No. 814,540. PATENTED MAR. 6, 1906.

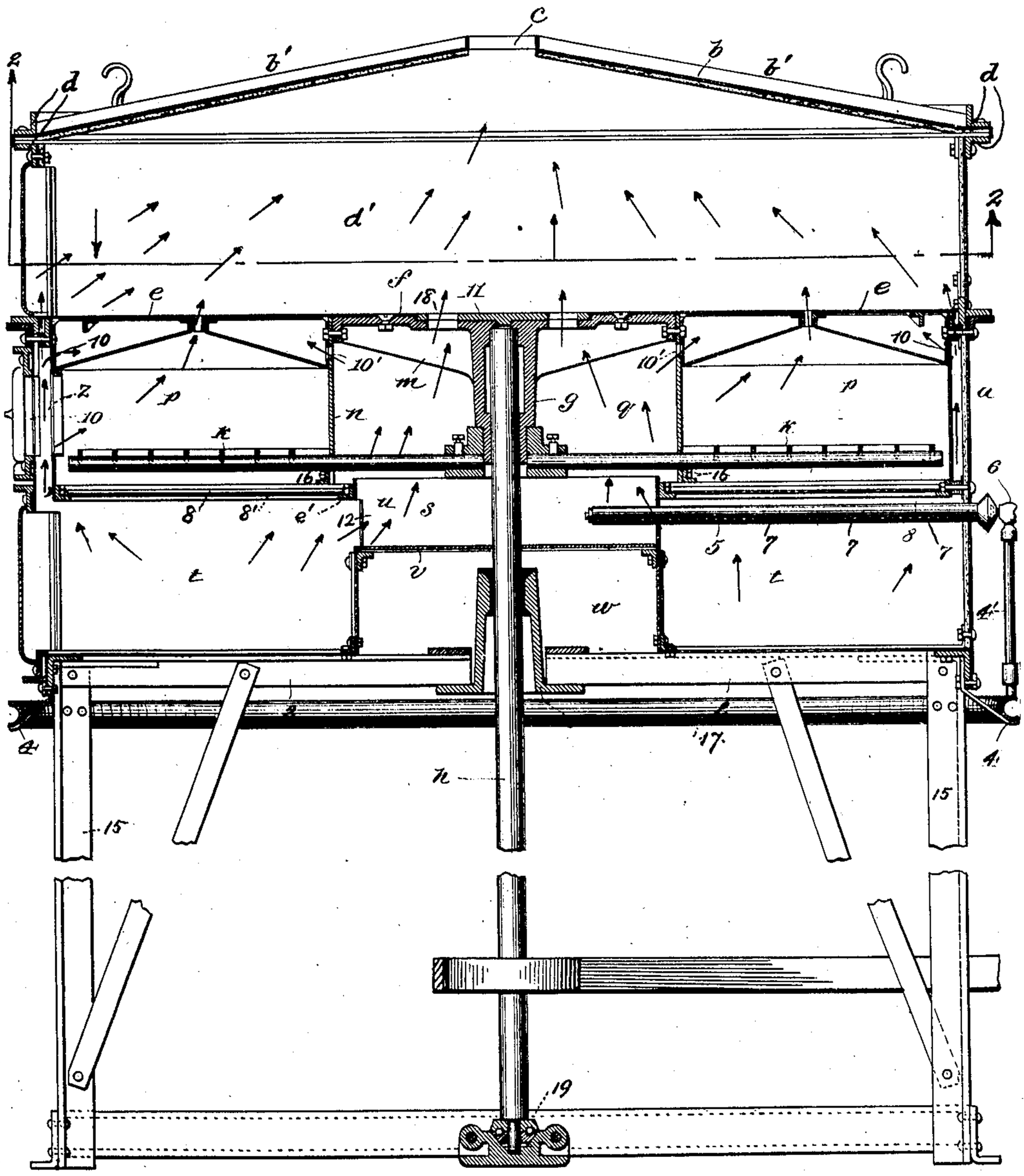
H. A. HIGBEE.

