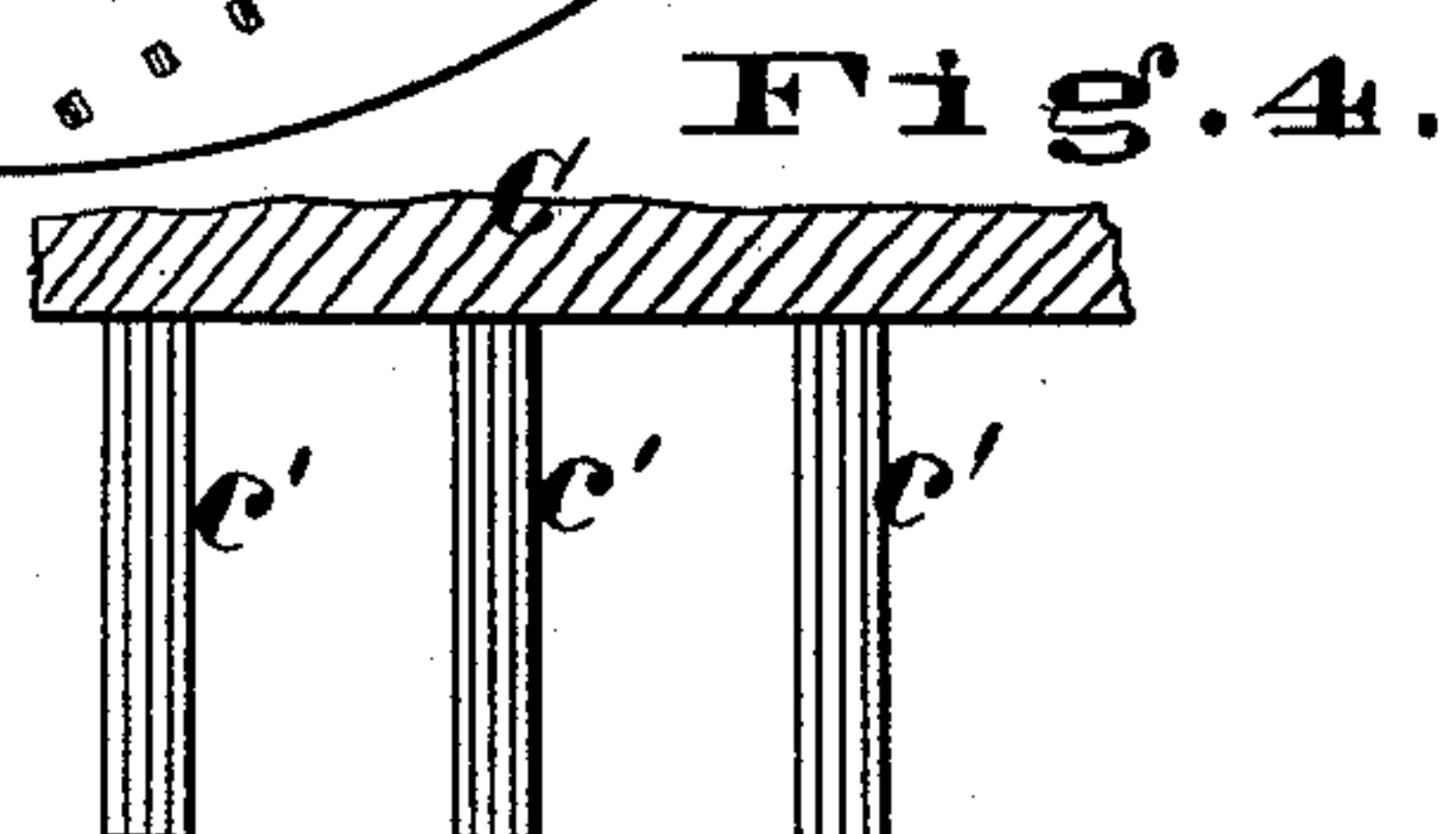
