

(No Model.)

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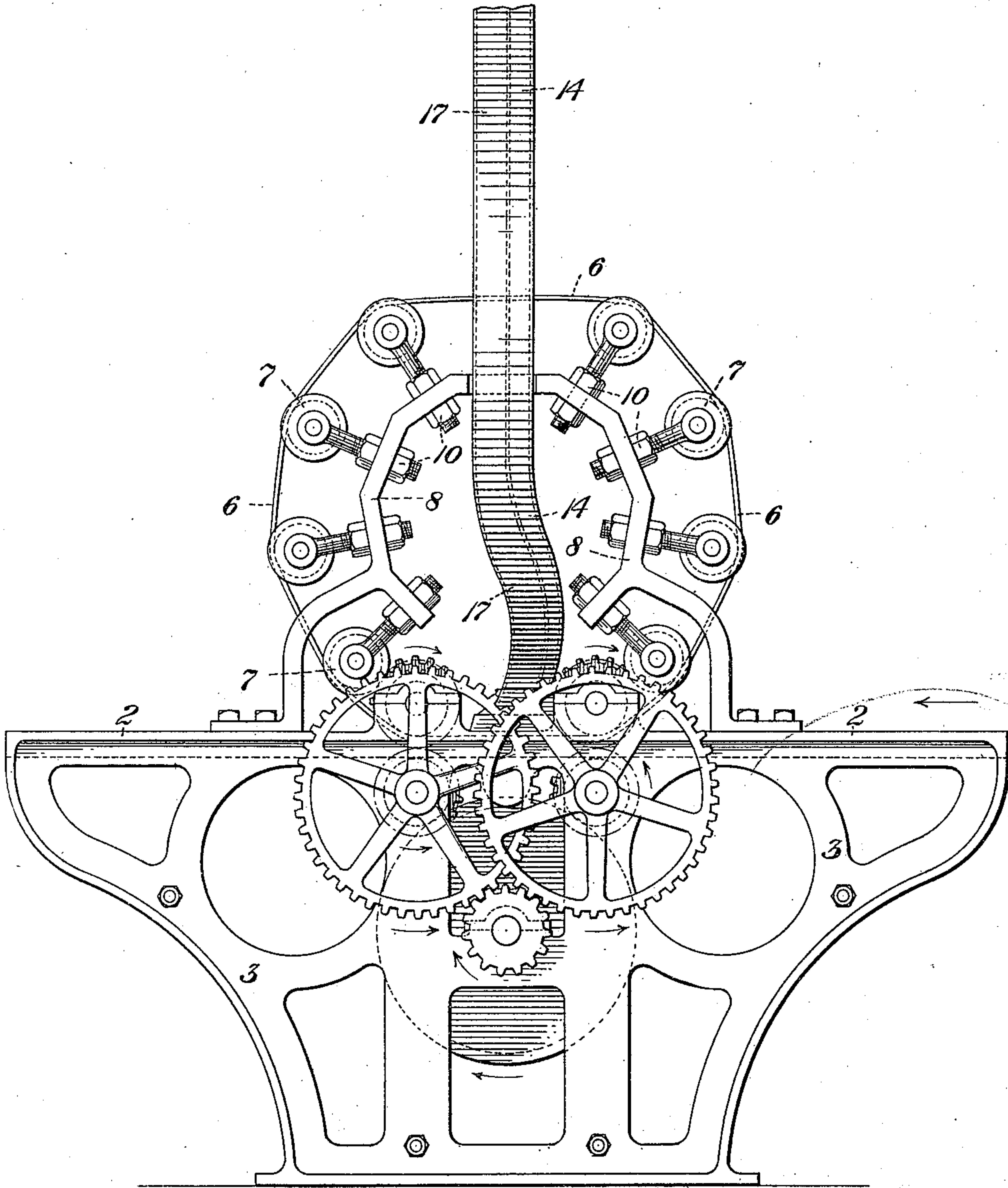
C. M. CLARKE.

MACHINE FOR ORNAMENTING WOOD AND OTHER SURFACES.

No. 467,155.

Patented Jan. 19, 1892.

Fig. 1.



WITNESSES.

J. W. Baxendale
J. M. Brown

INVENTOR.

Charles M. Clarke

(No Model.)

