

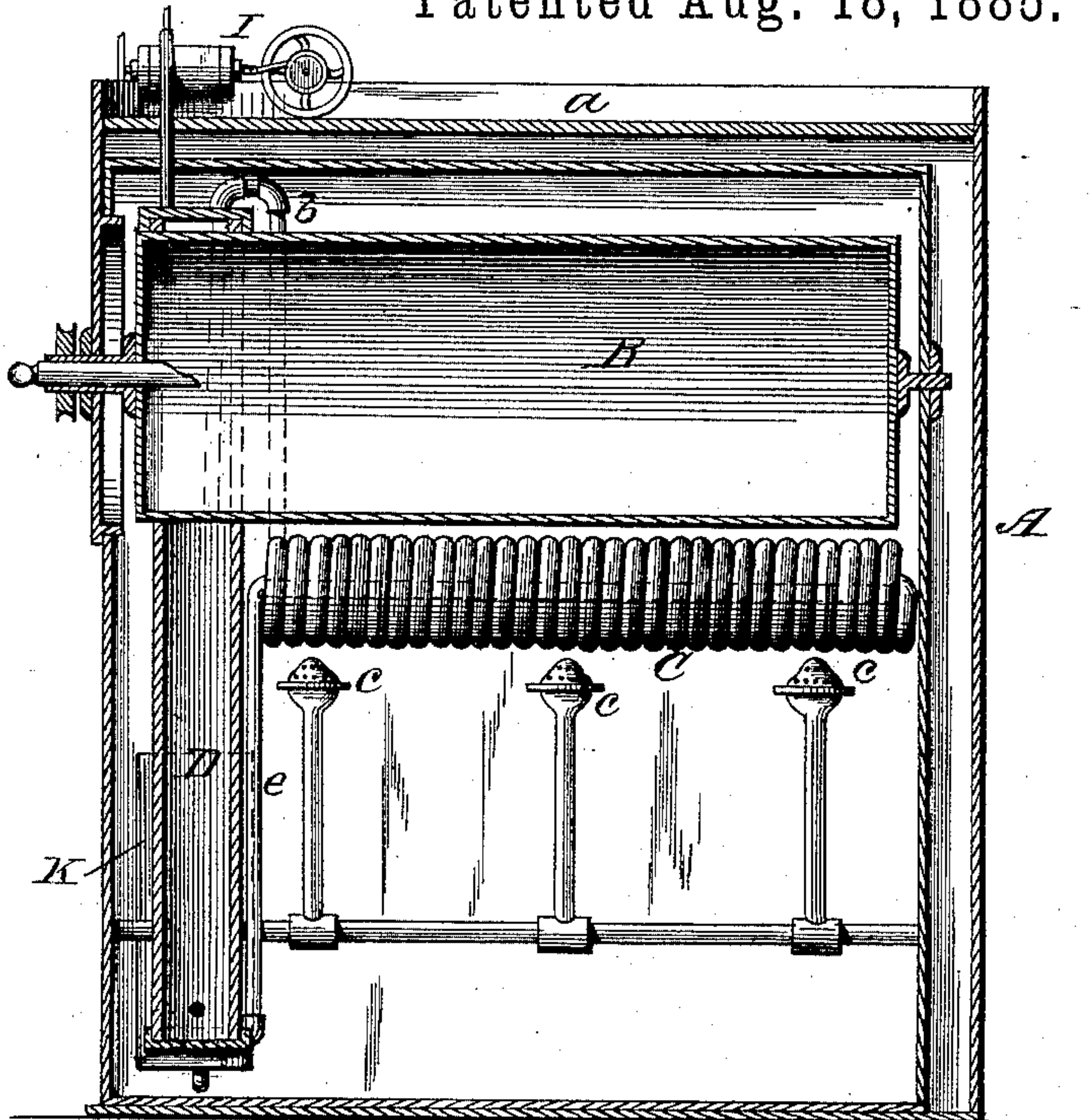
(No Model.)

