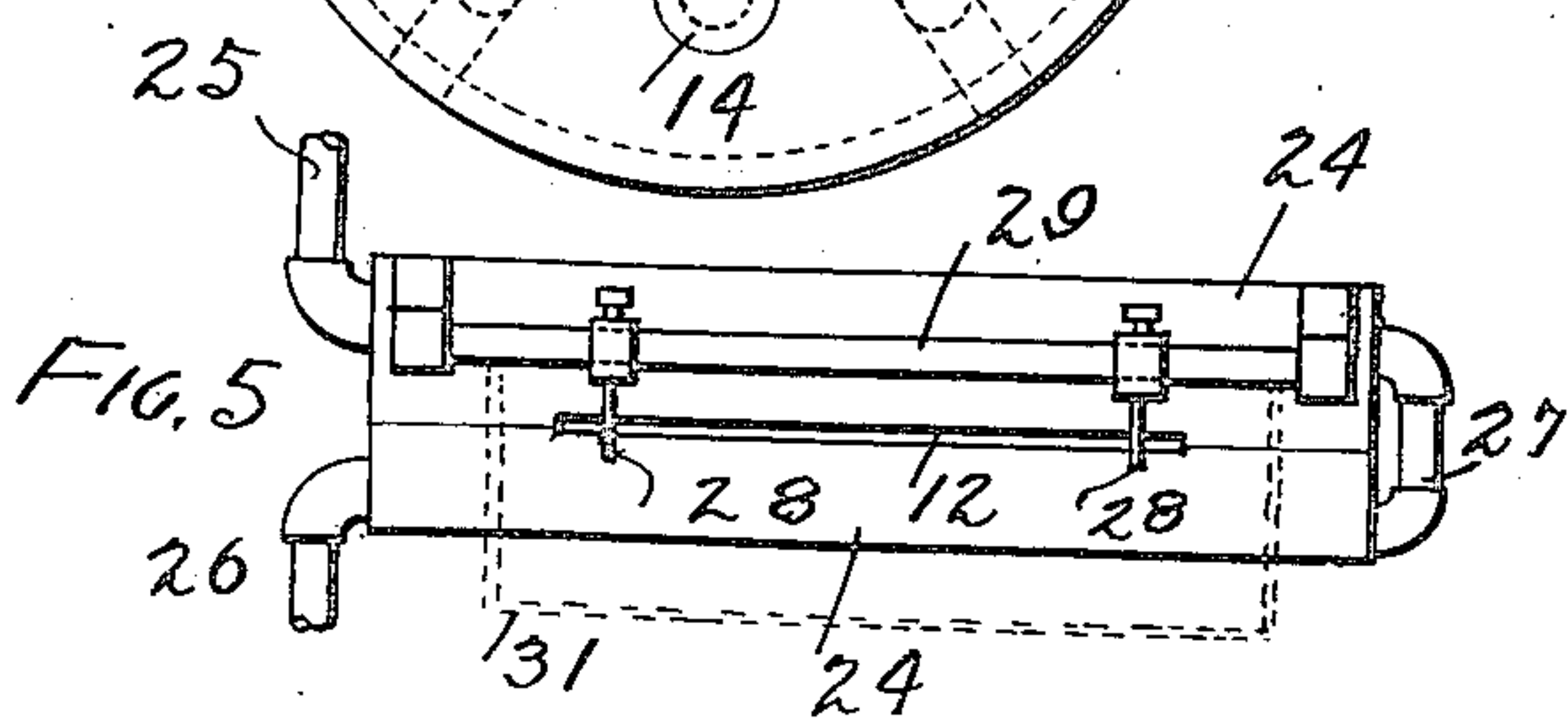
