

2. Sheets. Sheet 1.
G. C. Bovey,

Brick Machine.

No. 100,590.

Patented Mar. 8. 1870.

FIG. 5.

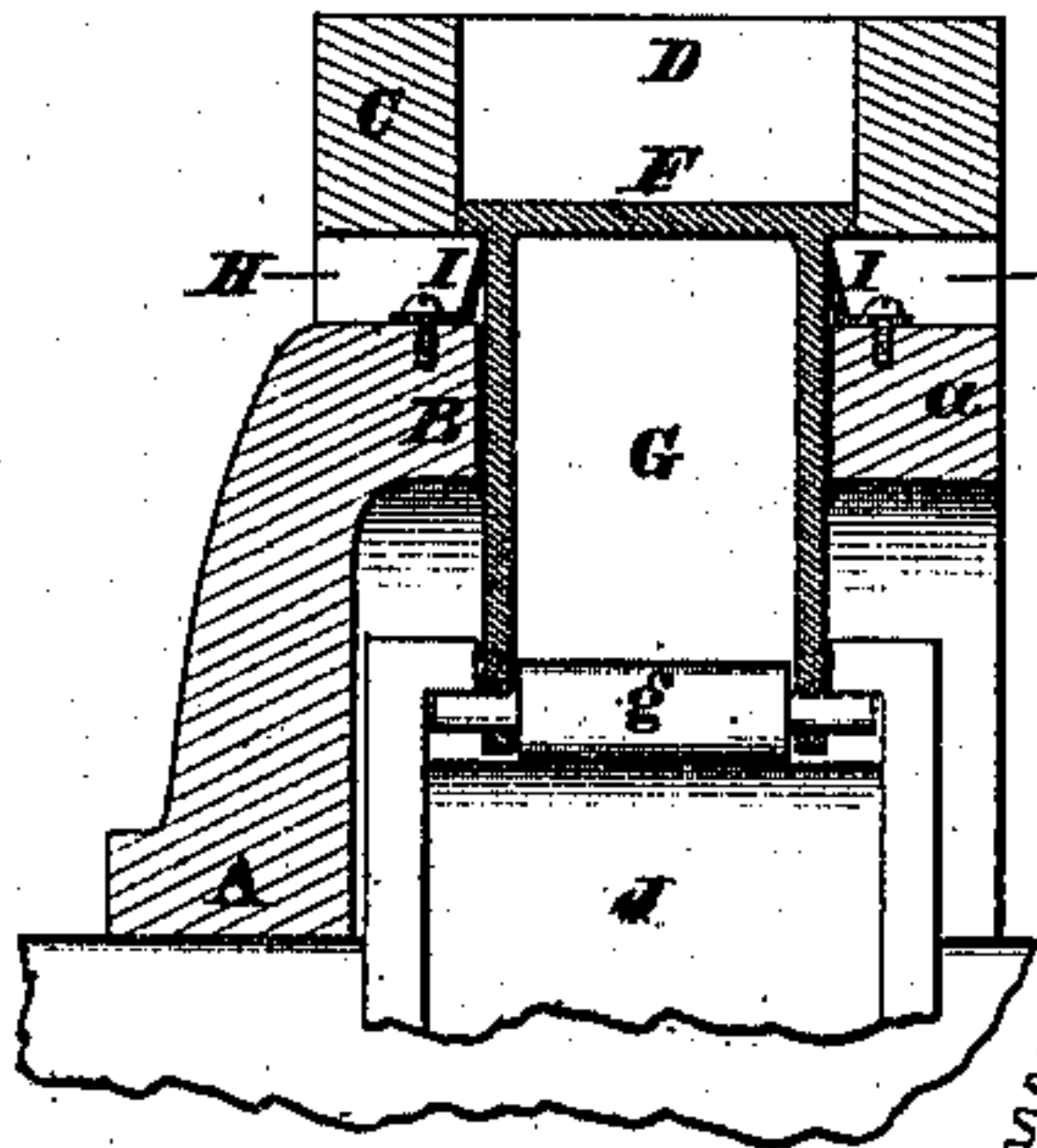


FIG. 1.

