

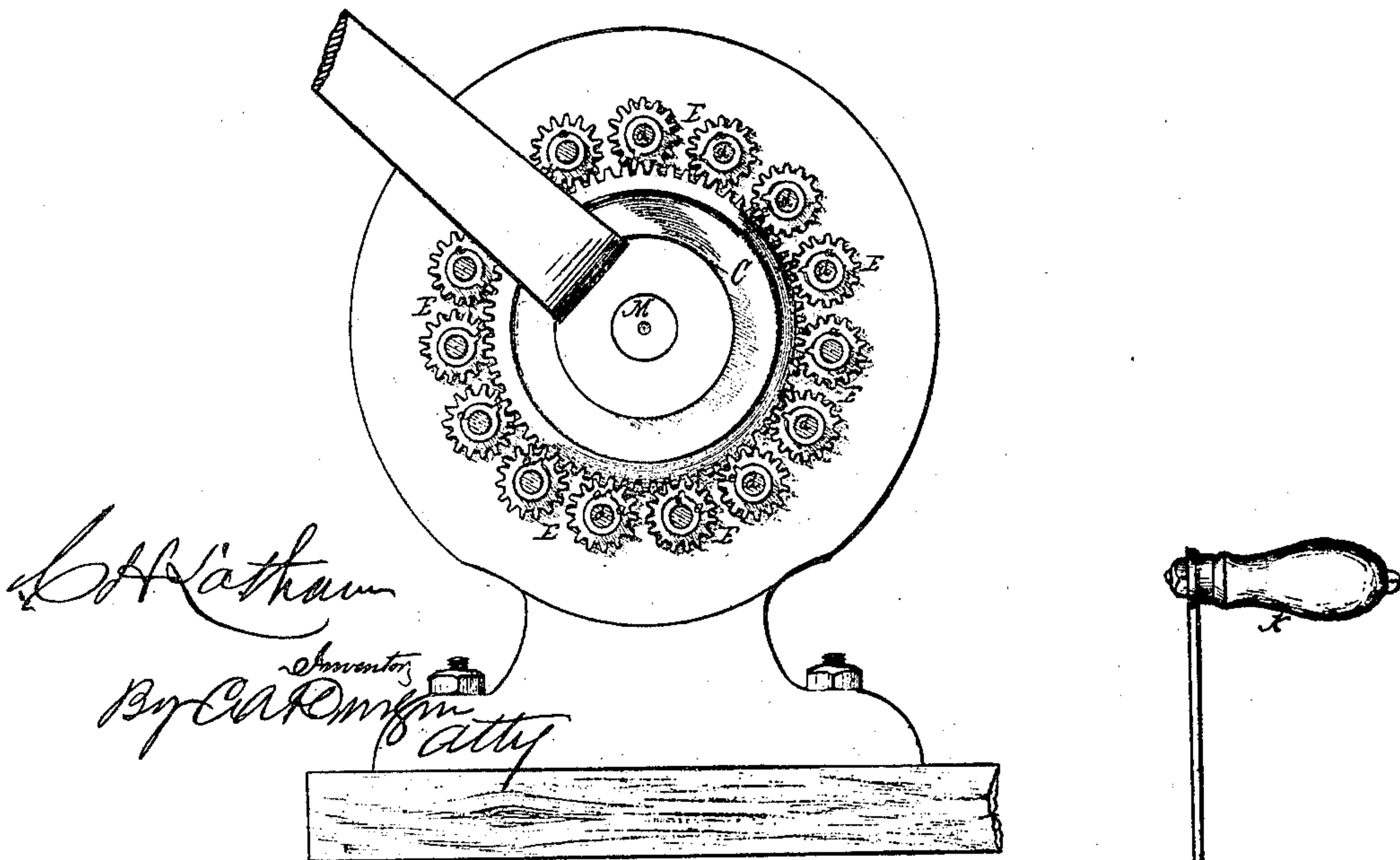
C. W. Latham,

2. Sheets, Sheet 1.

Forming Wire Cylinders.

No. 113,779.

Patented Apr. 18. 1871.

