

No. 686,077.

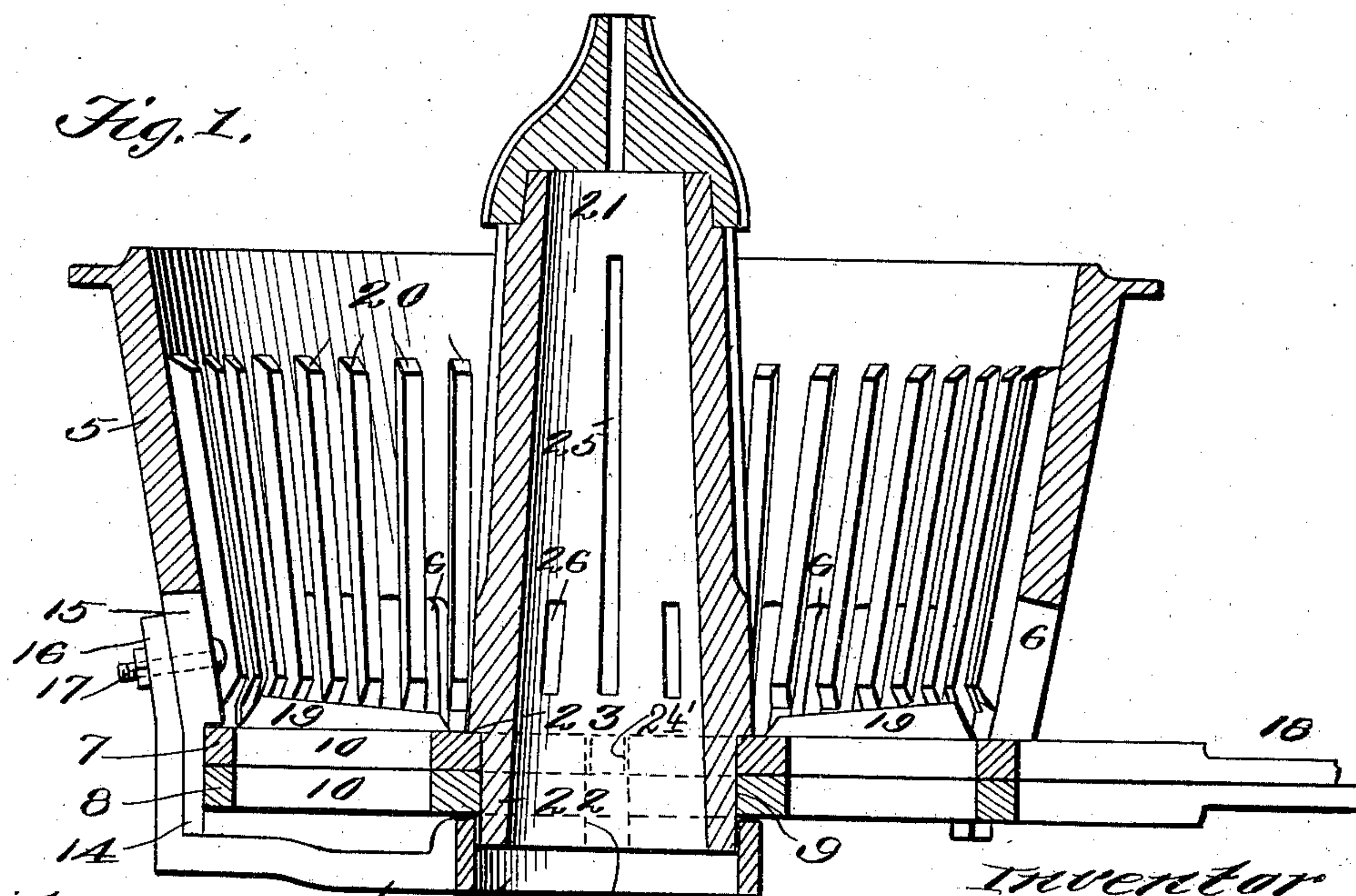