COOKING MACHINE.

APPLICATION FILED JUNE 23, 1904.

4 SHEETS—SHEET 1.

Fig. 1.



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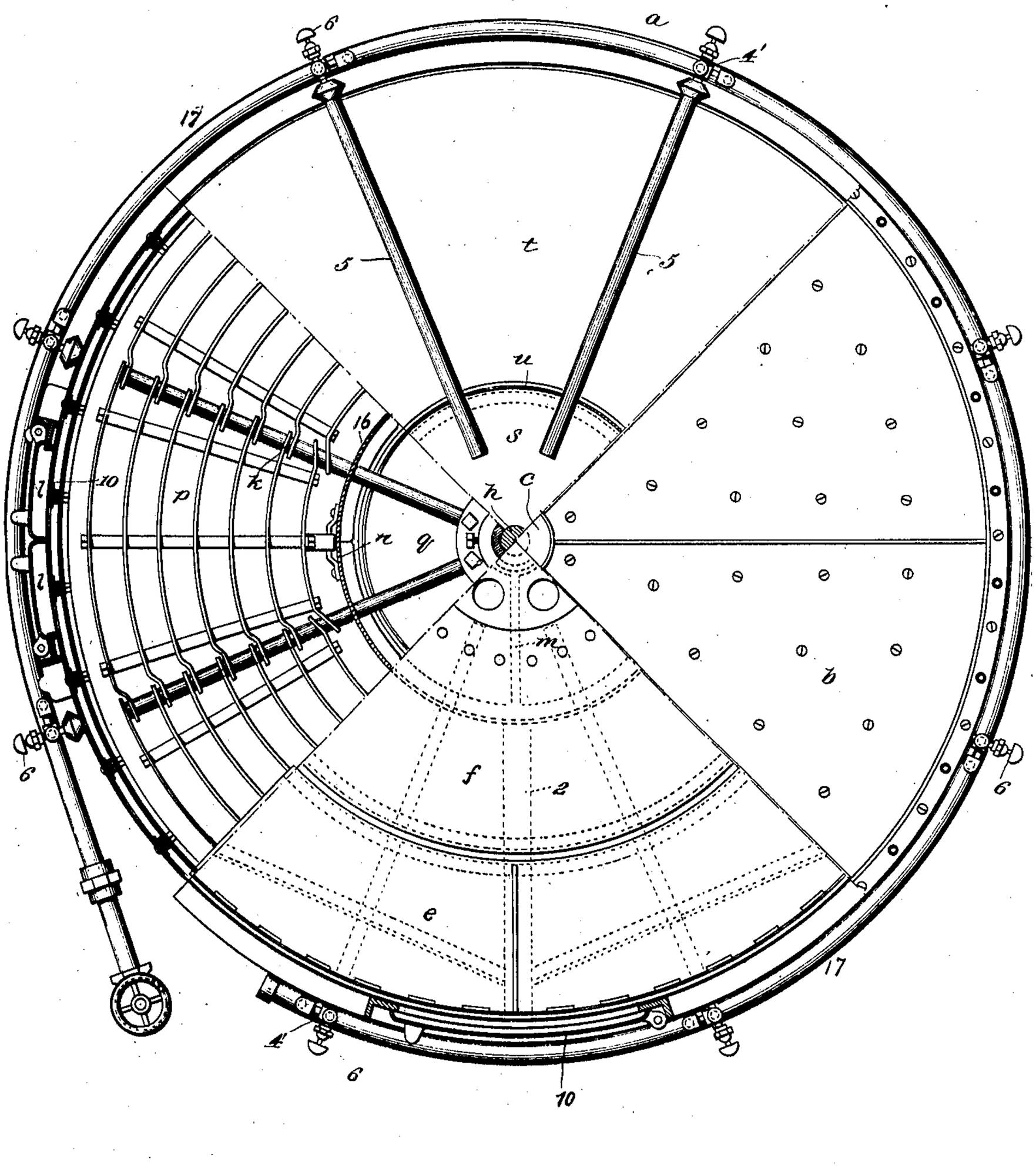
4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