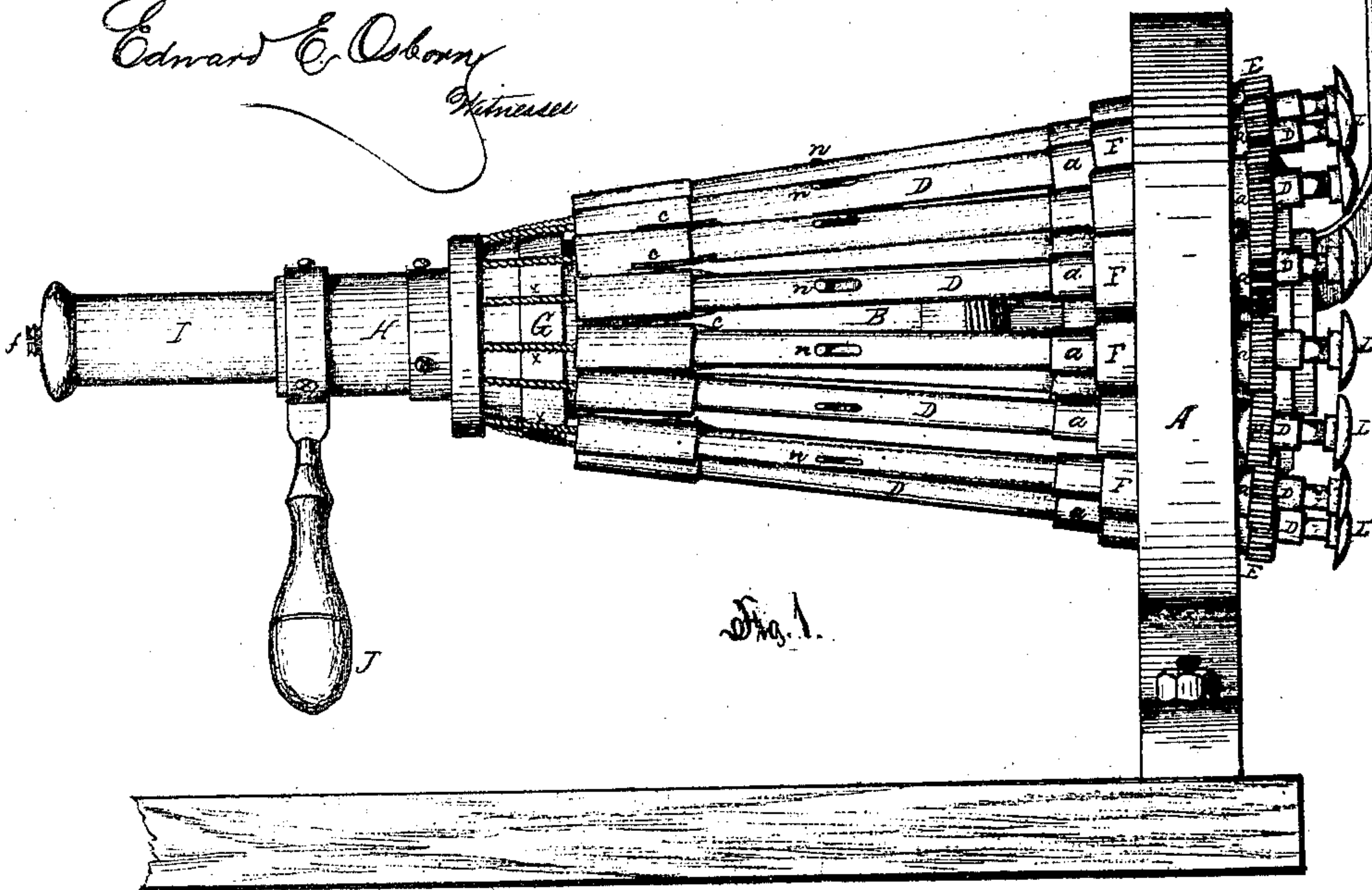


R. H. Manners

Fig. 2.

Edward C. Osborn

Witness



G. W. Latham,

2. Sheets, Sheet 2.

Forming Wire Cylinders.

No. 113779.

Patented Apr. 18. 1891.

