

(No Model.)

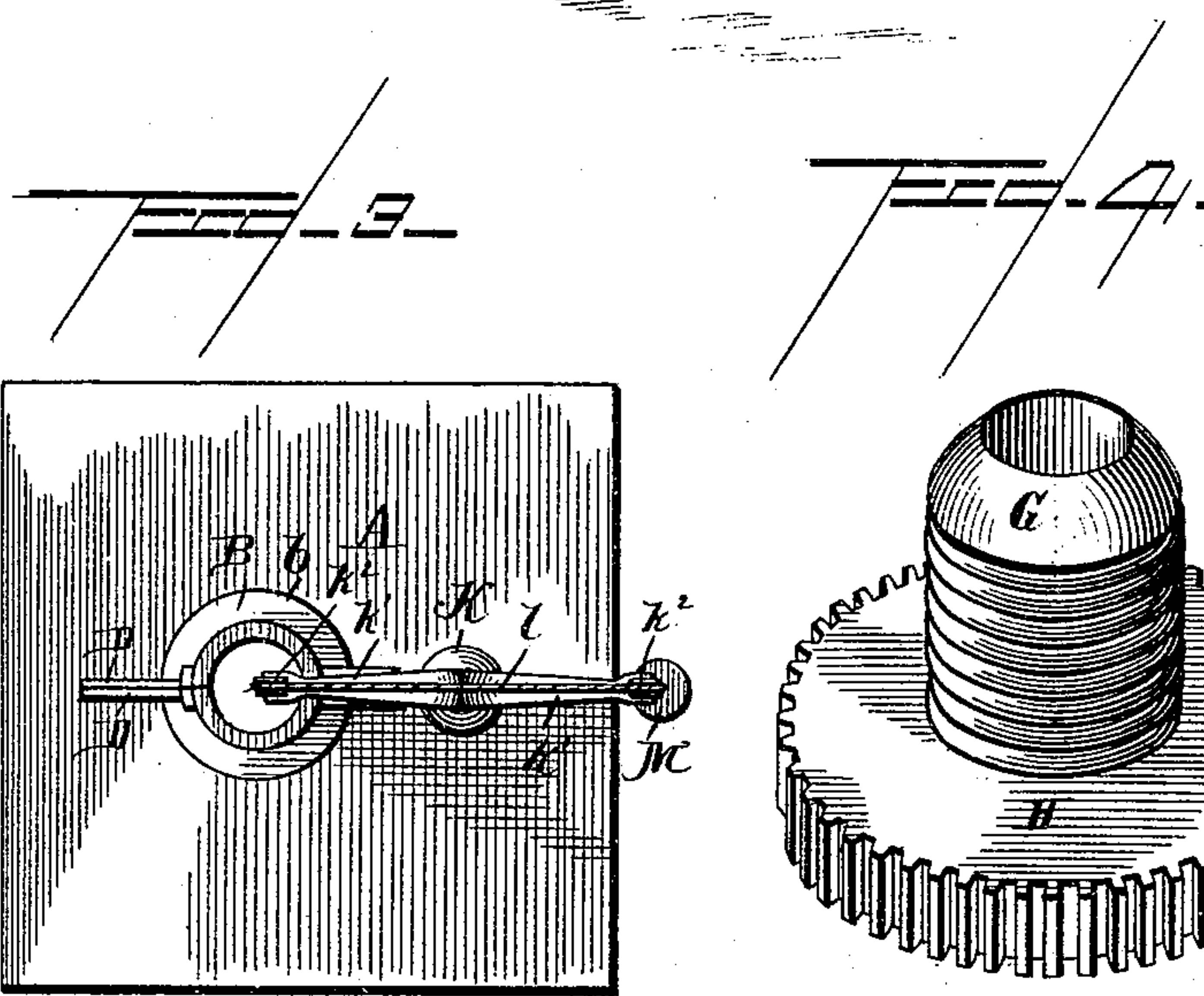
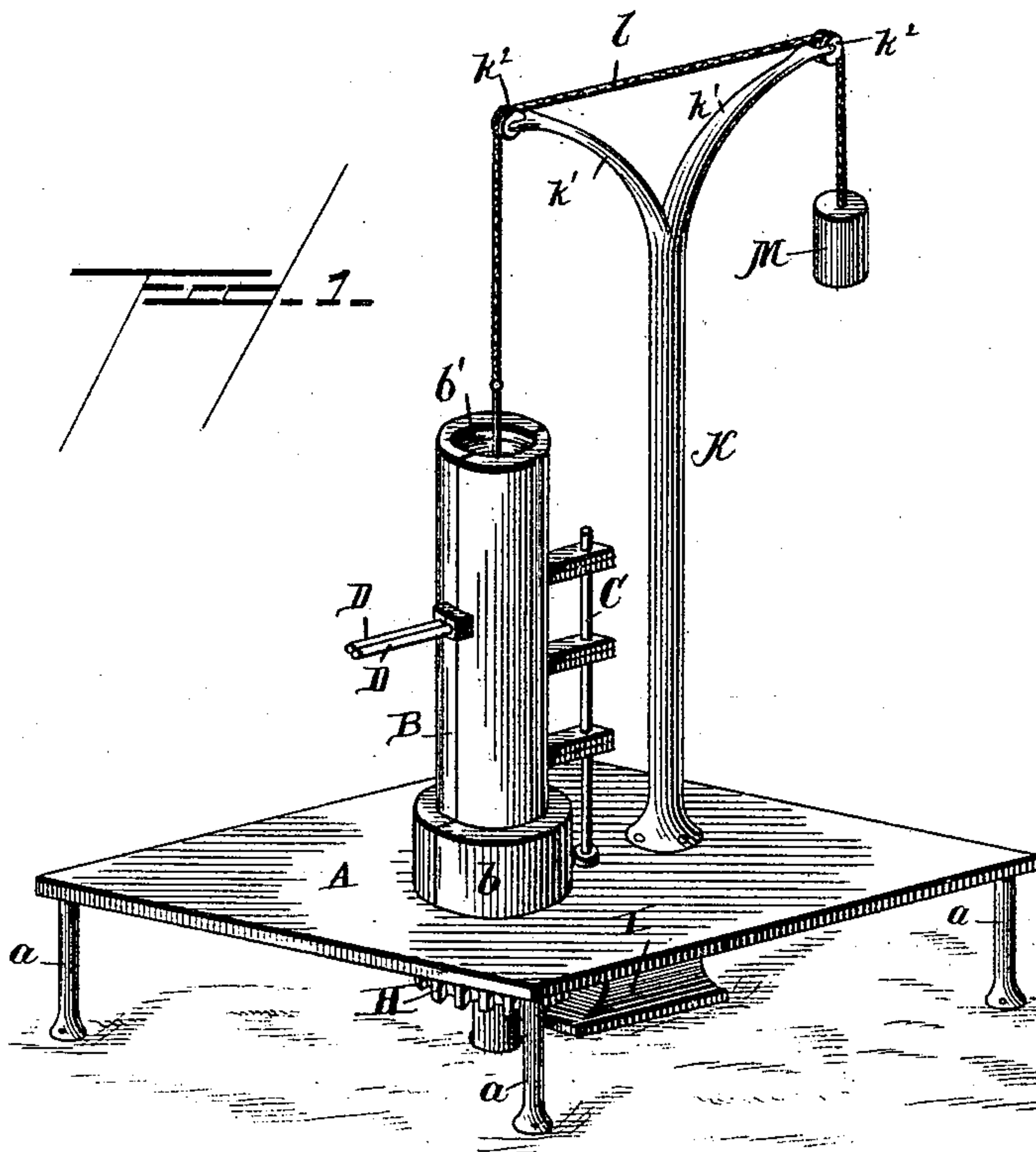
2 Sheets—Sheet 1.