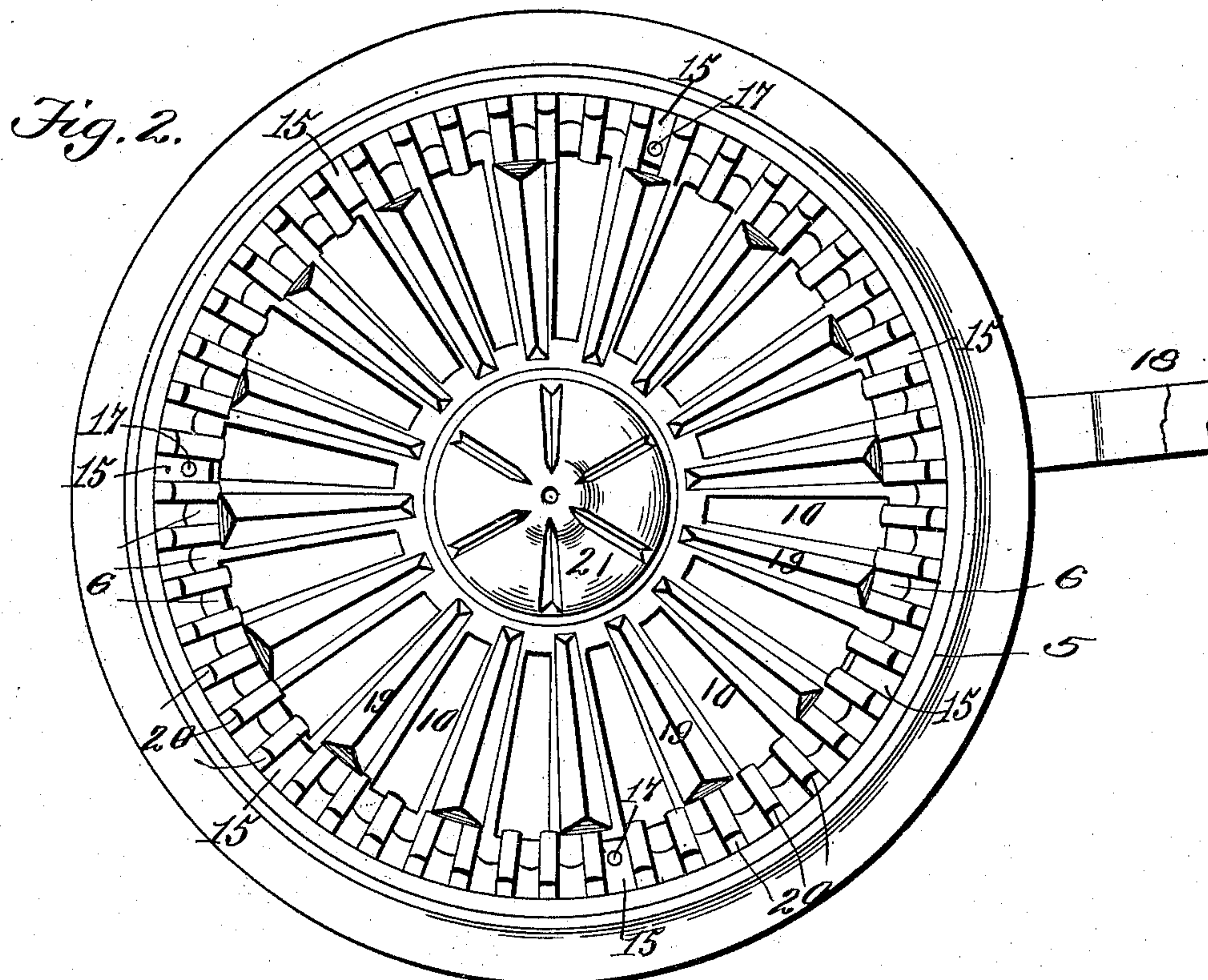
Patented Nov. 5, 1901.