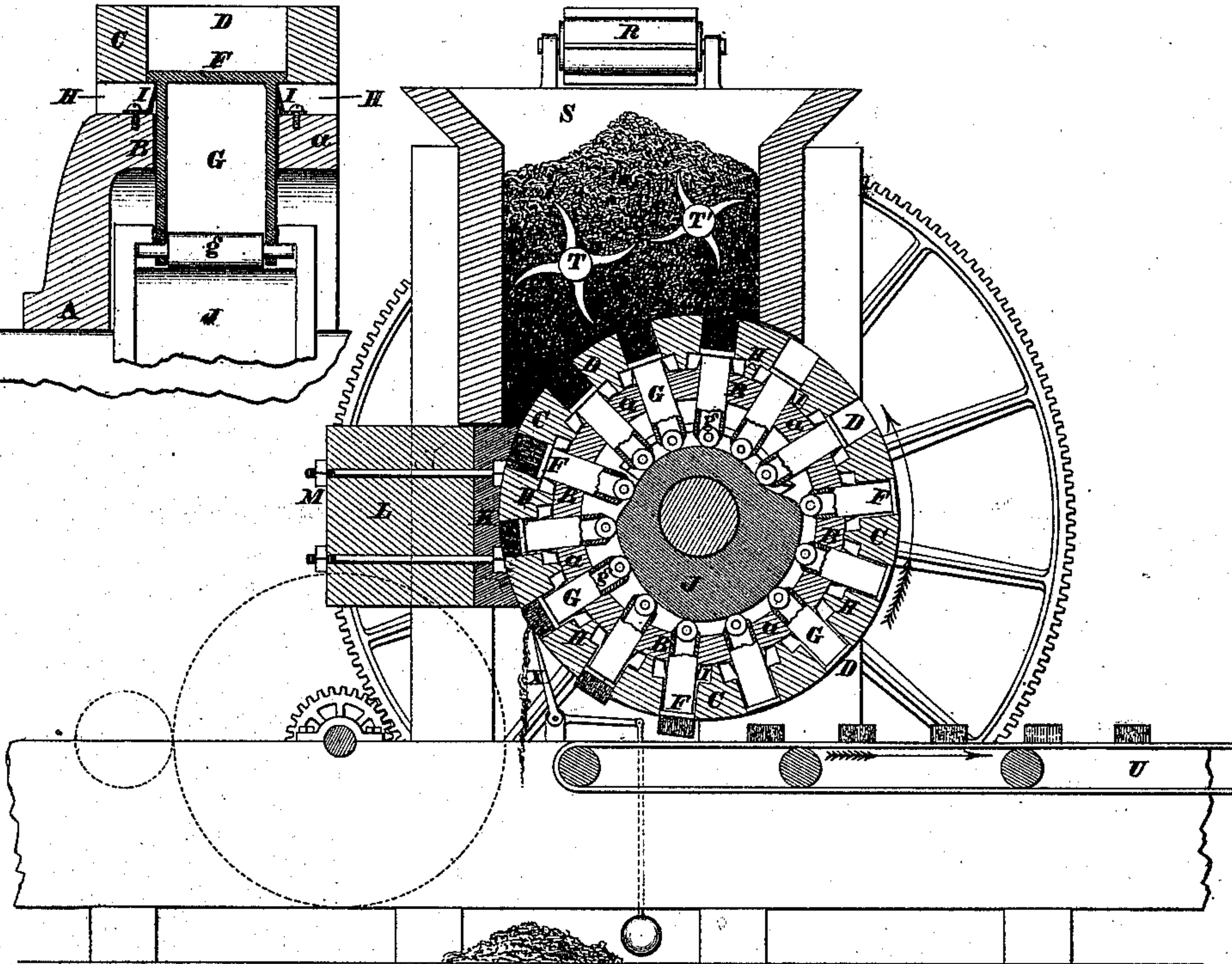


FIG. 6.

