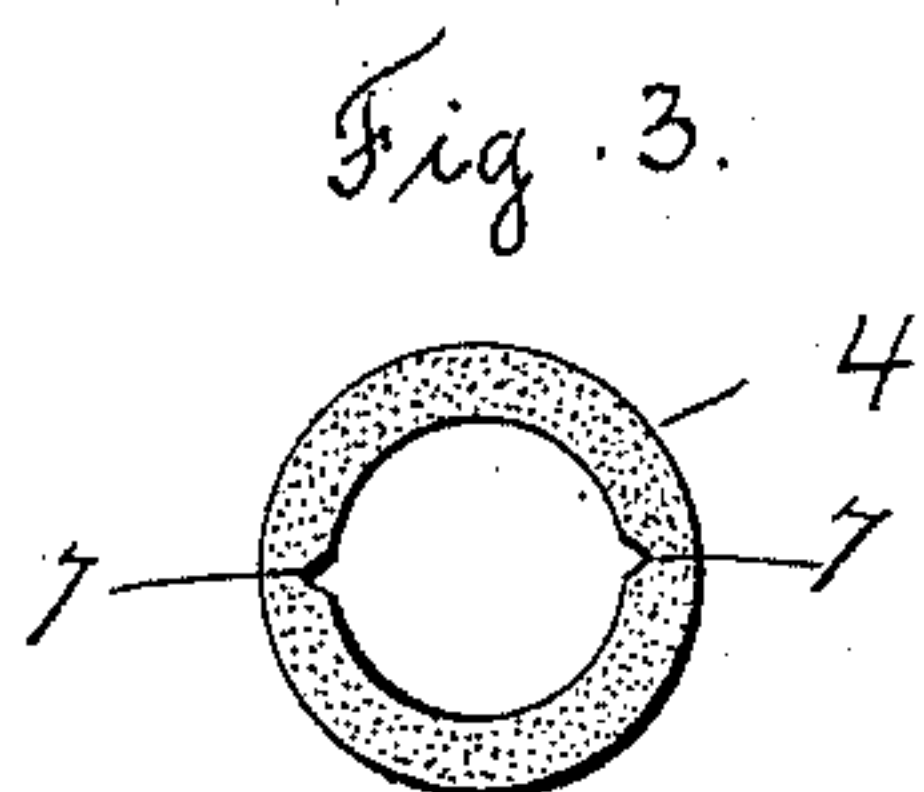
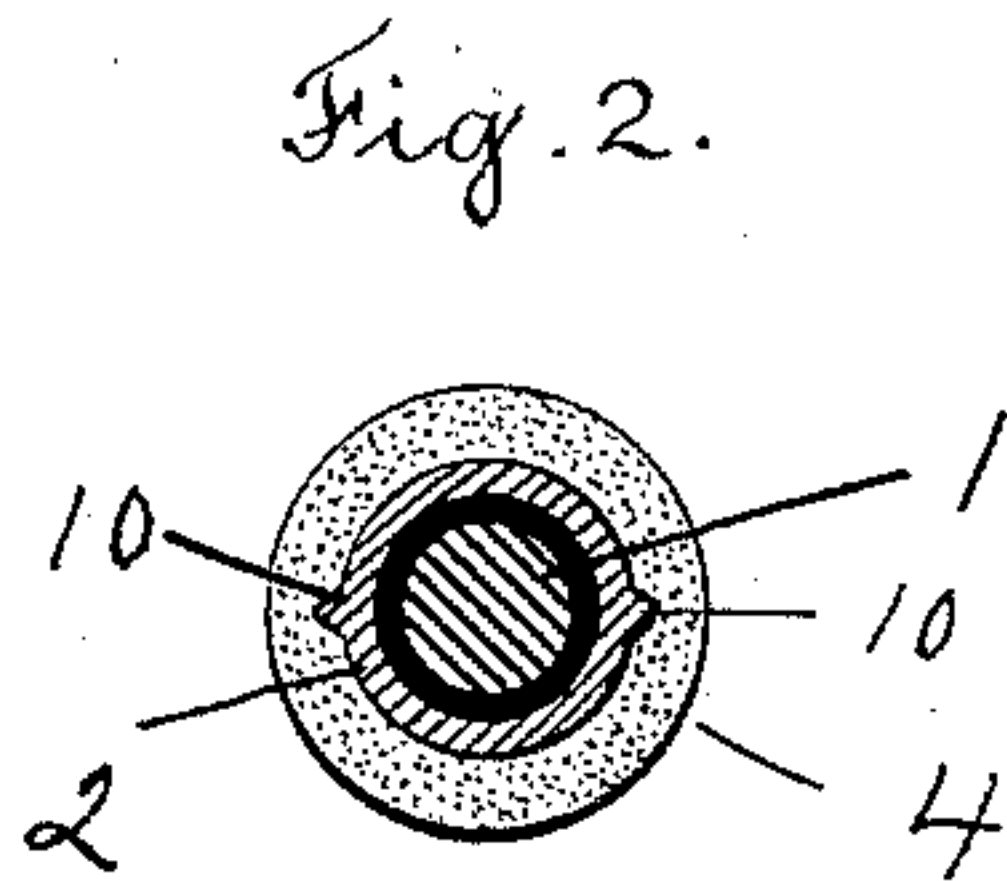
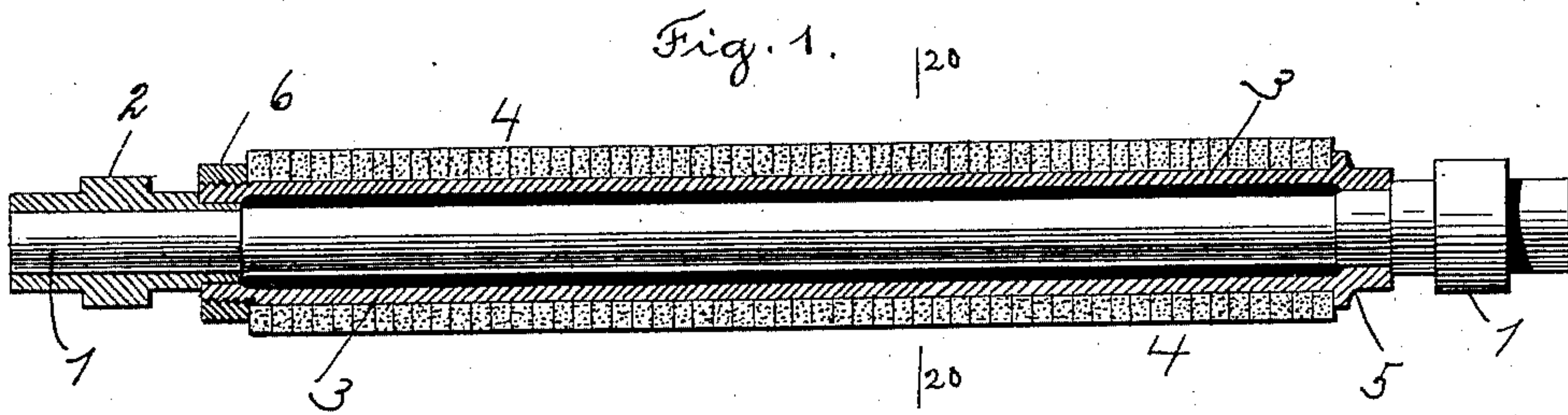


