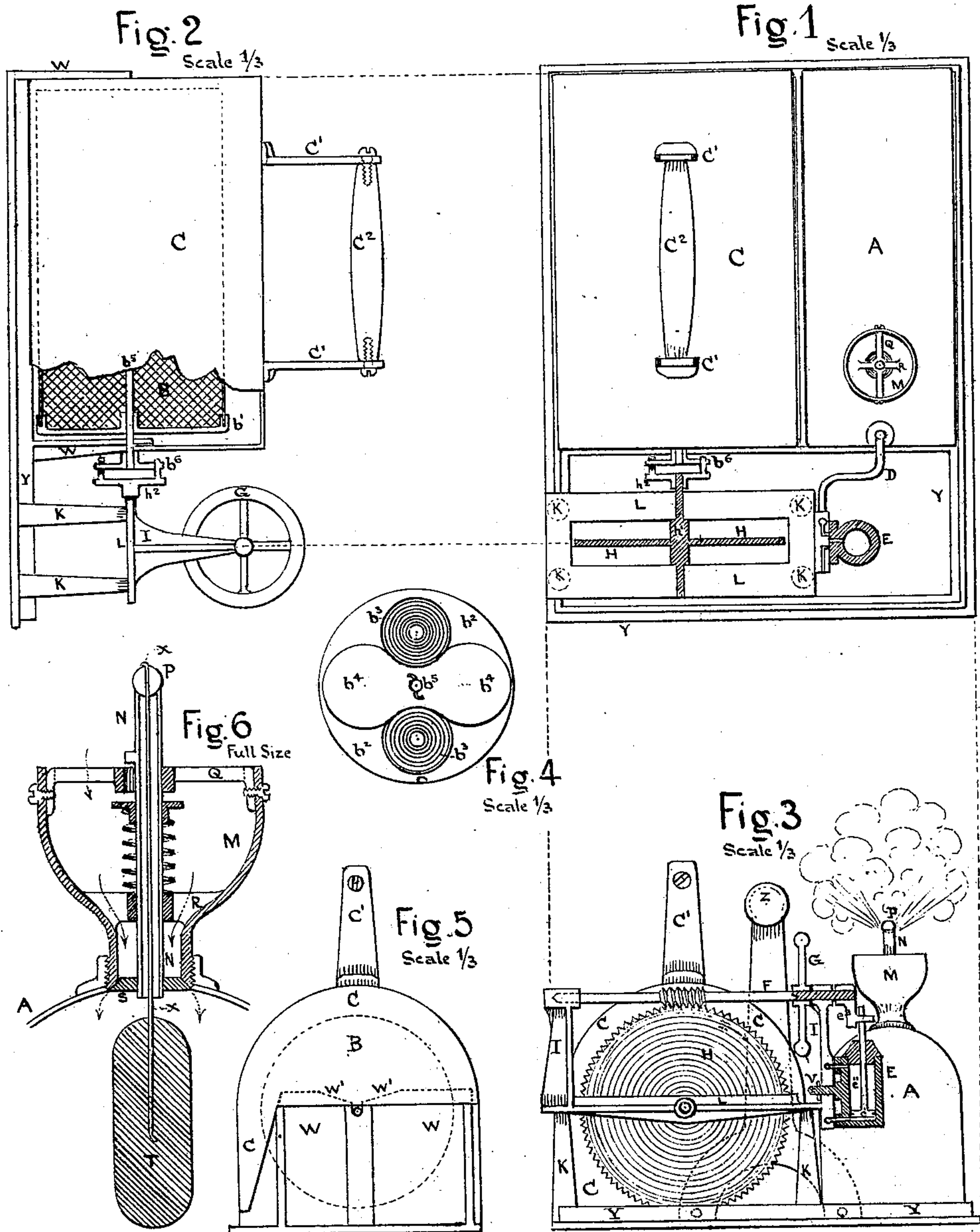


I. C. SMITH.

Coffee-Roaster Operated by Steam.

No. 127,654.

Patented June 4, 1872.