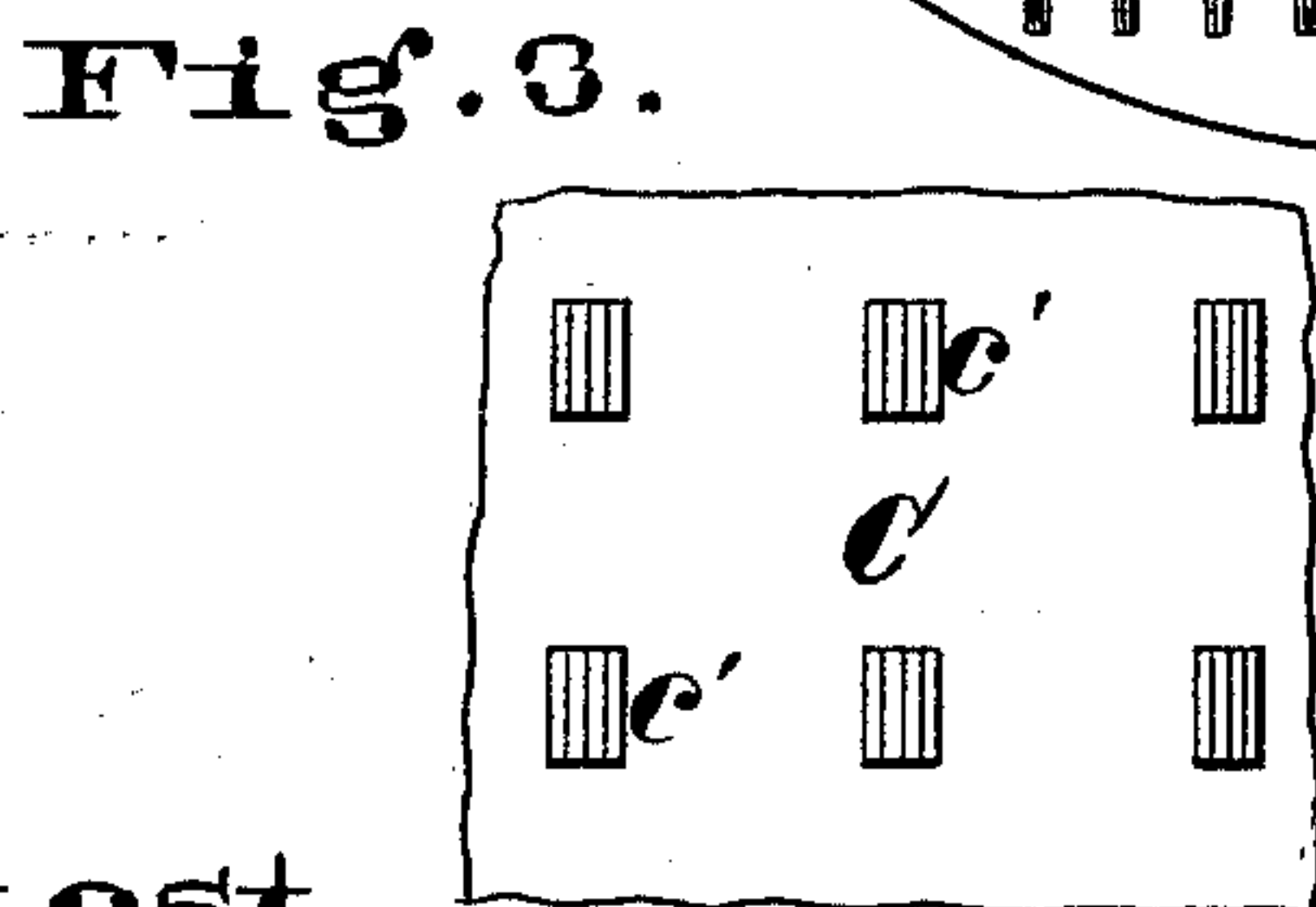