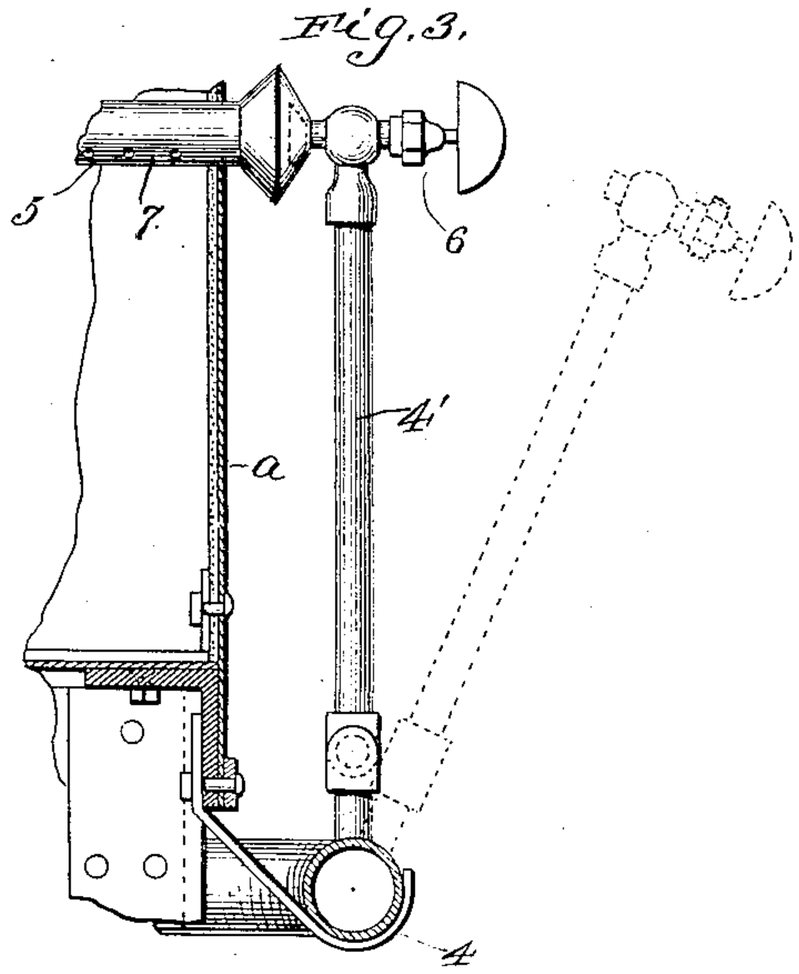


Fig. 4.