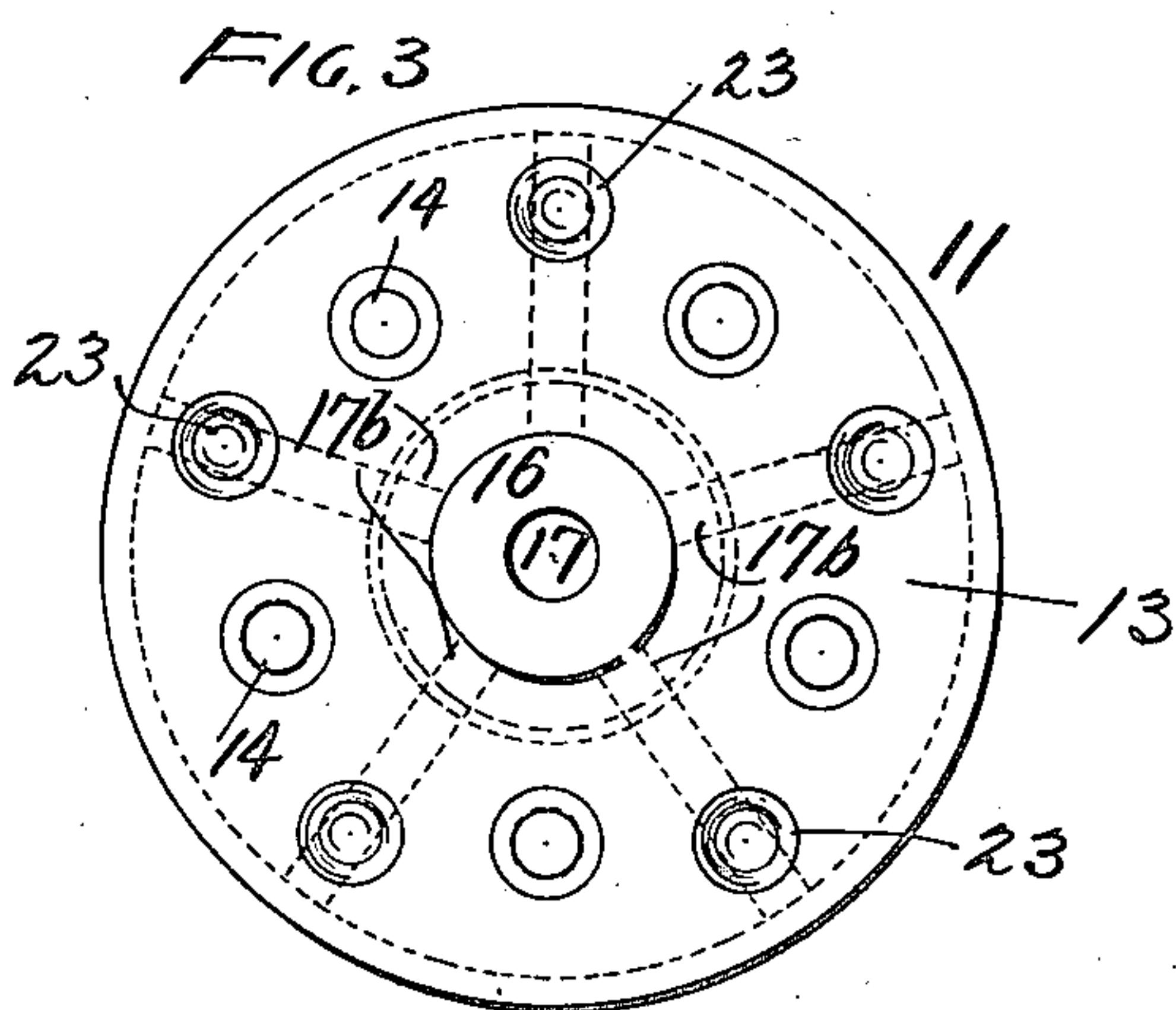
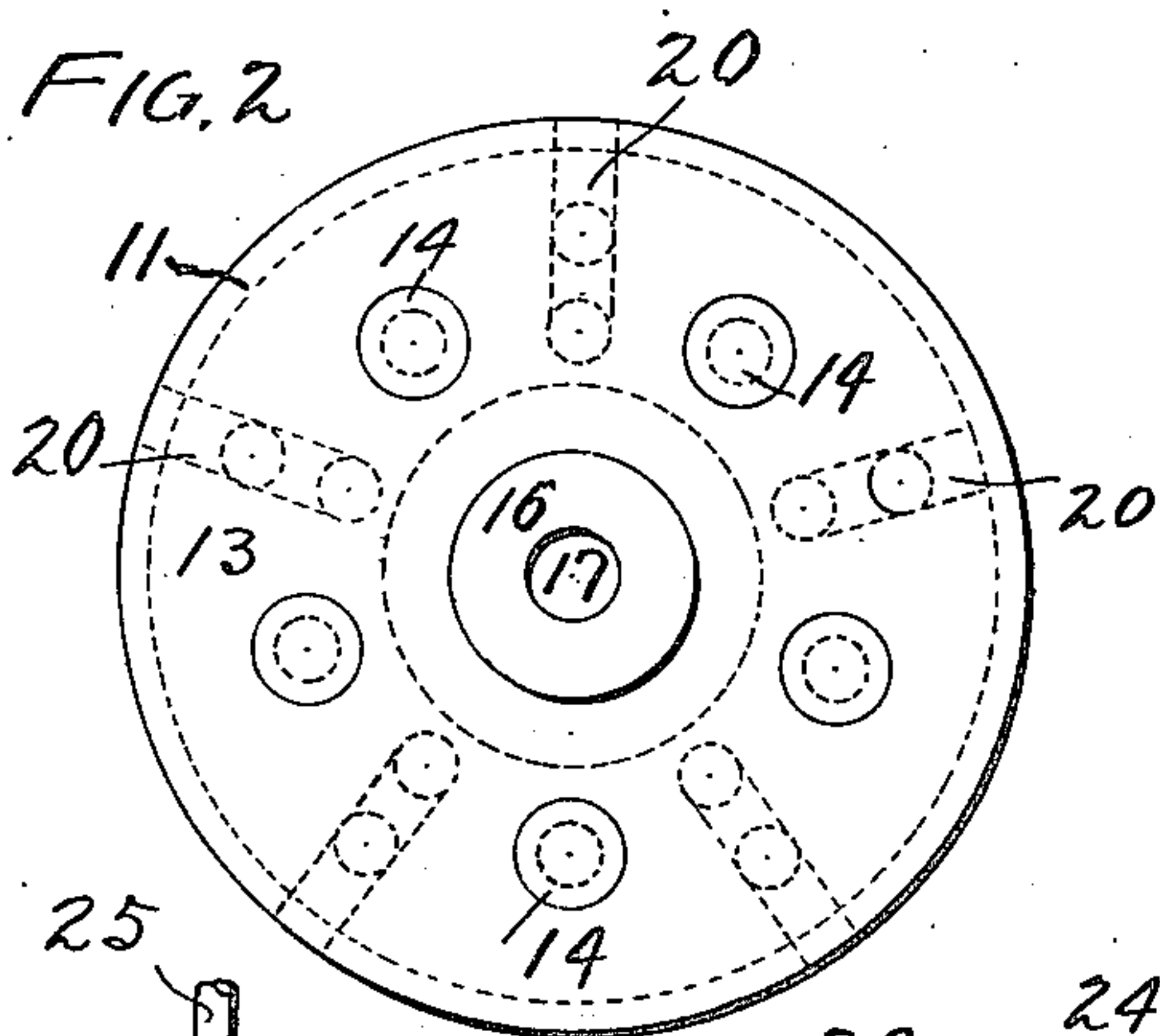