B. F. SHIELDS.  
COFFEE OR NUT ROASTER.

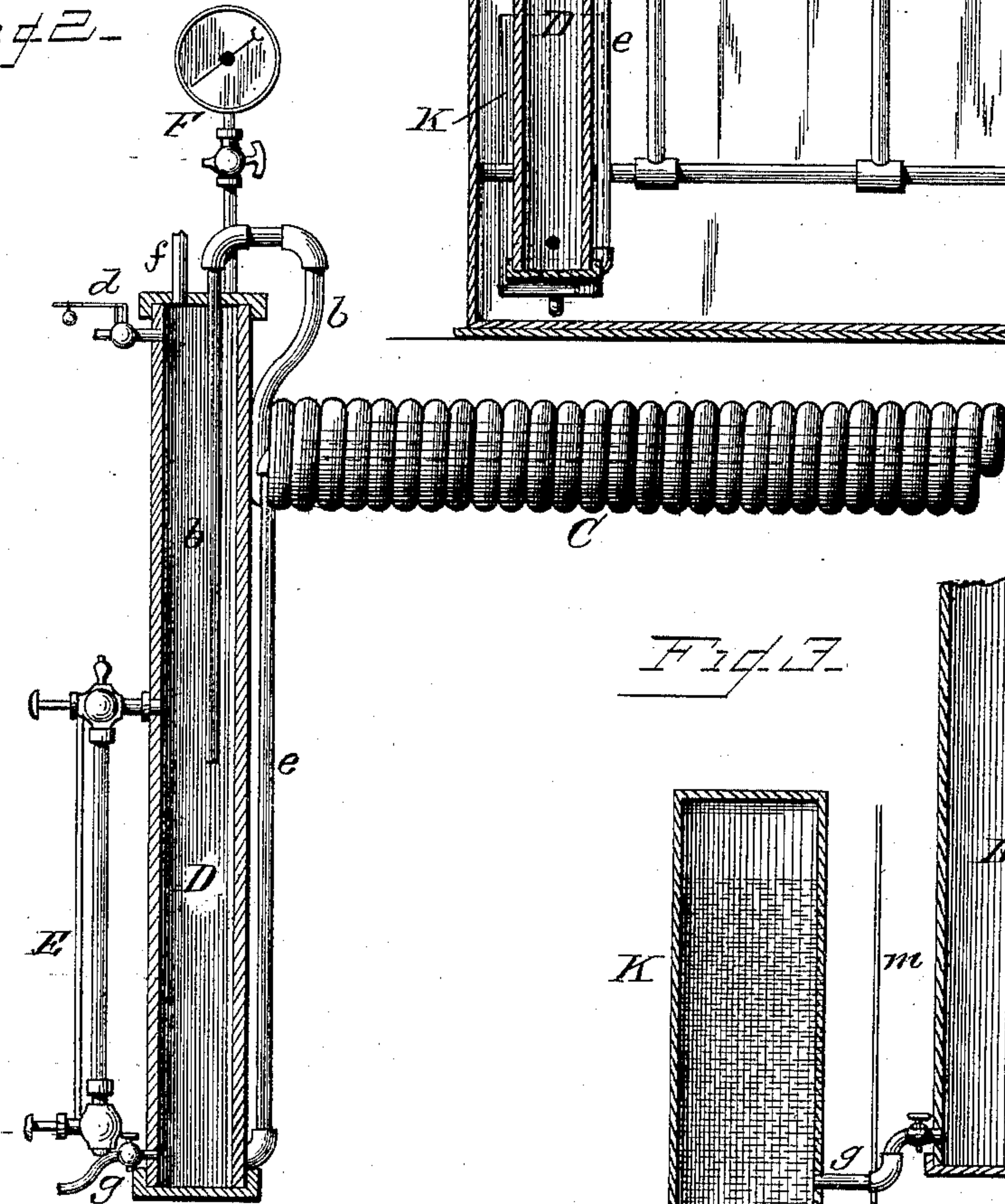
No. 324,599.

Patented Aug. 18, 1885.

