

(No Model.)

2 Sheets—Sheet 1.

A. ARNFIELD.  
GRATE FOR COTTON LAPPERS.

No. 561,853.

Patented June 9, 1896.

Fig. 1.

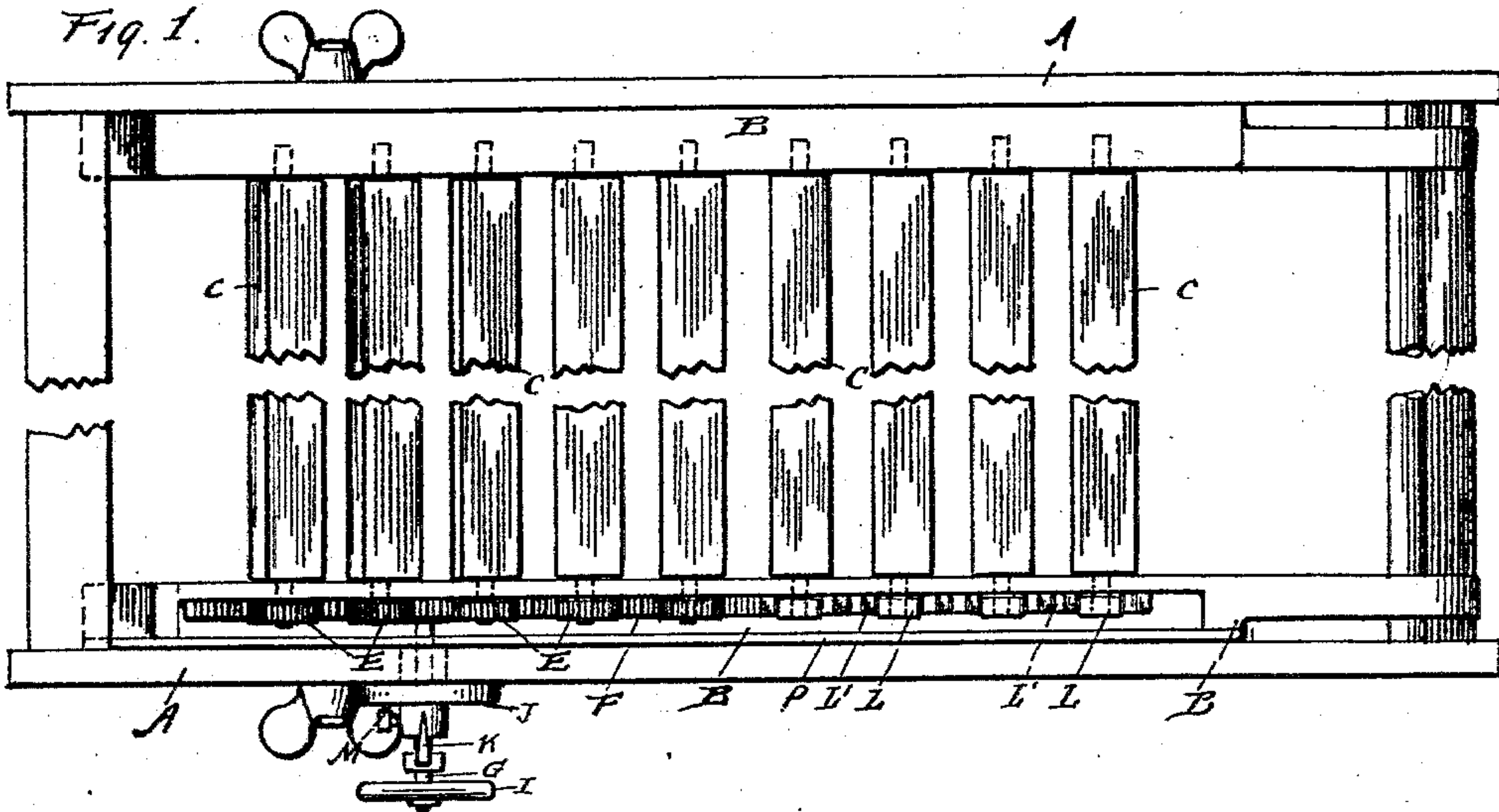
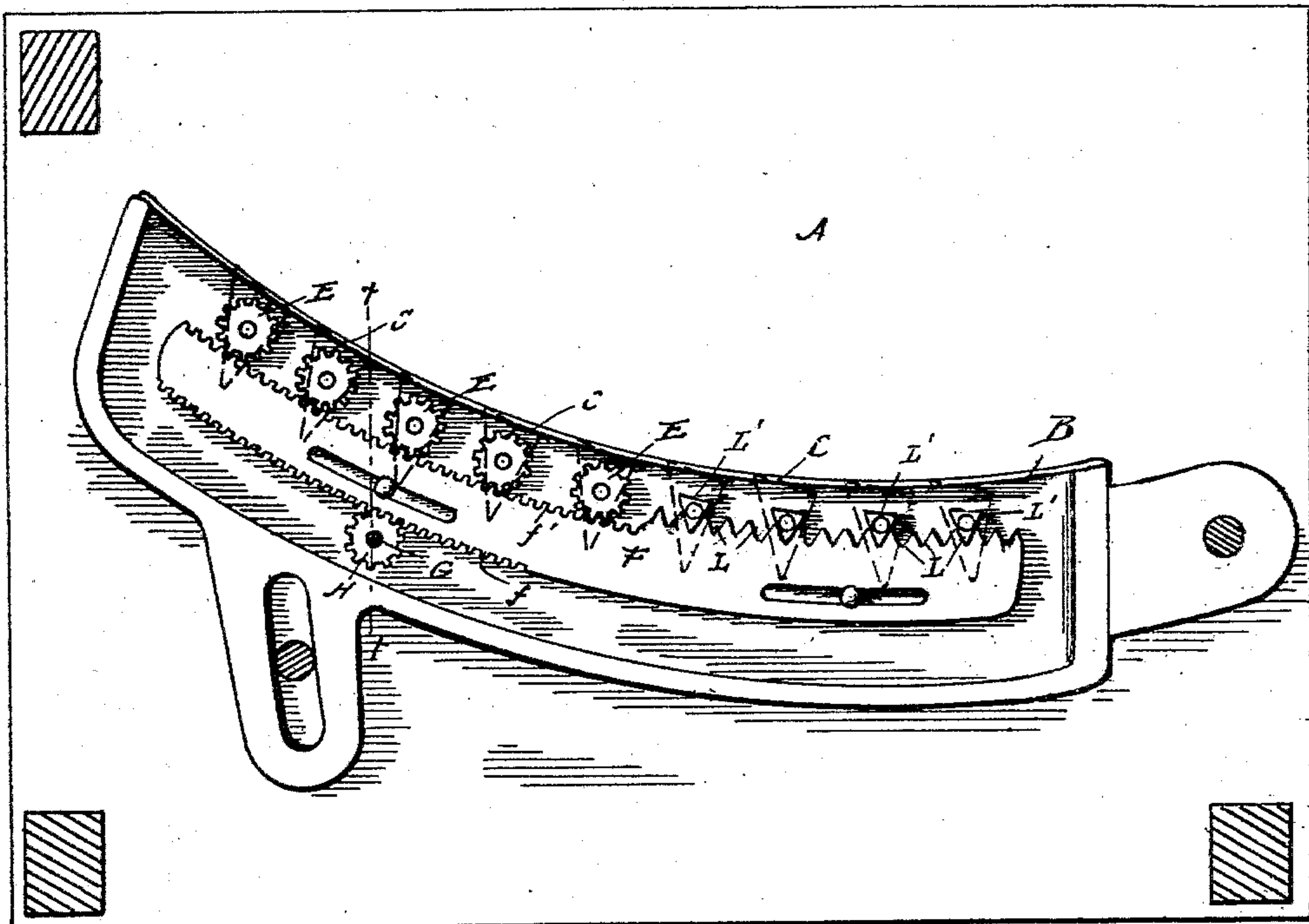


Fig. 2.



