

(No Model.)

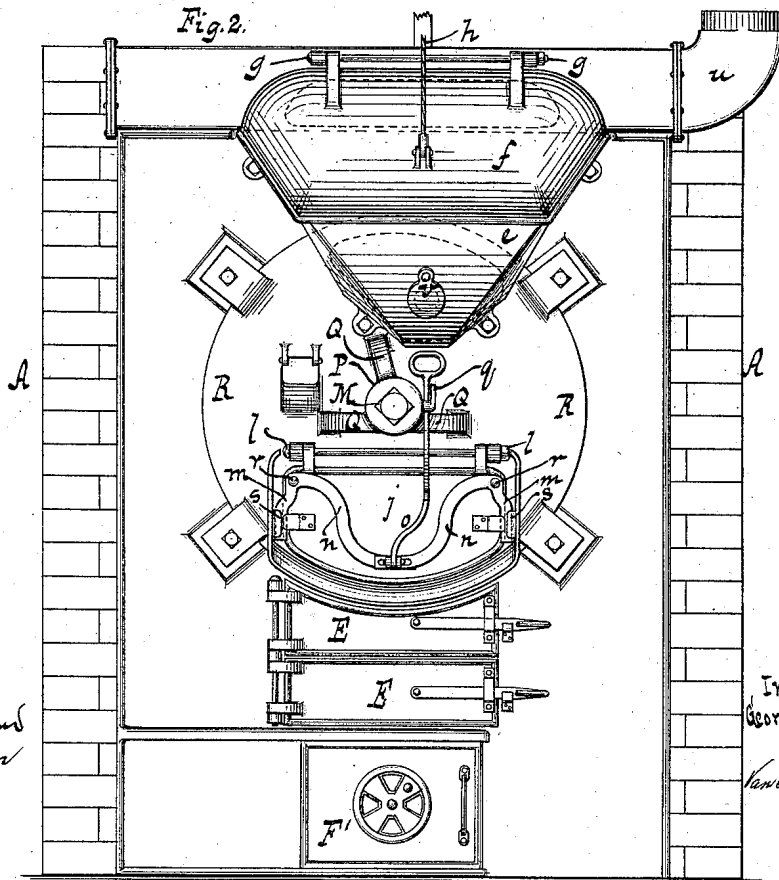
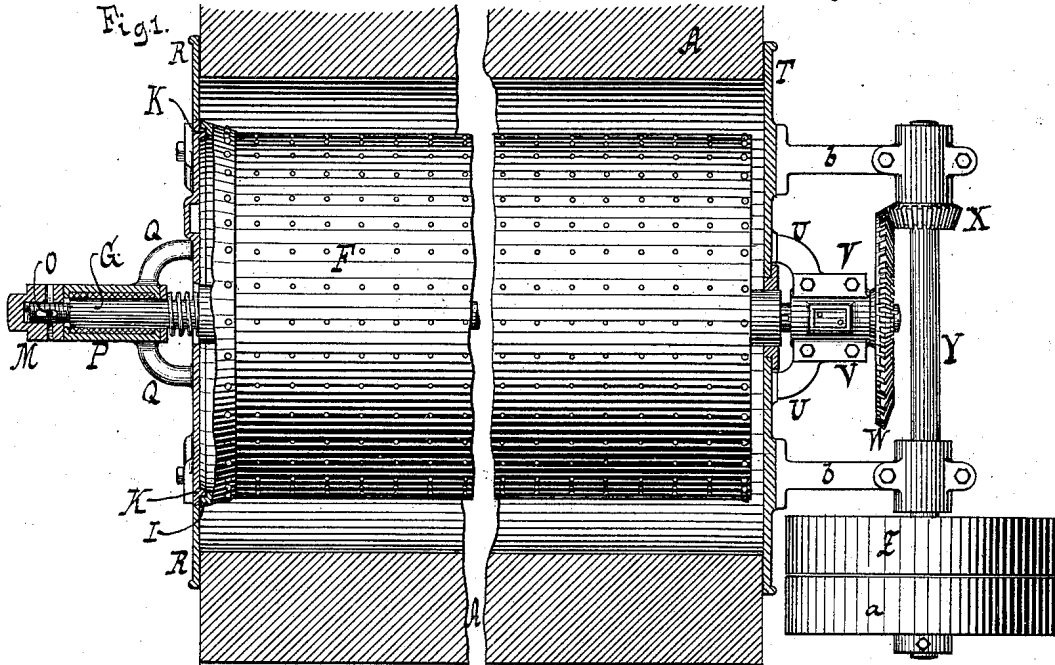
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G. W. HUNGERFORD.

