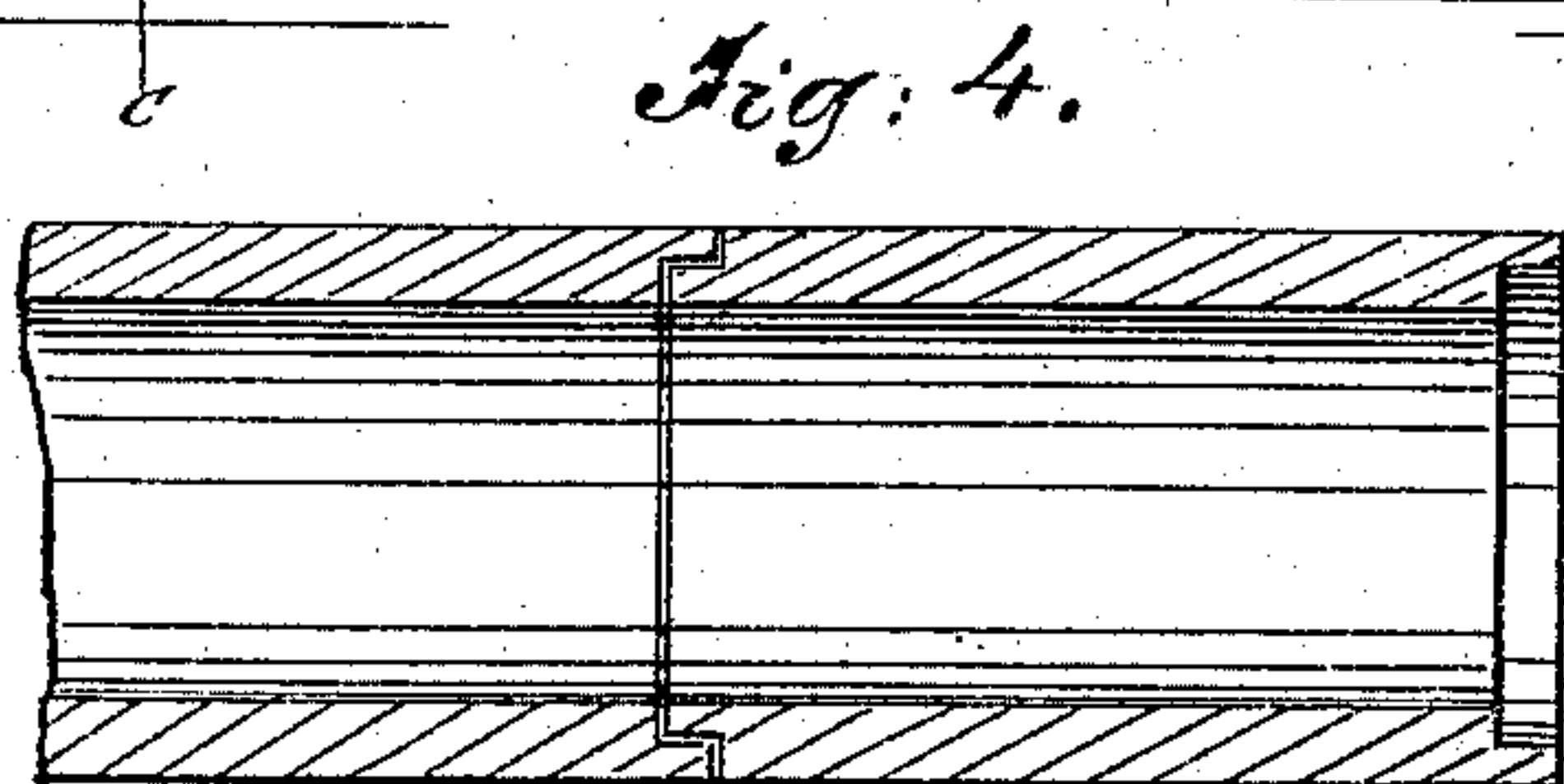
