

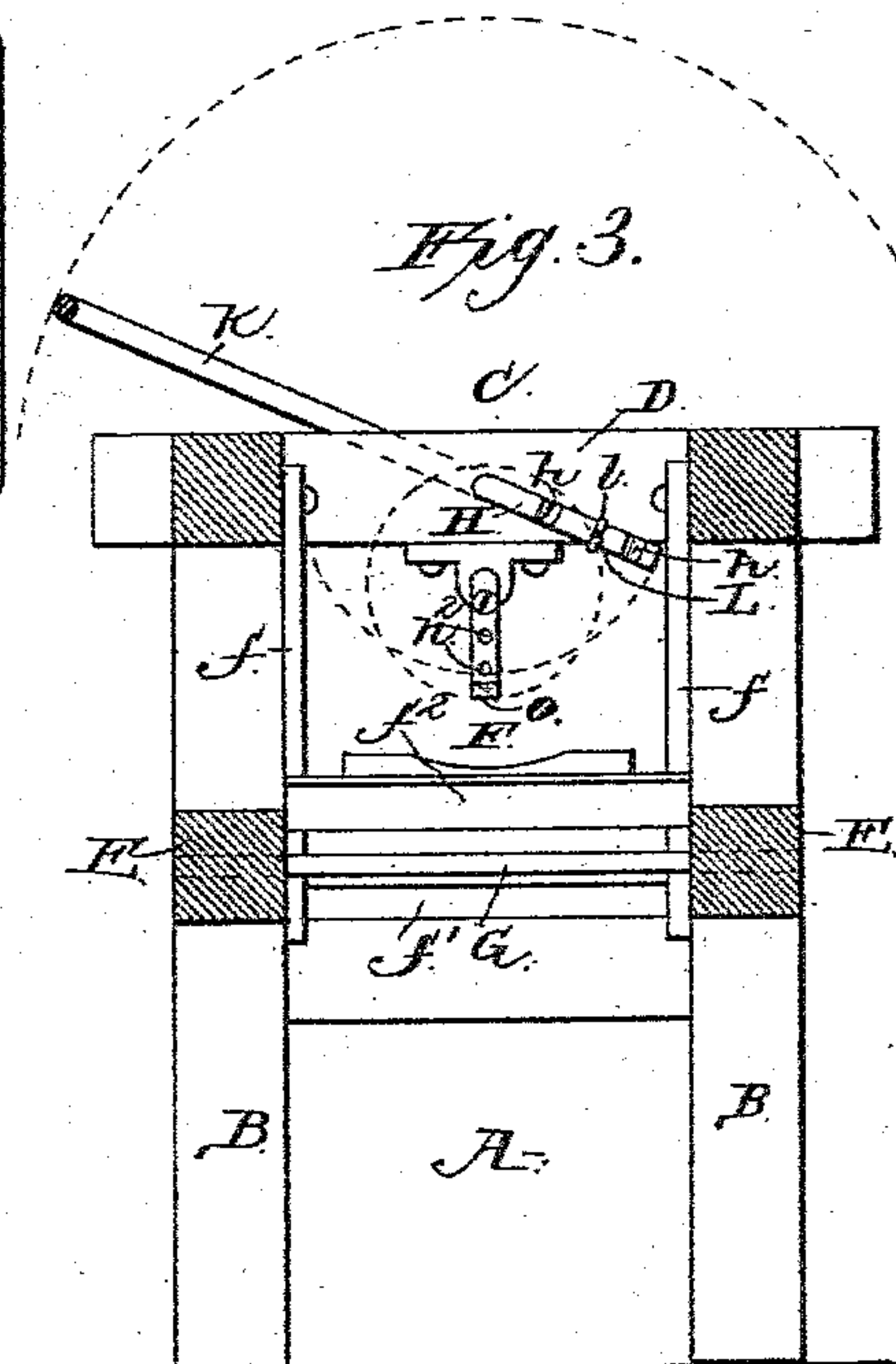