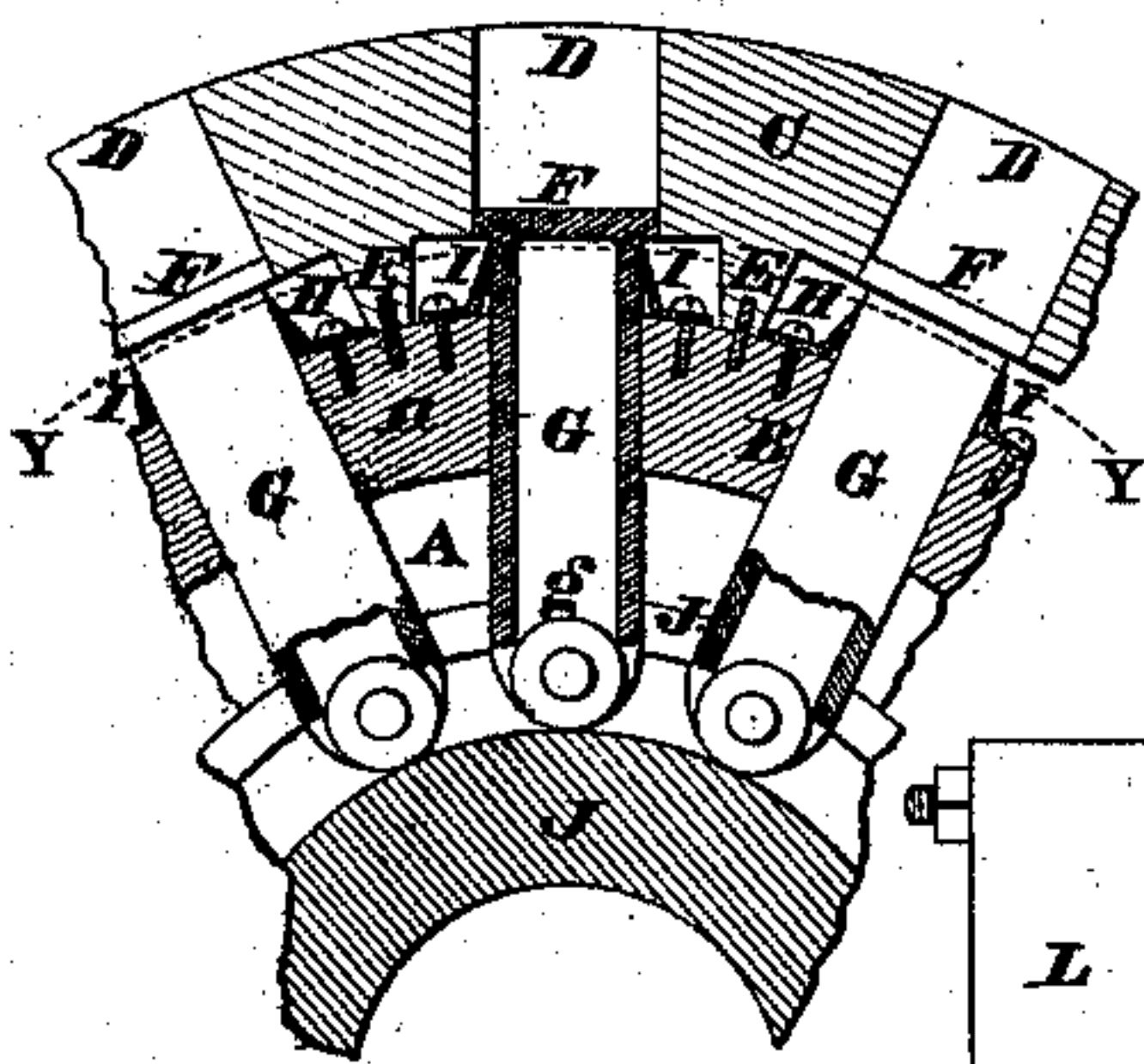


FIG. 2. S

