

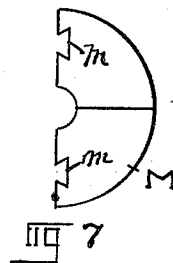
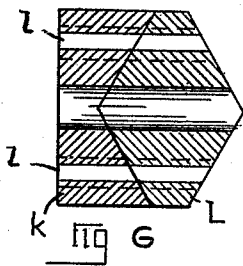
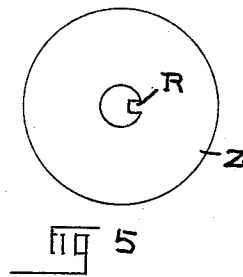
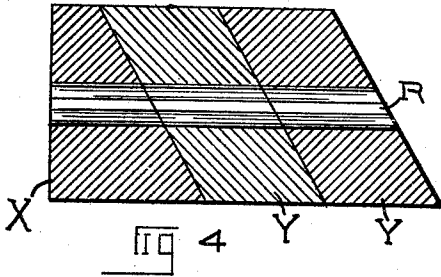
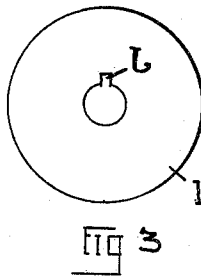
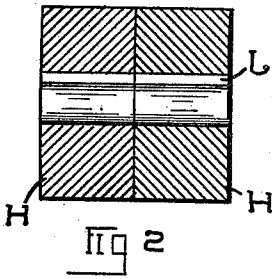
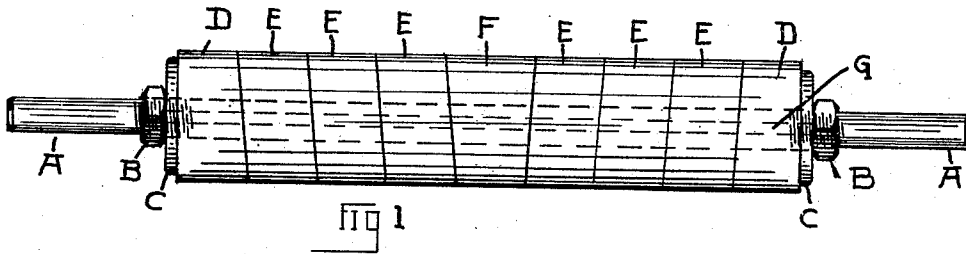
No. 691,011.

Patented Jan. 14, 1902.

W. E. SHEEHAN.
ROLLER FOR PAPER MAKING MACHINERY.

(Application filed July 15, 1901.)

(No Model.)



Witnesses.

Jessie Guardenier,
Lottie Prior.

Inventor.

William E. Sheehan.
By Ward Cameron,
attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM E. SHEEHAN, OF ALBANY, NEW YORK.

ROLLER FOR PAPER-MAKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 691,011, dated January 14, 1902.

Application filed July 15, 1901. Serial No. 68,448. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SHEEHAN, a citizen of the United States of America, and a resident of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Rollers for Paper-Making Machinery, of which the following is a specification.

My invention relates to rollers adapted to be used in machines for making paper; and the object of my invention is to provide a composite roller so constructed that it will resist a very great amount of friction and when worn may be cut down and made serviceable and will provide a continuous surface which may be brought in contact with the wet paper without causing the paper to be injured by the roller, together with such other improvements and devices as are hereinafter more particularly described, set forth, and claimed. I accomplish these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a section of a modified form of my invention. Fig. 3 is an end elevation of the modified form shown in Fig. 2. Fig. 4 is a section of a further modified form of my invention; Fig. 5, an end elevation of Fig. 4. Fig. 6 is a modified form of my invention. Fig. 7 is an end elevation of a modified form.

Similar letters refer to similar parts throughout the several views.