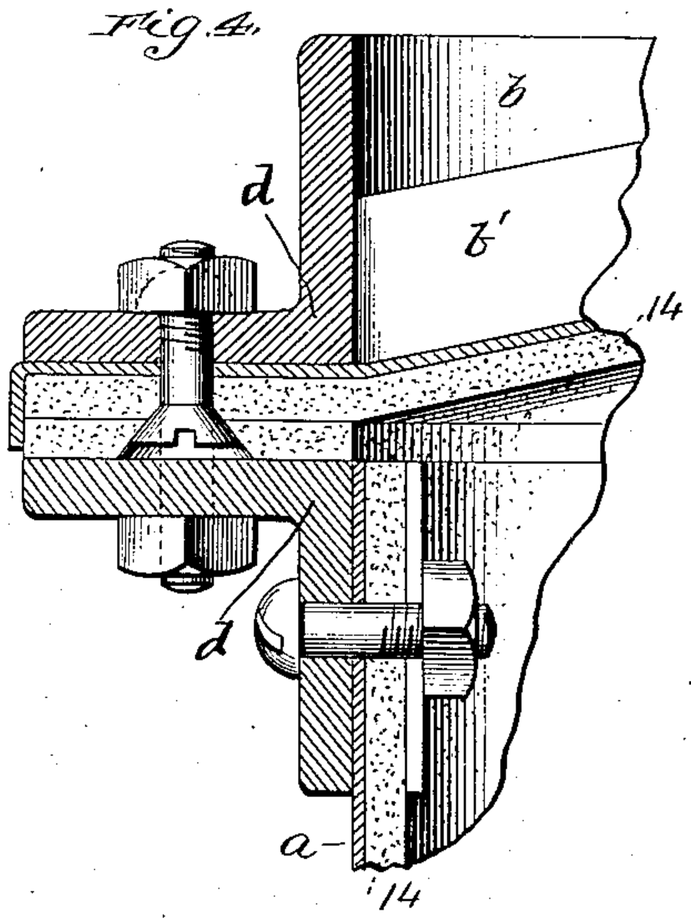
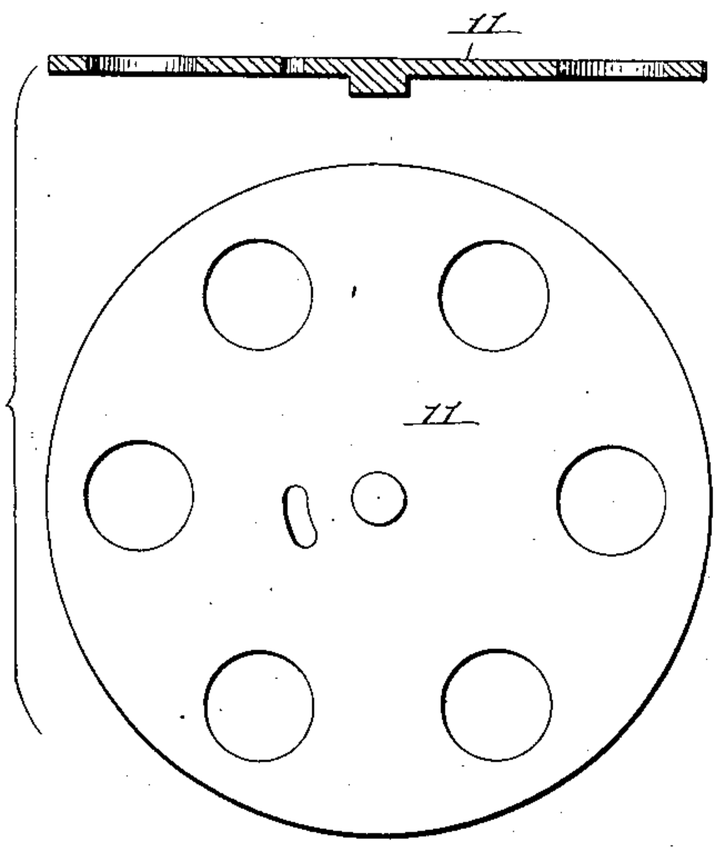


Fig. 5.