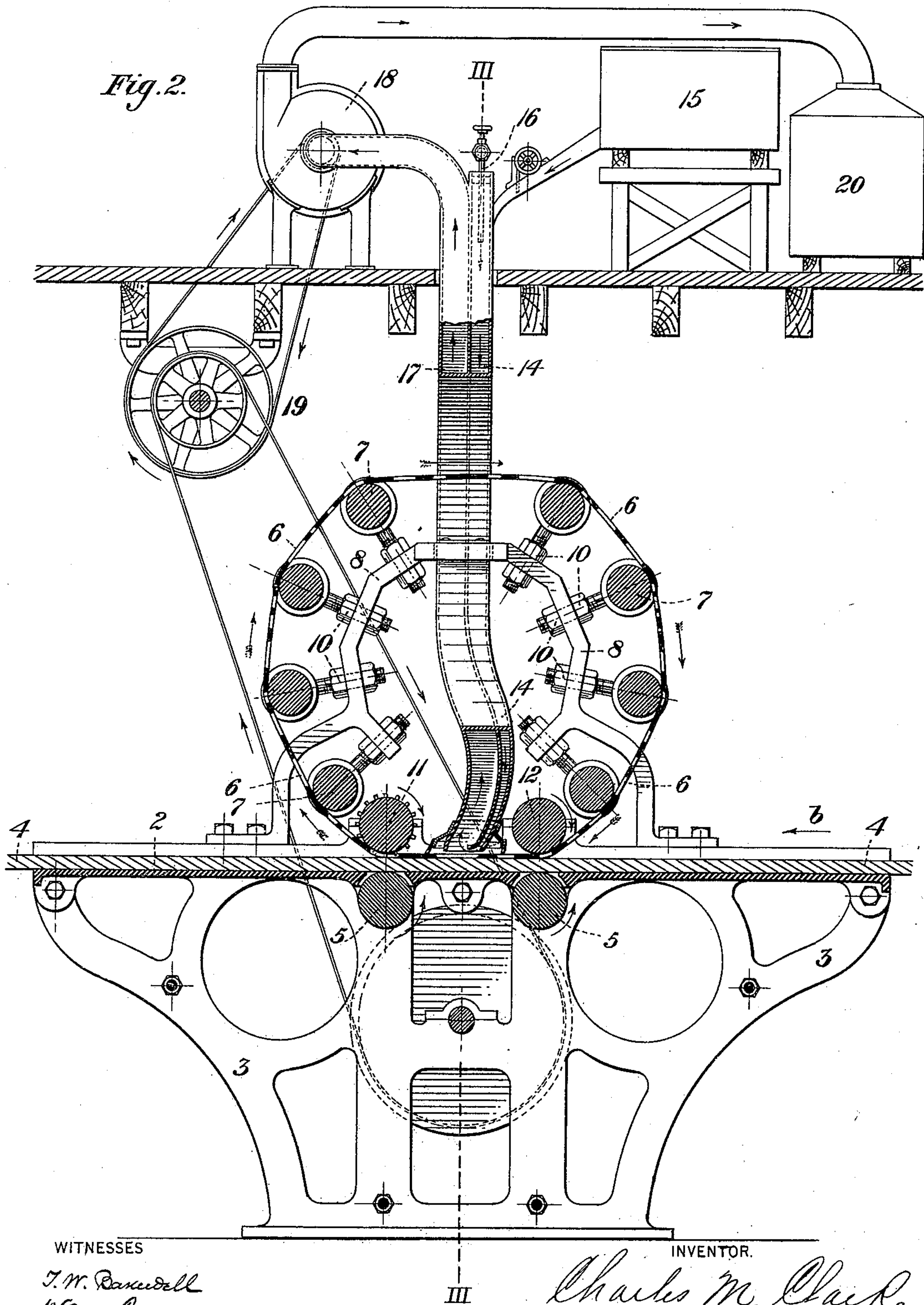
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