H. H. HUNTER.
GRATE.

(Application filed Jan. 31, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 3.

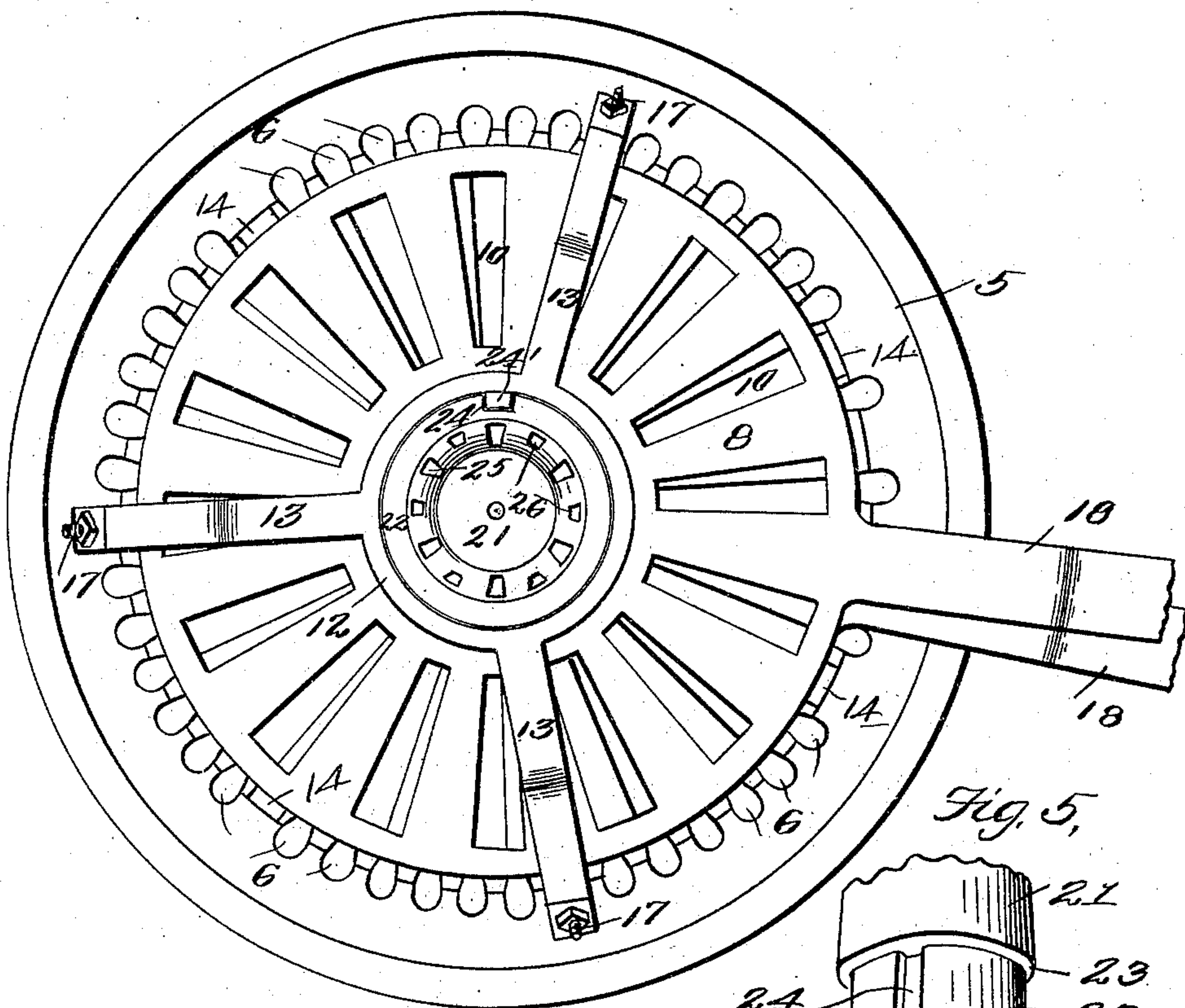


Fig. 5.