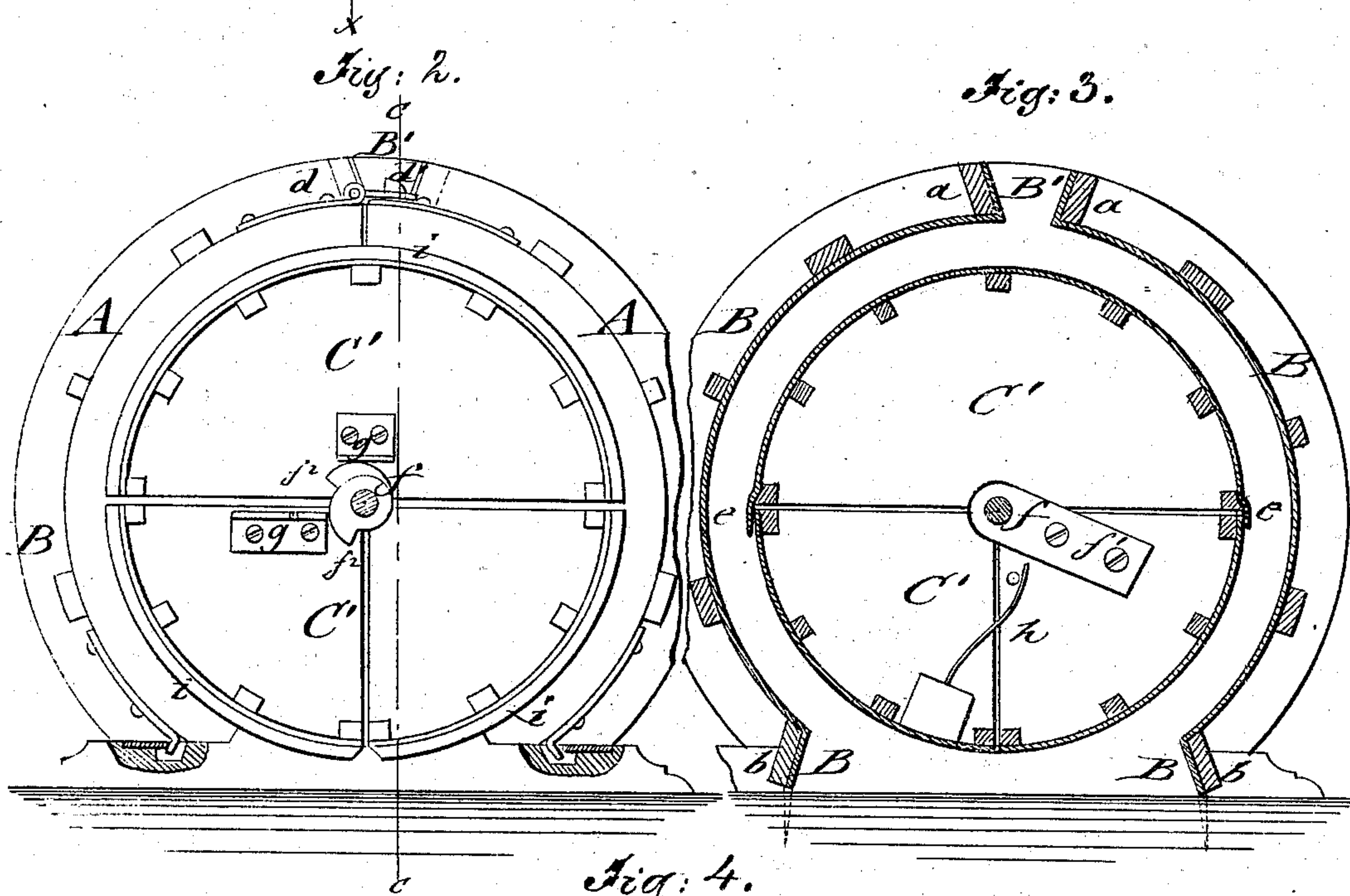