A. TUERFFS.

APPARATUS FOR THE MANUFACTURE OF GLASS PIPES.

No. 459,490.

Patented Sept. 15, 1891.



Witnesses

Henry S. Dieterich
Wm. J. Little,

Inventor

August Tuerffs,
By his Attorney
J. R. Little

(No Model.)

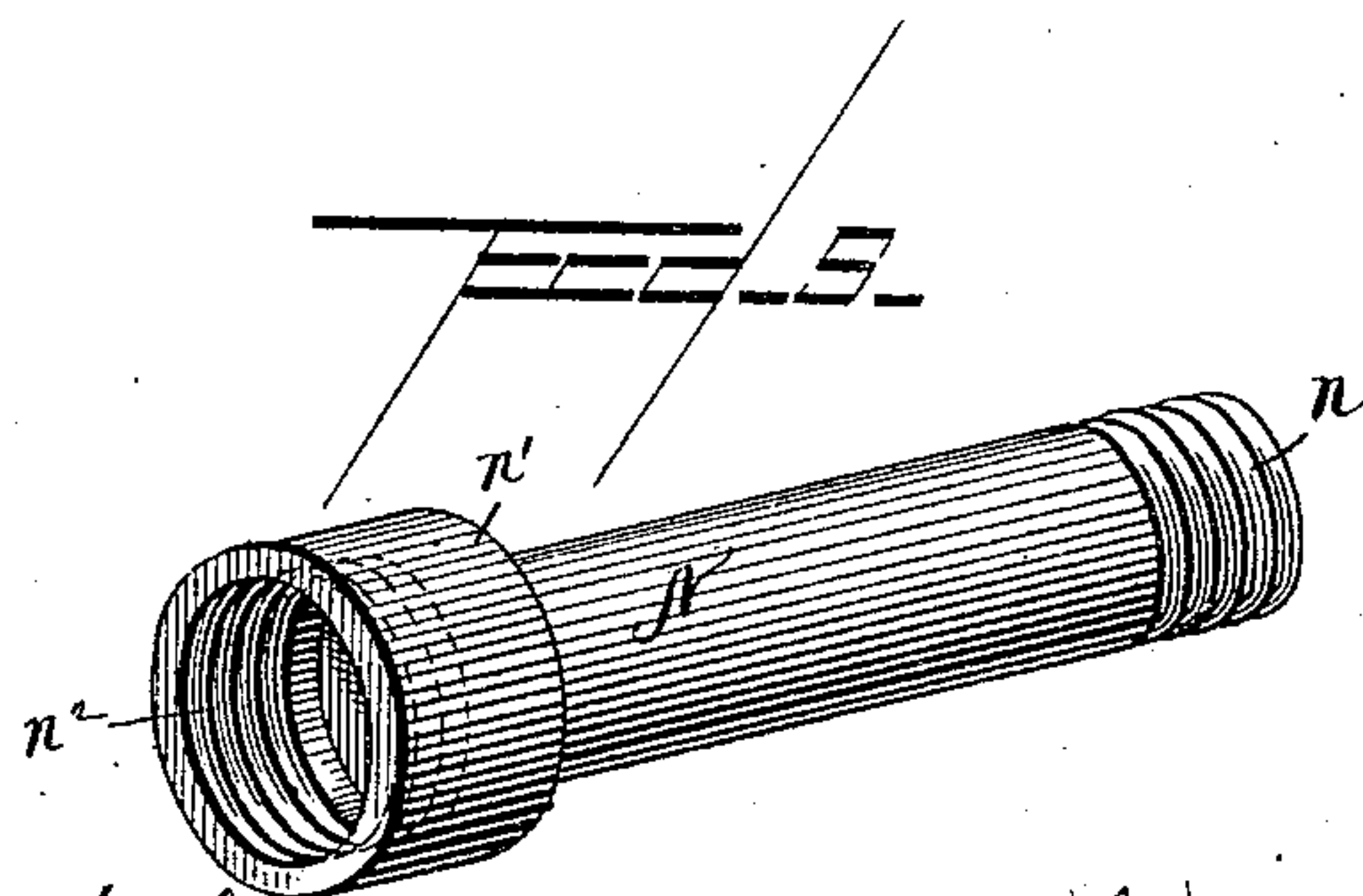
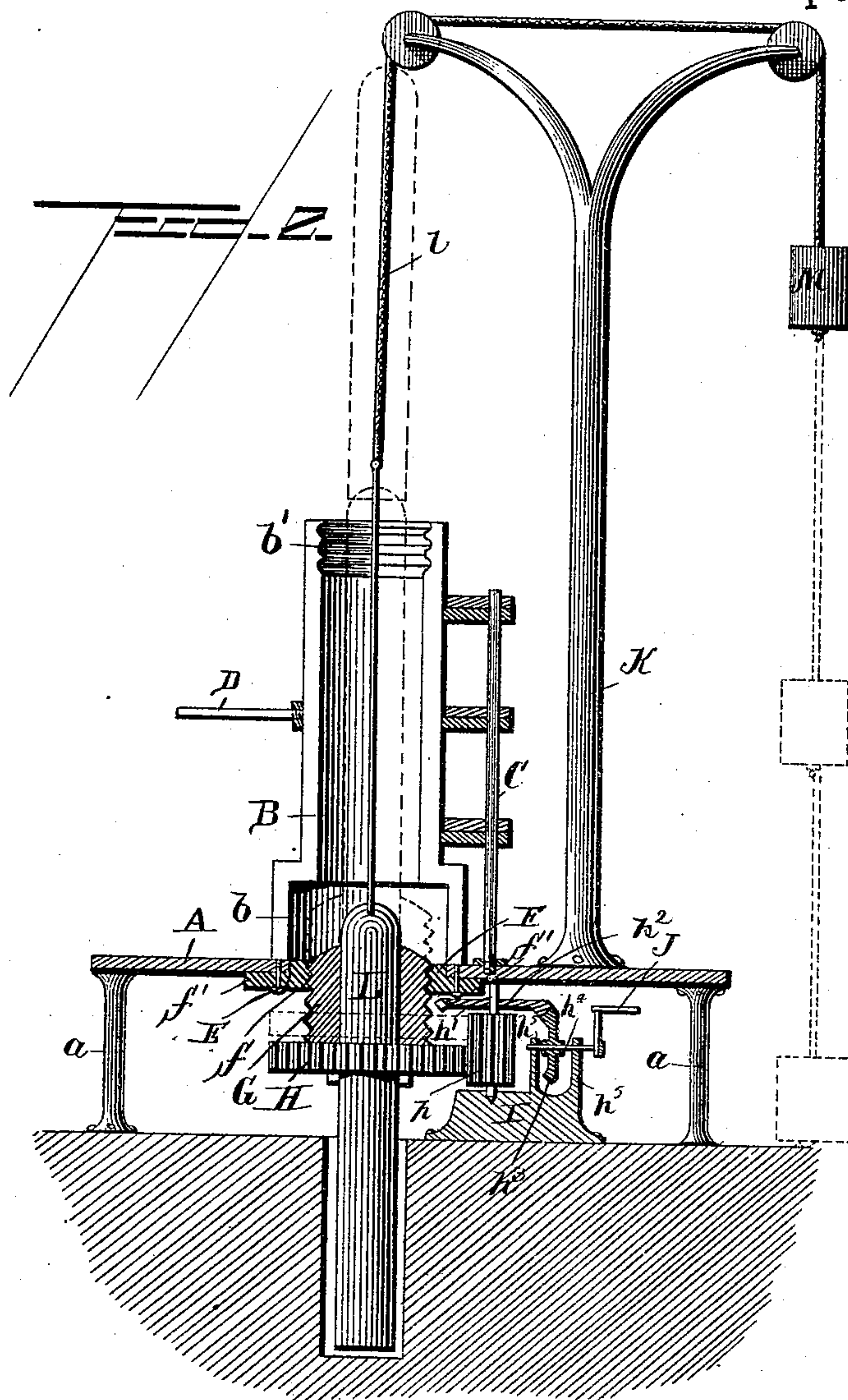
2 Sheets—Sheet 2.