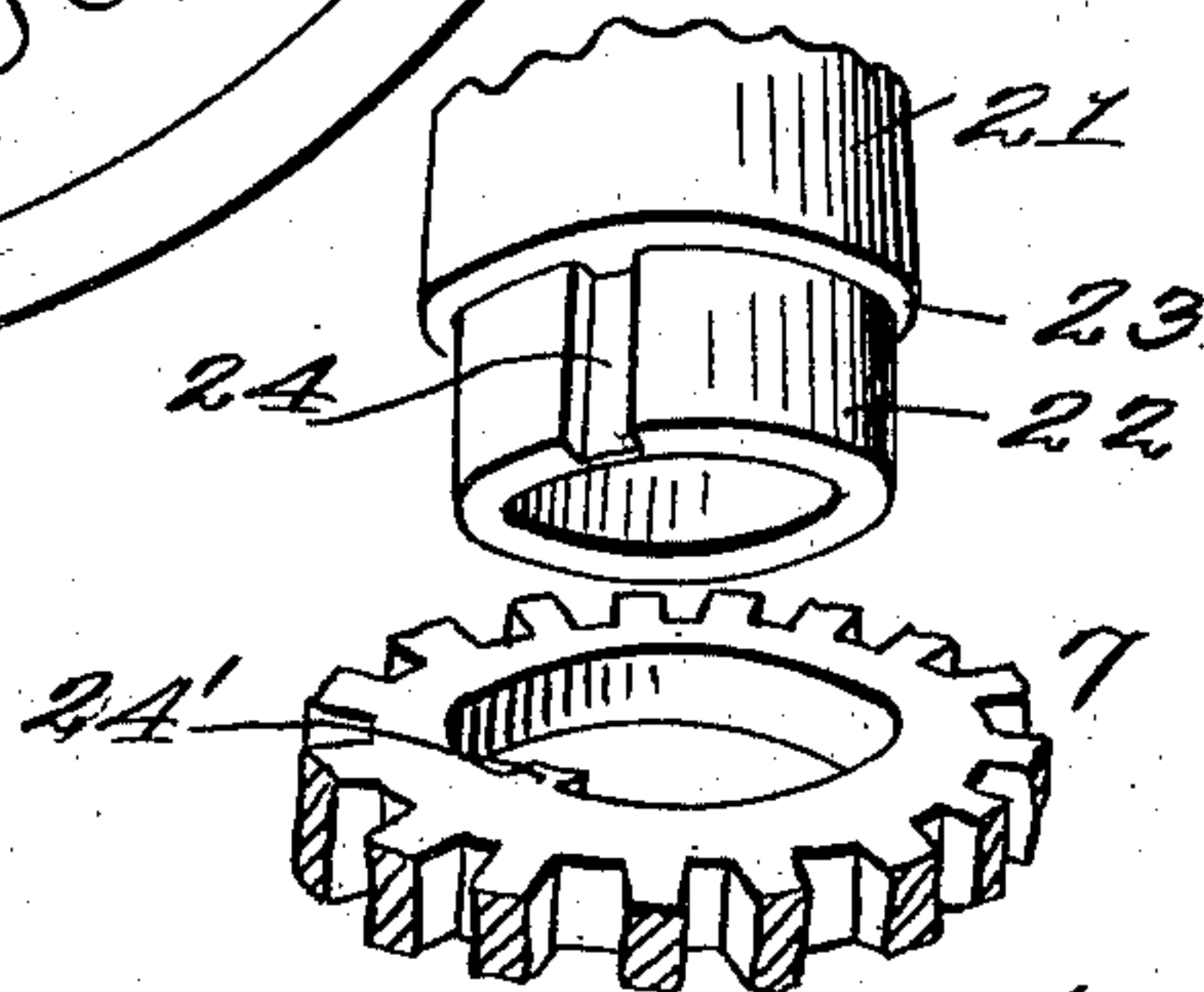
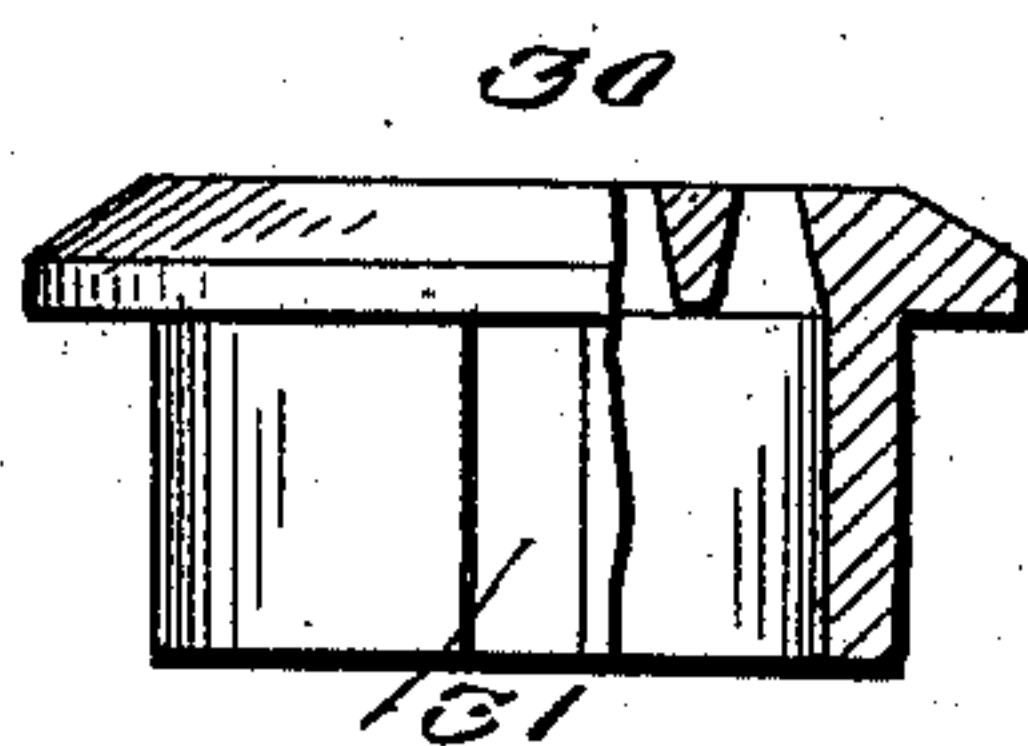


