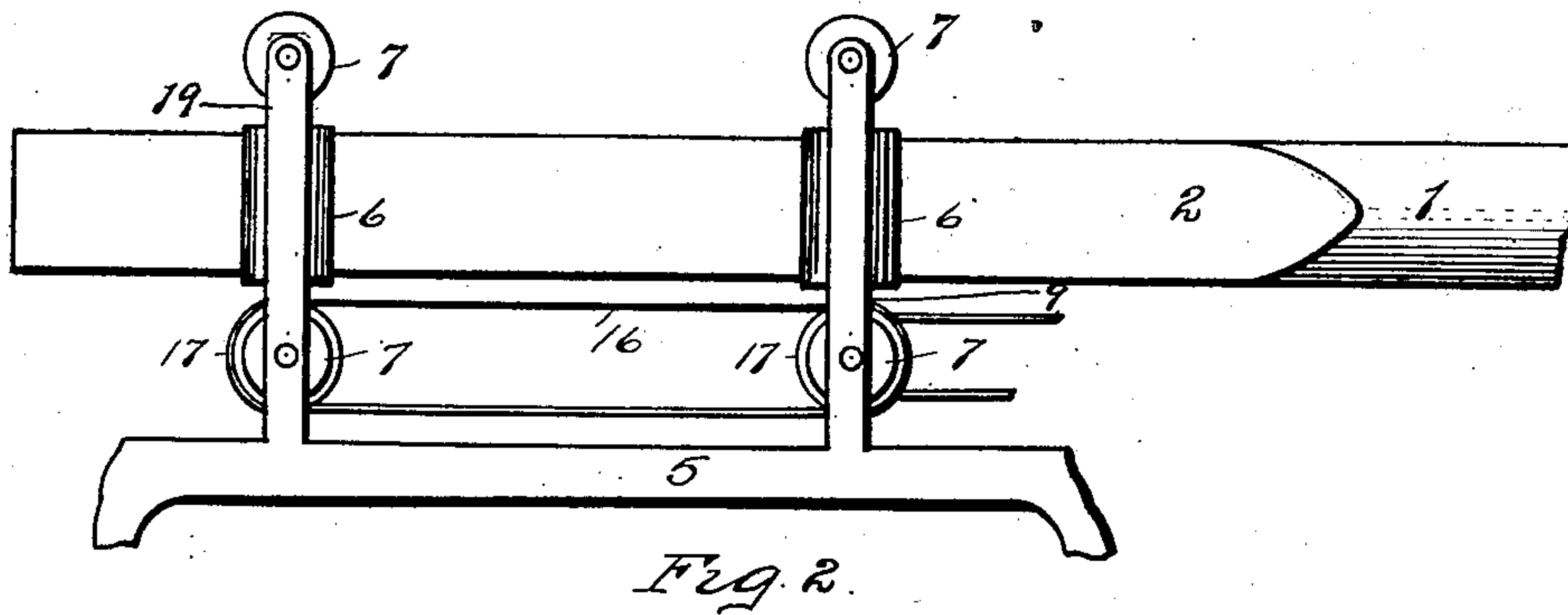
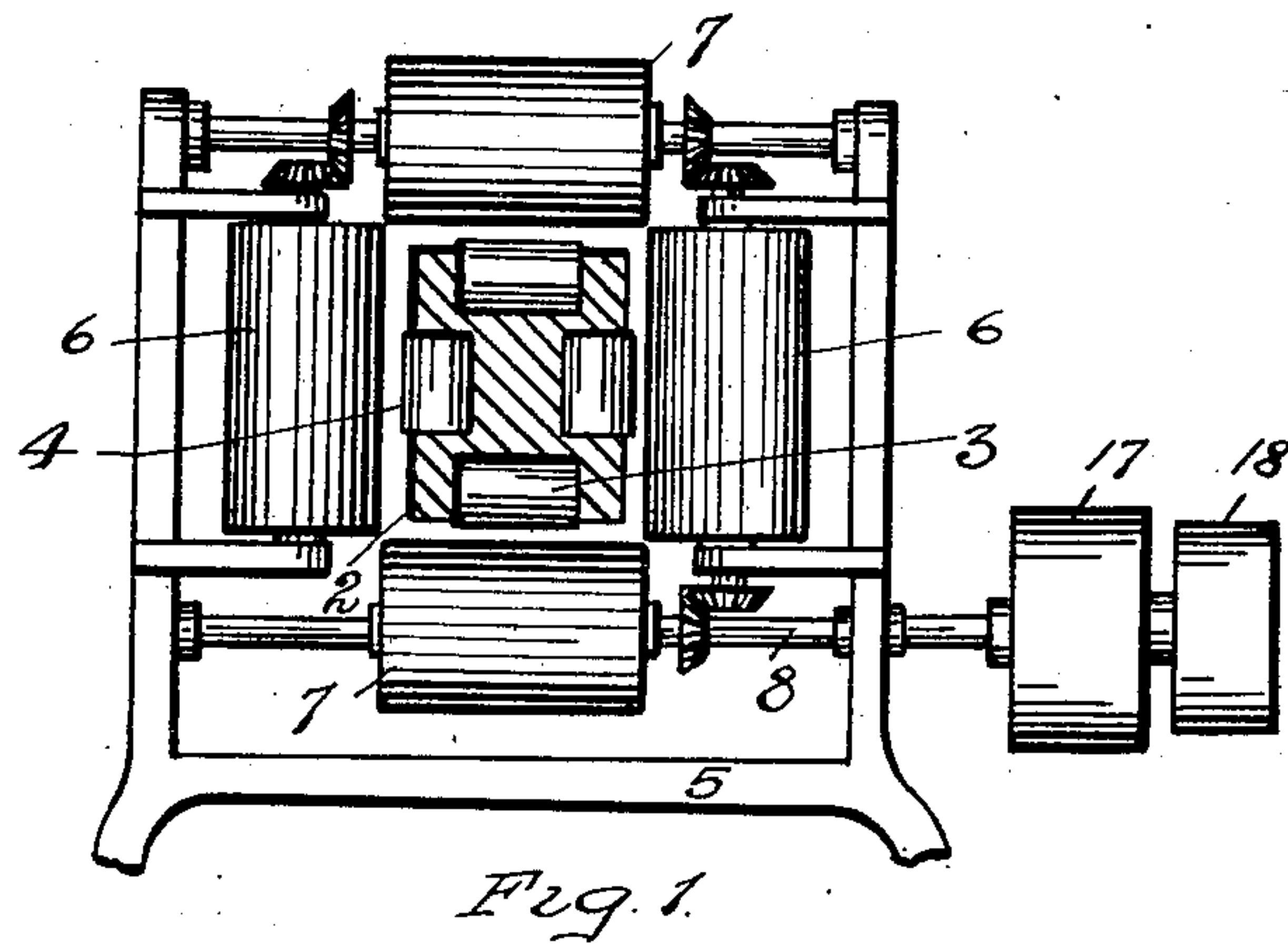