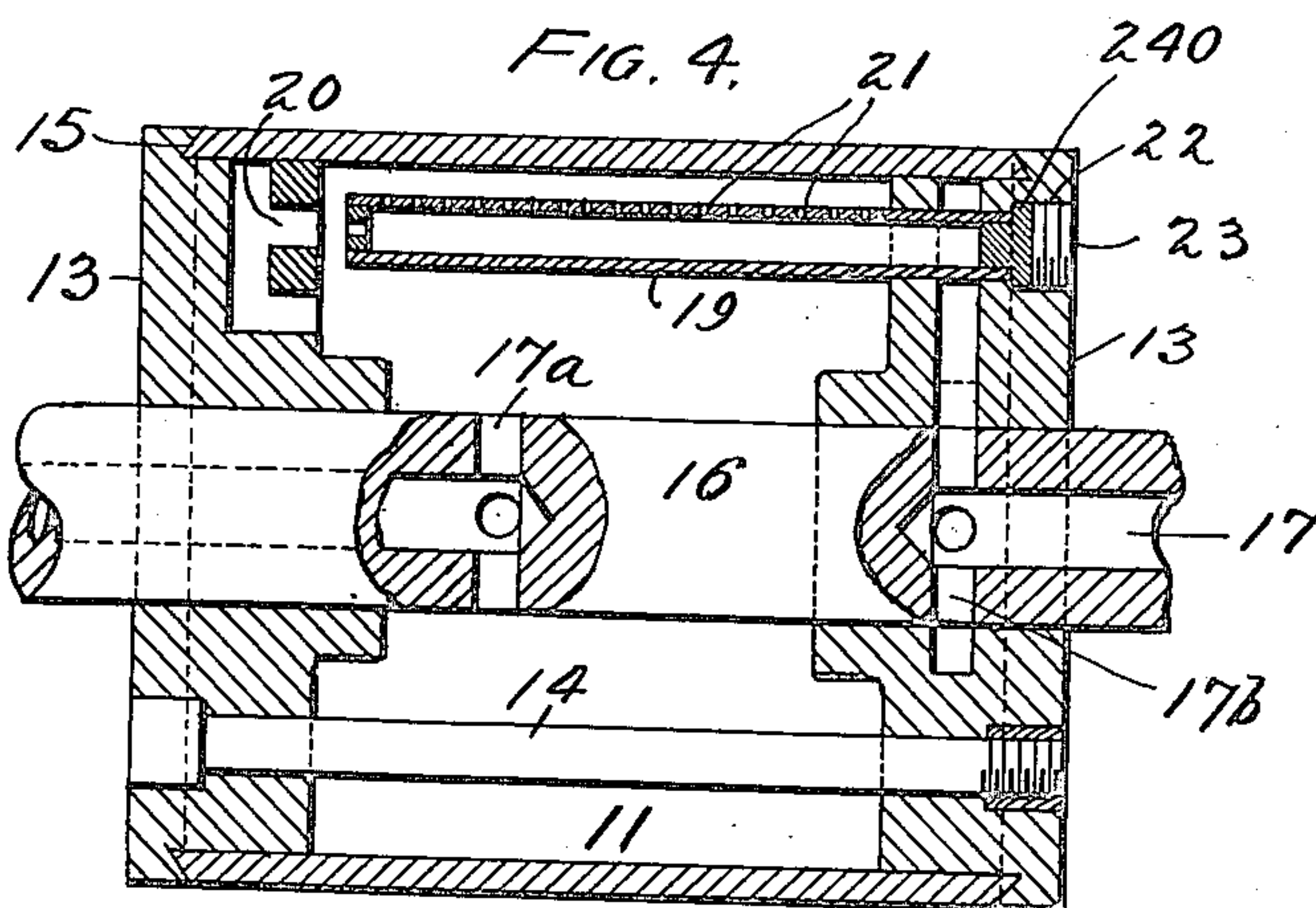