WITNESSES

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his Attorney

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Fig. 3.

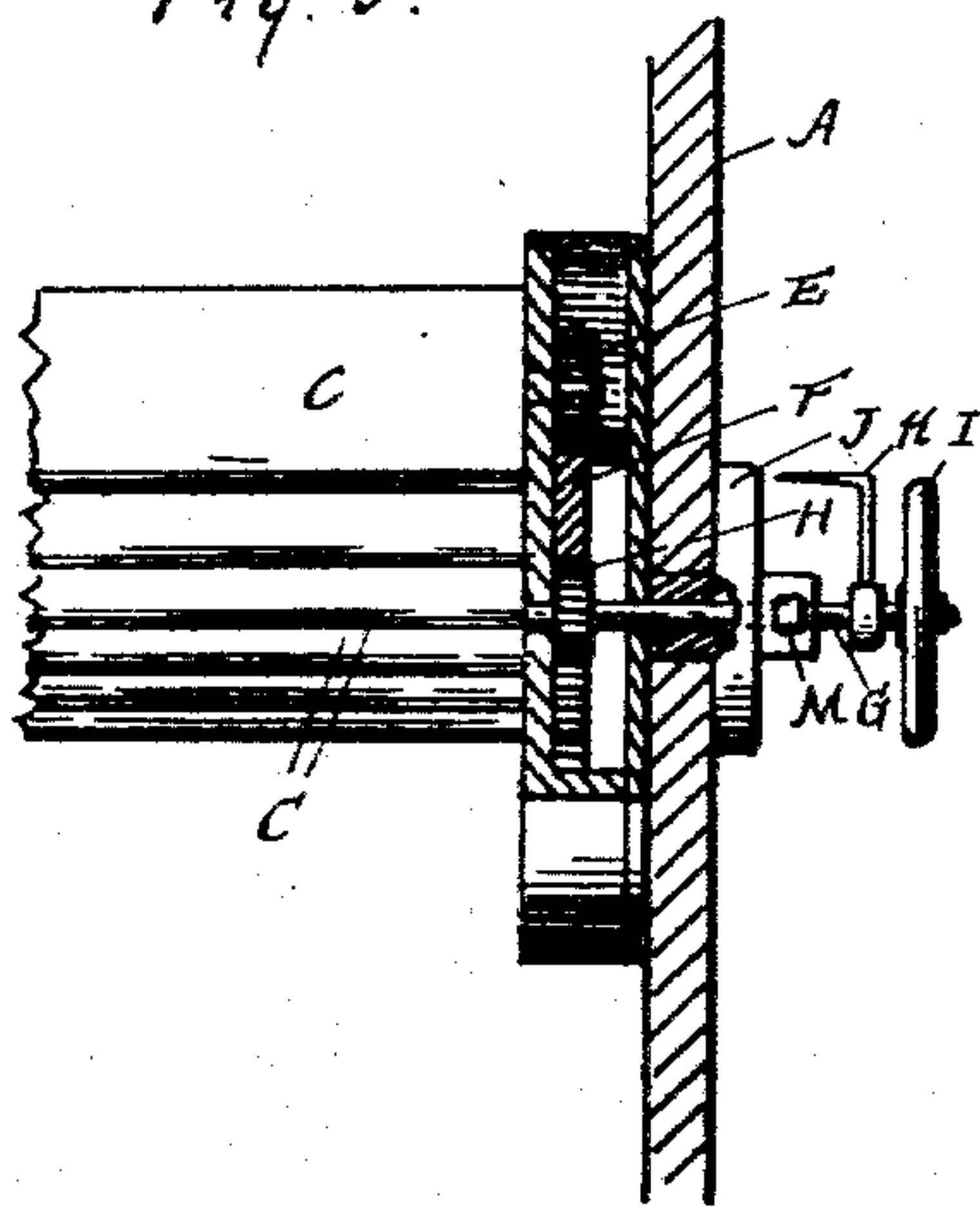


Fig. 4.

