

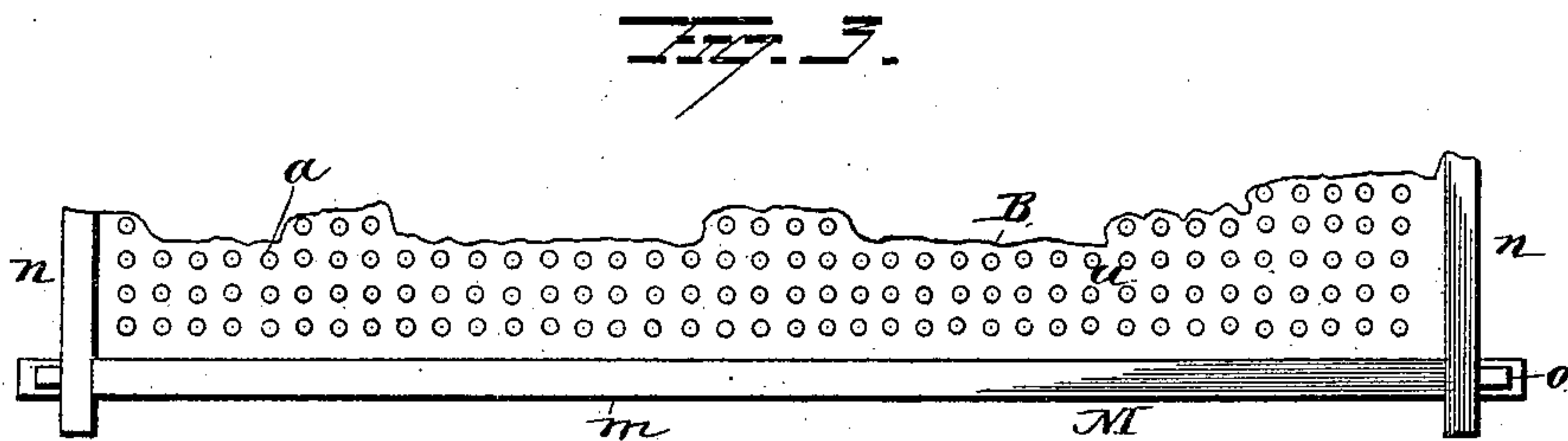
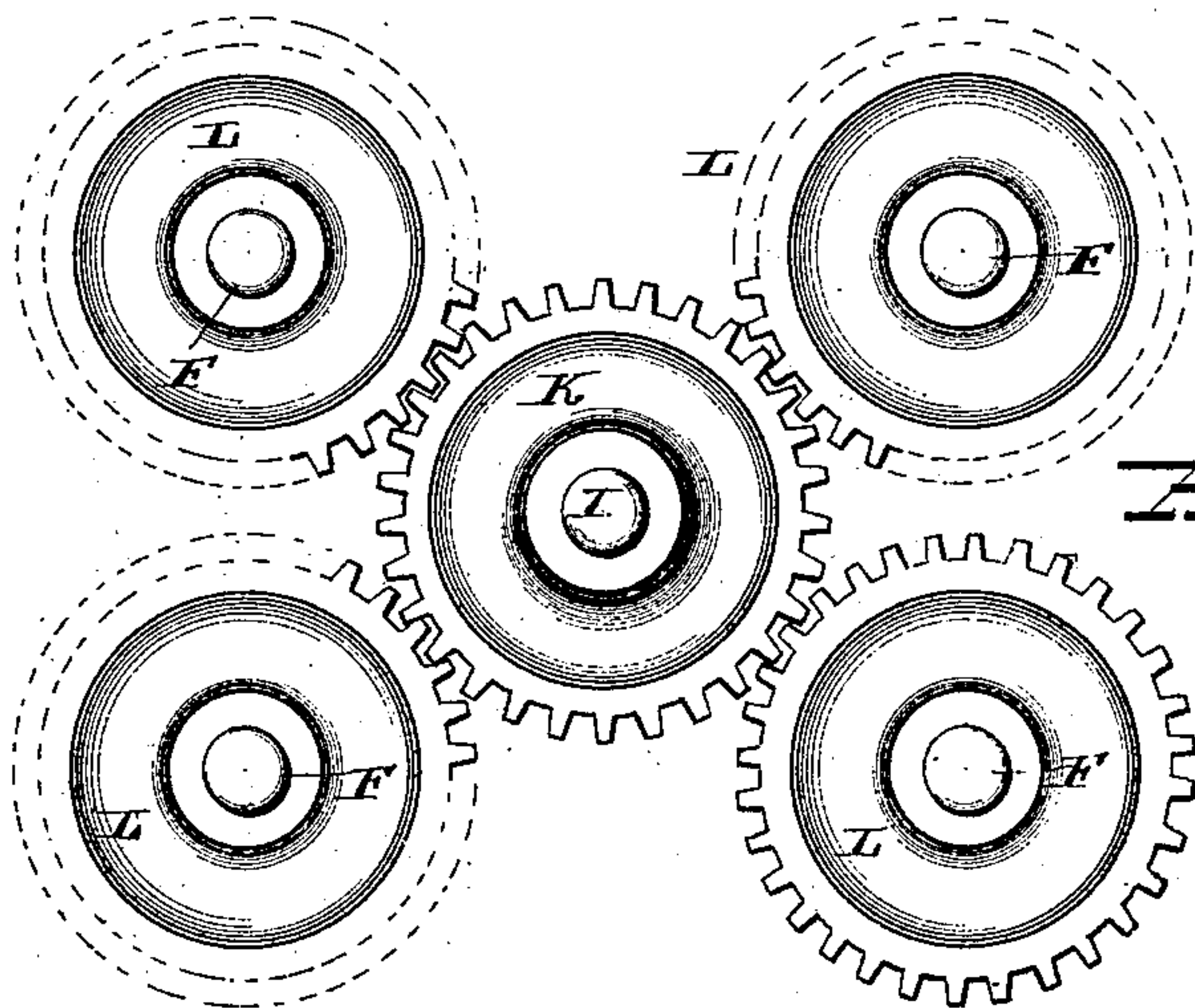