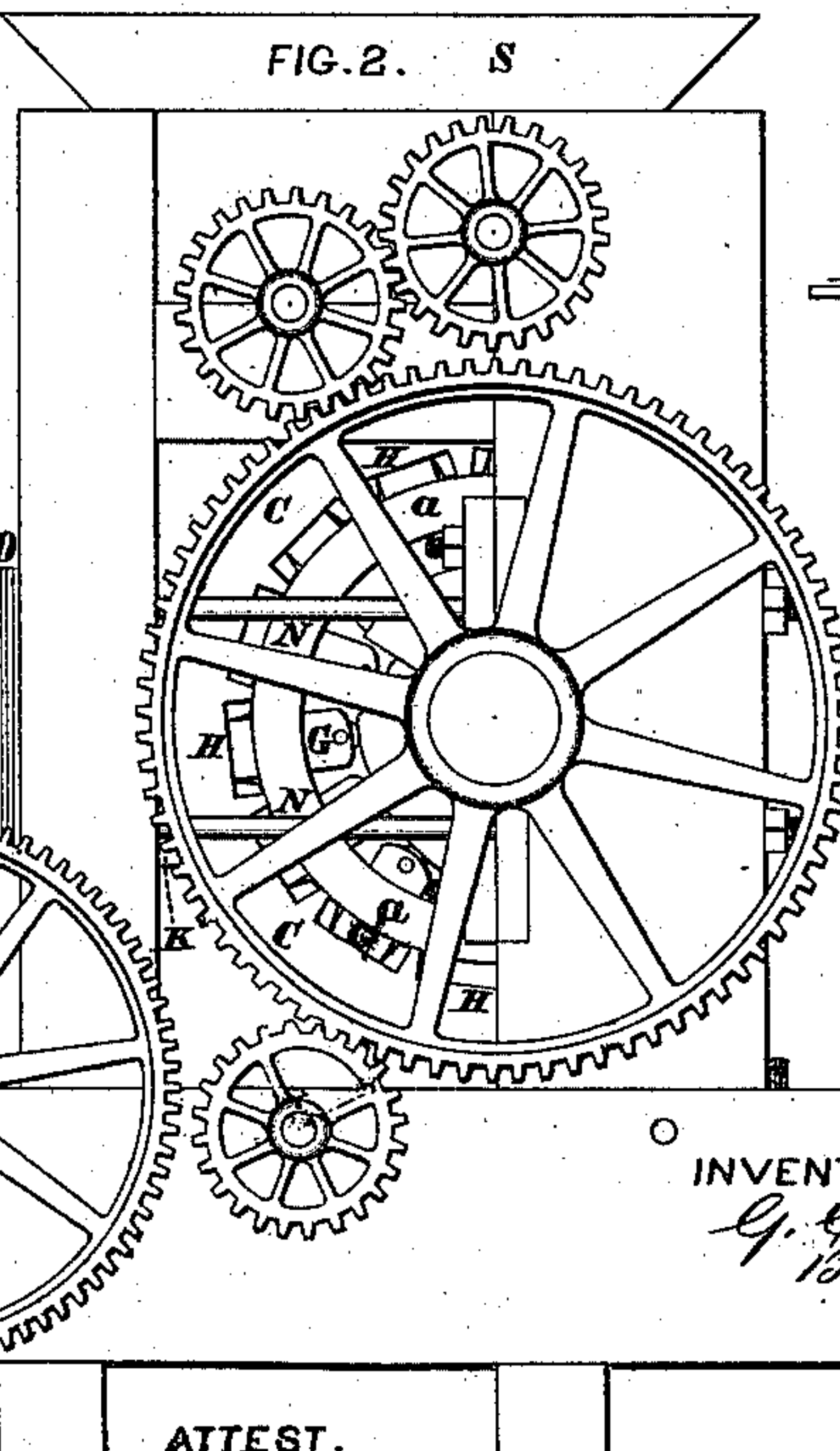
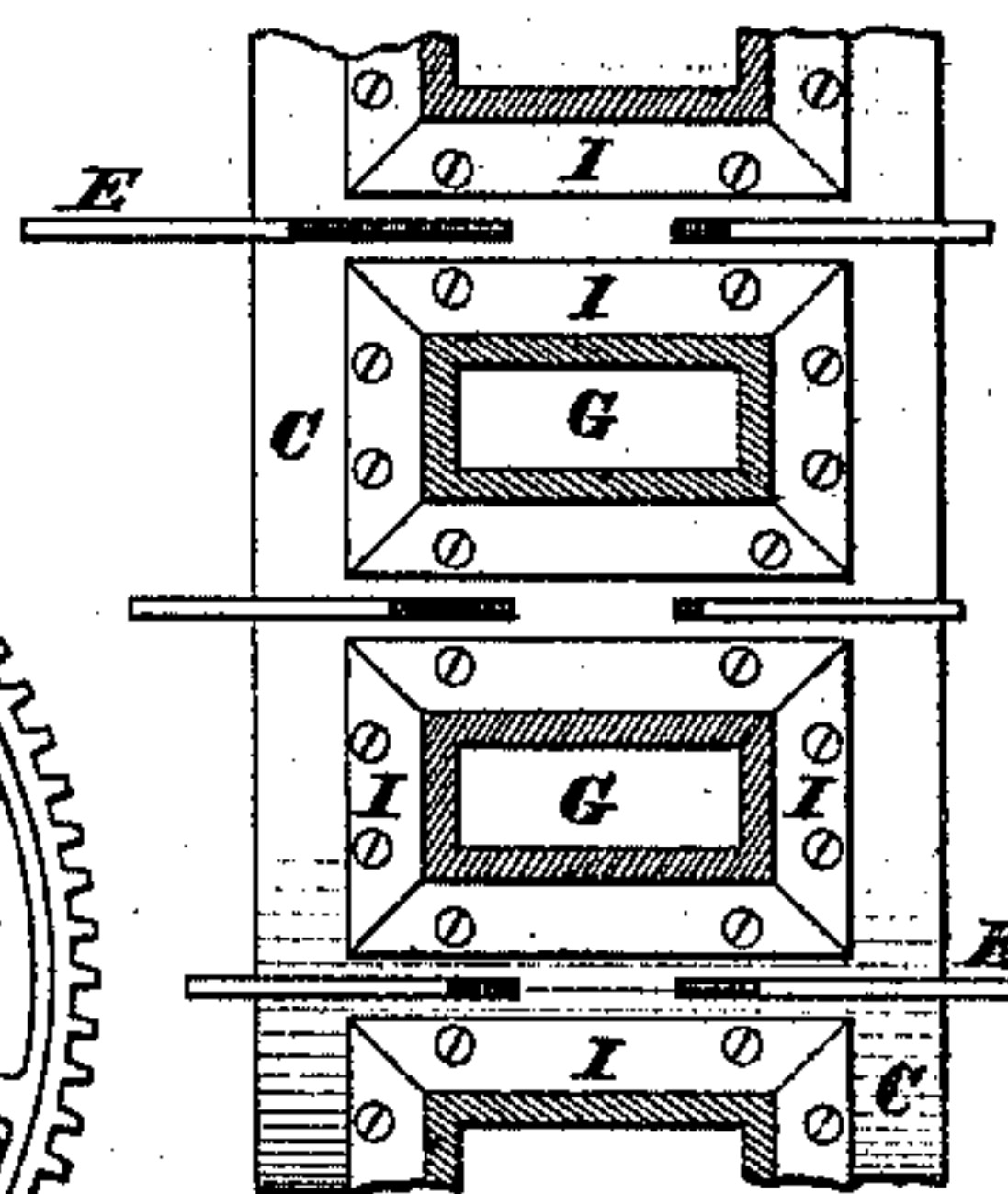


FIG. 7.