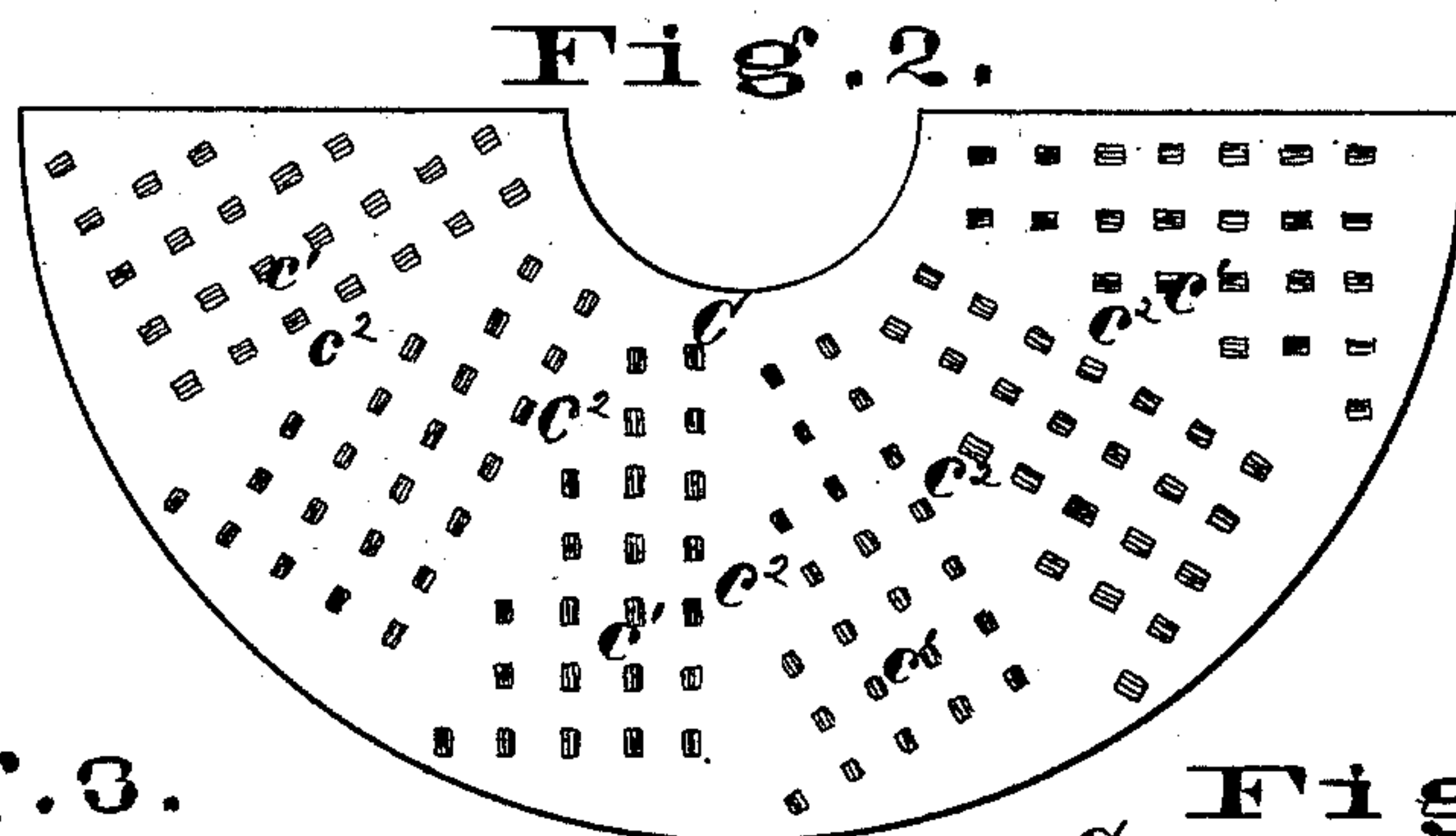