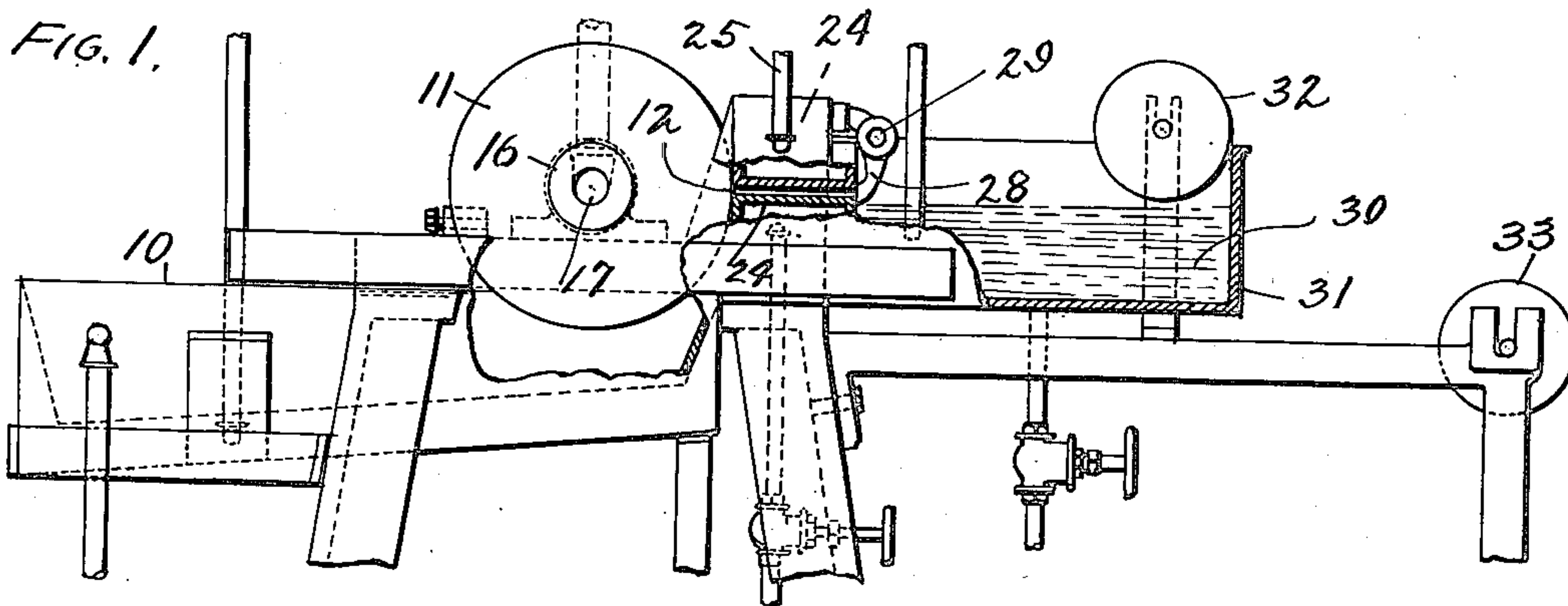


