

No. 712,821.

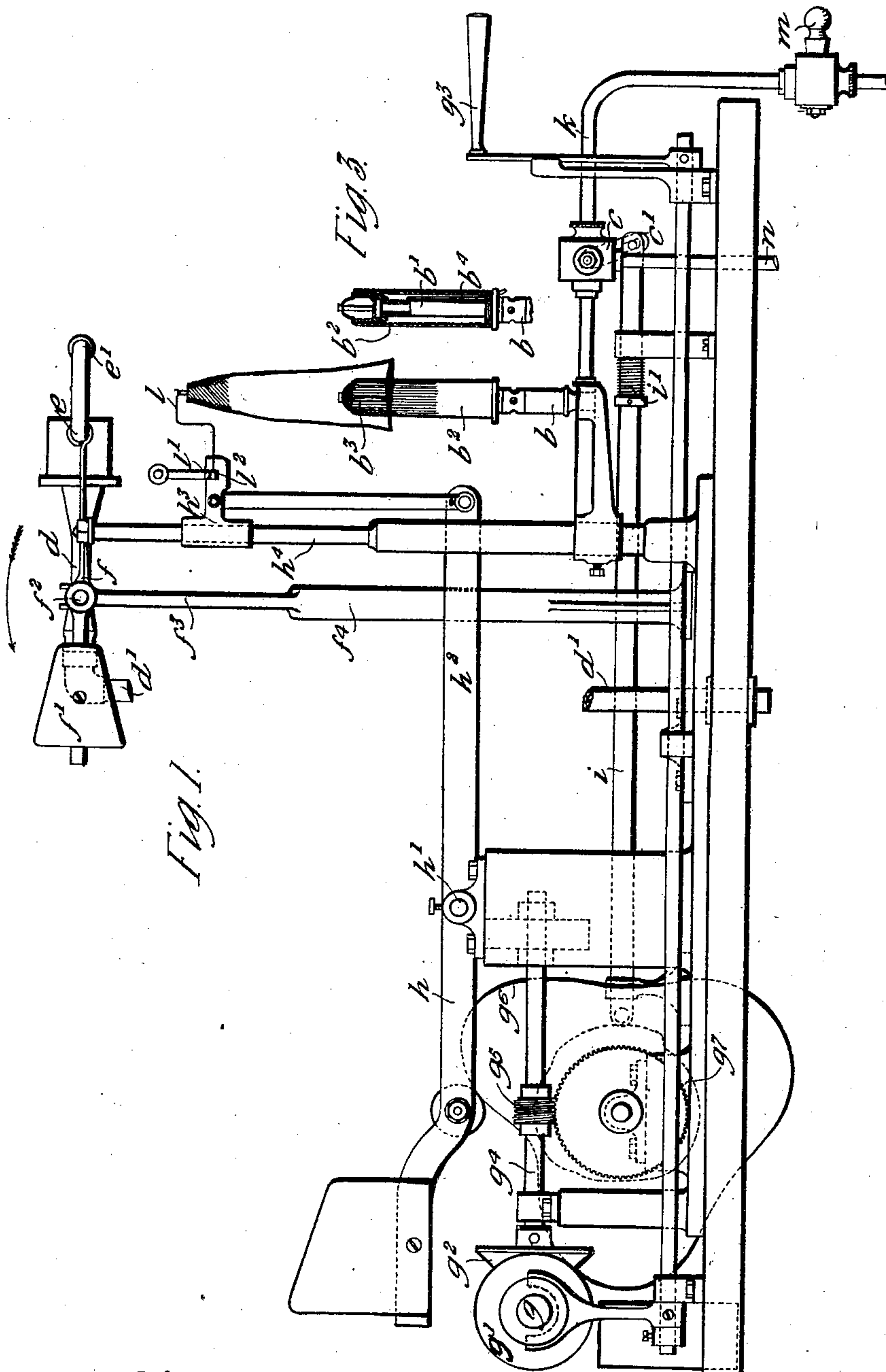
Patented Nov. 4, 1902.

