98,103.

Patented Dec. 21, 1869.



Witnesses.

J. F. Beale
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HENRY G. PEARSON, OF NEW YORK, N. Y.

Letters Patent No. 98,103, dated December 21, 1869.

IMPROVEMENT IN ROLLERS FOR FLUTING-MACHINES

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

To all whom it may concern:

Be it known that I, HENRY G. PEARSON, of the city, county, and State of New York, have invented certain Improvements in Fluting-Rollers; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention, sufficient to enable those skilled in the art to practise it.

My invention relates to a novel mode of constructing fluting-rollers, adapted for machines which impart a fluted character to textile or similar goods, under the action of heat and pressure; and

It consists in forming the roller of sheet-metal, or thin tubing, and corrugating the same, and applying the same to the hollow mandrel, which is to give the revolution to the roller when in the machine, all as hereinafter described.

Heretofore, the rollers of fluting-machines have been made of cast-metal, the ribs or teeth having been cast integral therewith; and after being cast, they require to be finished upon their exterior surface, at considerable cost and labor, in order to give a smoothness, which is necessary to avoid cutting or injuring the fabrics to be operated upon, and which are sometimes of very delicate texture. It is also very desirable that there should be no sharp edges or angles upon the teeth. This finishing or filing away also wastes some of the material, (usually brass,) and to cast them, requires that each roller should have considerable thickness of material beneath its grooves, in order to insure sufficient strength.

Another mode of making such rollers, has been to cut the longitudinal flutes, by appropriate machinery, in the surface of a cast tube. This is still more expensive, and requires, also, much labor in smoothing and finishing.

Figure 1, of the drawings, illustrates my invention, and shows, in perspective, the sheet-metal corrugated tube or sleeve applied to the hollow mandrel which supports and carries it.

Figure 2 is an end view of the sleeve itself, and

Figure 3, an end view of the mandrel, as made when the sleeve is to be applied, so as to be readily removed.

The sleeve A, I make of thin metal, preferably of brass, and corrugate it, to give it its flutes, either in sheets, in any well-known manner, and afterward bend it into tubular form, and unite the edges; or, I take a tube of larger diameter than that of the finished roller, and first tapering down one end, so as to admit it between the drawing-rollers, which are to impart to it its corrugations, it is then passed between such rollers, emerging in the finished state; but the mode I deem the best, is to force the tube through a draw-plate, or a succession of draw-plates, in progressive

series. The whole exterior surface is thus made smooth and true, and free from any roughness or sharp edges, and needs no filing or finishing.

B is a hollow mandrel, made of appropriate size to receive and hold snugly the sleeve A, which is to be free to be readily slid on and off at any time, and it has, at suitable points thereon, one or more projections, C, each adapted to enter a groove of the sleeve or tube, to prevent the same from slipping during the revolution of the mandrel, and so that the two shall revolve as if they were one.

D is an end-piece or cap, affixed to one end of the mandrel B, its central opening serving as a means for securing the same to the revolving shaft of the machine; or the hollow mandrel may itself rest in bearings in the frame of the machine, and in such case, any pin or detent within the tube would serve the purpose of the piece D, to limit the position of the heating-iron.

My compound rollers may be applied in pairs in the fluting-machine, as usual.

Independently of the cheapness and simplicity of my mode of making the rollers, they have also other advantages, among which are the following:

Finer or coarser-teethed rollers may be substituted at a moment's notice, and with but slight expense, one machine thus answering the place of many, by merely changing the corrugated sleeve, and disturbing no other portion of the apparatus. The heat which may have been imparted to the mandrel is retained during this change, whilst to change the rollers of the usual construction, the substituted ones must be heated entirely anew.

The mandrel may be made of thin tubing, and thus the heat required is less, and is more easily imparted to the fluted sleeve; and the hollow flutes of the sleeve form chambers, to receive the heat, (and they may be closed at the ends, if desired.) The mandrel may also be perforated in lines with the flutes, or otherwise, and thus allow the heat from the heating-iron to pass more quickly and directly to the outer sleeve. In some cases, I fill the open spaces between the flutes and the mandrel with metal or composition.

The corrugated sleeve may be held to its mandrel by soldering, brazing, riveting, or in any way which will permanently hold them together, in cases where it is not important to have it removable.

I claim a roller for fluting-machines, composed of a tubular corrugated sleeve, applied to the hollow supporting-mandrel or shaft, substantially as set forth.

HENRY G. PEARSON.

Witnesses:

J. F. BEALE,

JOHN J. HALSTED.