Fig 9

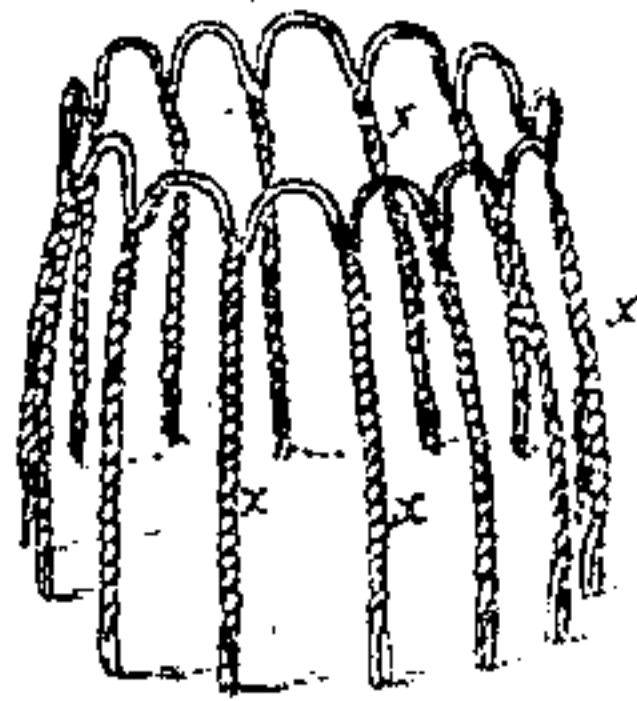


Fig 10.

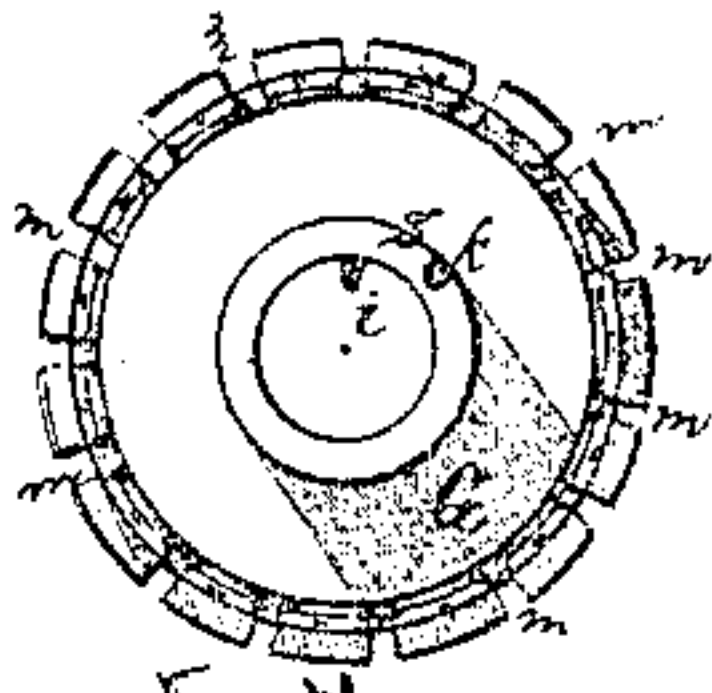
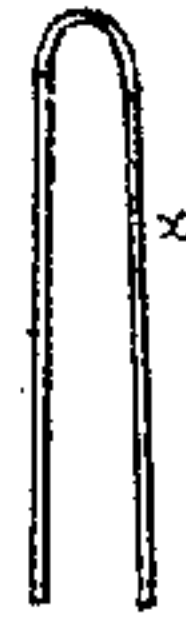


Fig 1.