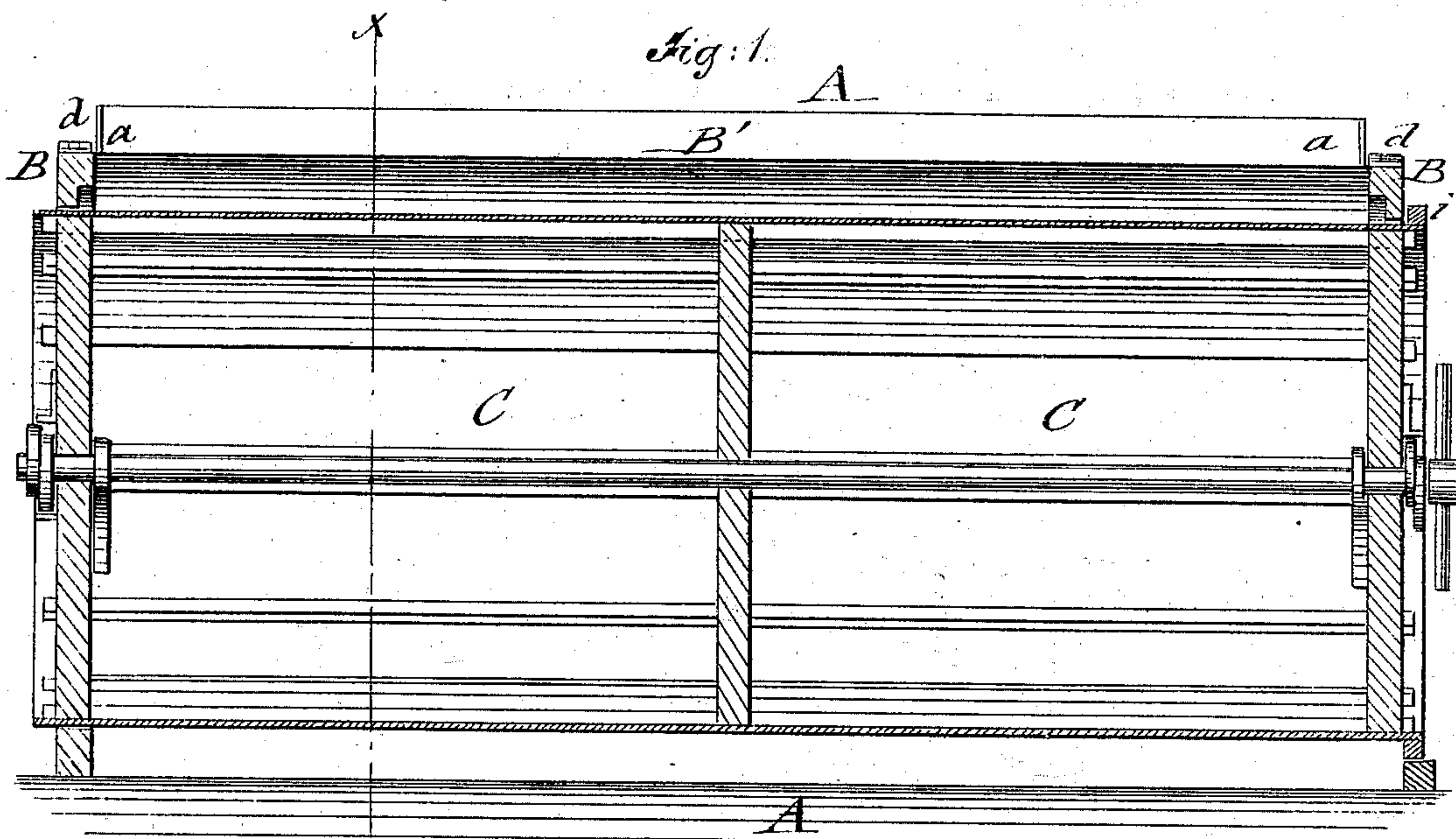