Fig. 4.



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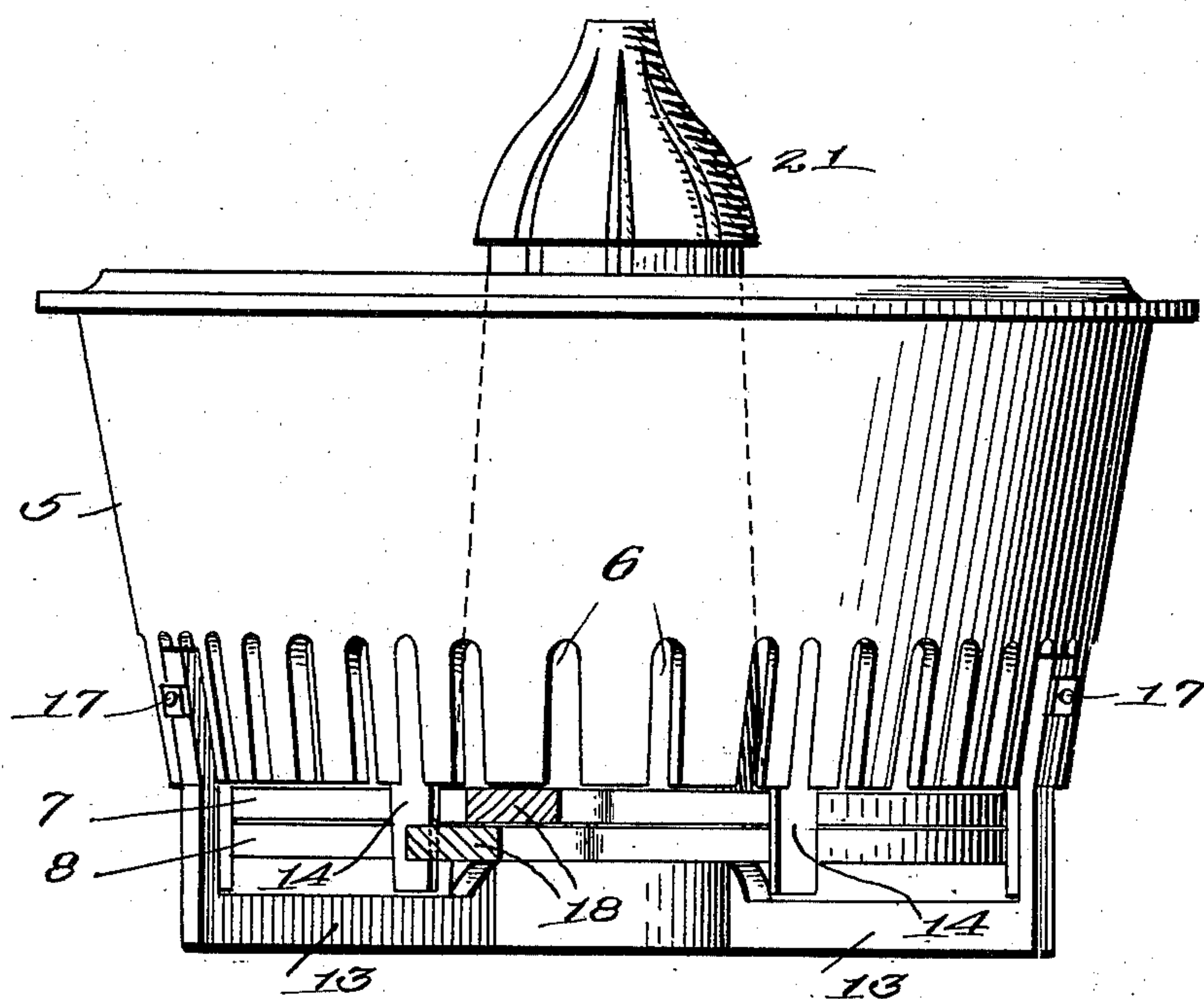
Patented Nov. 5, 1901.