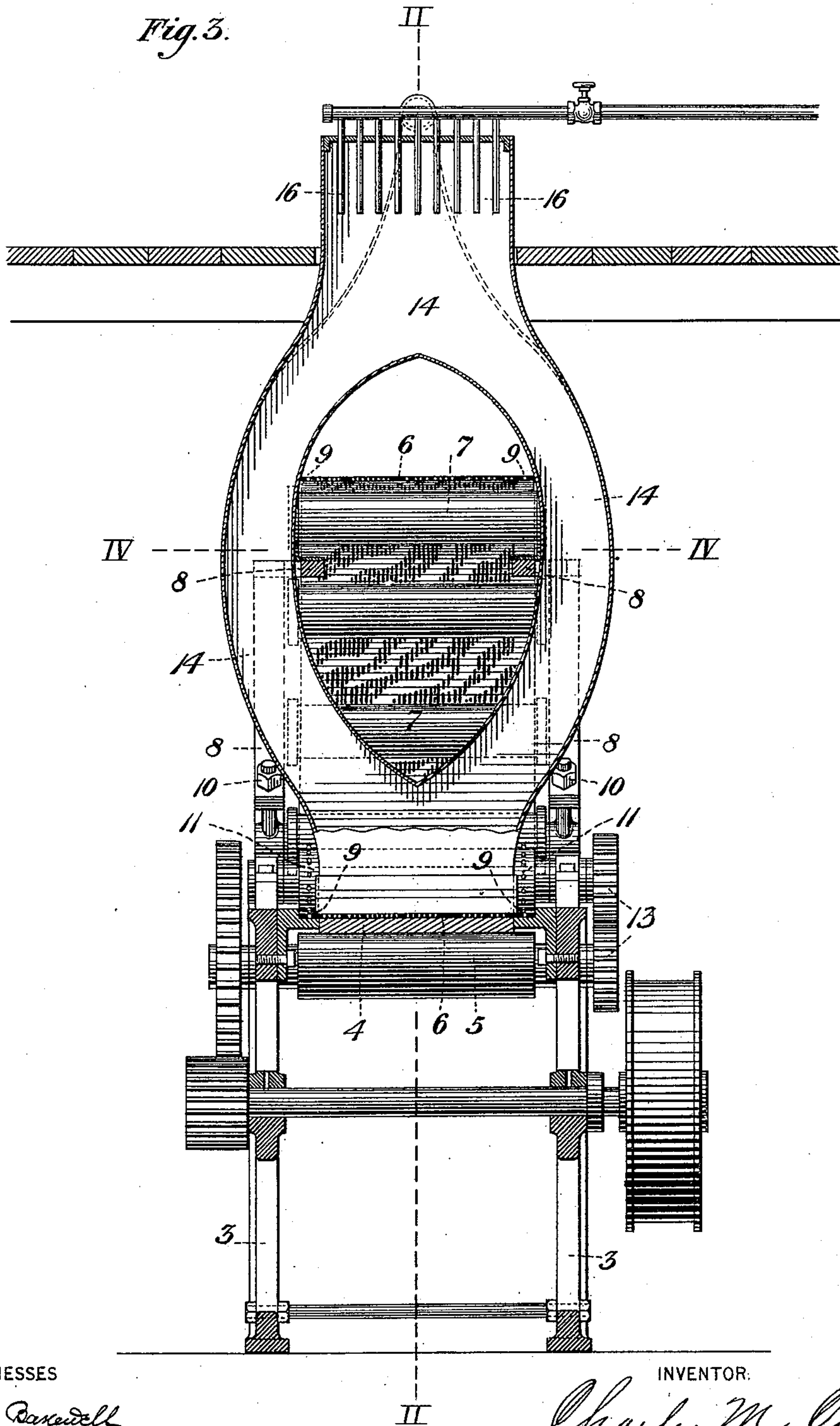
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Fig. 3.