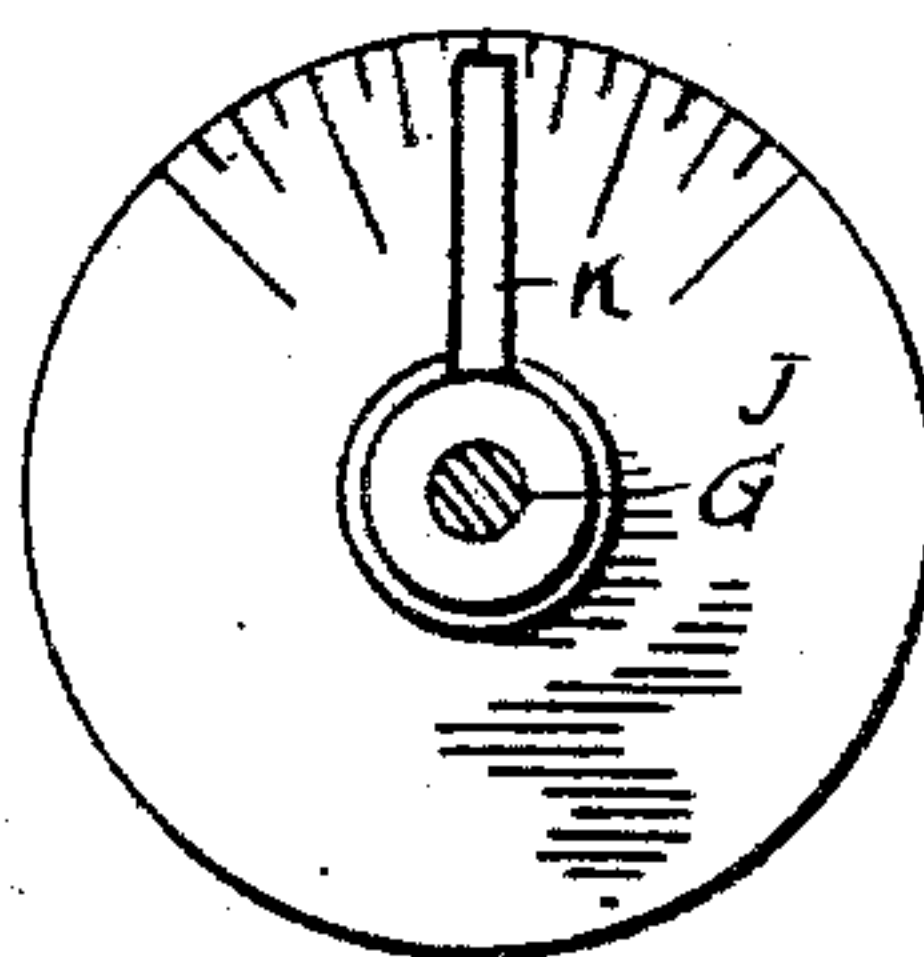
