

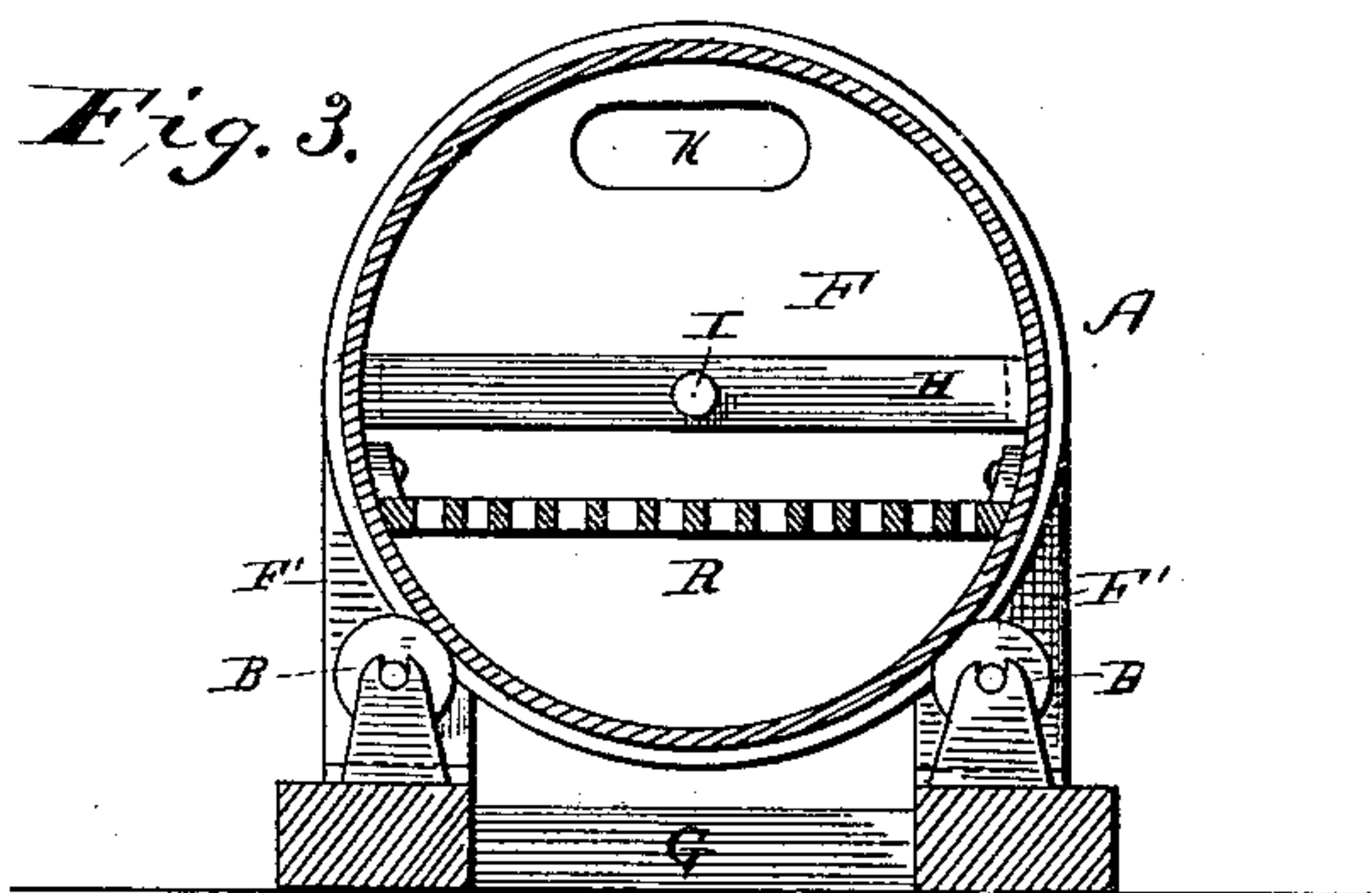
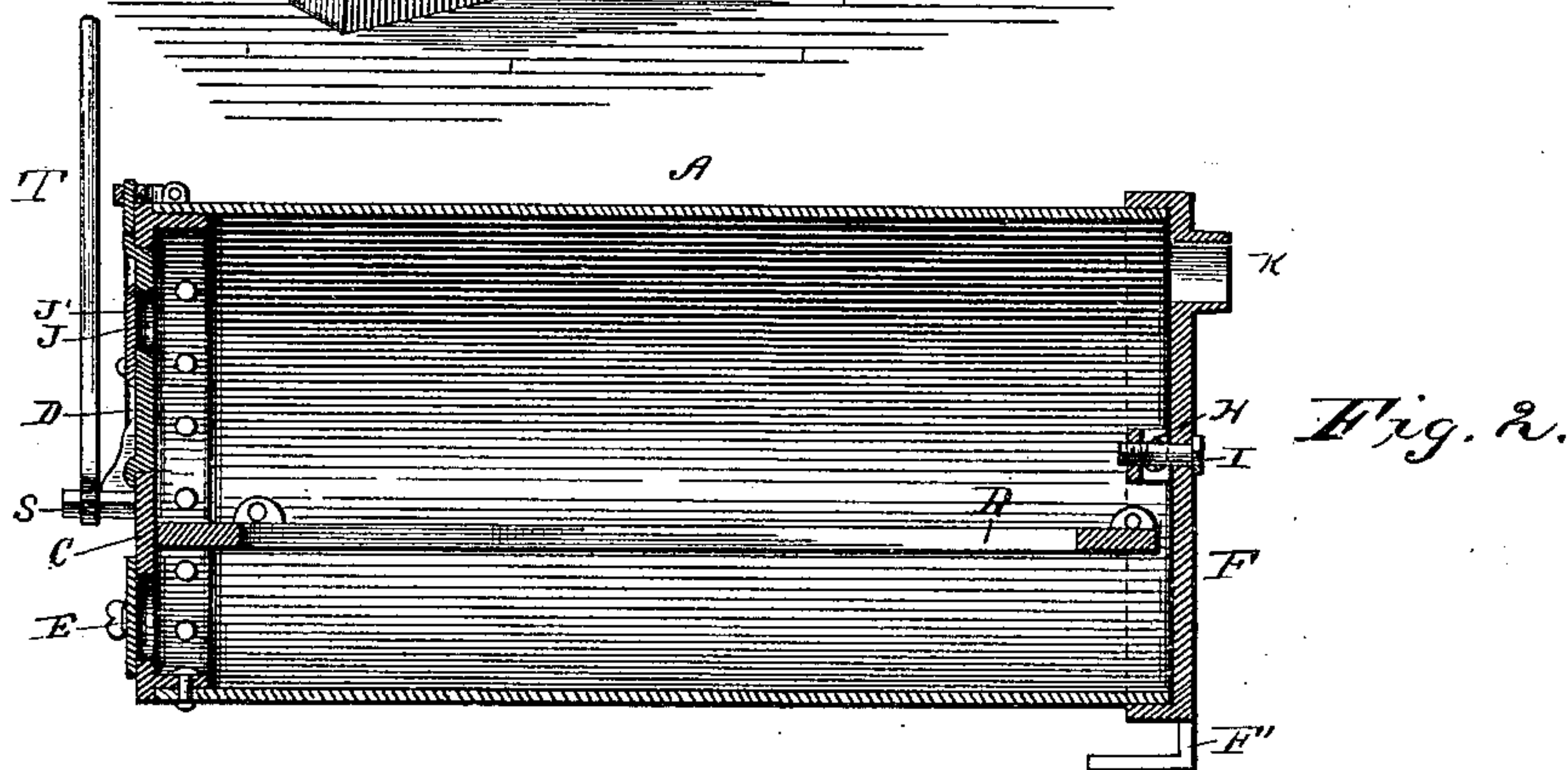