WITNESSES

J. W. Baxendale
J. M. Corwin

INVENTOR:

Charles M. Clarke

(No Model.)

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Fig. 4.

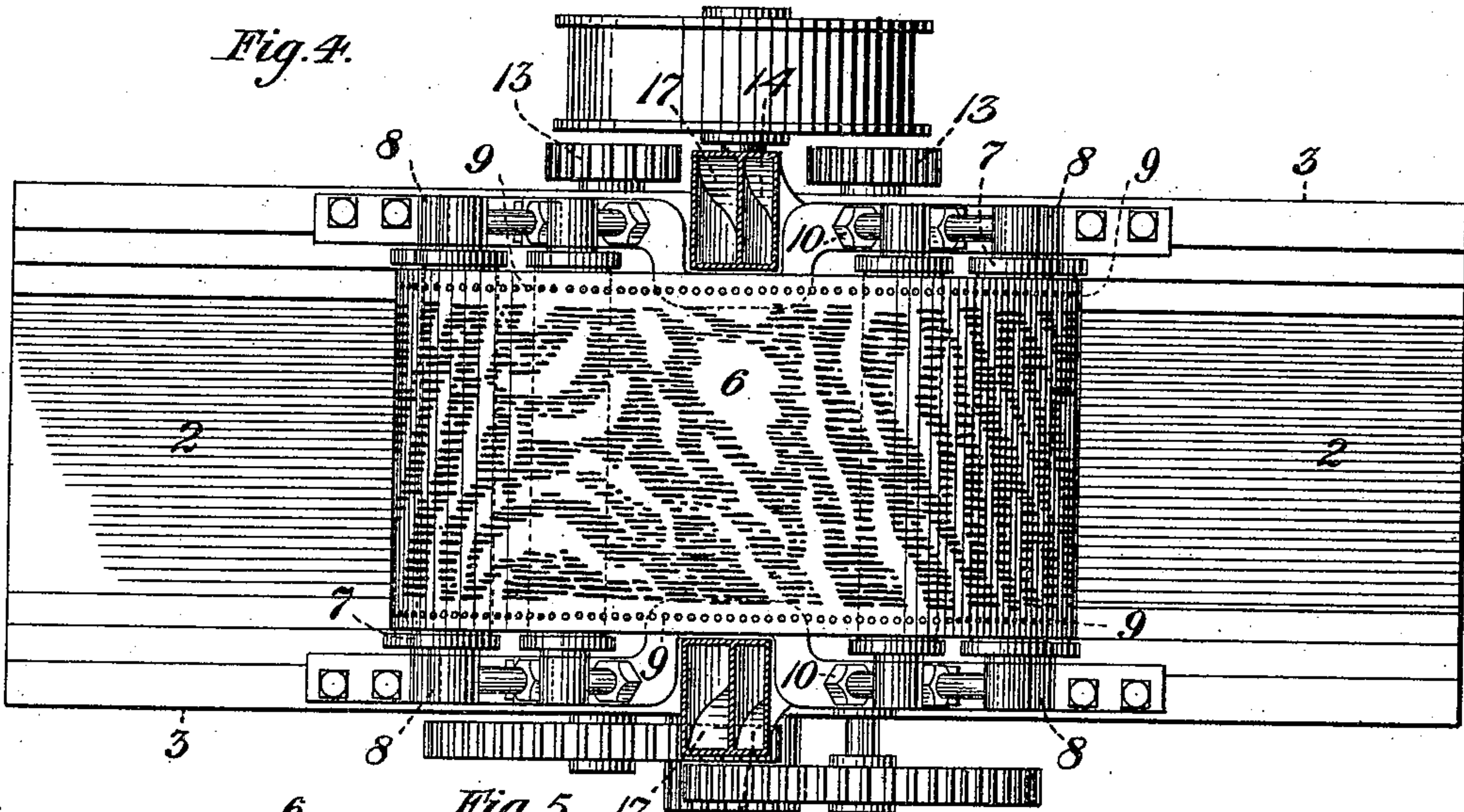


Fig. 5.