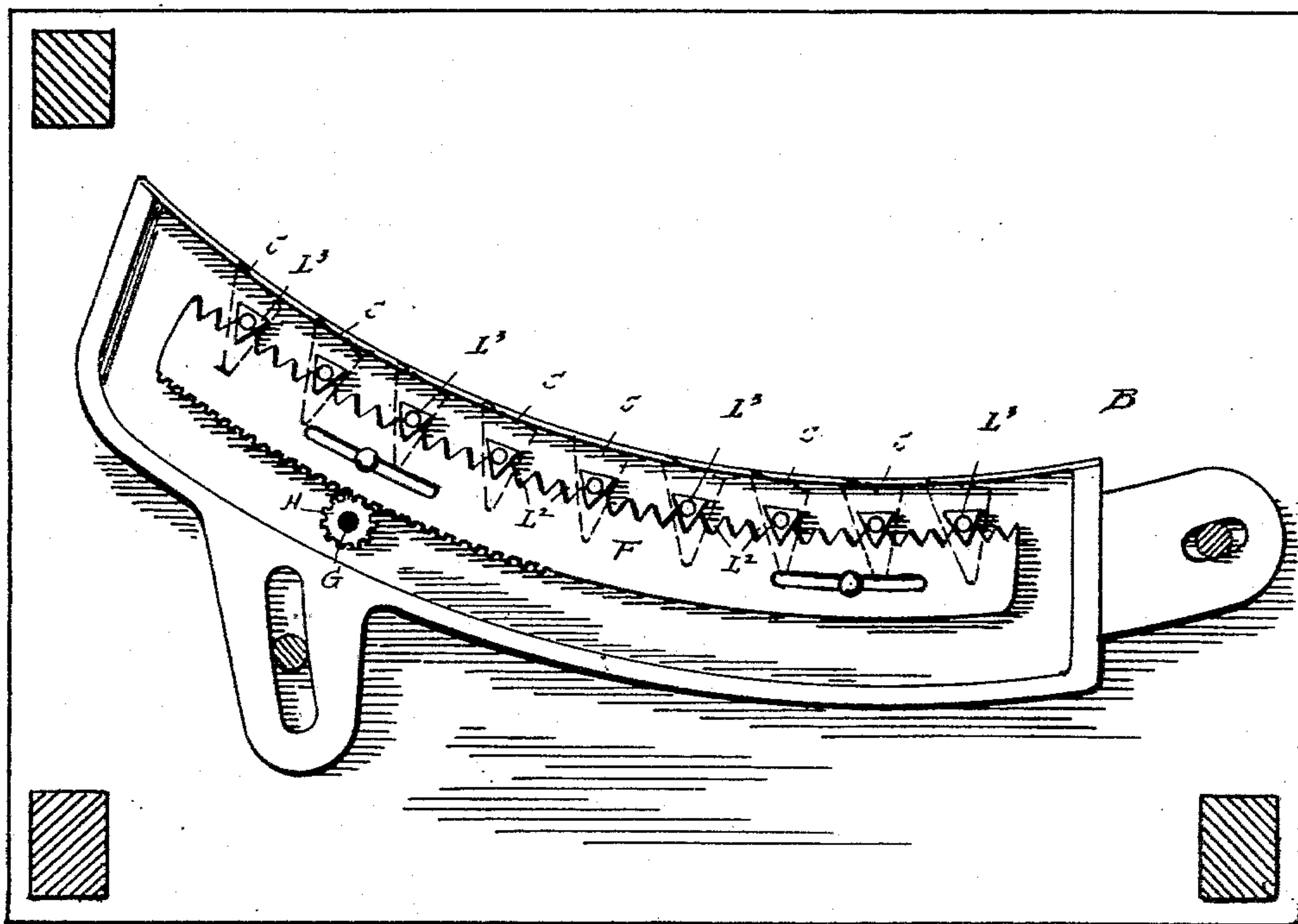