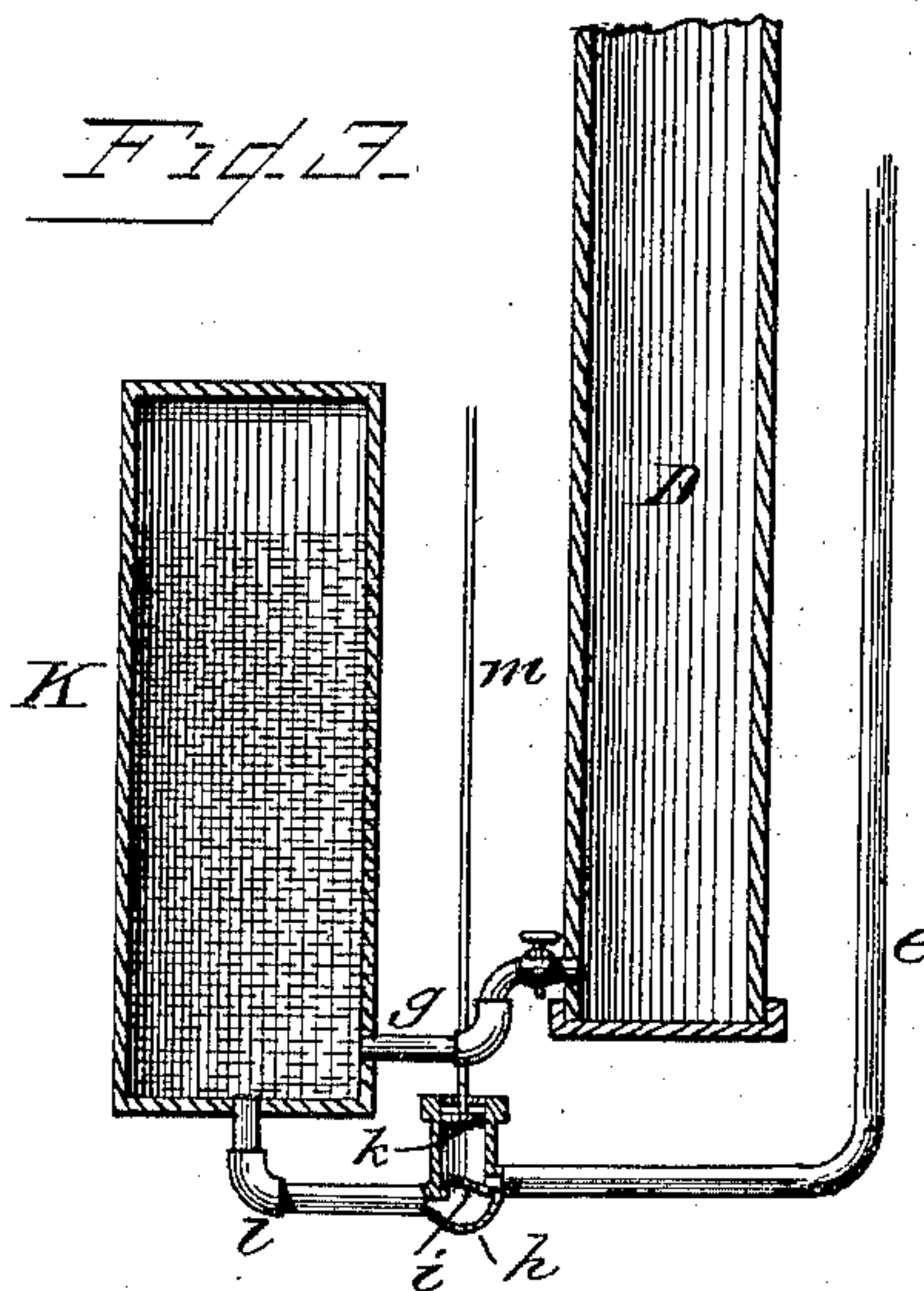
*Fig. 1*



*Fig. 2*



*Fig. 3*



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# UNITED STATES PATENT OFFICE.

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## COFFEE OR NUT ROASTER.

SPECIFICATION forming part of Letters Patent No. 324,599, dated August 18, 1885.

Application filed August 8, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. SHIELDS, a citizen of the United States, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Coffee and Nut Roasters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a sectional elevation of my invention; Fig. 2, a similar view of the cylinder or receiving chamber, in which the steam and water after passing through the heating-pipe are separated, and conducted, respectively, to the engine and water-tank, also showing the several connections to the chamber in elevation; and Fig. 3, a detail view in section of the receiving-chamber and water-tank, showing the means of communication with each other, also the pump and water-pipe communicating with each other and the tank.