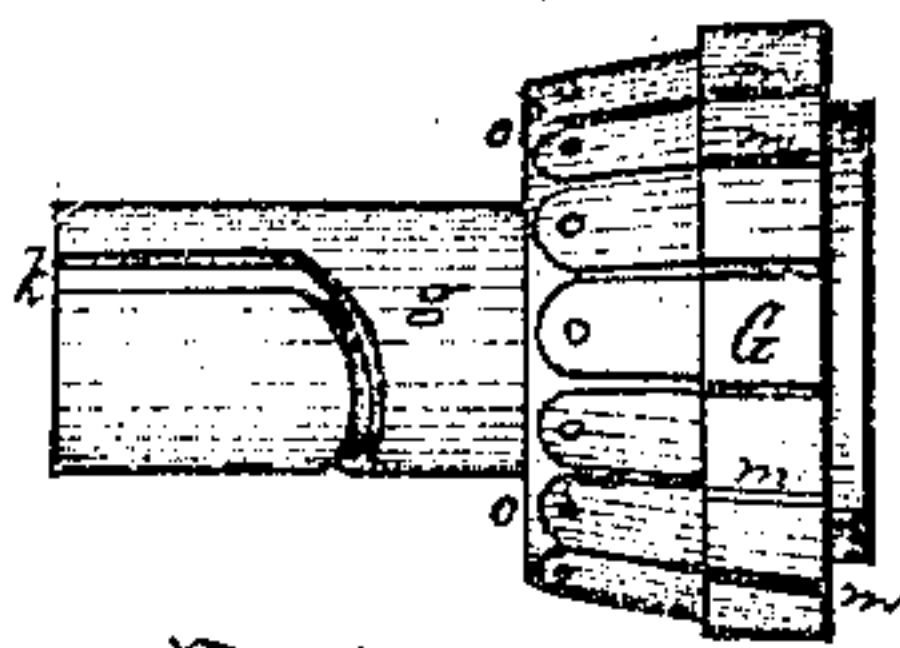


Fig 6