Jan. 2, 1923.

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G. H. WILDER.
WAX SHEETING MACHINE.
FILED SEPT. 23, 1919.



Inventor
Garner H. Wilder
by O. J. McIlwain
Atty

Patented Jan. 2, 1923.

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UNITED STATES PATENT OFFICE.

GARDNER H. WILDER, OF MEDINA, OHIO, ASSIGNOR TO THE A. I. ROOT COMPANY, OF MEDINA, OHIO.

WAX-SHEETING MACHINE.

Application filed September 23, 1919. Serial No. 325,642.

To all whom it may concern:

Be it known that I, GARDNER H. WILDER, of Medina, Ohio, have invented a certain new and useful Improvement in Wax-Sheeting Machines, and do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to the manufacture, or production of wax in sheet form, with especial reference to sheets that are formed into comb-foundation for use in bee hives, and the object, generally stated, is to improve machinery of the class in which melted wax is taken up by a revolving cylinder and forced through a contracted passage, or between dies, so that the proper temperature conditions may be maintained in the cylinder, with a minimum use of cooling water; the plasticity of the wax passing through the dies may be controlled and not be dependent on, or seriously affected by the prevailing temperature of the room in which the machine is worked; the width of the sheet delivered be subject to the requirements of the case; the product finally delivered prevented from tearing; and the capacity of the machine increased.

The machine shown in the drawings is capable of achieving all the just-mentioned results, and, therefore, is esteemed a most satisfactory embodiment of the invention, but the invention is not dependent upon that particular embodiment, but is any construction that is comprehended within the scope of the appended claims.

In the drawings:—

Fig. 1 is a view of such machine, partly in side elevation, and partly in section;

Figs. 2, 3 and 4, are, respectively, end views and a longitudinal section of the cylinder;

Fig. 5 is a detail view showing the sheet-trimming knives.

In the drawings, 10 designates the pan containing the molten wax, 11 the cylinder revolving partially therein, and 12 the die opening through which the wax is forced to emerge as a sheet of the desired thickness.

The cylinder 11 is hollow, being composed of a cylindrical shell, and heads 13 at the opposite ends thereof which are held together by bolts 14 that reach from head to head. The ends of the shell are bevelled and are engaged by undercut grooves 15 in the inner faces of the heads, and external di-

ameter of shell and head is the same, so that for its entire length the cylinder is of uniform diameter and is available for receiving the wax. The cylinder shaft 16 has an axial bore 17 reaching within each of the cylinder ends, one of which communicates with radial or diametrical holes 17^a that lead to the periphery of the shaft beyond one of the heads, and the other bore communicates with radial holes 17^b that lead into the other head, and into the interior of pipes 19 that extend parallel with the cylinder axis, and close to the inner periphery of the cylinder, and reach nearly to the other head which is chambered, or provided with cavities or passages 20 at the point of nearest approach of the pipe, and, being provided with numerous small perforations 21, establish communication between the pipes and the cylinder interior. By suitable inlet and outlet pipe connections with the respective bores 17, it will be seen that a cooling medium, such as water, may be circulated through the cylinder, and through the heads so that through its length, from end to end, the cylinder may be cooled to the requisite temperature to solidify the melted wax on its periphery. The pipe perforations 21 being small, are readily clogged and require to be cleaned, otherwise water in increased pressure and volume must be used. The pipes are, therefore, made readily removable, for cleaning purposes. To that end each is inserted and removable through a hole 22 provided in the cylinder head to which it is attached, the hole being closed, and the pipe thereat being secured, by a screw plug 23 that engages a flange 24 on the pipe end.