W. MACKEAN & E. WALKER.  
APPARATUS FOR BURNING AND SEASONING INCANDESCENT MANTLES.

(Application filed Jan. 31, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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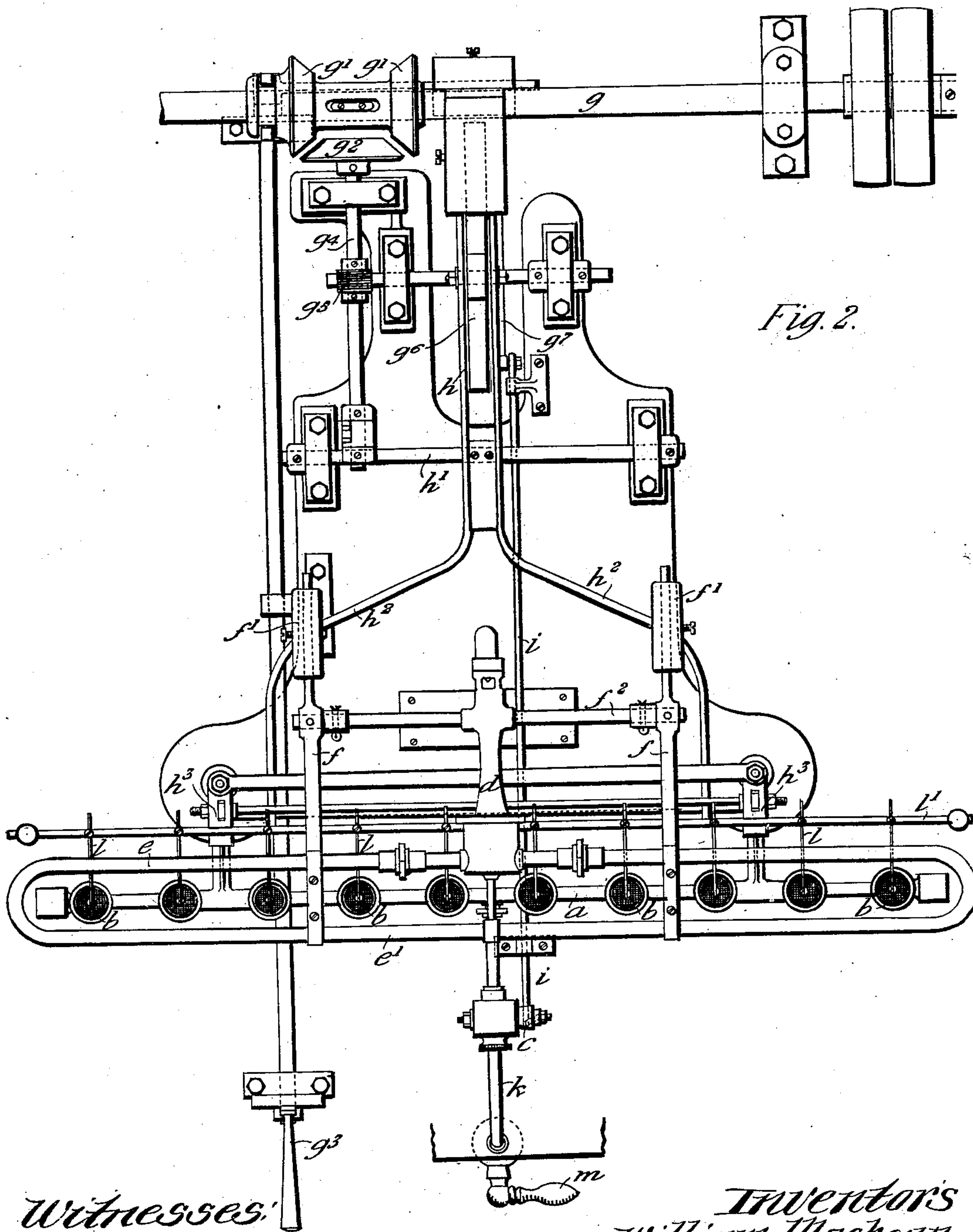
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3 Sheets—Sheet 2.

(No Model.)