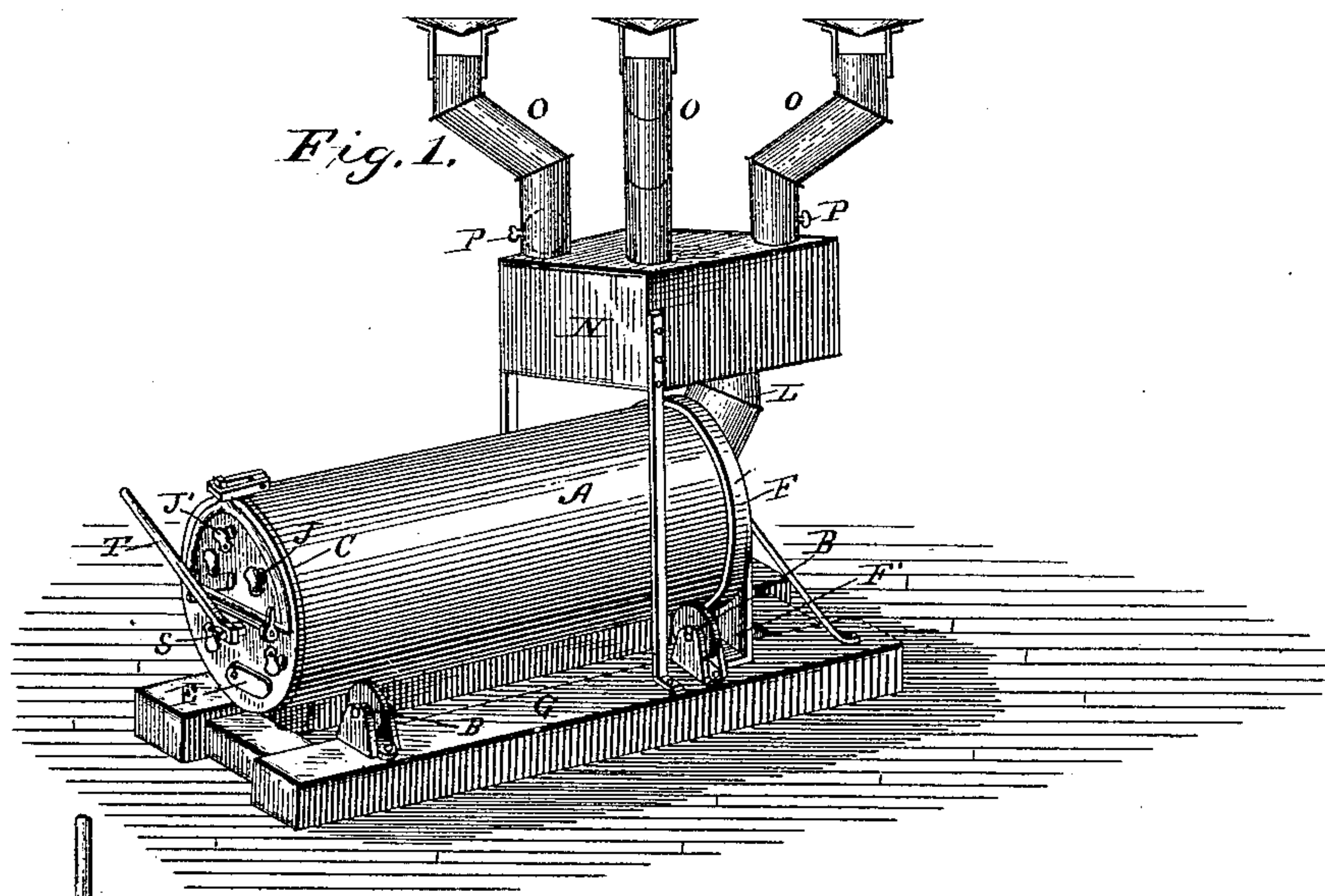
(No Model.)