Witnesses:  
*F. E. Nichols*  
*H. Stephens.*

Inventor  
*Irving C. Smith*

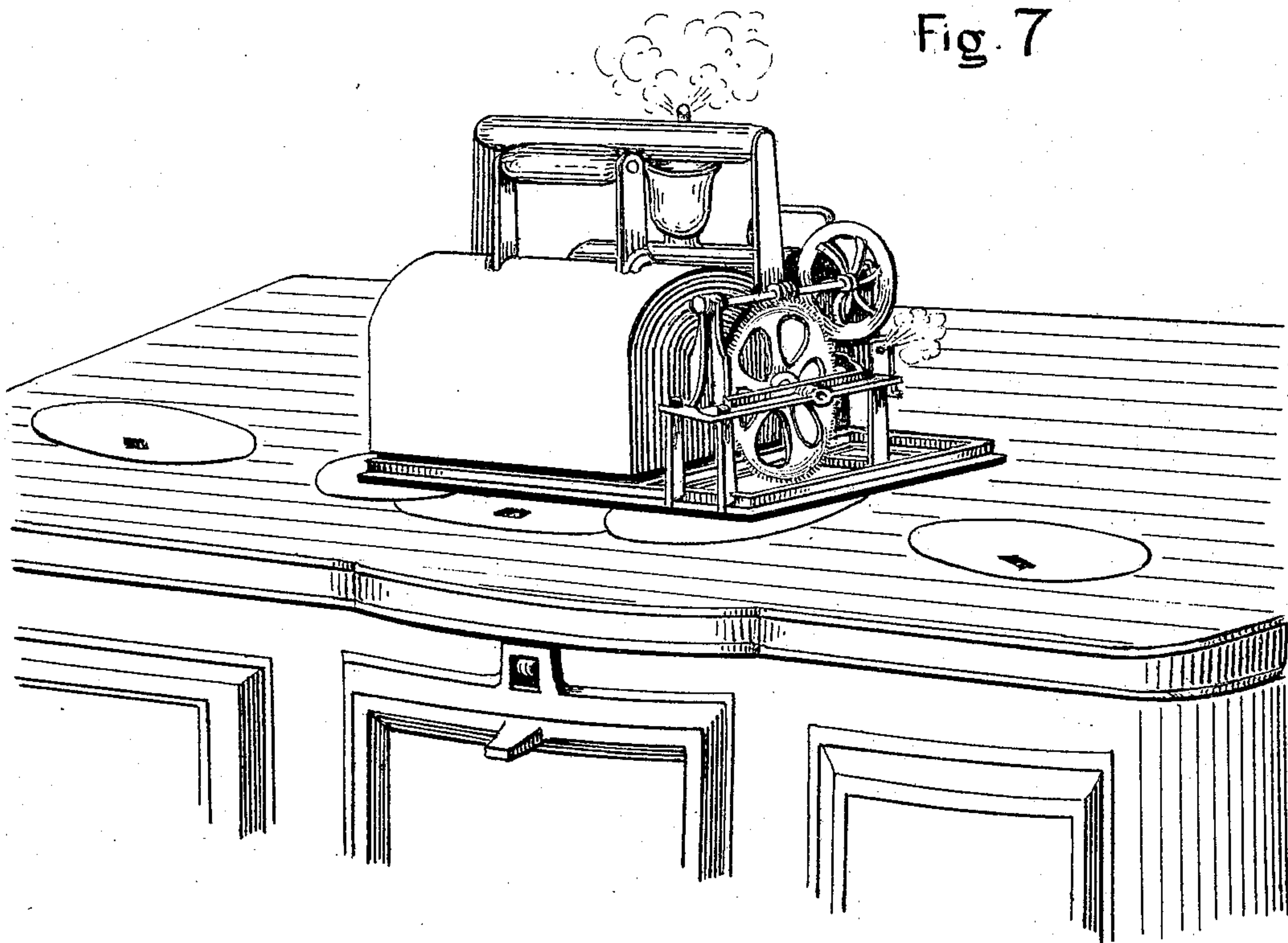
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Fig. 7



Witnesses:

*F. B. Sickers*  
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Inventor:

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# UNITED STATES PATENT OFFICE.

IRVING C. SMITH, OF NEW YORK, N. Y.

## IMPROVEMENT IN COFFEE-ROASTERS OPERATED BY STEAM.

Specification forming part of Letters Patent No. 127,654, dated June 4, 1872.

Specification describing certain Improvements in Steam Coffee-Roasters, invented by IRVING C. SMITH, of the city, county, and State of New York.

Figure 1 is a top view. Fig. 2 is a side view, showing a part of the cover removed. Fig. 3 is an end view. Fig. 4 is an end view of the roasting-cylinder. Fig. 5 is an end view of the roasting-cylinder, the cover and part of the frame supporting the same. Fig. 6 is a full-size view of the water-supply cup and valve for filling the boiler and safety-valve. Fig. 7, Sheet 2, shows the machine in position on an ordinary cooking-stove or range.