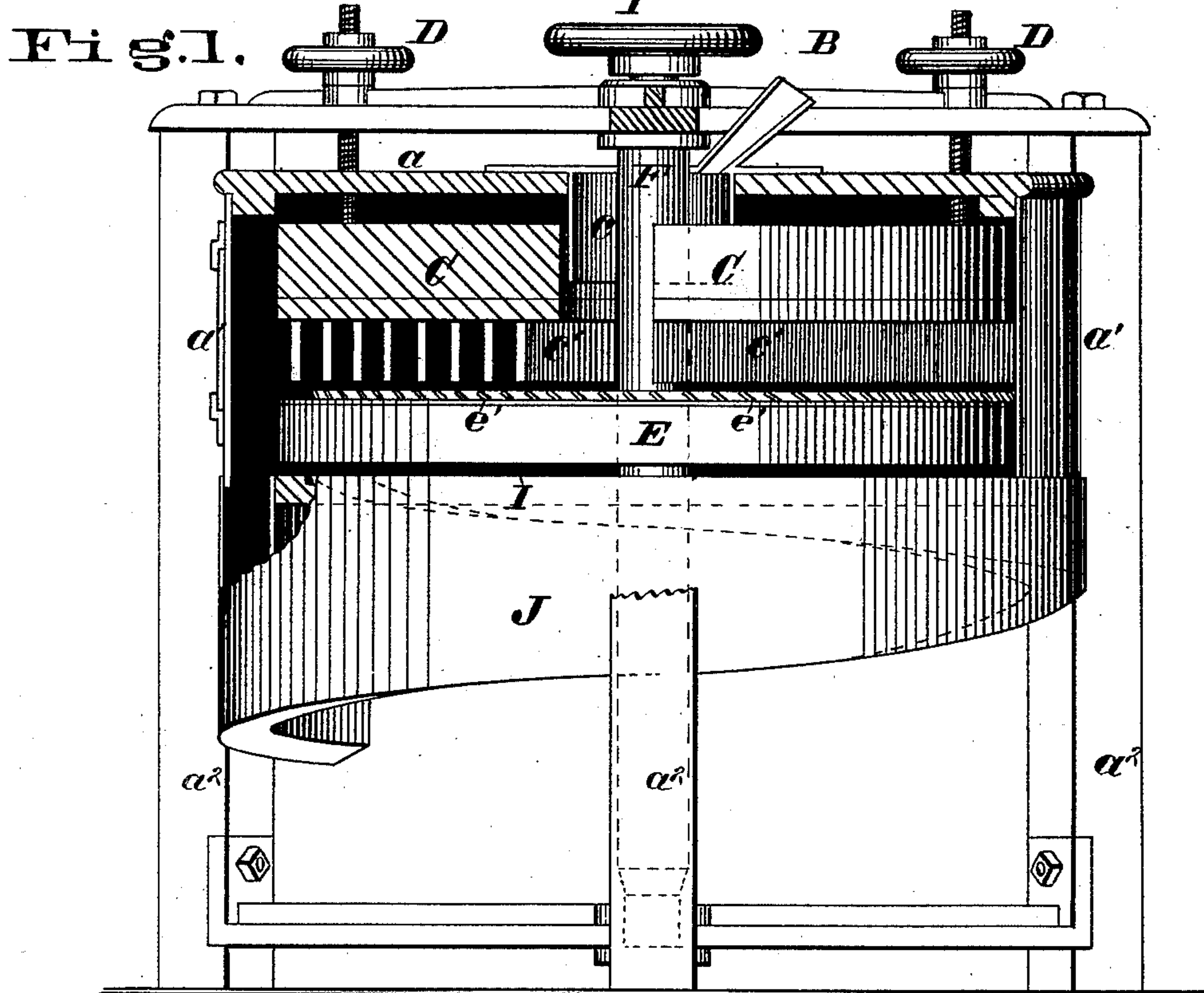


