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C. J. NOLAN.

TUBE FORMING APPARATUS.

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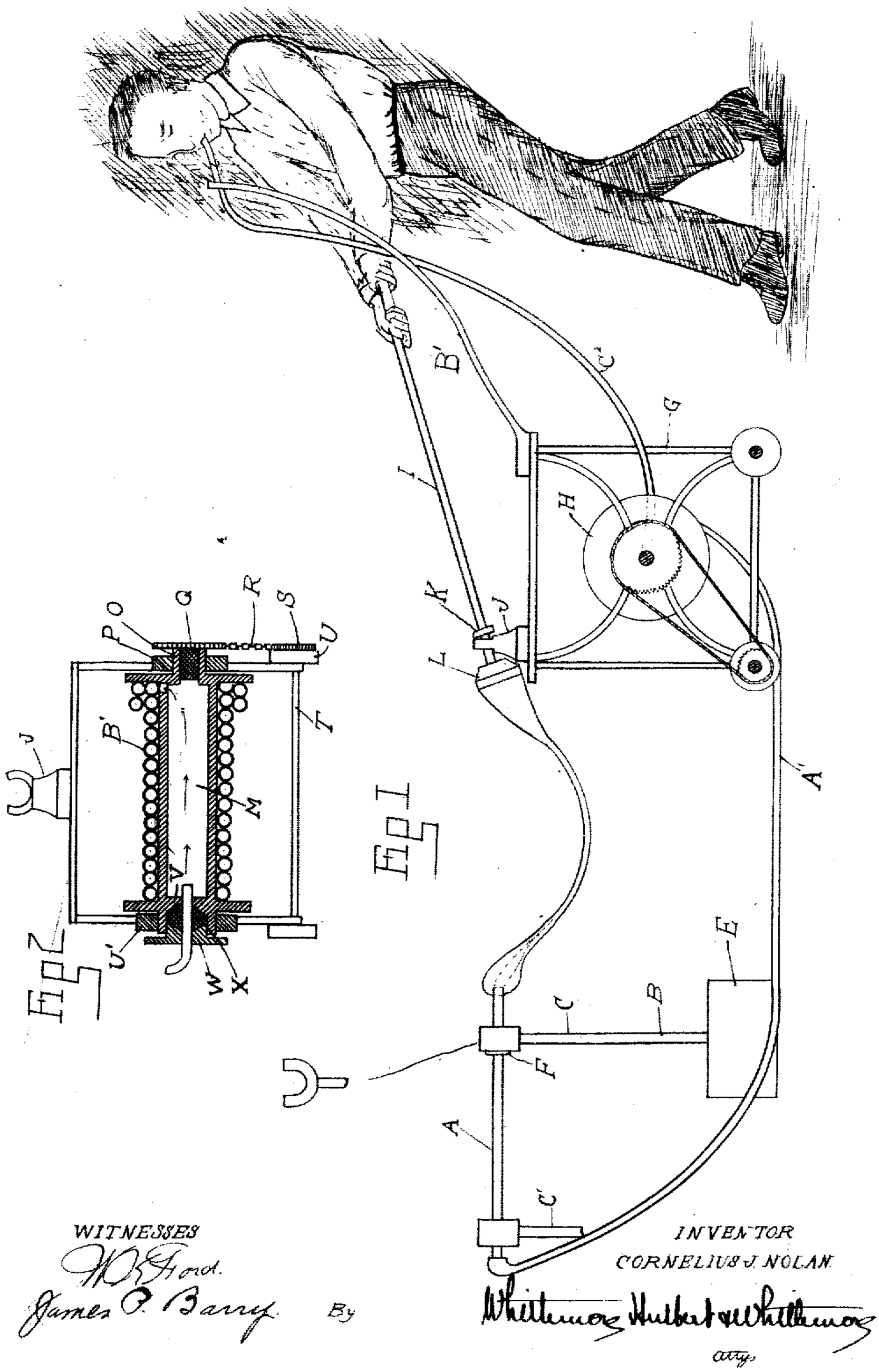

FIG 1

FIG 2

WITNESSES

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TUBE-FORMING APPARATUS.

No. 865,517. Specification of Letters Patent. Patented Sept. 10, 1907.