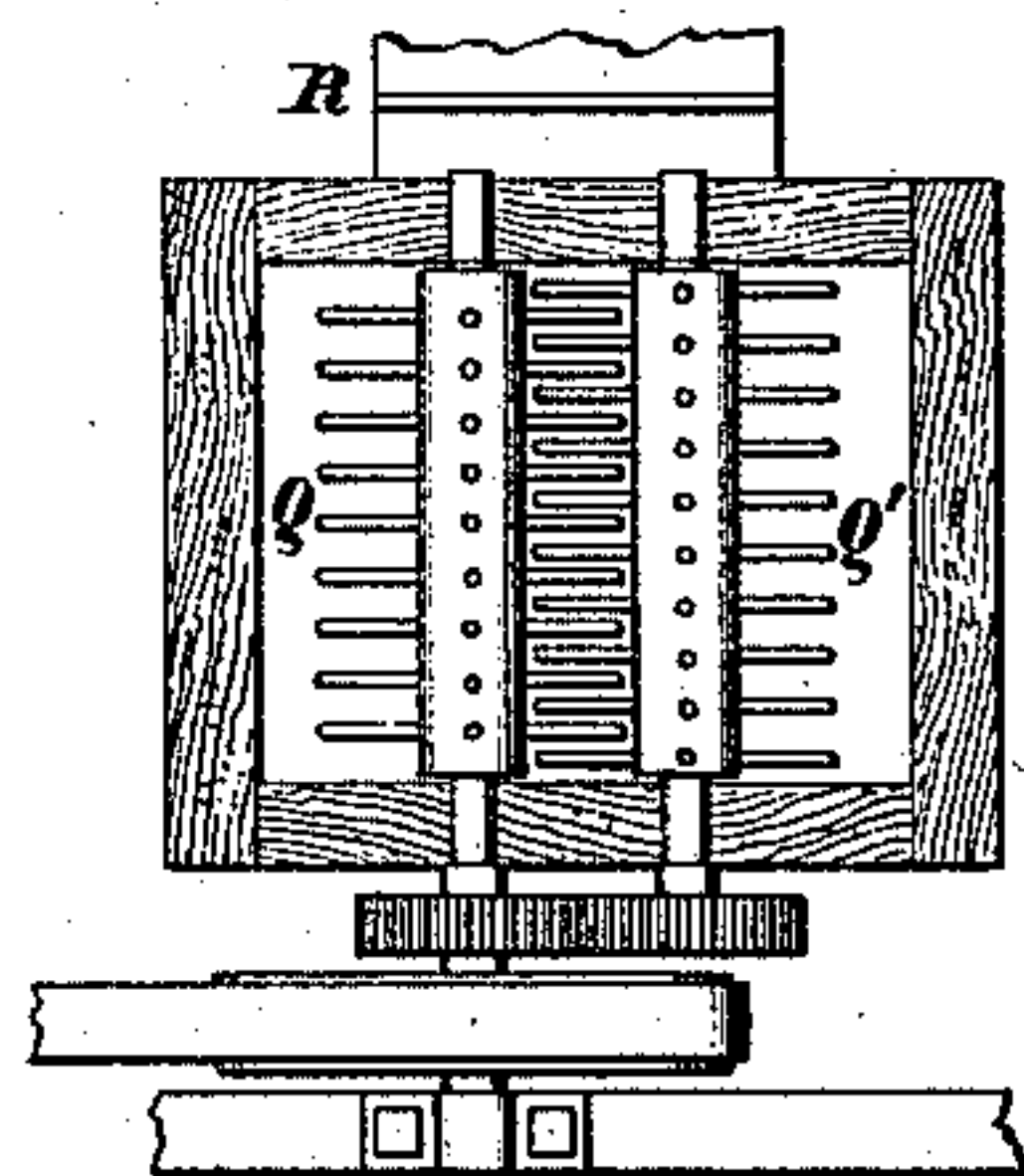