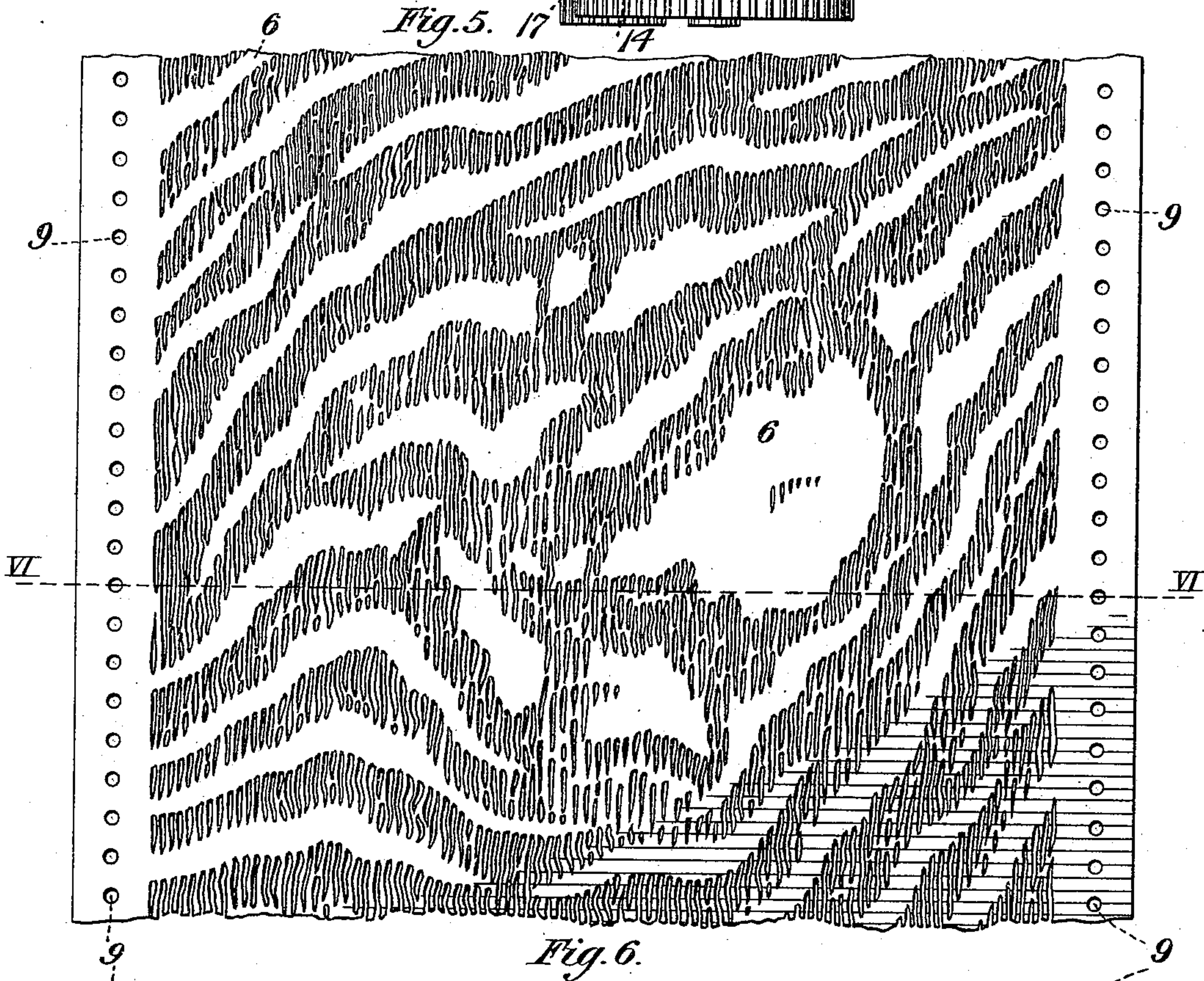


Fig. 6.

WITNESSES

J. W. Russell
J. M. Corwin

INVENTOR.

Charles M. Clarke.

(No Model.)

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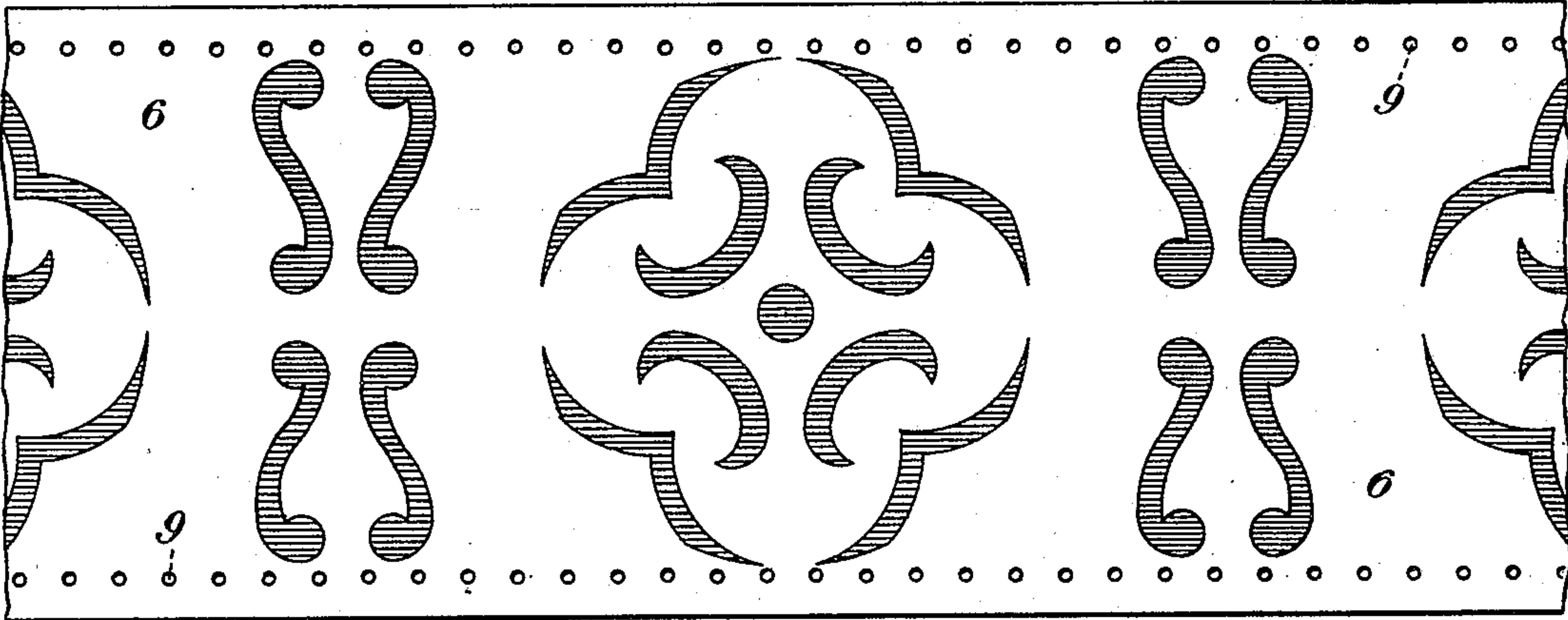


Fig. 7.