A. TUERFFS.

APPARATUS FOR THE MANUFACTURE OF GLASS PIPES.

No. 459,490.

Patented Sept. 15, 1891.



Witnesses

Henry G. Dieterich
Wm. J. Little,

Inventor:

August Tuerffs,
By His Attorney,
J. R. Little

UNITED STATES PATENT OFFICE.

AUGUST TUERFFS, OF FORD CITY, PENNSYLVANIA.

APPARATUS FOR THE MANUFACTURE OF GLASS PIPES.

SPECIFICATION forming part of Letters Patent No. 459,490, dated September 15, 1891.

Application filed October 21, 1889. Renewed June 30, 1891. Serial No. 397,991. (No model.)

To all whom it may concern:

Be it known that I, AUGUST TUERFFS, a citizen of the United States, residing at Ford City, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for the Manufacture of Glass Pipes, of which the following is a specification.

This invention relates to an apparatus for the manufacture of glass pipes; and it has for its object to provide a simple and improved apparatus of this character embodying mechanism for efficiently forming the threads upon the sleeve at one end of the pipe and means for pressing the molten glass against the sides of the mold to form a pressed pipe.

A further object of the invention is to provide an apparatus of this character possessing advantages in point of inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a perspective view of an apparatus embodying my invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a top or plan view. Fig. 4 is a detail perspective view of the thread-forming sleeve. Fig. 5 is a detail perspective view of a pipe as manufactured by the apparatus.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the bed of the apparatus, preferably formed of cast-iron and mounted upon suitable standards or supports *a*. Upon this bed is disposed a mold B, formed in two corresponding longitudinal sections, the latter being hinged, preferably, to a standard C, projecting upwardly from the bed. The contour of the inner surface of these sections when closed is designed to conform to the exterior surface of a pipe, and each section is provided with a handle D D, by which they are opened or closed. The lower end of the mold is enlarged, as shown at *b*, within which is formed the pipe-sleeve, while the upper end of the mold is provided with interior screw-threads or corrugations *d'*, for the purpose hereinafter set forth.