Fig. 5.



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# UNITED STATES PATENT OFFICE.

ALFRED ARNFIELD, OF LOWELL, MASSACHUSETTS.

## GRATE FOR COTTON-LAPPERS.

SPECIFICATION forming part of Letters Patent No. 561,853, dated June 9, 1896.

Application filed November 30, 1895. Serial No. 570,666. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED ARNFIELD, a citizen of the United States, and a resident of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Grates for Cotton-Lappers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a plan view of a grate embodying my invention, broken in the middle. Fig. 2 is a side view of the grate, the side piece of the frame and the cap-piece P being removed. Fig. 3 is a section on line  $x x$ , Fig. 2. Fig. 4 is a face view of the dial-plate and finger-piece. Fig. 5 is a view similar to Fig. 2 of the grate embodying a modification.

This invention has relation to certain new and useful improvements in grates for cotton-lapping machines of the character described and claimed in my Patent No. 540,570, granted June 4, 1895, the object being more particularly to provide improved means for simultaneously adjusting the angle of the movable grate-bars and changing the distances between them.

With this object in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the frame or casing of the machine, B B the curved pieces adjustably pivoted within the same, and C the rotary grate-bars, all constructed and arranged substantially as in the said patent with the exception that all the bars are journaled to rotate.

E designates the gear-wheels, which are carried one by each of the upper of the rotary bars of the series and turn within the outer hollow face of one of the cheek-pieces B.

F designates a rack which is placed within the hollow of the cheek-piece in which it is adapted to slide back and forth, its curvature being coincident with that of the cheek-piece.

The lower edge of said back along a portion of its length is formed with external gear-teeth  $f$ , and the upper edge for the upper half of its length is formed with similar gear-teeth  $f'$ , which engage the teeth of the gears E.

G designates a short shaft which is journaled in the side of the casing or frame and which carries at its inner end a pinion H, that meshes with the teeth  $f'$  of the rack. On the outer projecting end of said shaft is a hand-wheel I.

J is a graduated dial or segment plate which is secured to the outside of the frame or casing and is properly graduated.

K is a finger carried by the shaft and arranged to traverse the said dial or segment to indicate the degree of inclination of the grate-bars.

L designates notches which are formed in the upper edge of the lower half of the rack and which are adapted to engage with triangular-shaped pieces  $L'$  on the ends of the lower bars, whereby said bars will be moved simultaneously with the upper ones.

The operation will be readily understood. As the hand-wheel I is turned the rack will be actuated to rotate the gears E, and thereby the grate-bars, the dial indicating at a glance when the desired adjustment is reached. M is a set-screw which is arranged to engage the shaft G to secure the bars in the proper adjustment.

In Fig. 5 I have shown a modified form of the invention wherein the gears E are dispensed with, and the rack instead of having regular gear-teeth is formed at its upper edge with notches  $L^2$ , similar to the notches L above described, and which are arranged to engage with triangular pieces  $L^3$ , one of which is placed on the journal of each of the bars.

P designates a cap-piece which covers in the rack and gear and prevents dirt from entering.

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

1. In a grate for cotton-lapping machines, the combination with a suitable frame or casing, the curved adjustable cheek-pieces therein, the series of triangular grate-bars extending transversely between the said pieces, and having journal portions which turn in bear-



ings of the said cheek-pieces, the curved rack having means for engagement with the journal portions, and means for actuating said rack, substantially as specified.

5 2. In a grate for cotton-lapping machines, the combination of the curved cheek-pieces, one of which is hollow on its outer face, the triangular grate-bars journaled to rotate in the said pieces, gear-wheels carried on the 10 journals of the said bars, and seated within the hollow face of the said cheek-pieces, a rack also seated in said hollow face and engaging the said gear-wheels, a short shaft, a pinion therein engaging the said rack, means 15 for actuating said shaft, and an indicator; all substantially as and for the purpose specified.

3. In a grate for cotton-lapping machines, the combination of a pair of curved cheek-pieces, the series of triangular bars extend-

ing transversely between said cheek-pieces 20 and having journals which turn in bearings of the said pieces, the gear-wheels on said journals, the endwise-sliding rack having its upper edge externally toothed for a portion 25 of its length for engagement with the said pinions and formed with notches for the remainder of its length which are adapted to engage the journal portions of the lower or sand bars, the lower edge of said rack also 30 having teeth, a pinion engaging the teeth on said lower edge, and means for actuating the said pinion, substantially as specified.

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

ALFRED ARNFIELD.

Witnesses:

JOHN F. THOMPSON,

JAMES H. HALL.