The present invention has relation to that class of coffee and nut roasters in which is employed a suitable engine for rotating the roasting-cylinder by means of steam generated in a boiler and supplied to the engine by means of a pipe communicating therewith and with the cylinder of the engine.

Heretofore the means usually employed were the flames from a gasoline burner or burners extending from a pipe or pipes leading to a suitable reservoir containing the supply of gasoline, and as the steam was generated in a boiler it was necessary to provide two sets of burners, one arranged under the boiler to heat it and the other under the roasting-cylinder, thereby consuming an unnecessary amount of fuel to attain the end desired.

The object of the present invention is to dispense with the use of the boiler heretofore employed and generate the steam directly in the pipes as the water passes through them, and to attain this object I arrange the pipe or pipes directly under the roasting-cylinder, and cause a continuous circulation of water through them, and arrange the burners under said pipes, so that the heat used to generate the steam may be utilized to do the roasting.

In the accompanying drawings, A represents the casing, of any suitable form and dimensions, provided at its top with the usual nut-pan, *a*, into which the nuts are emptied from the roasting-cylinder to keep them warm. The casing A contains what I term a "fire-box," H, and in this fire-box is located the roasting-cylinder B, of the usual construction, revolved by means of pulleys and belt or other suitable means connecting with an engine, I, of any well-known construction commonly used with this class of devices.

Below the cylinder B, and directly under it, is the coil-pipe C, said pipe, although being preferably coiled to increase its heating-surface, as shown, may be composed of a series of horizontal and parallel pipes; but these would be less effective for the purpose. One end of the coil C connects with a pipe, *b*, which extends up a short distance, and then passes down through the top into a receiving-chamber, D, to discharge the surplus steam and water therein. This receiving-chamber I shall term a "separator," as the steam and water as it is discharged from the pipe *b*, after passing through the coil, is separated, the water being conducted to the supply-tank hereinafter described and the steam to the cylinder of the engine. The opposite end of the coil C connects with a pipe, *e*, which extends through the coil down to a pump-cylinder, *k*, in which are located a suitable valve, *i*, and piston *k*, said pump communicating with a tank, K, by means of a short pipe, *l*.

When the pump is in operation, water will be taken from the tank K, forced up pipe *e*, through the coil C, and thence discharged into the separator D through pipe *b*. The piston-rod *m* of the pump being connected to the engine I by crank-pin or any of the well-known means, the piston *k* is given a continuous reciprocating motion, thereby causing a continuous circulation of water through the coil in which steam is generated by means of the flames from the gasoline-burners *c*, placed under the coil; or any other heating medium may be used. As the water and surplus steam, are discharged into the separator, the water will fall to the bottom and steam will rise and pass to the engine through the pipe *f*, with which it com-



municates, thus being utilized as a motive power to run the engine. The surplus water in the separator D is conveyed back to the tank K through a pipe, g, said pipe being provided with a cock, and acts as a blow-off pipe to clean the separator of all sediment.

The separator D is provided with a suitable gage, E, safety-valve d, and pressure-indicator F.

10 It will be noticed that the boilers usually employed in this class of devices are entirely dispensed with, the burners used performing the double office of generating the steam in the coil of pipe as a motive power for the engine,  
15 and at the same time heating the cylinder that contains the coffee or nuts, the heat also radiating from the coil assisting the roasting. The flame from the burners first strikes the coil, and, in connection with the heat therefrom,  
20 passes up and strikes the roasting-cylinder, while the waste heat will strike the bottom of the nut-pan and keep the nuts warm.

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

1. In a roasting apparatus, the combination of a revolving cylinder, a motor, a steam-coil generator for the motor located beneath the roasting-cylinder, means for heating said cylinder and steam-coil, and a pump operated 30 from said motor, and located between the steam-coil and its supply, to force a continuous current of water through the coil, substantially as described, and for the purposes specified.

2. In a roasting apparatus, the combination 35 of a revolving cylinder, a motor, a steam-generator, a supply-tank and separator connected with the generator, the separator communicating with said tank and motor, and a pump operated from the motor, and located between 40 the tank and generator, the parts being constructed, arranged, and operating substantially as shown, and for the purposes described.

In testimony that I claim the above I have hereunto subscribed my name in the presence 45 of two witnesses.

BENJAMIN F. SHIELDS.

Witnesses:

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