(Application filed Jan. 31, 1901.)

(No Model.)

3 Sheets—Sheet 3.

Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY H. HUNTER, OF BERKELEY SPRINGS, WEST VIRGINIA.

GRATE.

SPECIFICATION forming part of Letters Patent No. 686,077, dated November 5, 1901.

Application filed January 31, 1901. Serial No. 45,501. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HUNTER, a citizen of the United States, residing at Berkeley Springs, in the county of Morgan and State of West Virginia, have invented new and useful Improvements in Grates, of which the following is a specification.

This invention relates to grates of that type known as "rotary," though some of the features thereof are capable of advantageous incorporation in grates of other kinds; and said invention is in some respects in the nature of an improvement upon the grate covered by Letters Patent of the United States No. 655,086, granted to me on July 31, 1900.

By my improved grate I am enabled to regulate the draft with precision, thereby avoiding the too rapid consumption of the finely-divided fuel which said grate is especially designed to burn and at the same time preventing the coal from "bedding" against the inside wall of the fire pot or bowl, by reason of which last-mentioned feature the incoming air can properly reach the outer portion of the fire to insure the even burning of the same.

The improved grate possesses other meritorious points, which will be set forth at length in the following description, and the real features thereof will be covered in the appended claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section. Fig. 2 is a plan view of the same. Fig. 3 is a bottom plan view. Fig. 4 is a detail sectional view of a cap. Fig. 5 is a perspective view of the central portion of the upper grate-section and the lower portion of the dome, showing said parts detached and the connection between the same; and Fig. 6 is a sectional elevation of the grate, showing more especially the depending guides for the grate-sections.

Like characters refer to like parts in all the figures of the drawings.

The improved grate involves in its construction a fire pot or bowl, as 5, adapted to be secured in some convenient manner within a stove or like device, and ordinarily it tapers slightly toward its bottom, the grate, hereinafter more particularly described, being located below said fire pot or bowl. The latter has near its lower end a plurality of slots or openings, as 6, the lower ends of

which are open and which serve to admit air to said fire pot or bowl to promote combustion therein. These slots are generally closely arranged and may be of substantially the height indicated.

The grate shown consists of two sections, as 7 and 8, and in the present case both of them are rotary, one of them, as 7, being mounted on the other, and they are represented as being of circular shape, they being of approximately the same size and shape, but in diameter somewhat smaller than the lower end of the fire-pot. Said grate-sections have central circular openings, as 9, and radial slots, as 10, the openings coinciding at all times, while the slots may be brought into registration by the manipulation of one or both of the grate-sections. The latter in their superposed relation are adjacent the under side of the fire-pot, and by bringing the slots 10 into registration the maximum draft-openings through the two-part grate can be obtained. By shifting one of said sections relatively to the other this opening may be decreased or wholly closed, so as to thereby adapt the grate to burning coal of very small sizes, and though these openings be wholly closed the draft to the fire will not be cut off, as will hereinafter appear.

The grate is sustained in the present case by a holder or bracket, shown as consisting of a ring portion, as 12, having a series of radial arms or spokes, as 13. The opening of this ring or annular body portion 12 registers with the central openings 9 of the grate-sections to receive a dome, hereinafter described.

A plurality of grate-guides are provided, these being shown as projections 14 of any suitable number depending below the bowl 5, and the inner faces of these projections are contiguous to the peripheries of the grate-sections, and they have shanks, as 15, fitted between the walls of the open slots 6. These shanks may be held in place simply by being drawn into the slots, and the bodies or guide portions thereby prevent the lateral displacement of the superposed grate-sections.

The grate or the under section thereof is directly sustained by the annular body portion 12; but the radial arms do not come in contact therewith, thereby reducing friction. These arms have upturned ends or extensions, as 16, fitting against the lower slotted

end of the bowl 5, and bolts, as 17, may pass through these extensions or upturned ends 16 and the shanks 15 of certain of the grate-guides 14, thereby to connect the grate-holder 5 with the bowl.