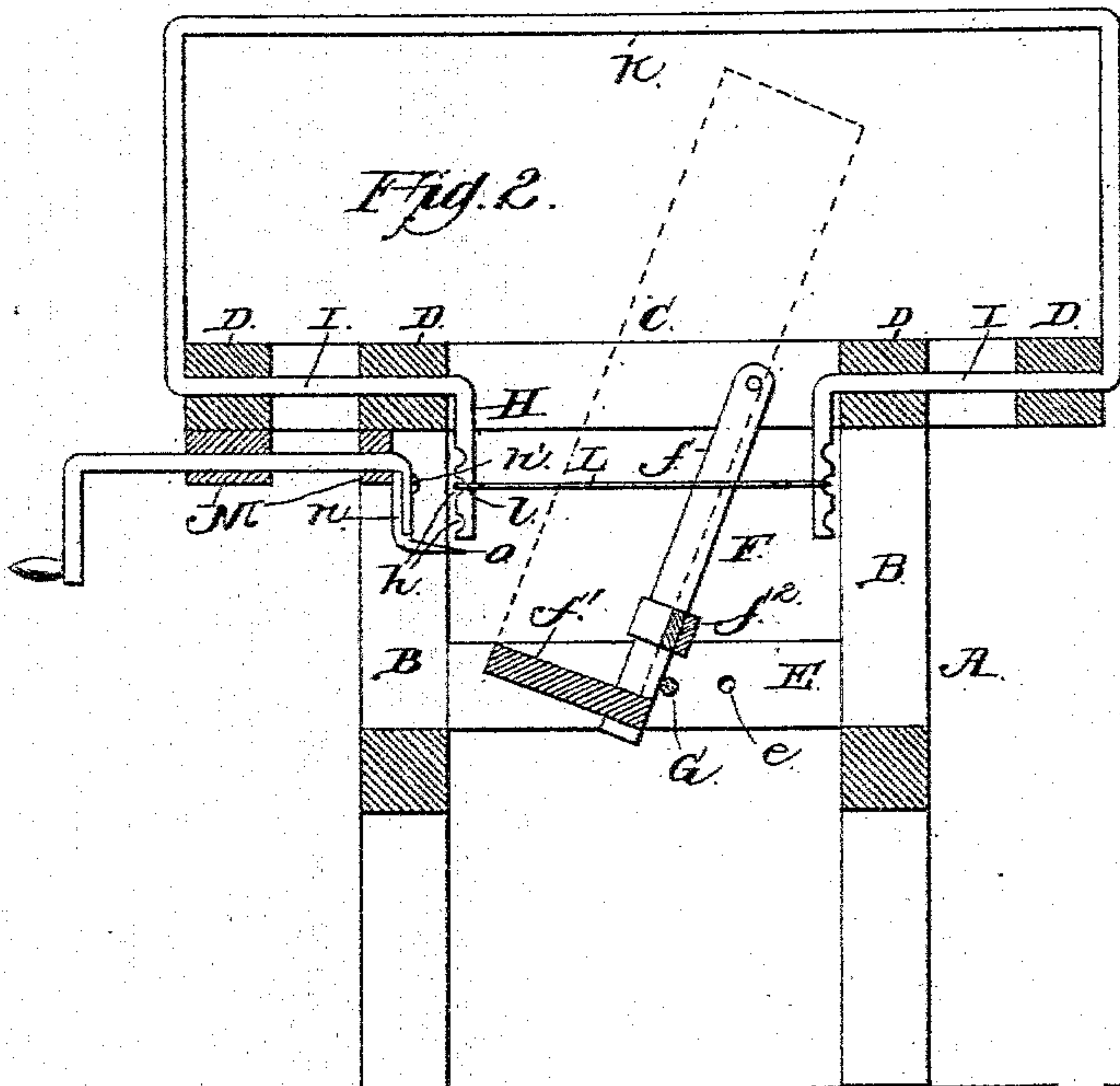