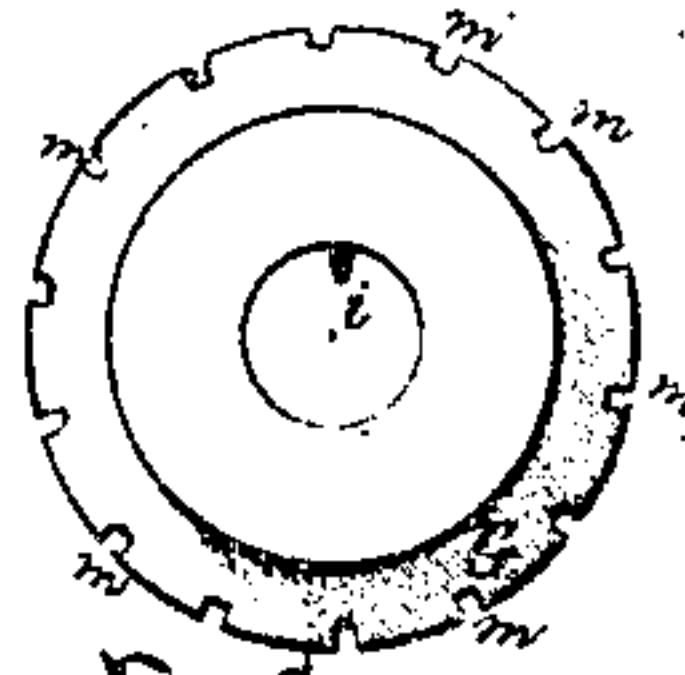
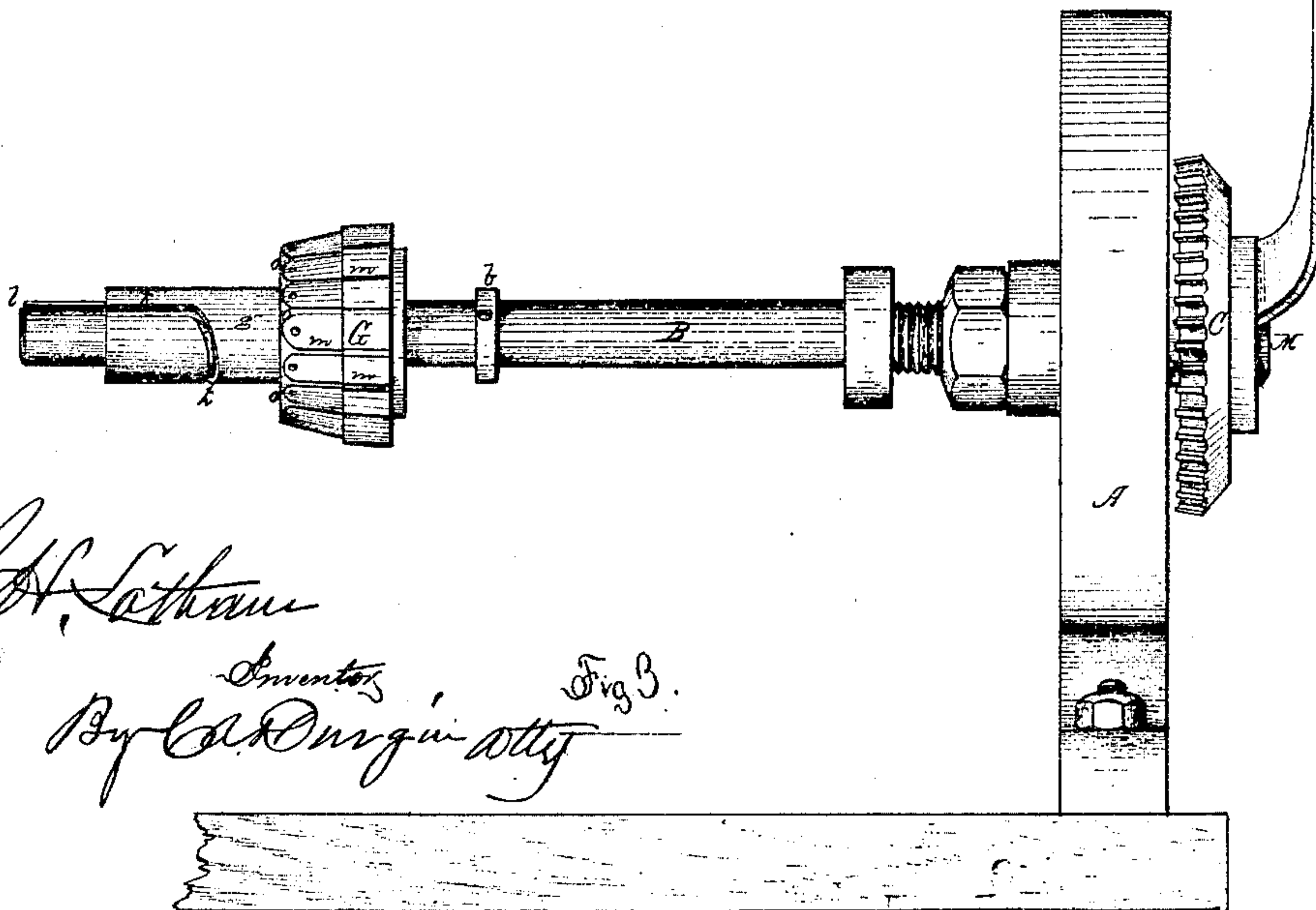