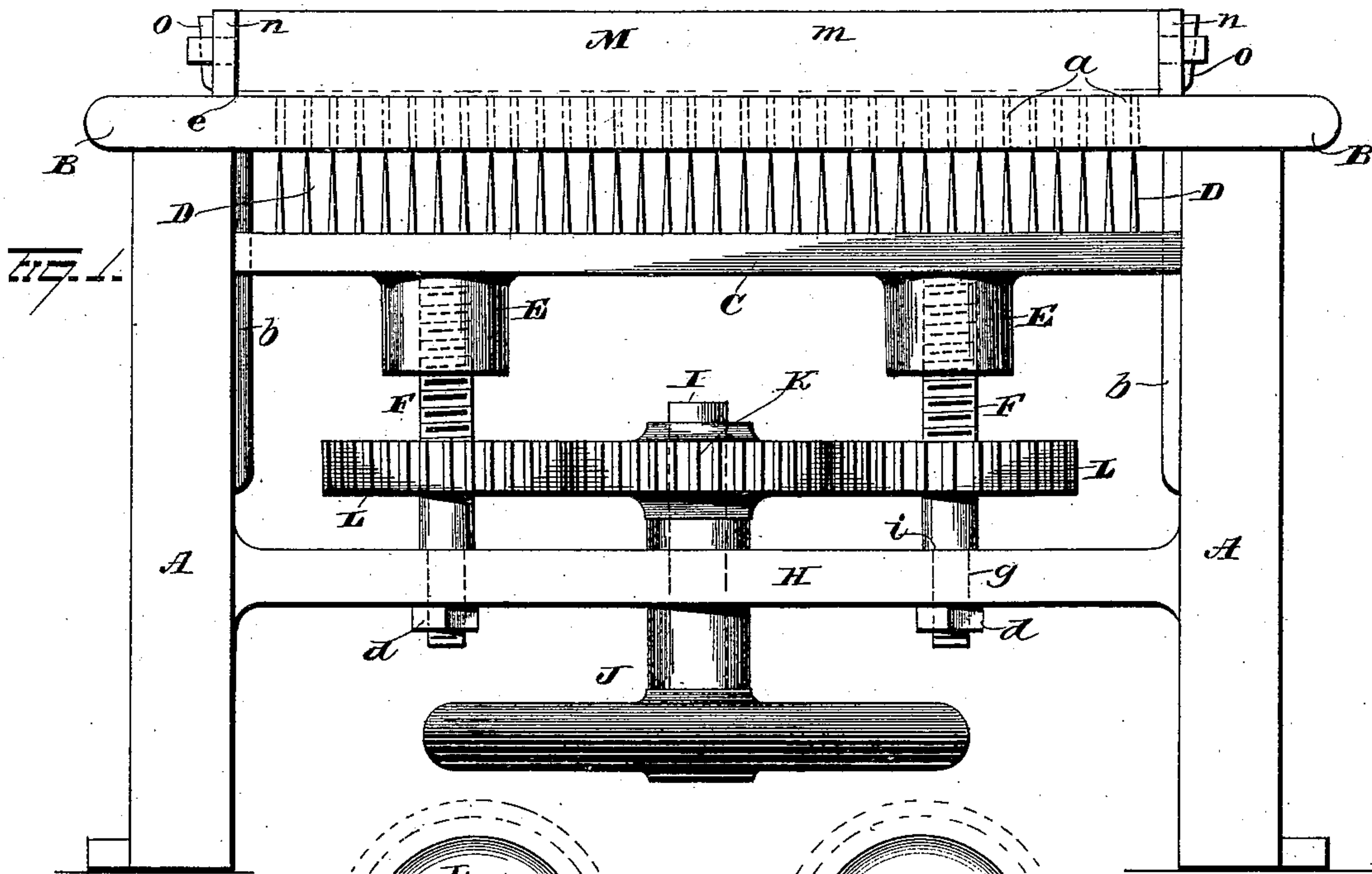
(No Model.)