T. S. NEAL.
MACHINE FOR SHAPING PAPER TUBES.
APPLICATION FILED JUNE 21, 1909.

969,555.

Patented Sept. 6, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS S. NEAL, OF DETROIT, MICHIGAN.

MACHINE FOR SHAPING PAPER TUBES.

969,555.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed June 21, 1909. Serial No. 503,298.

To all whom it may concern:

Be it known that I, THOMAS S. NEAL, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Machines for Shaping Paper Tubes, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to shaping machines for paper tubes.

It has for its object an improved shaping device adapted to square up or bring to a prismatic shape a paper tube that has been wound on a round mandrel.

In the drawings:—Figure 1, is a cross-section of a rectangular mandrel with external shaping rolls shown in elevation. Fig. 2, is a side elevation of the entire shaper.

The round mandrel 1 of a standard tube-forming machine has connected with it as an extension a prismatic mandrel 2. The prismatic mandrel 2 is provided at suitable intervals with cavities in which are journaled small rollers 3 and 4; these are so located in the prismatic mandrel that the outer run of the periphery of each roller is substantially in the plane of its proper side of the prismatic mandrel. A frame 5 constituting a base for operative machinery is suitably located under the extension mandrel 2, is provided with vertical posts 9 and 19, on each of which are brackets extending inward and supporting a pressure roller on an axis parallel to the post. The posts on opposite sides are connected by shafts on which there are other rollers. Where the mandrel is rectangular, as is shown in the present drawing, two vertical rollers 6 and two horizontal rollers 7 having their axes in the same plane transversely of the mandrel and geared together, so that all of the rollers may be driven from a single master shaft by master wheel 18, constitute the external means of producing the necessary

pressure to transform the round tube into a prismatic tube. A prismatic core 2 with its bearing rollers 3 and 4 constitutes the internal shaper for forming the prismatic tube. The periphery around the prismatic tube should be substantially equal to the circumference of the round mandrel upon which the tube is originally made. Preferably, the external rolls 6 and 7 and the internal rolls 3 and 4 have the axes of their shafts in the same transverse plane, and the external rolls not only shape but drive forward the tube under construction.

For long tubes a second set of internal bearing rolls and a second set of external pressure rolls are provided carried on the same frame 5; the second external pressure rolls are driven by a driving pulley belted as shown by the part 16 in Fig. 2 to the transmission pulley 17 of the first set.

What I claim is:—

1. In combination with the mandrel of a tube-forming machine, a prismatic mandrel connected therewith as an extension, bearing rolls in cavities in said extension mandrel, a pressure roll opposite each face of the prismatic mandrel forming an external pressure bearing, the said several external pressure rolls having their axes in a single plane, and the said internal bearing rolls having their axes in the same plane, substantially as described.

2. A means for shaping to prismatic form an ordinary round tube comprising a round mandrel a prismatic mandrel forming an extension thereof, a plurality of pressure rolls located in the same plane around said prismatic mandrel and a plurality of bearing rolls in cavities in the prismatic mandrel and having their axes located in the same plane with the axes of the pressure rolls, and means for actuating said pressure rolls, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

THOMAS S. NEAL.

Witnesses:

VIRGINIA C. SPRATT,
ELLIOTT J. STODDARD.