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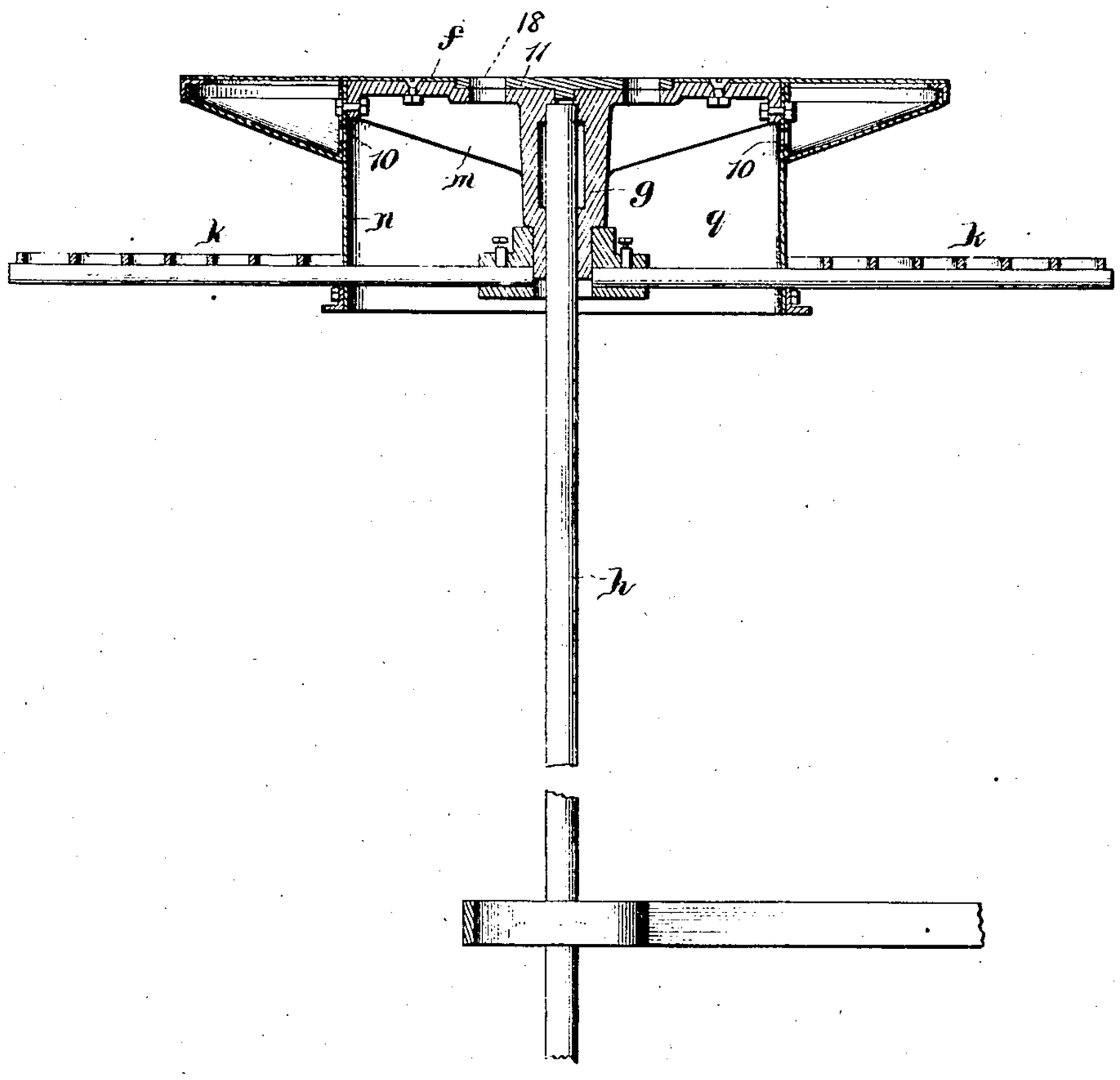
4 SHEETS—SHEET 4.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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COOKING-MACHINE.

No. 814,540. Specification of Letters Patent. Patented March 6, 1906.

Application filed June 23, 1904. Serial No. 213,823.

To all whom it may concern:

Be it known that I, HARRIET A. HIGBEE, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have made a certain new and useful Invention in Cooking-Machines; and I 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 and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical central section of the cooking-machine. Fig. 2 is a sectional view on the line 2 2 of Fig. 1, parts broken away, showing the second and third tiers. Fig. 3 is a detail view showing fuel-pipes. Fig. 4 is a detail sectional view of wall-joint. Fig. 5 shows details of register. Fig. 6 is a detail view of that part of the machine which has a rotary movement.