S. SNELL.

MACHINE FOR MANUFACTURING PAPER FILTERING STONES OR TILES.

No. 356,508.

Patented Jan. 25, 1887.



WITNESSES
Ed. Nottingham
Geo. F. Downing.

INVENTOR
Sam'l. Snell
By *H. A. Seymour* Attorney

UNITED STATES PATENT OFFICE.

SAMUEL SNELL, OF SPRINGFIELD, MASSACHUSETTS.

MACHINE FOR MANUFACTURING PAPER FILTERING STONES OR TILES.

SPECIFICATION forming part of Letters Patent No. 356,508, dated January 25, 1887.

Application filed June 9, 1886. Serial No. 204,648. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL SNELL, of Springfield, in the county of Hampden and State of Massachusetts, have invented certain
5 new and useful Improvements in Machines for Manufacturing Paper Filtering Stones or Tiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the
10 art to which it appertains to make and use the same.

My invention relates to an improvement in machines for manufacturing paper filtering stones or tiles, the object being to provide a
15 machine of this character which will be simple and durable in its construction and adapted to be operated by a minimum expenditure of power; also, to provide a machine in which the filtering passages may be formed in the
20 stone without necessitating the raising or lifting of the stone in its process of manufacture.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter de-
25 scribed, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of one form of machine embodying my invention. Fig. 2 is a plan view of the gears for raising and lowering the fol-
30 lower. Fig. 3 is a plan view of the perforated table and mold-frame supported thereon, and Fig. 4 is a cross-section of the filtering stone or tile.

A represents legs or standards, which support the table B, the latter being provided with holes *a*, which are cylindrical in form and extend vertically through the table. Beneath the table B is located a follower, C, the ends of which engage in guides *b*, formed on the inner
40 sides of the legs A, and serve to retain the follower against displacement during its operation.