The grate-sections have handles, as 18, and when the same are in alinement the slots 10 will be in registration. By manipulating one or both of these handles the size of the draft-openings through the grate can be regulated or ashes can be discharged from said grate. The movement of these handles is limited by two of the grate guides or projections 14.

The upper grate-section 7 has on its upper surface radial ribs, as 19, shown as wedge-shaped in cross-section, which are adapted to break up any clinkers that may be upon said section 7 and cause the same to pass through the slots 10. Besides this they serve to shift the coal to insure an even burning of the same.

The fire pot or bowl is shown as having arranged on its inner face the elongated ribs 20, which alternate with the slots 6 therein. These ribs extend depthwise of the fire-pot and prevent the mass therein from coming in direct contact with the entire inner surface of the pot, so that air entering the openings or slots 6 can freely pass through the spaces between said ribs and reach the outermost portion of the body of coal, notwithstanding the fact that the draft-openings through the grate may be greatly reduced.

A dome, as 21, is mounted centrally or substantially as in the fire-pot, and it is adapted to turn with the upper grate-section 7. Said dome is hollow and tapers somewhat toward its top, and its lower end is reduced, as at 22, this reduced portion being inserted in the registering control-openings 9 of the grate-sections. By reducing the dome at its lower end a shoulder 23 is formed, which rests upon the upper grate-section 7. This reduced portion 22 is simply slipped into the openings, and it has a peripheral aperture, as 24, to receive the key 24' on the section 7, whereby the dome is caused to rotate therewith. Air passes through the registering openings 9 and from thence into the hollow and substantially conical dome, which is surrounded by the fuel in the fire-pot and which extends above the two-part grate for a proper height. A plurality of slots are provided in the dome, and the incoming air passes through these slots, so that it can thereby reach the fire to create the draft. The slots are denoted, respectively, by 25 and 26 and are formed depthwise or longitudinally of the dome, and it will be seen that the slots 25 are very much longer than the slots 26. The lower ends of the slots are in line and are located but a short distance above the upper surface of the grate and the short ones alternate with the long ones, by virtue of which the central draft upon the fire above the grate-sections is provided, and it is properly regulated by alternating the sizes of the slots, it not being so

high as to cause an unnecessary consumption of the fuel.

The invention may be modified within the scope of the appended claims.

When the dome 21 is removed for any purpose, I may substitute therefor the cap 30, its upper side being provided with slots to permit the draft to pass therethrough. This cap fits in the registering openings 9 and has a circumferential keyway 31 to receive the key 24' on the grate. With this cap in place a fire can be maintained in the grate.

Having described the invention, I claim—

1. A grate consisting of a bowl, a plurality of superposed grate-sections, a support for the grate-sections detachably connected with the bowl and having a central body portion upon which the lower one rests, a plurality of guides for the grate-sections depending from the bowl and serving to limit the lateral motion of said grate-sections, and a slotted dome within the bowl rotatively connected with one of the grate-sections and sustained by the upper one.

2. A grate consisting of a bowl, a plurality of superposed grate-sections, a support for the grate-sections detachably connected with the bowl and having a central body portion upon which the lower one rests, a plurality of guides for the grate-sections depending from the bowl and serving to limit the lateral motion of said grate-sections, and a slotted dome within the bowl, the lower end of which is inclosed by the body portions of said grate-sections and said dome being rotatively and detachably connected with one of the grate-sections and sustained by the upper one.

3. A grate consisting of two slotted rotary superposed sections, a holder consisting of an annular body portion provided with arms having upturned ends, a bowl having slots in its lower edge, guides for the grate-sections having shanks fitted in certain of the slots, and fastening devices passing through said shanks and the upturned ends of said arms.

4. A grate consisting of two superposed rotary sections provided with handles, a bowl having depending guides for said grate-sections two of which serve to limit the motions of said handles, and a holder to support the lower grate-section, connected with the bowl.

5. A grate consisting of a slotted bowl, a plurality of superposed grate-sections, a support for the grate-sections, a series of guides for the grate-sections depending below the bowl and having shanks fitted in certain of the slots of the latter, means for detachably connecting the support with said guides, and a slotted dome rotatively connected with one of the grate-sections.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY H. HUNTER.

Witnesses:

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