The invention relates to portable cooking-machines; and it consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the letter *a* designates the incasement, which is cylindrical and made of sheet metal, the walls being lined with asbestos. The top *b* is preferably made in the form of a flat cone suitably strengthened by radial ribs *b'* and having a central escape at *c* for the products of combustion. The top is provided with a peripheral joint-flange *d*, which is designed to be bolted to a similar joint-flange at the top of the cylindrical wall. The oven portion is supported by suitable standards 15 and is normally divided into three tiers, one above another.

The floor of the upper chamber *d'* forms the top of the middle tier. It consists of the annular ledge or shelf *e*, which is secured to the cylindrical wall, and the interior circular table portion *f*, which is connected to the hub-cap *g* of the main vertical shaft *h*, which also supports the circular rack *k*. The hub-cap is provided with radial arms *m*, to the ends of which is bolted the interior cylindrical guard-wall *n*, to the lower edge of which is connected a ring-bearing 16, upon which rest the radial bars of the rack *k*.

When the vertical shaft is rotated, the circular rack rotates therewith. The circular guard-wall *n* separates the annular rack-chamber *p* from the central flue-chamber *q*, which surrounds the hub-cap.

Openings 10' are made at intervals through the guard-wall *n* and also at 18 through the circular table *f* for the passage of the heated air.

The lower tier of the oven consists of the annular chamber *t* and the inner flue portion *s*, which is separated from said annular chamber by the cylindrical guard-wall *u*. This flue portion *s* is comparatively shallow and is provided with a bottom *v*, forming the top of the open bottom central recess *w*, into which the external air passes freely.

The floor of the lower annular chamber rests on the radial bars 2, which are secured to the lower central bearing 3, through which the vertical shaft passes. This shaft is designed to be stepped in a ball-bearing support 19 in order that its movement may be smooth and regular.

Supported on brackets 4 around the lower portion of the machine is the supply-pipe 17 for the gas, which is designed to be used for producing heat. From this supply-pipe extend the branch pipes 4', which are in connection with the radial jet-pipes 5, which extend through the annular bottom chamber into the middle flue portion *s*. Regulating-valves 6 are provided to control the flow of gas, as indicated, and it is designed to locate the jet-apertures 7 of the jet-pipes or burners along the bottom thereof, the tops of said jet-pipes being in proximity to the top of the annular chamber *t*, which is indicated at 8. This top is designed to provide a guard to prevent the great heat in the vicinity of the jet-pipe from acting too intensely upon the articles on the rack of the middle tier requiring slow cooking. The peripheral wall of the middle tier is made double, the inner wall being separated from the outer wall sufficiently to provide an annular flue *z*, extending around this portion of the oven. The top of this flue is open and communicates with the upper oven-chamber, while the bottom of the flue opens into the lower annular chamber *t*, in which the jet-pipe is located.

Each tier of the oven is provided with suitable doors, as indicated, the door 10 of the middle tier being provided with a flue *l* between its inner and outer walls, which when

the door is closed communicates with the flue *z*.

The inner wall of the flue *z*, near its upper end, is provided with openings at 10, and similar openings are made through the cylindrical guard-wall which separates the flue-chamber from the rack-chamber. The openings at the top of this flue-chamber are designed to act in connection with a circular damper-plate 11, whereby the passage of the heated air may be controlled.

The machine is designed to cook any article requiring such process. Articles which are to be baked by comparatively slow process are placed on the grates of the rotary portion in the middle or baking chamber, and the rack device is turned slowly and continuously by suitable friction-gearing, the speed being timed to finish the baking process in one revolution, the operator loading and unloading from the same door at the same time. The main door is therefore normally open while baking.

Articles which are to be broiled or cooked quickly are designed to be placed in the lower annular chamber, where they will be subject to the direct heat of the flames from the jets of the burner-pipe, and articles which require more moisture in the cooking are placed in the upper chamber, either on the wall-shelf *e* or on the turning table *f*, interior to said shelf.