The bed A is provided with a circular opening E, corresponding to and inclosed by the lower end of the mold. Within this opening is fitted a plate F, provided with a central

screw-threaded opening *f*, said opening being of larger diameter than the threads or corrugations *d'*. The plate F is further provided with a flange *f'* at its lower end, which projects under and is secured to the bed A.

Within the threaded opening of the plate F works a correspondingly-screw-threaded sleeve G, the latter being adapted to be adjusted within the mold to form interior threads upon the sleeve of the pipe. This sleeve G is provided at its lower end with a horizontally-disposed gear-wheel H, which meshes with an elongated pinion *h*, carried by a vertically-disposed shaft *h'*, mounted in the bed A, and a bearing-plate I.

Upon the shaft *h'*, above the pinion *h*, is disposed a bevel-gear *h*², which meshes with a similar gear *h*³, carried by a horizontal shaft *h*⁴, mounted in uprights *h*⁵ *h*⁵, projecting from the plate I. A crank-handle J is mounted upon the outer end of the shaft *h*⁴, by which motion is imparted to the gearing. The operation of this mechanism will be obvious. As the crank-handle is turned in the proper direction motion is imparted to the sleeve G through the medium of the gearing, adjusting said sleeve into the mold. The elongated pinion *h* is of sufficient length to permit the engagement of the gear H at all times.

Upon the bed A is mounted a vertical standard K, extending some distance above the mold, and has its upper end bifurcated, forming two diverging curved arms *k k'*, the former of which projects over the center of the mold. The arms *k k'* are each provided at its end with a pulley *k*² *k*², over which passes a rope or chain *l*, connected at one end with a core L, working in the sleeve G and provided at its free end with a weight M.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. As the molten material is fed to the mold through the top the sleeve G is adjusted up into the mold to press the glass and form a thread thereon. The core is then moved up as the material is fed to the mold, throwing it against the sides of the mold and pressing it in the upward movement of the core. When the pipe thus formed has been sufficiently cooled, the core is removed entirely from the mold and the sections of the latter thrown open and

the pipe removed. The article N thus produced (see Fig. 5) is provided at its small end with a male screw-thread or a series of corrugations n and at its other end with an enlarged sleeve n' , having an interior thread n^2 of larger diameter than the male thread or corrugations at the opposite end of the pipe. Thus when a joint is formed a space is left between the male screw-threads or corrugations and the female threads, and this space is designed to be packed with cement, plaster-of-paris, or other similar material to form an air-tight joint. The article, however, forms no part of this application, the same forming the subject-matter of a separate application filed October 21, 1889, Serial No. 327,708.

It will be obvious that while my apparatus is designed more especially for the manufacture of glass pipes it may be employed in the manufacture of pipes of other material with equal efficiency.

I claim as my invention—

1. In an apparatus for the manufacture of pipes, the combination, with a mold provided at one end with an enlarged sleeve-forming portion, of an exteriorly-threaded hollow sleeve adjustable within the latter and an adjustable core working in said sleeve, substantially as and for the purpose set forth.

2. In an apparatus for the manufacture of pipes, the combination, with a mold comprising the body-forming portion and the sleeve-forming portion at one end, of a sleeve adjustable within the latter and of a greater di-

ameter than the interior of the body portion, for the purpose described, and means for adjusting said sleeve to form interior threads upon the pipe-sleeve, substantially as and for the purpose set forth.

3. In an apparatus for the manufacture of pipes, the combination, with a mold comprising the body portion and an enlarged end portion, of a core adjustable in said mold, a threaded sleeve surrounding the core and adjustable in said enlarged end, for the purpose described, said sleeve being of larger diameter than the interior of the body of the mold, and means for adjusting the sleeve, substantially as set forth.

4. In an apparatus for the manufacture of pipes, the combination, with an upright mold mounted on a bed, the latter being provided with a threaded opening surrounded by the mold, said mold being provided with interior threads or corrugations at its upper end and having an enlarged lower end, and an adjustable core working in the mold and suspended by a rope or chain carrying a weight, a threaded sleeve surrounding said core and working in the threaded opening in the bed, and means for adjusting said sleeve, substantially as and for the purpose set forth.

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

AUGUST TUERFFS.

Witnesses:

FRED AYE,
ANDIE FRANZ.