Fig 8



G. W. Latham

Inventor

Fig 3.

By C. D. Osborn atty

R. H. Manners

Witnesses.

Edward C. Osborn

Fig 4

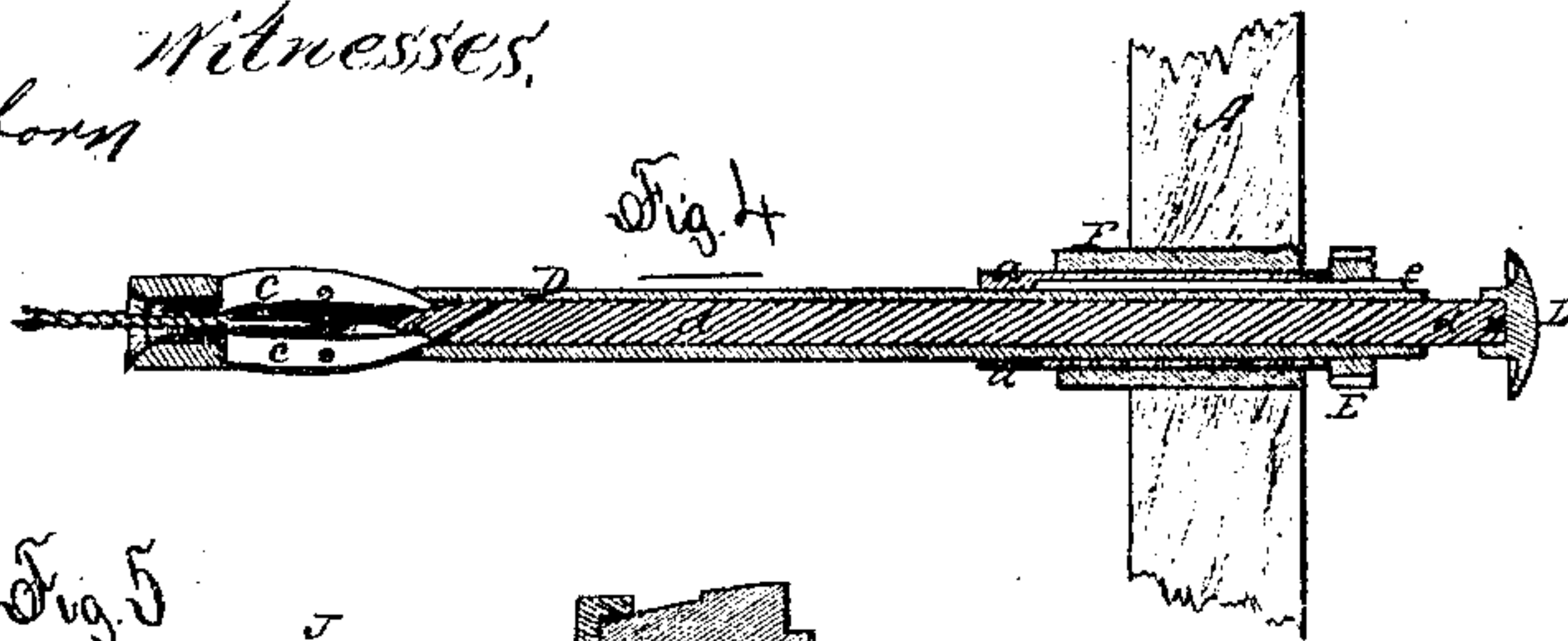
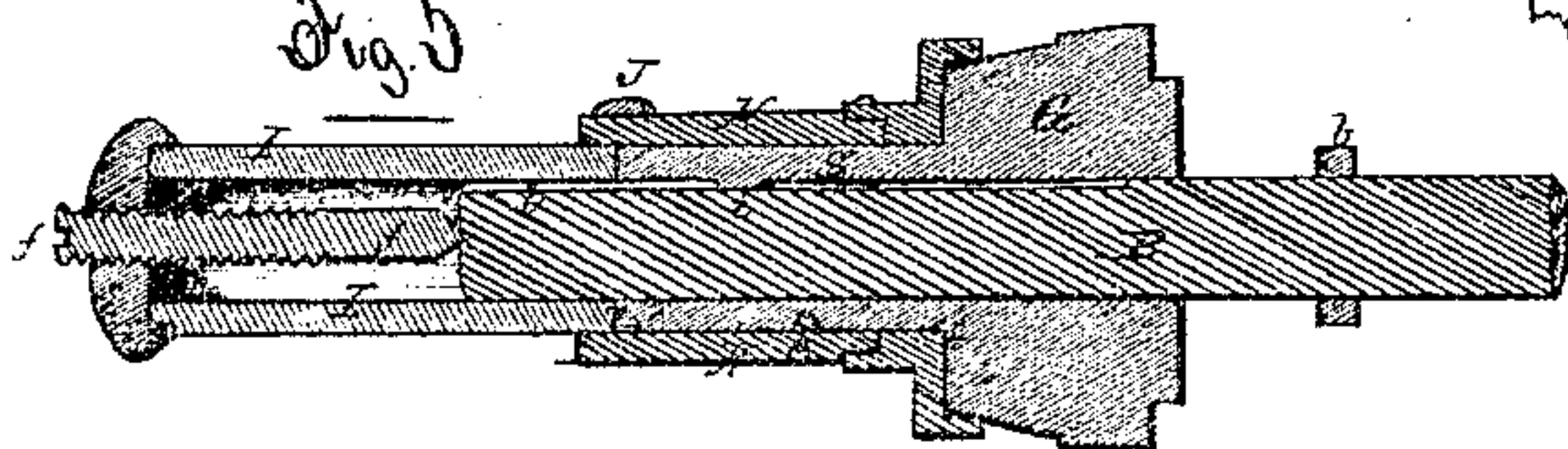


Fig 5





# UNITED STATES PATENT OFFICE.

CYRUS H. LATHAM, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR MAKING WIRE CYLINDERS.

Specification forming part of Letters Patent No. 113,779, dated April 18, 1871.

I, CYRUS H. LATHAM, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Machine for Forming Wire Cylinders, to be used in constructing cups, baskets, &c., of which the following is a specification:

### *Nature and Objects of the Invention.*

My invention relates to the construction of what I call "twisted-wire cylinders," which are formed of pieces of wire bent to the proper shape, and twisted together in the manner hereinafter described; and it has for its object the production of these cylinders in such sizes and shapes that they can be used in the manufacture of cups for holding castor-bottles, fruit, cake, and other baskets, holders for glasses, &c.