J. LOEFFLER.  
Laying Cement Pipes.

No. 152,564.

Patented June 30, 1874.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JACOB LOEFFLER, OF NEW YORK, N. Y.

## IMPROVEMENT IN LAYING CEMENT PIPES.

Specification forming part of Letters Patent No. **152,564**, dated June 30, 1874; application filed May 29, 1874.

*To all whom it may concern:*

Be it known that I, JACOB LOEFFLER, of the city, county, and State of New York, have invented a new and useful Improvement in Laying Cement Pipes, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved molding-flask for laying cement-pipes, taken on the line *c c*, Fig. 2. Fig. 2 is an end view of the flask; Fig. 3, a vertical transverse section of the same on the line *x x* of Fig. 1; and Fig. 4, a longitudinal section of the pipes, showing connecting-joint of the same.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a cheap, substantial, and rapid mode of laying cement pipes of all sizes for water, gas, drainage, and other purposes, so that a continuous and solid pipe may be constructed directly on the ground, dispensing with special places of production and loss of breakage by shipment, and preventing, also, by the more expeditious laying, a great deal of the annoyance and inconvenience experienced in large cities by the cutting up of the streets. My invention consists of a molding-flask, constructed of detachable exterior sections, suitably supported on the ground, and eccentrically-adjustable core-sections, which are flanged in such a manner that an overlapping joint of the pipe-sections is produced as they are formed consecutively, one after the other. The core-sections are withdrawn from the finished pipe-sections, by contracting them, by means of a central shaft and cam-eccentrics.

In the drawing, A represents a molding-flask, made of circular, oval, or other suitable shape and desirable size. It is constructed of two exterior sections, B, made of sheet-iron walls, with longitudinal and circumferential strengthening-strips, and with a longitudinal top opening and funnel-shaped spout, B', formed by inclined flanges *a* of its section B, and an interior core, C. The lower part of the outer section B does not extend concentrically around the core C, but is flanged sidewise and symmetrically to the longitudinal axis in downward direction, so that the longitudinal side strips *b* formed thereby, when

provided with pointed spurs or other steady-ing devices, support the exterior sections or shell. Hinged and slotted catch-plates *d*, at the upper part, near the ends of one section B, lock over projecting lugs *d'* of the other section, for binding both sections firmly together.

Any other connecting device may be used for the outer sections, spring-hook, and catch-hook and eye, &c., as may be found most efficient in practice.

The core C consists of two adjustable sections, C', which are constructed in similar manner as the outer sections, concentrically thereto, to produce a uniform thickness of the pipe. The core-sections C' are joined horizontally, the upper section being somewhat eccentric to the lower section, and of slightly smaller size, with sidewise-extending flanges *e* projecting over the lower section. The lower section is made in similar manner of quadrantal sections, with slight eccentricity, for the purpose of being adjusted by a central shaft, *f*, turning in suitable bearings *f*<sup>1</sup> of the lower section, and acting by cams *f*<sup>2</sup> on projecting lugs *z* at the outer side of end walls of the upper and lower sections. The pressure of the cams on the lugs forces the core-sections firmly against the exterior sections, so as to expand accurately into concentric shape therewith.

By releasing the cam-shaft the core-sections are contracted, which is assisted in the lower sections by suitable springs *h*, connecting the quadrantal parts thereof.

The core-sections are provided with detachable flanges *i* at both ends, for the first section, when the pipe is intended to be laid simultaneously in opposite directions; while, for the ordinary working, one end flange only is required for determining the exact position of the outer sections, the opposite projecting end being fitted into the finished pipe-section.

The cement is mixed, near the place of work, in any suitable proportion, according to the strength and resistance of the pipe under the addition of sand and broken stones, one part of cement, one part of sand, and three parts of broken stones forming a good working mixture. The same is filled into the flask, through the top funnel, until the whole space between the exterior and core sections is filled up. The ground is sufficiently leveled before laying the



flask, and the core supported, at the outer front end, by a lateral piece of wood, or other suitable support.

The bottom flanges of the outer sections guide the cement or "béton" directly on the ground, and form a broad base, on which the pipe-section is firmly supported. When the pipe is sufficiently dry and firm the outer sections are first taken off, and then the cross-sections contracted and drawn out at the forward end. The next pipe-section is joined to the preceding one, as indicated in Fig. 4, by putting up the core and exterior part of the flask in connection with the finished pipe-section, and filling up with cement, so as to produce an intimate overlapping joint of the pipe-sections, and thus a strong and continuous pipe.

Pipes for different purposes may, in this manner, be laid with great rapidity, and the excavations may be filled up as soon as a certain length of the same is completed, pro-

ducing thus, without loss of material and time, superior and less expensive pipe.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The molding-flask for laying continuous cement pipes directly on the ground, consisting of connected exterior sections, with entrance-funnel and open base part, combined with the concentrically-adjustable and detachable core-sections, constructed substantially in the manner set forth.

2. The core C of the molding-flask, composed of lower sections with adjustable quadrantal parts, and upper section, provided with projecting lugs and cam-shaft for producing the expansion and contraction of the same, as required, substantially in the manner specified.

Witnesses: JACOB LOEFFLER.

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