W. C. TURNER.
 Bran-Scouring Machines.
 No. 223,081. Patented Dec. 30, 1879.



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 Paul Bakewell
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Inventor.
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Fig. 5.

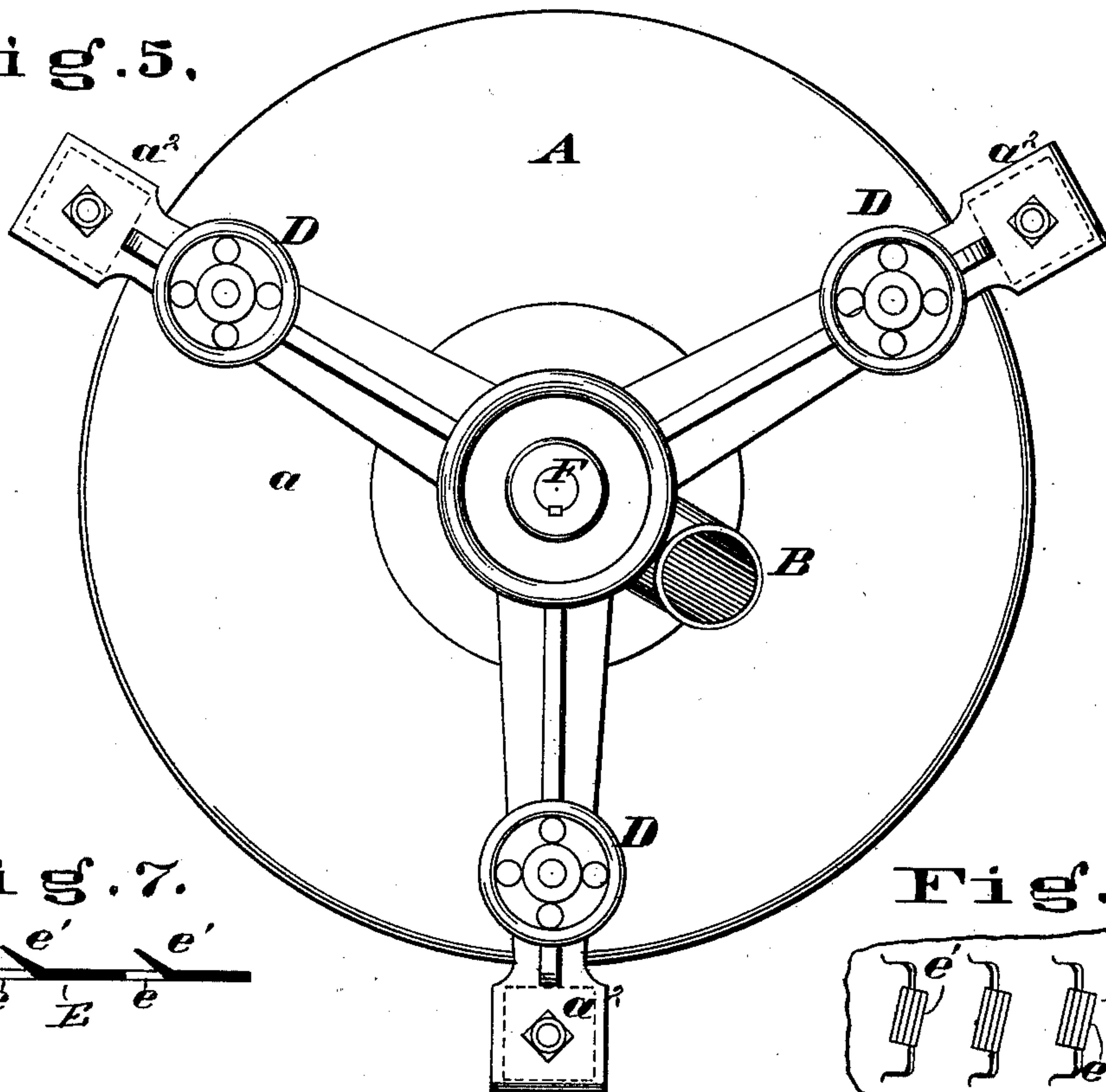


Fig. 7.