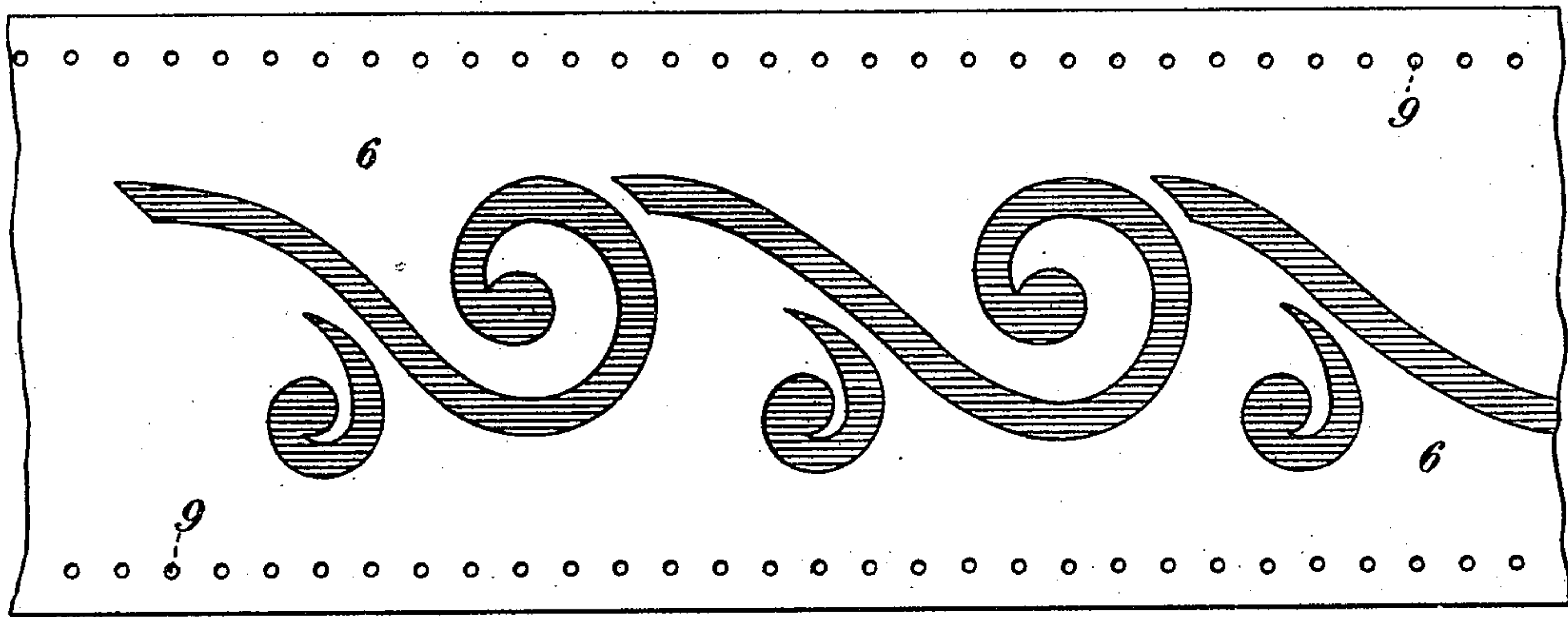
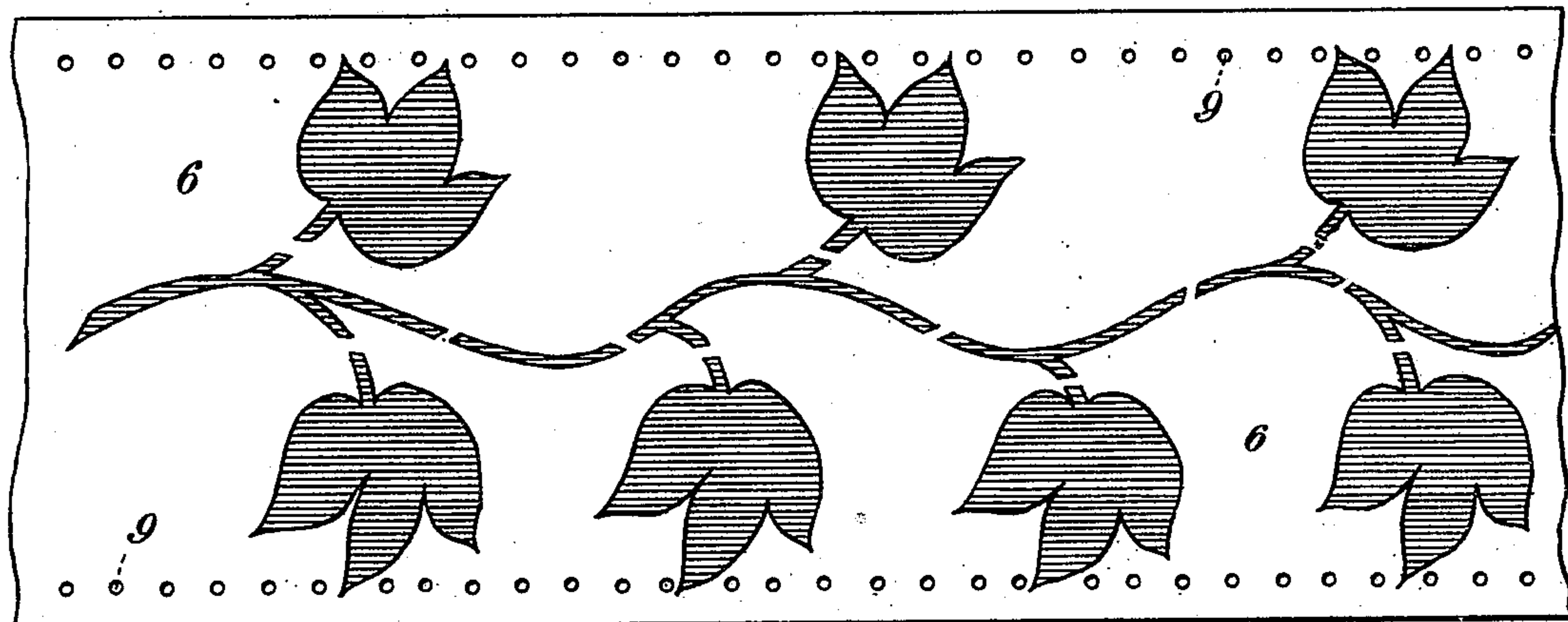