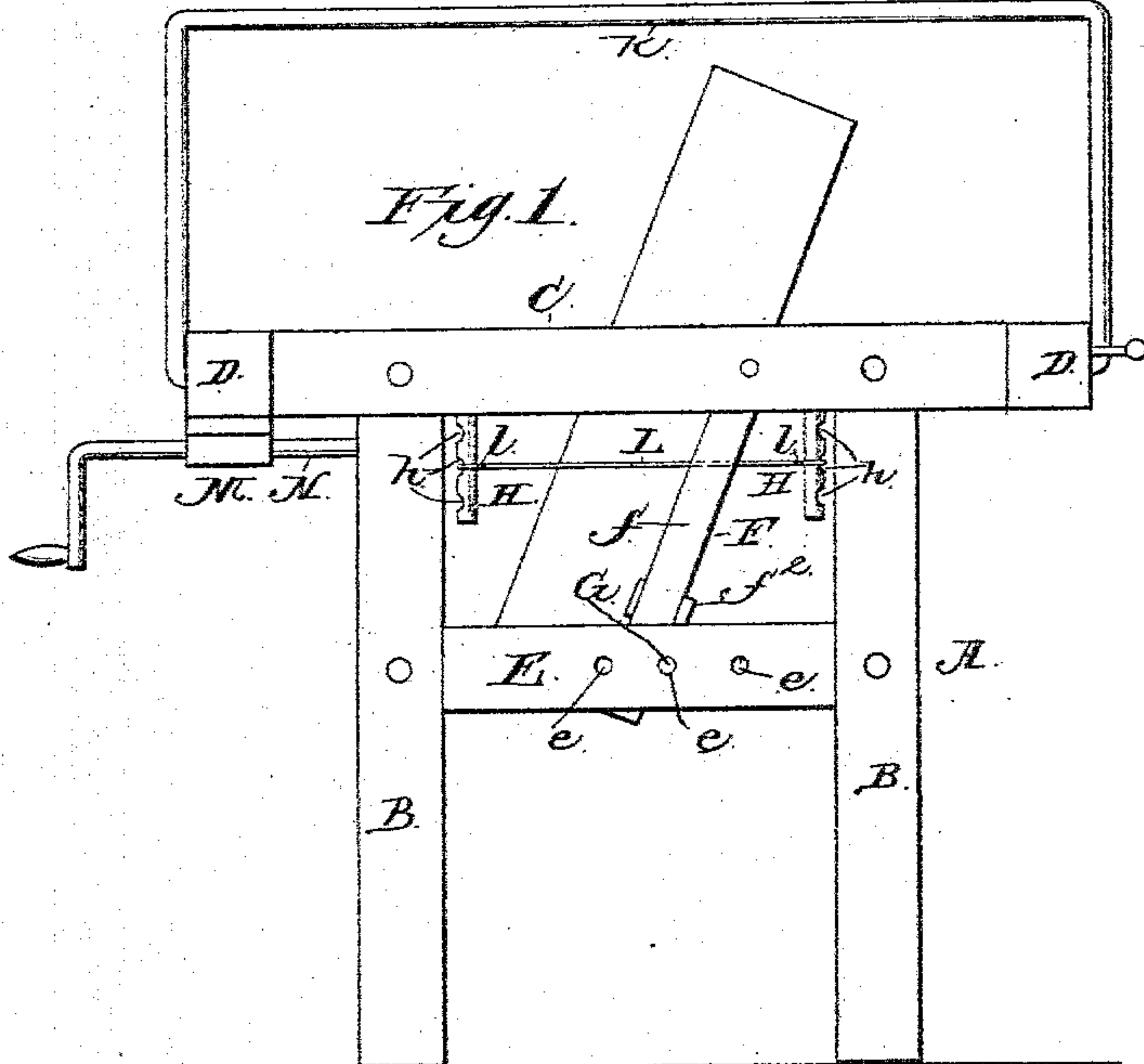
(No Model.)