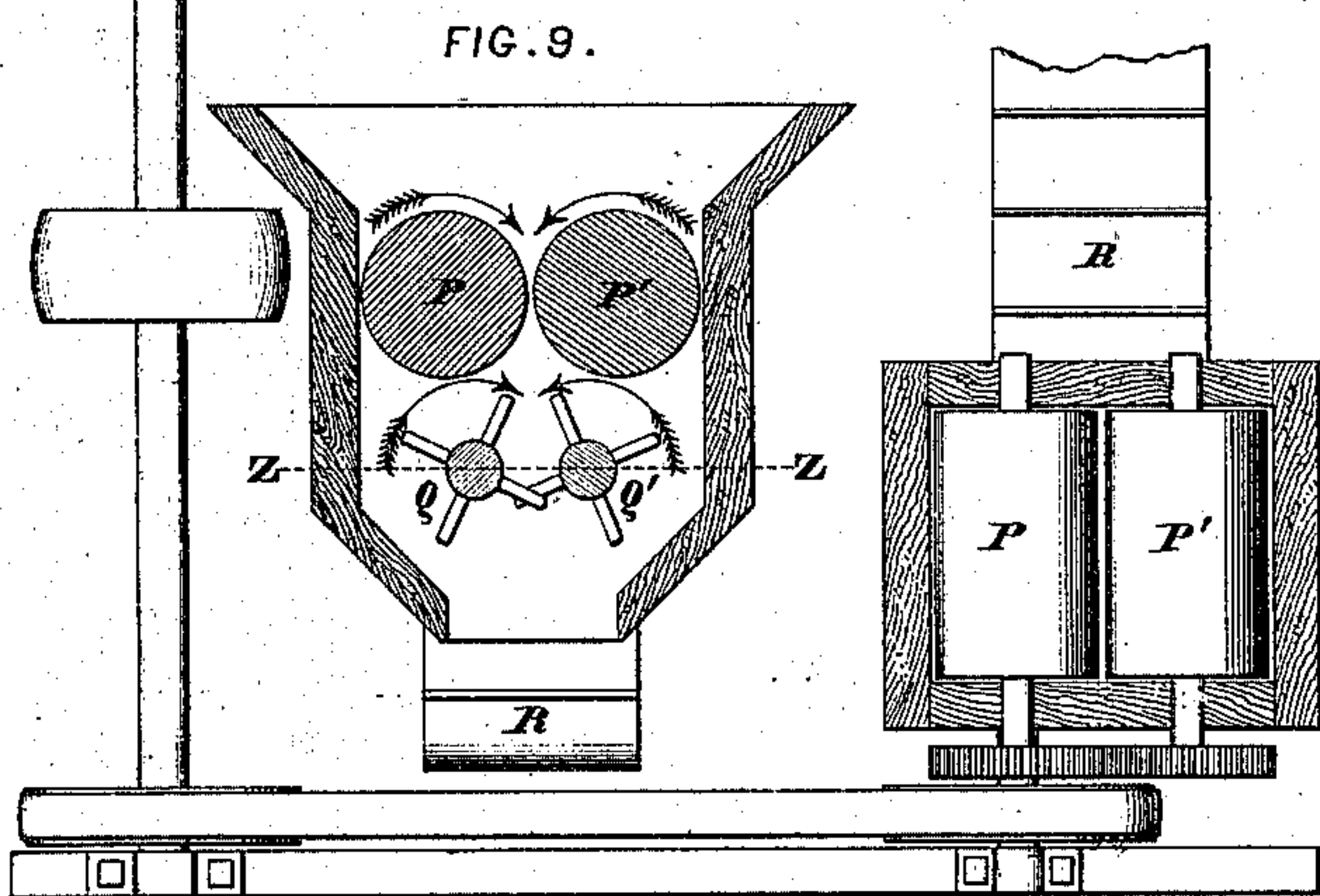
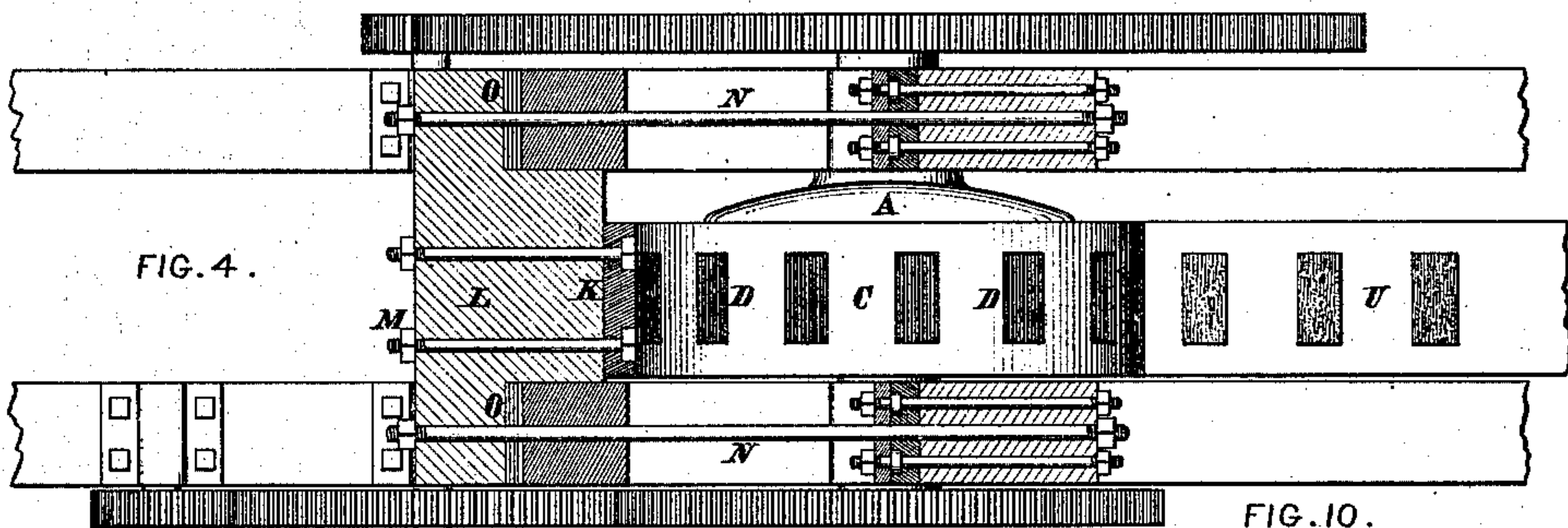