In the art of paper-making press-rollers are sometimes provided with an envelop of woven felt which extends from one end of the roller to the other. It is very difficult to place upon a roller, cylinder, or other device used in paper-making machines a jacket or envelop which will fit snugly at all points in contact with the core upon which it is placed. It is likely to become loose and drawn or give when pressure is placed upon the roller, and it wears unevenly and has to be soon removed. Woven felt, which is usually the material of which the envelop or jacket is constructed, when brought in contact with the wet paper after being worn some will mark and injure the paper and render the same unfit for use and impede the progress of the work. Pounded felt or wool material matted together when brought in contact with wet paper will not so

readily injure the paper, and for that reason and because of its greater durability I have constructed a roller composed of a series of sections placed together end to end upon a suitable spindle or shaft, with means for exerting pressure upon each end of a series of sections to hold them in contact under pressure. This will result in making a rigid roller and will prevent the sections from moving upon each other. In order to prevent a rotative movement of the sections upon the spindle or shaft, I have provided a means for causing the felt to adhere closely to the shaft by shrinking the same thereon. I also arrange a mechanical means for uniting the sections and the shaft, consisting of either keying them on or fastening them in any well-known manner.

Referring to the drawings, in Fig. 1 I show my composite roller made up of a series of sections D E F, in which the adjoining edges of the sections are beveled, so that the plane of the meeting faces shall not be at a right angle to the shaft. I preferably arrange a key-shaped section F, which may be placed, as shown in Fig. 1, midway between the ends of the roller or may be placed at either end. In building up this composite roller I make the sections of pounded felt or woolen material matted together, preferably soak it well with water, and preferably key or otherwise secure one by one the sections on the shaft A. I then place at each end of the roller thus formed the plate or flange C and a nut B. By screwing the nuts B against the plates C, the shaft being threaded to mesh with the threads on the nuts, I press the sections tightly, uniformly, and simultaneously from each end together, exerting such pressure upon them that it shall cause the roller to resist any pressure that may be brought transversely against it. Because of the adjoining sections arranged so that the plane of their meeting faces is not at right angles with the shaft when pressure is applied to the composite roller the opposite side of the roller is acted upon in such a manner as to press the adjoining sections together, for the reason that pressure on one side of any particular section of the roller will be exerted against an adjoining section on the opposite side of the roller. I then put the roller in a suitable lathe and turn it down

until the surface is uniform throughout. As thus constructed the roller is homogeneous, is shrunk tightly upon the shaft, is held securely in position there, is of such a nature
 5 that it will not injure the paper with which it is brought in contact, will resist successfully a great amount of friction, is inexpensive in its construction, simple in its manner
 10 of building, and performs every service to which it is put in a satisfactory manner.

When the roller has been worn, it can be turned down until its surface becomes uniform and again placed in the machine ready for use.

15 In Fig. 2 I show a section of two adjoining layers or sections H, in which the adjoining edges are at right angles to the shaft. The groove J is for the purpose of allowing the key on the shaft to hold the section securely
 20 in position.

In Fig. 4 I show a section in which the key-shaped layer or section X is placed at the end of the roller, and the adjoining sections Y Y are arranged with beveled edges and secured
 25 to the shaft by means of the spline R on each section entering the groove in the shaft.

In Fig. 6 I show a modified form of my invention in which the sections K and L are arranged so that the diamond-shaped section L
 30 will engage with the end section K at an angle with the shaft. In this connection I show a means for fastening the sections together by means of rods, (not shown,) which may be placed in the openings *l l*, extending through
 35 the roller from end to end.

In Fig. 7 I show an end view of a section M

to illustrate how semicircular sections may be dovetailed together at *m m*.

I do not wish to limit myself to any particular means or manner of constructing the contour of the meeting faces of the sections nor
 40 the particular means for securing the same together.

What I claim as my invention, and desire to secure by Letters Patent, is— 45

1. A composite roller adapted for use in paper-making machinery; consisting of a series of sections of pounded felt; a shaft upon which said sections are mounted end to end; a means at each end of said series for exerting
 50 uniform pressure thereon simultaneously.

2. A composite roller adapted for use in paper-making machinery, consisting of a shaft; a series of sections of pounded felt mounted thereon, and arranged for preventing said
 55 sections from marking the paper brought in contact with said roller; with a means at each end of said series for exerting uniform pressure thereon simultaneously.

3. In paper-making machinery, a roller consisting of a shaft; a series of sections of pounded felt mounted thereon; said sections so constructed that when brought in contact with the wet paper they will not mark the
 60 same, substantially as described. 65

Signed at Albany, New York, this 12th day of July, 1901.

WILLIAM E. SHEEHAN.

Witnesses:

FREDERICK W. CAMERON,
 LOTTIE PRIOR.