COFFEE ROASTER, MIXER, AND SCOURER.

No. 366,106.

Patented July 5, 1887.



Witnesses  
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(No Model.)

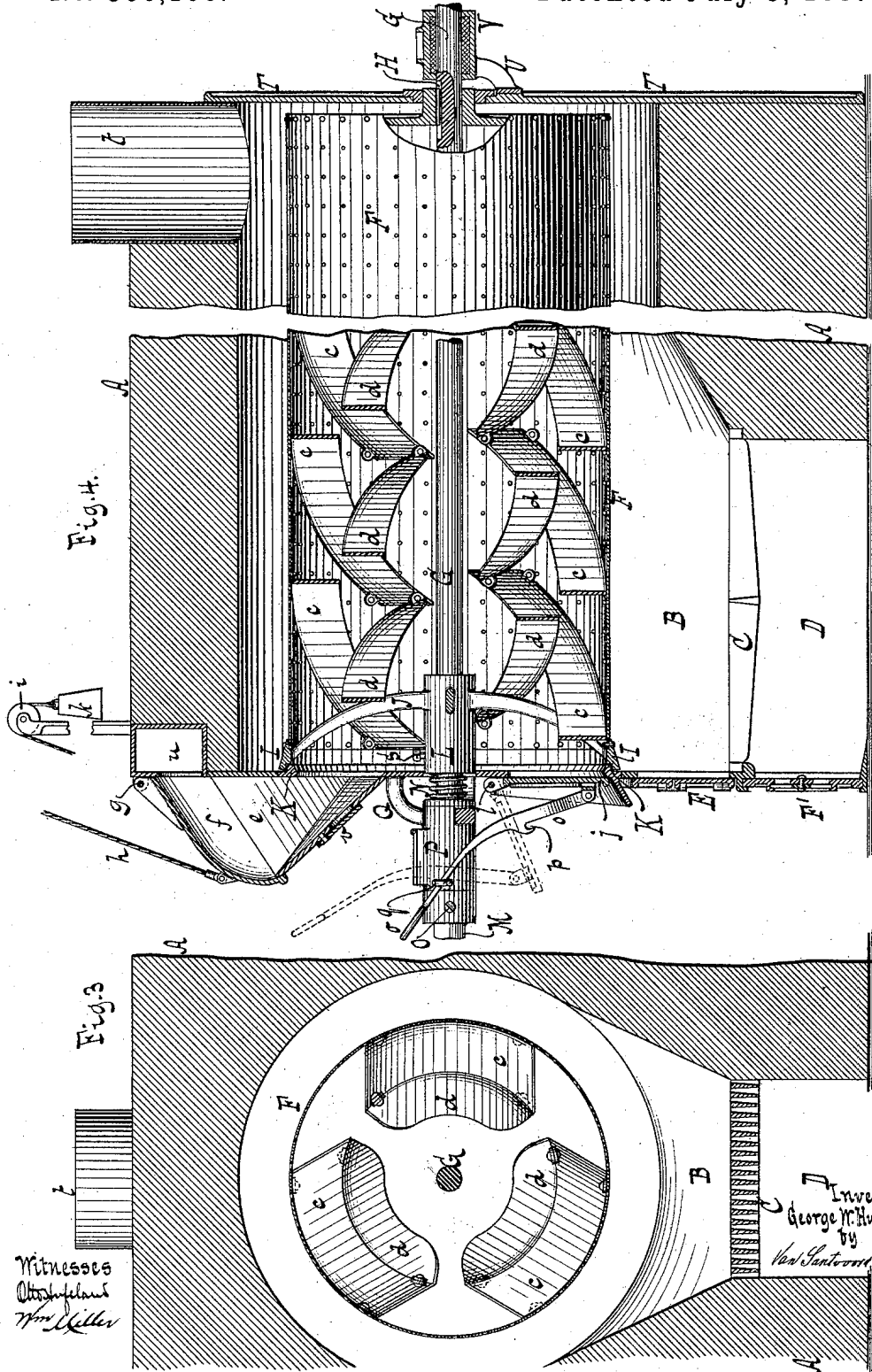
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# UNITED STATES PATENT OFFICE.

GEORGE W. HUNGERFORD, OF NEW YORK, N. Y.

## COFFEE ROASTER, MIXER, AND SCOURER.

SPECIFICATION forming part of Letters Patent No. 366,106, dated July 5, 1887.

Application filed November 18, 1886. Serial No. 219,316. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. HUNGERFORD, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Coffee Roasters, Mixers, and Scourers, of which the following is a specification.