The same letters refer to the same parts in each figure.

A is the boiler placed to receive the same heat that acts to roast the coffee. B is the roasting-cylinder. C is the cover of the roasting-cylinder.  $c^1 c^1$  are the arms supporting the handle  $c^2$ , by which the cover is removed, as required. D is the steam-pipe, to convey steam from the boiler A to the oscillating engine E. F is the shaft, operated by the engine E, carrying the fly-wheel G and the worm that gears into the cogs on the wheel H. I is the frame, supporting the ends of the shaft operated by the engine E. K is the standards, supporting the horizontal frame L, and this frame supporting the bearings of the wheel H. M, Fig. 6, is the supply-cup, for conveying water down through the valve S into the boiler, when this valve is opened by pressing upon the ball P. Q is a guide steadiment, for the top of the stem N. R is a steadiment, for the lower end of the same stem N. This stem is hollow so as to permit the steam to escape when the ball safety-valve P is opened. T is the safety-valve weight. V is a flat spring for holding the cylinder E up to its working face. W is the end plates of the frame, supporting the roasting-cylinder; and  $w' w'$  are the inclines on the top of the frame. X, Fig. 6, is the rod connecting the safety-valve weight to the ball-valve P on top of the stem N. Y is the lower frame of the machine. Z is the handle, by which the whole machine is lifted on and off the fire.

I will now describe the operation of my portable steam coffee-roaster, as I term it—at the same time it is equally applicable for roasting nuts and grains—in connection with the accompanying drawing: Press down the ball P,

Fig. 6, with the finger until a notch on the stem N is caught under the guide Q, and thus holding the valve S open, then pour water, (boiling preferred,) into the supply-cup M until the boiler is two-thirds full, then detach the catch holding the valve S open, and allow it to return to its seat; now, by means of the handle Z, (shown in Fig. 3, but omitted in Figs. 1 and 2,) place the machine on the fire without the roasting-cylinder B or its cover C. While steam is being generated in the boiler A fill the roasting-cylinder B one-half full of unroasted coffee or nuts or grains to be roasted, by putting the same through the holes  $b^3 b^3$ , Fig. 4, then turn the plate  $b^4 b^4$  around so as to cover up the holes  $b^3 b^3$ . Sufficient steam having been generated to operate the engine, by the same heat that roasts the coffee, turn the fly-wheel G around with the finger, as required, so as to work the condensed water out of the cylinder E; then let the engine run sufficient to discharge any condensed water that may be in the steam-pipe D; then, placing the finger upon the fly-wheel G, stop the engine on the center, put the roasting-cylinder in the machine by allowing the shaft to fall into the notches at the bottom of the inclines  $w' w'$ ; Fig. 5; the object of these inclines being to facilitate the placing of the roasting-cylinder into position more readily, the dogs  $h^2$  and  $b^6$ , Fig. 2, engaging so as to revolve the roasting-cylinder with the engine. With the finger turn the engine off the center, when it will immediately start and continue working; put the cover C over the roasting-cylinder. This cover can be removed, as required, to examine the coffee, or nuts, or grains during the progress of roasting.

Whenever it is required to stop the engine for any purpose, it can be readily done by placing the finger on the fly-wheel G, and stopping it with the crank on the center. It is advisable to stop the engine whenever it is required to remove the roasting-cylinder.

If, during the progress of roasting, it is found that the heat is not acting uniformly, this can be remedied either by taking out the roasting-cylinder and shaking the same or by shoving the machine in a different position over the heat.

It may be well to observe here that when the machine is being used on an ordinary cook-

ing-stove or range, that it will be found more convenient to place the machine on the same, with the roasting-cylinder parallel to and toward the front, (there being an ordinary fire,) with the boiler over that part indicating the greatest heat; thus the roasting-cylinder is apt to receive the amount of heat required. (See Fig. 7, Sheet 2.)

It is evident that the mechanism in which the steam acts to turn the roasting-cylinder may be variously arranged without affecting the nature or character of this invention.

Before putting away the machine after the roasting process is over, it is advisable to

empty the boiler by pouring out the water through the valve S.

What I claim as new, and desire to secure by Letters Patent, is—

The within-described portable coffee-roaster, composed of the engine, boiler, and roasting-cylinder, so arranged that the same heat that roasts the coffee shall also generate steam to drive the engine, as herein described.

IRVING C. SMITH.

Witnesses:

F. E. SICKELS,  
K. STEPHENS.