E. A. STARE.

MACHINE FOR CUTTING DRAIN TILES TO FORM ELBOWS, BRANCHES, &c.

No. 356,801.

Patented Feb. 1, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

ELIAS A. STARE, OF SIBLEY, ILLINOIS.

MACHINE FOR CUTTING DRAIN-TILES TO FORM ELBOWS, BRANCHES, &c.

SPECIFICATION forming part of Letters Patent No. 356,801, dated February 1, 1887.

Application filed February 24, 1886. Serial No. 193,064. (No model.)

To all whom it may concern:

Be it known that I, ELIAS A. STARE, a citizen of the United States, residing at Sibley, in the county of Ford and State of Illinois, have
5 invented a new and useful Improvement in Machines for Cutting Drain-Tiles to form Elbows, Branches, &c., of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to an improvement in machines for cutting drain-tiles in order to make elbows therefor while in a green or incompletd stage of manufacture; and it consists in the peculiar construction and combination of devices that will be more fully set forth
15 hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is
20 a vertical transverse sectional view.

A represents a vertical rectangular frame, comprising the vertical corner-posts or supports B, the rectangular horizontal frame C,
25 secured on the upper ends thereof, the transverse connecting-beams D, and the longitudinal connecting-beams E. Through the beams E are made horizontal series of transverse openings *e*.

30 F represents a swinging frame, comprising the side arm, *f*, the transverse bottom board, *f'*, secured at the lower ends of the arms *f* and connecting the same and the transverse beam *f''*, which is secured to the arms F at a suitable
35 distance above the base-board *f'*, and is concaved or hollowed on its inner side. A transverse rod, G, passes through aligned openings *e*, and connects the beams E, so as to support the swinging frame F, either in a vertical po-
40 sition or at any suitable angle.

H represents a pair of rocking arms, which are secured to or are formed with the inner ends of aligned longitudinal rock-shafts I,
45 which are journaled in the center of the top frame, C. These rock-shafts I are provided with an operating bail or handle, K, by means of which the arms H may be swung through half a circle. The rock-arms H are provided on their outer sides with a series of notches,
50 *h*, and a wire, L, connects the said rock-arms and is stretched tightly between them and has loops *l* formed at each end, which loops en-

gage with the notches *h*, and thereby secures the wire to the rocking arms at any desired adjustment thereon.

55 N represents a longitudinal shaft, which is journaled in blocks M, which are secured on the under sides of the top frame, C, at one end thereof, and in the center of the said frame. To the inner end of this shaft N is secured an
60 arm, *n*, by means of a bolt, *n'*, the said arm extending at right angles to the shaft, and is provided with a series of openings, *n''*, by means of which it may be adjusted on the shaft, so as to cause one end of the arm to describe a circle
65 of any desired diameter when the shaft is rotated. To this end of the arm is secured a cutting-blade, O, which projects in a line with the shaft and at right angles from the arm.

The operation of my invention is as follows: 70 The tile to be cut, in order to form an elbow while in a green stage or before it is burned, and while yet in a plastic condition, is placed in the swinging frame F, the lower end of the tile resting on the bottom board, *f'*, and one
75 side thereof being supported by the beam *f''*. The cutting-wire L is then adjusted on the arms H, so as to describe a circle having the same diameter as the tile, and the rocking arms are then swung through half a circle by
80 means of the bail or handle, causing the wire to pass through the tile and cut it at the desired angle.

In order to cut the hole in the main tile said tile is placed in the frame F, and the latter
85 adjusted to the desired position, and the arm *n* of the shaft N is adjusted so as to cause the blade to describe a circle of the same diameter as the hole to be cut in the tile. The shaft N is then moved inwardly in its bearings, so as
90 to cause the blade to come in contact with the side of the tile, and the said shaft is then operated by means of a suitable crank provided at its outer end, thereby causing the cutting-blade to cut a hole in the side of the tile. 95

A machine for cutting tiles thus constructed is extremely cheap and simple, performs its work with great accuracy, and is not likely to get out of order.

Having thus described my invention, I 100 claim—

1. The combination, in a machine for cutting drain-tiles, of the frame A, having the beams E, provided with the series of openings

e, the swinging frame F to support the drain-tiles while being cut, and the rod G, for passing through the openings e, to support the frame F at any desired position, substantially as described.

2. The combination, in a machine for cutting drain-tiles, of the supporting-frame and the rotating shaft M, carrying the cutting-blade O, substantially as described.

3. The combination, in a machine for cutting drain-tiles, of the rotating shaft M, having the cutting-blade O, laterally adjustable with relation to the said shaft, whereby the said blade is adapted to cut openings of different sizes in the sides of the drain-tiles, substantially as described.

4. The combination, in a machine for cutting drain-tiles, of the swinging frame F, for supporting the tiles at any desired position, and the rocking arms H, having the connecting cutting-wire L, arranged at right angles to the path described by the swinging frame F, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELIAS A. STARE.

Witnesses:

W. A. BICKET,
D. E. SIVERLING.