C. L. RYAN.

SMOKING AND DRYING APPARATUS.

No. 354,072.

Patented Dec. 7, 1886.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES L. RYAN, OF GALENA, ILLINOIS.

SMOKING AND DRYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 354,072, dated December 7, 1886.

Application filed May 7, 1886. Serial No. 201,451. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. RYAN, a citizen of the United States, residing at the city of Galena, in the county of Jo Daviess and State of Illinois, have invented certain new and useful Improvements in the Mode of Smoking and Drying Meats, Fish, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to certain new and useful improvements in the class of furnaces or retorts which are designed to be placed in or connected to a smoke or dry house for the purpose of smoking and drying meats, fish, &c.; and it has for its objects to provide novel and efficient means for producing an even and steady supply of smoke to the smoke house, for maintaining the temperature of the same at any desired degree, and for spreading and diffusing the smoke throughout the smoke-house, and thus thoroughly saturate and preserve the articles placed in the same. These objects I accomplish by the means illustrated in the accompanying sheet of drawings, making part of this specification, in which—

Figure 1 represents a perspective view of my invention complete; Fig. 2, a longitudinal sectional elevation of the furnace detached, and Fig. 3 a vertical transverse sectional representation of the furnace mounted upon supporting-rollers.

In the drawings the same letters of reference indicate corresponding parts in all the figures.

The invention consists, essentially, in mounting a cylindrical or other shaped furnace, with its grate or grate-bars rigidly secured upon its interior, upon supporting-rollers, so that an oscillating or rotary movement may be imparted to the same.

The invention further consists in providing the furnace with adjustable draft-openings, whereby the temperature of the smoke-house may be regulated and maintained at any desired degree; and it still further consists in providing a drum or smoke receptacle with hooded pipes leading therefrom, whereby the smoke may be diffused and distributed throughout the entire smoke-house in which the furnace is located.