Fig. 8.



WITNESSES

J. W. Daxwell
J. M. Corwin

Fig. 9.

INVENTOR.

Charles M. Clarke

UNITED STATES PATENT OFFICE.

CHARLES M. CLARKE, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR ORNAMENTING WOOD OR OTHER SURFACES.

SPECIFICATION forming part of Letters Patent No. 467,155, dated January 19, 1892.

Application filed July 1, 1891. Serial No. 398,103. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. CLARKE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Ornamenting Wood, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved machine. Fig. 2 is a vertical longitudinal central section thereof on the line II II of Fig. 3. Fig. 3 is a vertical cross-section on the line III III of Fig. 2. Fig. 4 is a sectional plan view of the machine, the section being on the line IV IV of Fig. 3. Fig. 5 is a plan view of part of the stencil employed in the machine. Fig. 6 is a vertical cross-section on the line VI VI of Fig. 5. Figs. 7, 8, and 9 are plan views of stencils provided with various patterns.

Like symbols of reference indicate like parts in each.

The purpose of my invention is to provide efficient and rapid means for ornamenting wood by forming on the surface thereof an indented pattern of the desired configuration adapted to be filled afterward with a filler paste or enamel; and it consists in a machine of improved construction which I have devised for performing this work, which machine is herein described fully, and the novel features of which are specifically indicated in the claims.

In the drawings, 2 represents the table of the machine, which may be mounted on a suitable frame 3, and is adapted to support the board or strip of wood 4 intended to be ornamented. The wood is fed through the machine in the direction of the arrow *b* by means of driven feed-rollers 5, whose peripheries bear against the wood and by revolution feed it forward.