This invention relates to improvements in coffee roasters, mixers, and scourers, as fully set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a roaster, partly in section. Fig. 2 is a front view of a roaster. Fig. 3 is a vertical transverse section of a roaster. Fig. 4 is a side elevation of a roaster, partly in section, so as to expose the interior of the roaster.

Similar letters indicate corresponding parts.

The letter A indicates the side walls of a furnace made of suitable material—such as fire-brick—and preferably having a fire-place, B, grate-bars C, and ash-pit D. Suitable doors, E F, may be provided for the fire-place and ash-pit. In the furnace is suitably mounted a roaster, F, of suitable material—such, for example, as sheet metal. The front end of the roaster is provided with a flange, I, which is held firmly against a rim or ledge, K, on the front wall of the furnace. The flange I and rim or ledge K are of circular form, so as to allow rotation of the roaster. The rear end of the roaster is connected by a feather, H, Fig. 4, to the axle G, so that the roaster is compelled to turn with the axle; but as the roaster expands or contracts, because of changes in the temperature, the rear end of the roaster can move longitudinally on the axle G. Warping or injury of the roaster, because of its expansion or contraction, is thus avoided. The front of the roaster F is connected to the axle G by means of arms J, attached to the roaster and to a collar, L. The collar L can be fixed and adjusted on the axle G by a set-screw, S, passing through the collar and clamping the collar against the axle G. The front portion of the axle G passes through a bearing, P, supported on the front wall, R, of the furnace by arms or supports Q. The front end of said

axle is provided for the attachment of a nut, M, and by screwing said nut M onto the axle G said nut M will be caused to press against the bearing P, and will draw the axle G and roaster F forward and cause the flange I of the roaster to sit against the ledge K. On loosening the nut M the spring N, which is inserted between the collar L and the bearing P, will press the axle G backward through the pressure of said spring upon the collar L. To prevent accidental movement of the nut M, said nut is perforated so as to allow of the insertion of a screw, O. By having the screw O pass through a slot in the axle G, as seen in Fig. 1, the nut M is held against rotation. The rear of the axle G is supported in a bearing, V, attached by arms U to the rear wall, T, of the furnace. Said axle G can be rotated from the shaft Y by means of a bevel-gear, X W. The shaft Y rests in suitable bearings, b, and said shaft is provided with a driving-pulley, Z, and a loose pulley, a, so that said shaft can be made to rotate or to remain at rest, as desired. The rotation of the shaft Y rotates the axle G and the roaster F.

To the inner wall of the roaster F are attached wings or lifters c. These wings or lifters are formed of suitable material—such as cast or malleable metal—and said wings are fixed diagonally in said roaster, as shown. The wings c are attached with one edge to the wall of the roaster, and to the inner edges of the wings c are attached the wings or lifters d. The wings d are also placed diagonally, as seen, and the positions of the wings c and d are such that the wings c and d face in opposite directions. These wings revolve with the roaster F, and said wings c d secure a thorough agitation of the material in the roaster, so that every portion of such material is equally well roasted.

The material to be roasted can be fed into the roaster through a hopper, e. The hopper e can be closed by a cover, f, swinging on a suitable hinge or pivot, g. A rope or chain, h, passing over a pulley, i, and provided with a weight, k, facilitates the raising of the cover f.

The material in the roaster can be withdrawn

therefrom through a door, *j*. The door *j* is held closed by latches or tongues *m*, engaging suitable lugs, *s*, on the wall of the furnace. The latches *m* swing on pivots *r* on the door *j*.  
 5 To the tongues *m* are attached suitable arms, *n*, pivoted or jointed to a handle or arm, *o*. By pulling on the handle *o* the tongues *m* are caused to swing on the pivots *r* out of engagement with the lugs *s*, and the door *j* is  
 10 raised or moved to an open position, as indicated in dotted lines in Fig. 4. A hook, *p*, on the handle *o* can be made to hold the door *j* open by causing said hook *p* to engage a suitable lug or projection, *q*.

15 The roaster *F* is shown as having perforated walls, as is customary.

The spent gases from the furnace can pass off through the chimney *t*.

By having one end of the roaster fixed against  
 20 longitudinal movement, as shown, said longitudinally-fixed end can be held firmly against one wall or side of the furnace. Said side of the furnace can thus be used as a closing-wall for one end of the roaster *F*. Said end of the  
 25 roaster *F* can thus be left open, thereby cheapening the construction of the roaster, and when the roaster *F* is taken out of the furnace said open end gives ready access to the interior of the roaster for cleaning and repairing.