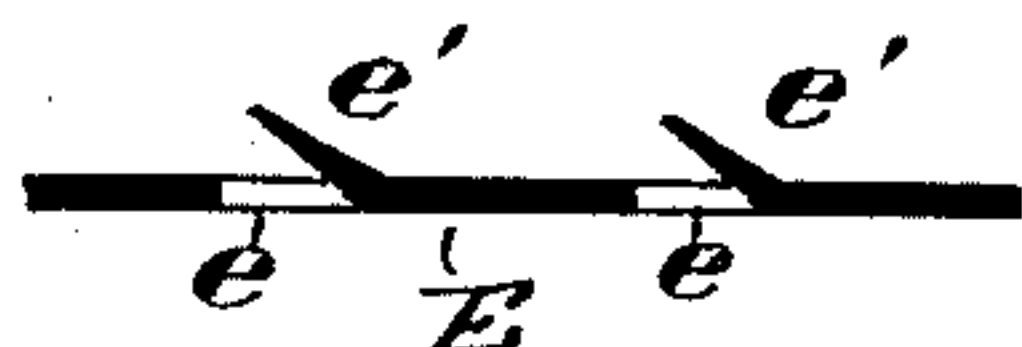


Fig. 8.

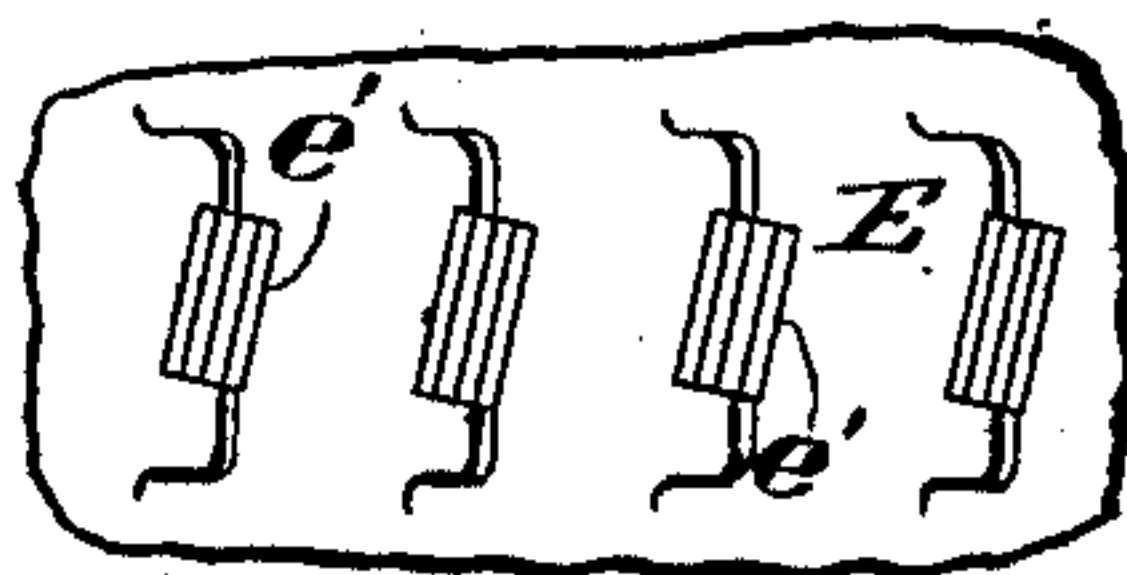
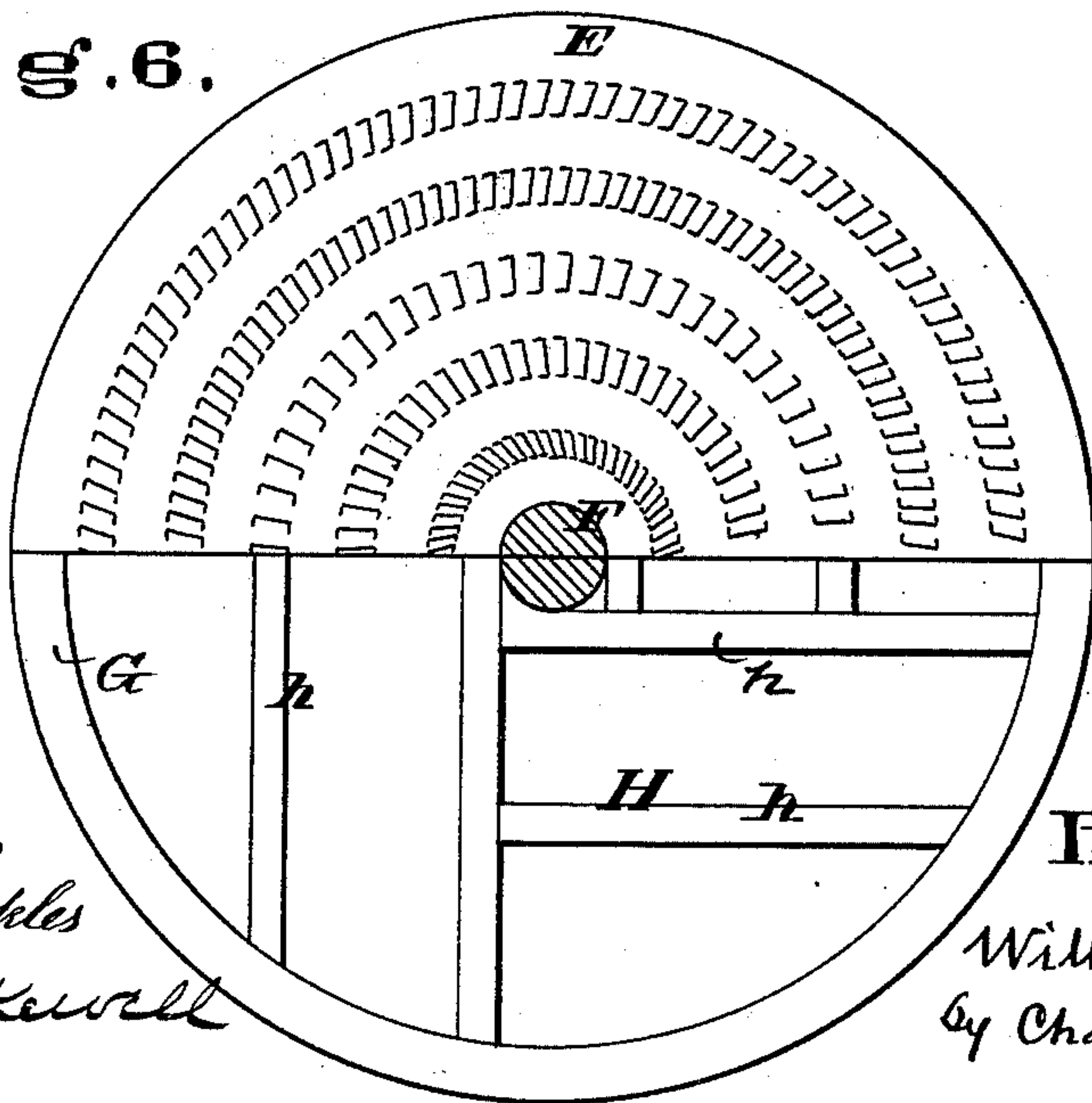


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM C. TURNER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN BRAN-SCOURING MACHINES.

Specification forming part of Letters Patent No. **223,081**, dated December 30, 1879; application filed July 2, 1879.

To all whom it may concern:

Be it known that I, WILLIAM C. TURNER, of St. Louis, Missouri, have made a new and useful Improvement in Bran-Scouring Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation, partly in section, of the apparatus used in carrying out the process; Fig. 2, a bottom view of a portion of the brush; Fig. 3, a detail, being a bottom view, on an enlarged scale, of a portion of the brush; Fig. 4, a detail, being a sectional elevation of a portion of the brush; Fig. 5, a plan of the apparatus; Fig. 6, a plan of the disk, a portion being removed to show the fan beneath; Fig. 7, a detail, being a vertical section taken through the disk; and Fig. 8, a detail, being a view indicating the relative position of the brush-teeth and the disk-lips.