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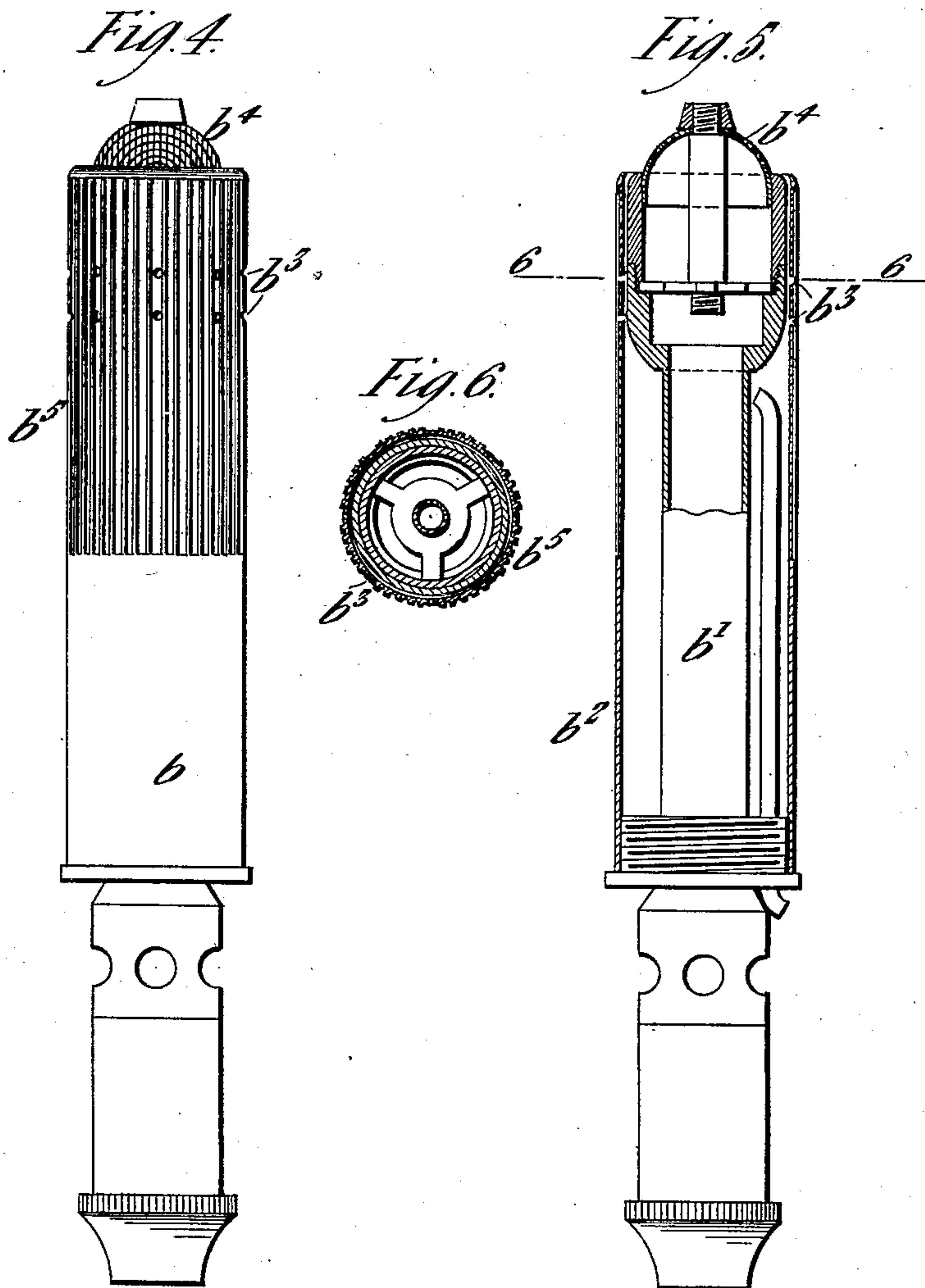
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(No Model.)

3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

WILLIAM MACKEAN AND ERNEST WALKER, OF WESTMINSTER, ENGLAND.

APPARATUS FOR BURNING AND SEASONING INCANDESCENT MANTLES.

SPECIFICATION forming part of Letters Patent No. 712,821, dated November 4, 1902.

Application filed January 31, 1902. Serial No. 92,081. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM MACKEAN and ERNEST WALKER, citizens of England, residing at 78 York street, Westminster, in the county of London, England, have invented certain new and useful Improvements in Apparatus for Burning and Seasoning Incandescent Mantles, (for which we have applied for a patent in Great Britain, dated July 2, 1901, No. 13,460,) of which the following is a specification.

In burning and seasoning incandescent mantles the operator has to kindle the mantle held on a wire and to bring it when partly burned over the burner which is to finish the burning and effect the seasoning.

The present invention relates to apparatus for effecting these operations more speedily and regularly than is possible by hand, as will be described with reference to the accompanying drawings, in which--

Figure 1 is a side elevation, and Fig. 2 a plan, of the apparatus, and Fig. 3 is a section of a detail. Fig. 4 is an elevation, Fig. 5 is a vertical section, and Fig. 6 is a horizontal section on the line 6 6 of Fig. 5, of one of the seasoning-burners.

On a gas-pipe *a* is mounted a row of burners *b*, each consisting of a central tube *b'*, surrounded by tube *b''* of somewhat-larger diameter, so as to form an annular passage leading to a number of lateral holes *b'''* near to the top of the burner, thus to afford jets playing on the bottom of the mantle, as well as the large flame issuing from the wire-gauze top *b''''* and filling the interior of the mantle, it being seen that the tubes *b'* and *b''* are separated at their tops, so as to provide for such enlarged flame. To prevent the mantle from sticking to the burner should it come in contact therewith, the outer tube thereof is fluted on its outer surface, as indicated at *b'''''*.