In the drawings annexed and heretofore mentioned, the letter A designates a cylindrical furnace, mounted upon suitable supporting-

rollers, B, and having its rear end open and its forward end inserted in and secured to a flanged head, C, which is provided with the usual fuel-door, D, and the ash door or opening E. The rear or open end of the furnace is also inserted in a flanged head, F, which is rigidly secured, by means of the supports F', to a suitable base or frame, G, upon which also are secured the supporting-rollers B. Across the rear end of the furnace, upon the inside, is secured or bolted a bar, H, by means of which and the journal or bolt I the rear end of the cylinder is loosely confined within the flange on the head-plate F. The bolt I passes loosely through an aperture in the center of the head F, and is screwed into the bar H, thus confining the end of the cylinder within the flange upon the said head F, and also forming a journal or centering-pin for the cylinder to rotate upon.

The forward head of the cylinder, besides the feeding and ash doors, is provided with openings J, adjustable by means of the pivoted covering-plates J', for the purpose of regulating the draft to the fire when the furnace is in operation. The door of the furnace is also provided with adjustable draft-openings, whereby the supply of air above the grate is governed.

An outlet, K, for the smoke is formed in the upper part of the stationary head F, from which a smoke-conducting pipe, L, leads to a smoke drum or chamber, N, which may be located above the furnace, as in this instance, or may be placed at some distance from it. From the top of this drum extend hooded pipes O, which may be carried to any part of the dry-house, or project a short distance from it, as desired, and are intended to conduct and spread the smoke to all parts of the house in which the furnace is located.

The hooded pipes O may be provided with dampers or cut-offs P, for the purpose of regulating the supply of smoke to the house.

Rigidly secured upon the interior of the revolving furnace by means of bolts is the grate R. Made integral with the head of the furnace is a wrist or squared projection, S, by means of which and the wrench-like lever T, which fits over the same, the furnace may be rotated or oscillated.

When the fuel is placed upon the grate and the fire is started, the necessary air-supply to support the combustion is regulated by the

adjustable openings in the door and head of the cylinder, and in case the fire should burn too briskly, so as to consume the carbon instead of sending it off in smoke, the furnace
5 is revolved or inverted by the lever T, to check or retard the too rapid combustion of the fuel. This operation is repeated at the option of the attendant, or whenever the combustion of the fuel is too rapid, and the machine is therefore
10 not producing a steady supply of smoke.

It will be manifest that the essential feature of my invention consists in the rotating or oscillating furnace having the grate secured upon its interior, so as to move with it, by
15 which construction a steady volume of smoke is obtained and the thorough and slow consumption of fuel is effected.

The specific construction of my device may be varied somewhat without departing from
20 the invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a smoke-producing furnace, the combination, with a horizontal revoluble cylinder
25 suitably mounted and a horizontal grate rigidly bolted to the interior of the said cylinder, so as to revolve with it and be inverted at every revolution, of means for revolving said
30 cylinder and grate, substantially as set forth.

2. In a smoke-producing furnace, the combination of the horizontal revoluble cylinder, a horizontal grate bolted to the interior of the said cylinder, a bar extending transversely of
35 the rear end of the cylinder, a stationary flanged head-plate, in which the end of the cylinder is secured, and a bearing or journal pin with suitable operating means, substantially as set forth.

3. In a smoke-producing machine, a furnace
40 capable of being given a rotary movement, mounted upon suitable rollers, having in its head and door adjustable draft-openings, and having one of its ends loosely secured within a stationary head-plate, in combination with
45 suitable operating mechanism, substantially as specified.

4. In a smoke-producing machine, the combination, with operating mechanism, substantially as described, of a furnace capable of revolving, mounted upon rollers, having adjustable draft-openings in its head, and having
50 one of its ends loosely confined within a flanged stationary head-plate, a smoke-chamber connected to the furnace, and pipes containing dampers leading from said chamber, substantially as and for the purpose herein specified.
55

5. In a smoke-producing furnace, the combination, with a horizontal cylinder provided with adjustable draft-openings and a smoke-
60 outlet, and a horizontal grate bolted to the interior of the said cylinder, of suitable means whereby the cylinder is revolved.

6. The combination, with a revoluble cylinder, a grate secured rigidly upon its interior,
65 and a flanged stationary head-plate provided with a smoke-outlet, of a smoke-chamber communicating with the interior of the said cylinder and spreading flues leading from said chamber, substantially as specified.
70

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

CHARLES L. RYAN.

Witnesses:

THOS. J. SHEEAN,
WILL. D. MCHUGH.