The same letters denote the same parts.

The present invention has relation partly to the special means immediately used in scouring the bran, and partly to the means for properly directing the movement of the bran through and past the scouring apparatus.

The bran is delivered into the apparatus A through a spout, B. The latter is inserted in the top *a* of the casing *a'* of the machine. The bran falls through a central opening, *c*, down through and beneath a stationary brush, C, that is arranged horizontally beneath the top *a*, and suspended therefrom by the screws D D D.

The brush-teeth *c' c'* are made of flat steel wire, being, in a working machine, about three inches long, three thirty-seconds wide, and a sixty-fourth thick. They are arranged in tufts, and the tufts are distributed as shown in Fig. 2, and for the purpose hereinafter described.

E represents a disk, arranged horizontally, and made to rotate just beneath the brush. For this purpose it is attached to a shaft, F, that is arranged vertically in the machine and turning in suitable bearings therein, the motion being imparted thereto, say, by the pulley *f*.

The disk is perforated, as shown at *ee*, Figs. 6, 7, 8, and it is also furnished with raised

edges or sharpened lips *e' e'*. The perforations, so far as providing openings through which the particles can escape is concerned, can be arranged in any preferable mode; but as the lips are conveniently formed from the metal that is struck up in cutting the perforations, and as it is desirable for the lips to be turned and arranged so as to give the proper draft for directing the grain through the machine, the openings and lips are as shown substantially in Fig. 6—that is, to throw the bran away from the center of the disk and to hold it longer near the skirt.

The disk is of sheet metal. The shape of the lips is shown more distinctly in Figs. 7 and 8, and the relative position of the brush-teeth and lips is shown in Figs. 1 and 8.

The disk is attached to a hoop, G, that also serves as a frame for a fan, H, the vanes *h h* of which are within the hoop, just beneath the disk, and as shown in Fig. 6. There is a space, I, beneath the fan, the outlet to which is at the periphery of the hoop, which, in turn, leads into a spiral discharging-spout, J.

The casing of the machine and other parts are suitably supported by the standards *a² a²*.

The action is as follows: The bran, after falling upon the disk, is distributed thereupon, the lips *e'* serving to effect this properly. The disk rotating, the lips carry the bran-flakes against the brush-teeth. The latter, by reason of their elasticity, yield and then spring back, causing the flakes to be shaken and beaten and thrown to and fro, and operating to loosen the middlings therefrom. The desired result is facilitated by arranging the brush-teeth and lips relatively as indicated in Fig. 8, which causes the flakes to encounter the teeth at the corners thereof. In this way the flakes are bent or folded more or less upon the teeth, causing the middlings particles to crack or peel off more rapidly and effectually. Further, by reason of the spaces *c² c²* between the teeth *c'*, room is provided wherein the bran can be thrown by the action of the parts, and there beaten about until the middlings are thoroughly separated from the bran-flakes.

The products—that is, the middlings particles and the bran—are discharged together from the machine, principally down through the openings *ee*, through the fan H, into the

space I, and thence into the spout J. A portion also escapes at the periphery of the disk directly into the spout J. The fan H serves to draw the particles downward through the disk-openings, and thus facilitate the delivery from the machine. The relative position of the teeth and lips also enables the latter (especially from having sharp edges) to exert a shearing action and to cut the middlings off the bran. The bran and middlings are afterward separated by sifting. The flour is similarly detached and separated from the bran.

I claim—

1. The combination of the disk E, having the sharpened lips *e' e'*, and the brush C, having the teeth *c' c'*, substantially as described.
2. The combination of the disk E, having lips *e' e'*, arranged as described, to secure the proper draft, and the brush C, substantially as described.

WILLIAM C. TURNER.

Witnesses:

CHAS. D. MOODY,
WM. L. TURNER.