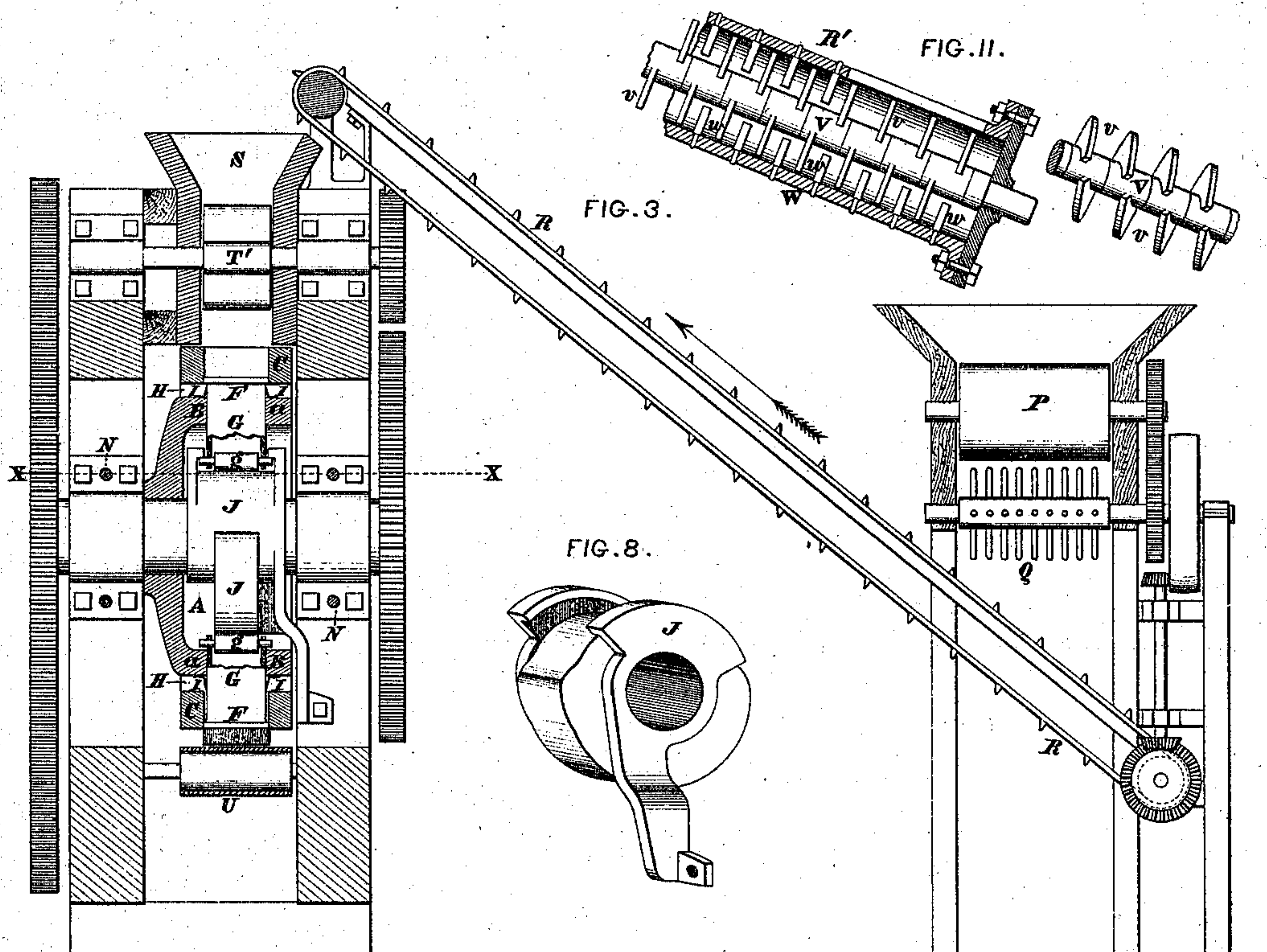