The die opening 12 is formed by the adjacent faces of upper and lower dies 24, each in the form of a hollow block or box through which a heating medium, such as hot water, or steam, is passed and thus a temperature maintained for the die faces which results in the desired plasticity of the wax in passing through the die opening. A pipe 25 supplies steam or other heated medium to one end of one box, and an outlet pipe 26 leads from the corresponding end of the other box, and the two boxes are connected at the opposite end by a pipe 27.

It is desirable to trim the sheets of wax to a particular width, and to vary such width. For this purpose, two knives 28, are supported from a cross bar 29 bolted to the

upper die block, so that the emerging sheet encounters them and is smoothly cut to the desired width, said knives being adjustable towards, and from each other on said rod.

5 From the dies, and after being cut or trimmed, the sheet enters a body of water 30 in a pan 31 through which it passes, and is caused to emerge by passing over a roller 32 supported at the far end of the pan 31, 10 and, thence, passes to the winding arbor 33. The passage of the sheet through the water 30 renders it less likely to tear apart as it rolls upon the winding arbor.

I claim:—

15 1. Apparatus of the kind described comprising a pan for melted wax, a cylinder revolving in the latter, of uniform diameter throughout its length, and dies receiving wax from the cylinder.

20 2. Apparatus of the kind described comprising a pan for melted wax, a cylinder revolving in the latter, of uniform diameter throughout its length, and chambered throughout substantially its length to re- 25 ceive a cooling medium, and dies receiving wax from the cylinder.

3. Apparatus of the kind described comprising a pan for melted wax, a cylinder revolving in the latter, of uniform diameter 30 throughout its length, and composed of a shell and chambered heads in communication with a source of supply of cooling medium, and dies receiving wax from the cylinder.

4. Apparatus of the kind described comprising a pan for melted wax, a hollow cylinder revolving in the latter, and perforated 35 pipes removably secured within the cylinder.

5. Apparatus of the kind described, comprising a pan for melted wax, a hollow cylinder having closed ends, revolving in the lat- 40 ter, a shaft on which the cylinder is mounted, extending through the ends thereof, perforated pipes in the cylinder removably supported therein in the space outside the shaft, 45 and means establishing communication between such pipes and a source of supply of cooling liquid outside the cylinder.

6. Apparatus of the kind described comprising a pan for melted wax, and a hollow

cylinder revolving in such pan, comprising 50 a shell of uniform external diameter throughout its length, and chambered heads closing the shell ends of the same diameter as the shell exterior, and distributing pipes to establish communication between the 55 chambers in the heads and the outside of the cylinder to circulate a cooling medium through the cylinder.

7. Apparatus of the kind described comprising a pan for melted wax, a hollow cylinder revolving in the latter, perforated pipes within the cylinder adapted to be passed through holes in the cylinder head, and re- 60 movable means to close said holes and secure the pipes to the head. 65

8. Apparatus of the kind described comprising a pan for melted wax, dies through which the wax is passed, and means for controlling the temperature of the wax passing 70 through the dies.

9. Apparatus of the kind described comprising a pan for melted wax, dies through which the wax is passed consisting of hol- 75 low blocks, and means for circulating a heating medium through said blocks.

10. Apparatus of the kind described comprising dies, means for forcing wax through the dies, and means for cutting the wax lon- 80 gitudinally after passing through the dies, said means comprising knives supported contiguous to the exit side of the dies and directly therefrom.

11. Apparatus of the kind described comprising dies, means for forcing wax through the dies, and means for cutting the wax lon- 85 gitudinally after passing through the dies, and consisting of knives adjustable towards and from one another and mounted directly on the exit side of the dies.

12. Apparatus of the kind described comprising dies, means for forcing wax through the dies, a water-holding means receiving the wax sheets emerging from the dies di- 90 rectly from the dies, and a roller receiving the wax sheet directly from the water. 95

In testimony that I claim the foregoing I have hereunto set my hand.

G. H. WILDER.