Above the row of burners is a burner-tube *d*, delivering gas supplied through a flexible pipe *d'* to two pipes *e e'*, normally situated immediately over and parallel to the row of burners *b*. These pipes are shown as being integral with each other and are provided with jets or holes on the sides facing each other at the places immediately above the burners *b*. Instead of this arrangement there may be one pipe *e*, from which a ring-shaped

burner having inwardly-radiating jets may project over each burner *b*.

The pipes *e e'* are carried on the ends of lever-arms *f*, provided with adjustable counter-weights *f'* and keyed on a shaft *f''*, which rocks in bearings on arms *f'''* of upright *f''''*. Behind the row of burners *b* is a shaft *g*, driven by any convenient motor and provided with sliding friction-cones *g'*, either of which may be engaged with the friction-cone *g''* by moving the handle *g'''* to the right or to the left, respectively. The cone *g''* is keyed to the shaft *g''''*, a worm-gear *g'''''* on which engages with a worm-wheel on a transverse shaft, which carries the cams *g'''''' g'''''''*. The former of these acts on a roller attached to a counter-weighted lever *h*, centered at *h'* and branched at its opposite end. Each branch *h''* is linked to a bracket *h'''*, sliding on an upright *h''''*. The other cam *g''''''* acts on a roller on one end of the sliding bar *i*, urged against the cam by a spring *i'* and connected by a slot and pin with the lever *c'* of the three-way cock *c* on the pipe *k*, which supplies the usual gas under pressure.

The operation of the apparatus is as follows: The operator having suspended the mantles to be burned on a row of hooks *l*, carried by a bar *l'*, places this bar in slots *l''*, provided for it in the sliding brackets *h'''*, which are then in their highest position. To enable him to do this, he swings back the pipes *e e'* in the direction shown by the arrow in Fig. 1. He then turns the gas-tap *m*, whereby gas is supplied to the burner-tube *d* and pipes *e e'*, the three-way cock *c* being open to the pipe *n*, leading to the burner-tube *d*, when the brackets *h'''* are in their highest position. He kindles the gas issuing from the holes in the pipes *e e'* and swings the latter back into the position shown in the drawings, thus igniting the mantles. The next operation is to shift the handle *g'''*, so as to throw one of the cones *g'* into gear with *g''* and start the cams. The effect of this is to lower the sliding brackets *h'''* at a suitable rate and to cut off the gas from the pipes *e e'*. When the mantles have descended well over the burners *b* and before the flame which has been traveling down the mantles arrives at the bottom thereof, the three-way cock *c* is turned by cam *g''''''* into the position



for supplying gas to the burners  $b$ , each of which has a pilot-jet  $b^1$ , so that it is at once kindled and the seasoning of the mantles begins. When the brackets  $h^3$  are again in their highest position, the handle  $g^3$  is shifted to disengage the friction-clutch  $g^1 g^2$ , the tap  $m$  being turned off. The pipes  $ee'$  are now turned back, and the bar  $l'$ , loaded with burned mantles, is exchanged for another loaded with those ready to be burned.

Obviously the brackets  $h^3$  may be allowed to descend and ascend more than once, if this be necessary for proper seasoning.

Having thus described the nature of this invention and the best means we know of carrying the same into practical effect, we claim—

1. Apparatus for burning and seasoning incandescent mantles comprising a row of burners, a number of gas-jets vertically above each burner, a vertically-sliding bar to support a mantle between the upper gas-jets and each burner and cams adapted to give the said sliding bar a reciprocating movement and to control a gas-cock on the pipe supplying gas to the apparatus, substantially as described.

2. Apparatus for burning and seasoning incandescent mantles comprising a row of burners, two parallel gas-pipes vertically above the burners, holes in the sides of the gas-pipes facing one another at places in line with the burners, counterbalanced lever-arms car-

rying the gas-pipes, sliding brackets vertically reciprocated by a cam and carrying a bar to which is attached a mantle suspended over each burner and a three-way cock controlled by a cam one part of which opens the gas-passage to the gas-pipes while another part opens it to the burners, substantially as described.

3. Apparatus for burning and seasoning incandescent mantles comprising a row of burners, two parallel gas-pipes vertically above the burners, holes in the sides of the gas-pipes facing one another at places in line with the burners, counterbalanced lever-arms carrying the gas-pipes, sliding brackets vertically reciprocated by a cam and carrying a bar to which is attached a mantle suspended over each burner, a three-way cock controlled by a cam one part of which opens the gas-passage to the gas-pipes while another part opens it to the burners, a clutch for throwing the cones in and out of gear and a gas-tap for controlling the supply of gas to the three-way cock, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

W. MACKEAN.  
E. WALKER.

Witnesses:

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