30 The gases in the hopper *e* can pass off through a flue, *u*. The gases generated in the cylinder or roaster *F* can pass into the hopper *e*, and thence through the flue *u*, and thus be carried off.

35 The spring *N*, as is seen, tends to press the roaster away from the seat or ledge *K*, and thus prevents the roaster from working or pressing too strongly against the seat *K*. Wear, noise, and excessive friction of the  
 40 roaster while moving in or over the seat *K* are thus prevented.

To prevent turning of the collar *L* on the shaft *G*, said collar *L* may be secured on the shaft by a feather-key.

45 By having the wings *c d* facing in opposite directions one set of said wings in the operation of the roaster will cause the coffee or material in the roaster to travel toward the front of the roaster, while the other set will cause  
 50 the coffee or material to travel toward the rear of the roaster. The material in the roaster is thus thoroughly mixed and also scoured as well as roasted. It is also to be noticed that by not having the wings extend continuously  
 55 or with unbroken surfaces through the interior of the roaster the material in the roaster will be rapidly shifted from one surface onto a different surface, whereby a different portion of the material is presented to the hot  
 60 metal of the roaster. The material in the roaster is thus not apt to spot or burn. The receptacle *F* can also be used without heat for the purpose of mixing and scouring coffee as the action of the wings on the coffee effects a  
 65 mixing and scouring. As with arrangement of wings *c d*, the coffee cannot lodge for any

length of time in any part of the roaster, the coffee will not be burned, and will be thoroughly scoured and mixed, and danger of  
 breaking the coffee because of such lodging  
 70 is avoided. By opening the door *j* the coffee will be rapidly fed out of or discharged from the receptacle *F* by operating said receptacle in the proper direction. As the fastenings *s*  
 75 for the door *j* are at one side, no coffee is apt to lodge in said fastenings, said fastenings not being in the way of coffee or material being discharged. The automatic operation of the latches or tongues *m* enable the door *j* to be rapidly opened and closed, as a pull on the  
 80 handle *o* opens the door, and by letting the door *j* descend by its weight the latches *m* will automatically catch into the fastenings *s*.

By having the bearings *P V* for the shaft *G* outside of the walls of the furnace, and by  
 85 having an air-space between said bearings and the furnace-wall, said bearings will not become excessively heated.

When desired, steam, water, or other substances may be introduced into the receptacle  
 90 through a suitable opening in the hopper *e*, which opening is shown in the drawings as being closed by a cover, *v*, suitably pivoted or attached to the hopper. This opening can be  
 95 uncovered and substances passed through said opening without stopping the operation of the device.

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

1. The combination, with a furnace, a rotating  
 100 shaft, *G*, and a ledge, *K*, of a rotating roaster or receptacle, *F*, provided at one end with a flange, *I*, engaging the ledge and held against endwise movement and having its  
 105 other end feathered to the shaft, and means, substantially as described, for moving the cylinder to and from the ledge.

2. The combination, with a furnace having its front wall provided with a bearing, *P*, and  
 110 ledge *K*, of a shaft, *G*, extending through said bearing, a roaster, *F*, provided at its forward end with a flange, *I*, engaging the ledge and held against endwise movement, and having  
 115 its other end feathered on the rear end of the shaft, and a nut on the forward end of the shaft to tighten the cylinder on the ledge, substantially as described.

3. The combination, with a furnace having its front wall provided with an external bearing, *P*, and an internal ledge, *K*, of a shaft,  
 120 *G*, extending through said bearing and screw-threaded and slotted at its forward end, a roaster, *F*, provided with a flange, *I*, at its forward end engaging the ledge and held  
 125 against endwise movement, and having its other end feathered on the rear end of the shaft, a nut, *M*, on the forward end of the shaft, and a transverse screw, *O*, passing through the nut into the slotted end of the shaft, substantially as described.

4. The combination, with a furnace having its front wall provided with an external bear-

ing, P, and a ledge, K, of a rotating shaft, G,  
extending through said bearing, a collar, L,  
thereon, a roaster, F, provided at its forward  
end with a flange, I, engaging the ledge, and  
5 with arms J, connected with the collar and  
having its other end feathered on the rear end  
of the shaft, a spring, N, between the bearing  
and collar, and a nut, M, on the forward end  
of the shaft, substantially as described.

In testimony whereof I have hereunto set to  
my hand and seal in the presence of two sub-  
scribing witnesses.

GEORGE W. HUNGERFORD. [L. S.]

Witnesses:

W. HAUFF,  
WILLIAM MILLER.