To the follower are secured the pins D, which are conical or tapering in form. The pins
45 may be secured to the follower in any desired manner; but preferably the follower has holes of the proper size drilled through the same, and the pins are then tightly driven into these holes and securely fastened in place.

50 On the under side of the follower are formed the depending bosses E, which are screw-

threaded and receive the screws F, one at each corner of the follower. Each screw-shaft I is provided with a bearing, *g*, which enters a corresponding hole, *h*, in the girt or cross-bar H. 55 The bearing *g* is of less diameter than the screw-shaft, thereby forming an annular shoulder, *i*, which rests upon the cross-bar H and supports the screw-shaft.

To the lower and projecting end of the bearing of each screw-shaft is secured a nut, *d*, to retain the screw-shaft in place. 60

I is a central shaft, journaled in an elongated bearing or box formed on the cross-bar H, the lower end of the shaft being provided with a
65 hand-wheel, J, and the upper end with a large gear, K, the latter meshing with the four small gear-wheels L on the four screw-shafts. By this construction and arrangement of parts the requisite power may be transmitted to the
70 follower for raising and lowering it, and an even and uniform motion is transmitted to the entire surface of the follower during its operation.

On the upper surface of the table B is placed 75 the frame M, which consists of the side pieces, *m m*, and end pieces, *n n*, which are detachably secured together by the wedges *o*. The side and end pieces of the frame are seated against the shoulders *e* at the sides and ends of the ta- 80 ble B, and thus are firmly secured in place.

The different parts of the machine are preferably made of metal, and thus insure strength and durability in its construction and oper- 85 ation.

Having fully described the construction and arrangement of the several parts of the machine, I will now briefly describe its operation.

The follower is raised so that the pins D will extend through the holes in the table B and project upwardly above its upper surface. 90 The frame M is placed on the table, as represented in Fig. 1, the ends and sides of the frame being firmly locked together by the wedges *o*. The plastic material of which the stones are 95 made is then poured onto the table within the frame M, filling the space within the frame, and to any desired depth therein. This material is allowed to remain until it has set or hardened, and then the follower is depressed 100 by operating the gearing and screws described, and the pins D are thus withdrawn

from the stone, leaving conical holes h formed therein and extending through the stone. The wedges o are then released and the sides and ends of the frame M removed, leaving the completed stone resting on the table, from which it is then removed and the operation repeated.

The parts of the machine are extremely simple and durable in their construction, and not liable to become unduly worn or impaired in use. In view of the fact that the completed stone, with its series of perforations formed therein, is produced without raising or moving the stone, there is practically no danger of cracking or breaking the stone in its manufacture.

As it is evident that many slight changes in the construction and relative arrangement of the different parts of my improved machine might be made without departing from the spirit of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described; but,

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

1. The combination, with a perforated support or table and a frame made of separable sides and ends resting on said table, of a series of adjustable or movable tapering pins adapted to extend through the perforation in the support or table and project above its upper surface.

2. The combination, with a perforated sup-

port or table constructed with ledges or shoulders at its sides and ends and a removable frame adapted to engage said ledges or shoulders, of a follower carrying a series of pins adapted to extend through the perforations in the table and project above its upper surface, and devices, substantially as described, for operating the follower, substantially as set forth.

3. The combination, with a perforated table and a follower provided with pins constructed and adapted to extend through the perforations in the table and project above its upper surface, of screws and gear-wheels for raising and lowering the follower, substantially as set forth.

4. The combination, with a perforated support or table and a frame made of separable sides and ends resting on said table, of a series of adjustable or movable pins adapted to be withdrawn from the stone, substantially as set forth.

5. The combination, with a perforated table or support, of a follower carrying pins, screws arranged to support the sides and ends of the follower, and gear-wheels for raising and lowering the follower, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAMUEL SNELL.

Witnesses:

S. G. NOTTINGHAM,
C. P. DRURY.