The stencil which I prefer to employ consists of an endless flexible band 6, which may be made of sheet metal or other material, but is preferably composed of vulcanized india-rubber. It passes over a series of guide-rollers 7, mounted in bearings which are fixed adjustably to a frame 8 by means of nuts 10, enabling them to be moved out or in to vary

the tension of the stencil-band. Along each margin of the band is a row of indentations or projections 9, adapted to be engaged by a toothed roller 11, driven by gearing 13, so as to rotate at the same surface speed with the feed-rollers 5, with which said gearing connects them. The driven roller 12 is a feed and guide roller bearing on the stencil. The rotation of these rollers causes the stencil-band to travel around the series of guide-rollers 7 at the same rate at which the board 4 is moved by the feed-rollers, and as the rollers 11 12 (or other rollers of the series) are set in proximity to the surface of the board the stencil-band is caused to pass for a considerable portion of its travel in contact with the latter. The band is perforated with holes after the manner of a stencil, and the holes are of such shape, size, and relative position as to be adapted to reproduce on the wood the desired pattern. Where it is desired that the wood should be ornamented with a surface pattern in imitation of the grain of hard wood, such as oak, the holes are arranged to conform to the surface pores of the variety of wood to be imitated. This is shown in Figs. 4, 5, and 6. The stencil, however, may be ornamented with any other pattern, as illustrated in Figs. 7, 8, and 9.

For the purpose of applying a blast of sand or other abrasive material I employ a blast-pipe 14, whose discharge end is directly above the place of contact of the stencil-belt with the board and which is divided or curved as shown in Fig. 3, in order to clear the outer branch of the stencil-belt. The upper end of the blast-pipe is connected with a reservoir 15, containing sand or other abrasive material—for example, granules of cast-iron or steel—and a pipe or series of pipes 16 enters the blast-pipe and discharges therein compressed air or steam for the purpose of creating a blast which will carry the abrasive material from the reservoir and will discharge it with sufficient violence against the stencil.

In order to remove the sand from the stencil after it has performed its work, I employ an eduction-pipe 17, which may extend adjacently to the pipe 14, and the open lower end of which is in proximity to the discharge end of the latter. The pipe 17 is connected with a fan or other suction device 18, driven by

suitable mechanism, such as belting 19, and which serves to draw up the abrasive material from the stencil and to deliver it into a receiver 20.

5 The operation is as follows: The board 4, having been introduced into the machine, is carried therethrough by the action of the feed-rollers, and the stencil-band travels in contact with the board and at the same rate
10 of speed. The compressed air or steam is delivered from the pipe 16 into the blast-pipe and causes the abrasive material to be forced in a strong jet against the stencil, where, acting through the holes in the stencil, it en-
15 gages the wood and cuts the surface thereof, so as to produce indentations corresponding to the pattern of the stencil. Having thus performed its work, the abrasive material is drawn off by the pipe 17 and is delivered to
20 the receiver 20, together with the particles of wood which have been worn off by its abrasion. This action of the machine continues until the entire length of the board has been fed through it, and as the stencil is in the
25 form of an endless band it produces a continuous pattern, while its action, being uninterrupted, is rapid and regular.

30 The apparatus may be used not only for ornamenting wood, but for treating metals, paper-board, or other material.

The form and details of construction of the machine may be varied in wide limits by those skilled in the art, since, although I intend to claim specifically the illustrated form, the
35 broader claims of the application are not limited thereto, and within the scope of the method claimed any form of stencil, whether continuous or otherwise, used in any kind of machine may be employed.

40 The advantages of the machine will be appreciated by those skilled in the art. It affords facility for producing intricate designs, and is not limited, as are most other indenting-machines, to producing straight patterns
45 in the lines of the grain.

I claim—

1. In a machine for ornamenting wood or other surfaces, an endless stencil, means for moving the stencil and the material to be ornamented at an equal rate, and a blast-pipe 50 adapted to force abrasive material against the stencil, substantially as and for the purposes described.

2. In a machine for ornamenting wood or other surfaces, the combination of feed-roll- 55 ers, an endless stencil, driving-gear by which the stencil is caused to move at the same speed as the material to be ornamented, and a blast-pipe adapted to force abrasive material against the stencil, substantially as and for the pur- 60 poses described.

3. In a machine for ornamenting wood or other surfaces, an endless stencil, guides around which the stencil passes, and a blast-pipe divided to permit passage of the stencil, 65 substantially as and for the purposes described.

4. In a machine for ornamenting wood or other surfaces, the combination of a stencil, a blast-pipe for supplying abrasive material 70 thereto, and an eduction-pipe and fan for removing the abrasive material and cuttings, substantially as and for the purposes described.

5. In a machine for ornamenting wood or 75 other surfaces, an endless stencil, guides by which it is held in contact with the board for a considerable portion of its length, and means for supplying abrasive material, substantially as and for the purposes described. 80

6. In a machine for ornamenting wood or other surfaces, an endless stencil having pro- 85 jections or indentations thereon, and a feed-roller engaging said projections or indentations, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 29th day of June, A. D. 1891.

CHARLES M. CLARKE.

Witnesses:

W. B. CORWIN,

H. M. CORWIN.