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2. Sheets. Sheet 2.



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UNITED STATES PATENT OFFICE.

GEORGE C. BOVEY, OF CINCINNATI, OHIO.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 100,590, dated March 8, 1870.

To all whom it may concern:

Be it known that I, GEORGE C. BOVEY, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain Improvements in Brick-Machines, of which the following is a specification:

My improvements are particularly designed for the class of brick-machines which contain a series of molds in the periphery of a cylinder or mold-wheel.

The first part of my invention consists in forming such molds in a tire or band encircling the body of the wheel, which tire, whenever the molds become too much worn by use, can be removed from the wheel, and either repaired or replaced by a new and unworn tire.

The second part of my invention consists in the provision of drifts or passages for the escape or removal of clay and imprisoned air from the sides of the plungers.

The third part of my invention consists in the application to the sides of the plungers, within said passages, of yielding sleeves or scrapers, for detaching and depositing in the said passages whatever clay may be adhering to the sides of the plungers.

The fourth part of my invention consists in the provision of a pressure plate or gage, whose office is to remove the surplus clay from each successive mold, and to press the remaining portion compactly into the mold, so as to impart a smooth and hard finish to the brick.

Figure 1 is vertical section of my machine in the plane of rotation of the mold-wheel. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse section of said machine with its attendant pulverizer and conveyer. Fig. 4 is a horizontal section at the line *xx*, with the mold-wheel in relief. Fig. 5 is an enlarged section of a mold-plunger and portion of the fixed cam, taken in the plane of the mold-wheel's axis. Fig. 6 is a section (to the same scale as Fig. 5) of the same parts in a plane of rotation. Fig. 7 is a section taken at the line *Y Y*. Fig. 8 is a perspective view of the fixed cam which actuates the plungers. Fig. 9 is a transverse section of the crushing and pulverizing apparatus. Fig. 10 is a horizontal section of said apparatus at the line *Z Z*. Fig. 11 shows by side elevation a portion of

the screw form of my conveyer, a part of the shaft being shown detached.

My mold-wheel closely resembles in many particulars that described in my patent of October 20, 1868, but differs from said wheel in that it consists of two portions, namely, an inner portion, A, whose rim *a* is pierced with a series of equidistant radial apertures, B, and a tire, C, likewise pierced with a series of radial apertures, D, in continuation of the apertures B, said tire being secured to the periphery of the portion A by suitable keys E, or otherwise.

The apertures D in the tire C constitute the molds proper, and are as much larger than the apertures B in the body portion A as the plunger face-plate F is larger than the stem or body G of the plunger.

The apertures D at their inner extremities are enlarged so as to form a chamber, H, surrounding the plunger-body. This chamber H is of great utility in affording a passage or way of escape for whatever air or clay may work past the face-plate, and which, if not removed, would penetrate to the interior of the wheel and clog the parts.

The chamber H also affords room for the attachment to the portion A of a series of elastic metallic scrapers, I, which, embracing the plunger-body, detach therefrom whatever clay may have adhered thereto, so as to prevent it working down farther into the wheel, and, by diverting it into the chamber H, to enable its ready removal from time to time. In other respects, the above parts, and also the fixed cam J, together with the rollers *g*, are substantially the same as the corresponding parts in the brick-machine described in my aforesaid patent of October 20, 1868.

Instead, however, of an additional mold-wheel, I impart the proper pressure to the clay in each mold by means of a plate, K, firmly secured to an adjustable block, L, by bolts M, and the whole secured to the frame by bolts N. The working face of the plate K is concavely cylindrical to fit and hug the periphery of the tire C. Strips O, introduced between the block L and the frame, enable, by their removal or insertion, the adjustment of the pressure-plate K toward or from the tire, and thus enable the perfect contact of

these important parts to be maintained even after they have become reduced by wear.

The pressure-plate K serves to cut off superfluous clay, and to press the remainder compactly into the mold with a uniform density and finish.

In order to thoroughly crush, temper, and comminute not only the crude clay but any rocks or other refractory particles it may contain, I introduce the clay into a hopper having a pair of cast-iron cylinders, P P', from which the clay escapes in the form of a sheet, which is caught and torn to pieces by a pair of intermeshing spiked wheels, Q Q', from which the now thoroughly comminuted clay is conducted by a conveyer, R or R', into the hopper S of the brick-machine, said hopper having a series of ribbed wallowers, T T', substantially similar to those described in my patent aforesaid.

The form of conveyer shown at R' consists of a rotating shaft, V, armed with spiral blades v, and revolving axially within a tube, W, which extends obliquely upward from the crushing and pulverizing apparatus P P' Q Q' to the hopper S. These spiral blades v serve, in conjunction with projections w, from the interior of the tube W, to still further comminute the clay in the act of elevating the same to the hopper S.

X is a scraper, and U is an off-bearer similar to those described in my aforesaid patent.

While describing the preferred forms of my improvements, I reserve the right to vary the

same in non-essential particulars. For example, the crushing and pulverizing apparatus may be placed directly over the hopper S, so as to dispense with a conveyer, or the clay may be discharged onto a platform and be thence shoveled into the hopper by an attendant.

The tire C may be secured to the body of the mold-wheel by bolts instead of by keys.

The chambers H may be formed in a mold-wheel cast in one instead of two pieces, and such chambers may be used in a horizontal mold-wheel.

I claim as my invention—

1. The provision, in a brick-machine, of the removable tire C D to the mold-wheel, substantially as and for the purpose designated.

2. The provision, in a brick-machine, of the chambers H around the plungers, for the objects set forth.

3. The provision, within the chambers H, of the yielding scrapers I, hugging the plunger-body, for the purpose set forth.

4. The adjustable concave pressure-plate or gage K, in combination with mold-wheel A C, block L, bolts M and N, and strips O, as and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

GEORGE C. BOVEY.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.