(No Model.)

A. A. ANDREWS.
TOP ROLL.

No. 474,204.

Patented May 3, 1892.



Witnesses

J. J. Rafferty

Herbert M. Litch

Inventor

Albert A. Andrews

By his Attorney

Louis W. Southgate

UNITED STATES PATENT OFFICE.

ALBERT A. ANDREWS, OF WHITINSVILLE, MASSACHUSETTS.

TOP ROLL.

SPECIFICATION forming part of Letters Patent No. 474,204, dated May 3, 1892.

Application filed February 15, 1892. Serial No. 421,559. (No model.)

To all whom it may concern:

Be it known that I, ALBERT A. ANDREWS, a citizen of the United States, residing at Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Top Rolls, of which the following is a specification.

The aim of this invention is to improve the construction shown in my patent, No. 455,434, of July 7, 1891; and to that end the invention consists of the device described and claimed in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation. Fig. 2 is a cross-section on line 20 20 of Fig. 1, and Fig. 3 is an end view of one of the washers.

In detail, 1 represents the arbor, 2 the arbor-sleeve, and 3 the shell. On this shell are placed a number of leather washers 4, which are clamped between the collar 5 on the shell 4 by a nut 6. It has been found desirable in practice to key the washers to the shell to prevent them from turning or slipping, and I do this by stamping out the washers 4 with one or more pointed notches 7 and on the outside of the shell forming one or more keys, as 10, adapted to the notches in the washers. The way I preferably form these keys is to cast or make the same integral with the shell. This does away with any machining on the shell on the outside and greatly cheapens the manufacture. I preferably use two keys, as shown, diametrically opposite to each other, so as to securely hold the washers. Then all that has to be done to the shell is to bore the

ends and form the thread for the nut 6. The washers are slipped on endwise and clamped in place by the nut or collar 6, and are then turned off to form a smooth surface. The keys in the shell will keep the washers from turning, and the construction or the addition of the same, as before described, does not add to the cost.

The construction herein shown and described may be varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

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

1. In a top roll, the combination of the shell having a key formed integral therewith and a series of leather washers mounted on said shell and having notches to engage said key, and means to clamp said washers in place, substantially as described.

2. In a top roll, the combination of the shell having two keys, diametrically opposite, formed integrally therewith, and a series of leather washers mounted on said shell and having notches to engage said keys, and means, as nut 6, for clamping said washers, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALBERT A. ANDREWS.

Witnesses:

JAMES J. RAFFERTY,
LOUIS W. SOUTHGATE.