### *Description of the Drawing.*

Figure 1 is a side elevation of my machine. Fig. 2 is an end view from the right-hand side of Fig. 1. Fig. 3 is a view of the frame and supporting-mandrel. Fig. 4 is a longitudinal section of one of the revolving mandrels; Fig. 5 is a longitudinal section through the former G and the central mandrel. Figs. 6, 7, and 8 are views of the former G. Fig. 9 is a view of a cylinder complete after being removed from the machine; and Fig. 10 illustrates the form of the wires of which the cylinders are composed.

### *General Description.*

The upright plate A, bolted to the table, constitutes the frame of the machine. It supports at its center the stationary mandrel B, and is bored to receive the revolving mandrels D. The central mandrel is held at right angles to the frame, and the revolving mandrels are arranged in a conical form around it. The revolving mandrels are driven by the pinions E on the collars a, which mesh with the central gear, C, on the shaft M, and each mandrel is provided with a feather, e, which slides in a groove in the collar a, so that the ends of the mandrels that seize the wires may be adjusted to form a circle of greater or lesser diameter, according to the distance the mandrels are moved in the collars a. The mandrels and collars revolve in the bearings F in

the frame. The spindles d, which slide in the mandrels D, operate to close the levers c against the ends of the wires, in order to hold them securely during the operation of twisting. The extent of motion of each spindle is governed by a pin, n, working in a slot in the mandrel. The ends of the mandrels are cupped out to facilitate the insertion of the ends of the wires. The former G is bored to fit and slide upon the mandrel B, and its outer face is made of a conical shape, with a series of grooves to receive and hold the wires to be twisted. A pin, i, in the inner face slides in a groove, l, in the mandrel B, so that the former G is prevented from turning out of place, and the ends of the wires are always presented in proper position to the revolving mandrels.

In order to hold the wires properly on the former, a cap, H, is arranged to slide upon the tube g—a part of the former—and fit over the end, so as to embrace the curved ends of the wires, and hold them in the grooves m. A pin, h, in the inner face of the cap H, slides in the cam-groove k, so that as the handle J is forced down the cap will be pressed and held against the former.

The cap I serves as a gage to regulate the position of the former G when first placed upon the mandrel. It is provided with a screw, f, so arranged that it governs the distance of the end of the cap from the end of the mandrel.

When the cap I is in position on the mandrel, and the end g of the former G is brought up against it, as shown in Fig. 5, the ends of the wires on the former will be inserted the proper distance in the revolving mandrels to be seized by the levers c. The travel of the former on the mandrel is governed by the adjustable collar b, held in place on the mandrel by a set-screw.

When the wires x, Fig. 10, are laid in the grooves m, a rubber band is slipped over them around the former, to hold them temporarily in place until the former is placed on the mandrel B and the cap H brought into position to hold them.

The flange of the cap H serves to hold the curved ends of the wires in place against the circular edges o on the former, so that the wires, during the operation of twisting, will

be drawn against the curves *o* and receive the proper shape.

After the former is adjusted on the mandrel B by means of the cap I, as before described, the spindles *a* are driven forward to close the levers *c*, and the machine is ready to be operated.

By turning the handle K the wires *x* will be twisted and the mandrel G drawn forward on the mandrel until it strikes against the collar *b* and arrests the motion of the machine.

In the operation of this machine several formers, G, may be filled with wires and placed at hand for convenience, a filled one being placed in the machine as the one with the completed cylinder is removed.

After the cylinders, Fig. 9, are removed from the machine they are shaped by dies or otherwise for their intended purpose.

*Claims.*

I claim as my invention—

1. The combination of the following elements: a supporting-mandrel, B, a holder or former, G, and a series of revolving mandrels, D, constructed, arranged, and operating substantially as described and specified.

2. The combination, with the revolving mandrels D, of the mechanism, or equivalent thereof, for clamping the wires to be twisted, substantially as described and specified.

3. The combination, with the former G, of the flanged cap H, or its equivalent, for covering and holding the curved ends of the wires *x*, substantially as described and specified.

4. The herein-described machine for making twisted-wire cylinders, constructed, arranged, and operating substantially as described and specified.

CYRUS H. LATHAM.

Witnesses:

L. A. MCARTHUR,  
H. F. SLOCUM.