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To all whom it may concern:

Be it known that I, CORNELIUS J. NOLAN, a citizen of the United States of America, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Tube-Forming Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to an apparatus for forming glass tubes, and consists in the construction of the mechanism whereby the drawing of the glass into the desired size for the tube and the blowing of the glass into tubular form may be performed by a single person.

The invention further consists in the peculiar construction, arrangement and combination of the parts of the apparatus, as more fully hereinafter described.

In the drawings, Figure 1 is a view in side elevation of the tube-forming mechanism; and Fig. 2 is a section through the reel forming a part of the traveling support.

In the drawings thus briefly described, A represents a blow-pipe of ordinary construction detachably mounted on a suitable support B. In this instance the support is composed of two uprights C and C', forked at their upper ends to receive the blow-pipe and mounted upon base sections of any suitable character, as E. A collar F is provided for the blow-pipe adapted to bear against the end of the standard C, and serves to prevent during the operation of drawing the displacement of the blow-pipe from its support.

G represents a traveling support, upon which is mounted for rotary movement a reel H, and I is a drawing-iron or rod of the usual construction detachably mounted in a forked bearing J fixed to the traveling support, as indicated. The iron is provided with a collar K bearing against one side of its forked support, and with the usual head L.

The reel is constructed with a hollow shaft M, one end of which is closed and carries an extension O journaled in a suitable central bearing P upon the supporting frame. Q is a sprocket-wheel secured to the extension O, connected by a sprocket-chain R to a sprocket-wheel S fixed upon the shaft T, upon which are also mounted the forward wheels U of the traveling support. The opposite end of the reel shaft extends through a central bearing U, and is provided with an annular shoulder V and a gland W, between which is placed suitable packing X, forming a suitable stuffing-box.

A' represents a conduit, a section of which is adapted to be wound upon the reel, while the ends are respectively supported upon the traveling carriage or support and connected to the end B' of the blow-pipe. The conduit is preferably formed in sections, one section B' being wound upon the reel and having communication with the hollow shaft, and its opposite end communicating with the blow-pipe, as described, and a second section C', which may be either flexible or rigid as desired, one end of which is supported upon the upper end of an upright or arm B' secured to the traveling carriage, while the opposite end extends within the stuffing-box.

In forming the tube, a quantity of glass is gathered upon the end of the blow-pipe in the usual manner, and the latter arranged upon its support, with the collar F adjoining and contacting with the upright or standard C. The end of the conduit is then secured to the blow-pipe, and the traveling carrier or support moved into adjacence to the blow-pipe until the head L of the drawing-iron contacts with the glass and the latter adheres thereto. The traveling support is then moved away from the blow-pipe by the operator, thus drawing the glass into the desired size for the tube, and at the same time the operator forms the tubing by blowing through the conduit and the blow-pipe during the operation of drawing. During the travel of the movable support away from the blow-pipe, the conduit is paid out the desired amount through the drive connection between the reel and the support wheels, and upon the return movement of the carriage the conduit is wound upon the reel, leaving the latter in readiness to be used for forming the next length of tubing.

What I claim as my invention is,—

1. In a tube-forming mechanism, the combination with a blowing member, of a drawing member, and a conduit between said members having one end connected to the blowing member and its opposite end free and arranged in operative relation to the drawing member.

2. In a tube-forming mechanism, the combination with a blow-pipe, of a relatively movable drawing-rod, and a flexible conduit communicating with the blow-pipe at one end and having its opposite end free and supported in adjacence to the rod.

3. In tube-forming mechanism, the combination with a support, of a blow-pipe detachably mounted thereon, a drawing-iron or rod, a traveling support for the rod, and a flexible conduit having one end free and mounted upon the traveling support and communicating at its opposite end with the blow-pipe.

4. In tube-forming mechanism, the combination with a blow-pipe, of a traveling support, a drawing rod, and a reel mounted thereon, and a flexible conduit wound upon the reel having one end mounted upon the support and its opposite end connected with the blow-pipe.

5. In tube-forming mechanism, the combination with a suitable support and a blow-pipe mounted thereon, of a wheeled support in operative relation to the pipe, a drawing rod and a reel thereon, a drive connection between said reel and one of the support wheels, and a flexible conduit mounted at one end upon said latter support, communicating at its opposite end with the blow-pipe and having a section wound upon the reel.

In testimony whereof I affix my signature in presence of two witnesses.

CORNELIUS J. NOLAN.

Witnesses:
F. E. WHITMORE,
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