The heat is derived from a series of radial gas-burners which are located in the annular lower chamber. Eight of these burners or jet-pipes are usually employed, and the heat therefrom is at first mainly directed downward into the annular broiling-chamber, where it divides, part going up through the flue-chamber of the oven by way of the openings 12, in the inner wall of said chamber, and part up through the circular peripheral flue *z*.

If it be desired to get more heat into the upper chamber, the flue-dampers are regulated accordingly, and the escape-pipe designed to be connected to the top of the oven should also be provided with a damper for this purpose.

The branch gas-pipes are jointed, and their upper valved injector ends are connected to the burners by insertion, so that they can be disconnected from said burners and turned down. The burners can then be pulled out of the annular chamber.

The rotary rack is designed to have its hub engage the top of the shaft by friction, so that in case any obstruction should occur the rack will stop moving, and the grates are made in truncated sector form and removable, so that they can be readily lifted out should it be desired to get at the baffle-plates 8′ of the top 8 below them, which form the top of the annular baking-chamber. These baffle-plates rest on flanges *e*′ of the walls and are readily removable.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. A cooking-machine, having a cylindrical incasement and vertical central shaft, a lower annular oven-chamber, a top chamber, and between said chambers, a double-wall middle chamber, bearing upon said central shaft, and a rotary table-top which forms the main floor of the top chamber, substantially as specified.

2. A cooking-machine, consisting of a cylindrical incasement, a lower annular chamber, and above the same, a double-wall chamber, in combination with a table-top to said double-wall chamber and a rack within the same carried by a rotary shaft, substantially as specified.

3. A cooking-machine, consisting of a cylindrical incasement a lower annular chamber provided with heating-burners, and, above this chamber, a double-wall chamber having a rotary rack and rotary table-top, substantially as specified.

4. The combination with a cylindrical oven-incasement having a double-wall flue around its middle portion, and an annular heating-chamber below, of a rotary rack, inner wall and top for said middle portion, substantially as specified.

5. In a cooking-machine, the combination with an incasement, an annular heating-chamber and a middle flue-chamber, of a detachable radial jet-pipe, jointed branch pipes and a main supply-pipe for the gas, substantially as specified.

6. In a cooking-machine, the combination with a cylindrical casing, its central shaft, a double-wall flue portion, a lower annular chamber and an annular ledge of a rotary rack, table-top and inner guard-wall carried by the central shaft, substantially as specified.

7. In a cooking-machine, the combination with a cylindrical casing, and double-wall chamber of a radial arm rotary rack, its removable grates, baffle-plates below said rack, removable radial jet-pipes, a gas-supply pipe and jointed branch pipes, substantially as specified.

8. A cooking-machine, having a rotary shaft, in combination with a baking-rack, and a hub loose on said shaft in connection with said baking-rack, substantially as specified.

9. In a cooking-machine, the combination with a central shaft and an incasement, a lower annular heating-chamber, a central flue portion, an annular ledge and a double-wall flue between said heating-chamber and ledge, of a rotary rack and table-top in connection with said shaft and a circular flue-wall, substantially as specified.

10. A cooking-machine, consisting of a cylindrical incasement, an annular heating-

chamber, radial burner-pipes in said chamber, a central flue portion, a rotary shaft, and a rack having a hub loose on said shaft, substantially as specified.

11. The combination with the rotary shaft, of the baking-rack and its hub loose on said shaft, the cylindrical oven-incasement and its doors, substantially as specified.

12. The cooking-machine, having the lower annular heating-chamber, and the central bottom recess, the double-wall flue middle chamber with central flue, the rotary rack and table-top, vertical shaft and hub, and the radial gas-burners in the heating-chamber, substantially as specified.

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

HARRIET A. HIGBEE.

Witnesses:
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