

No. 610,213.

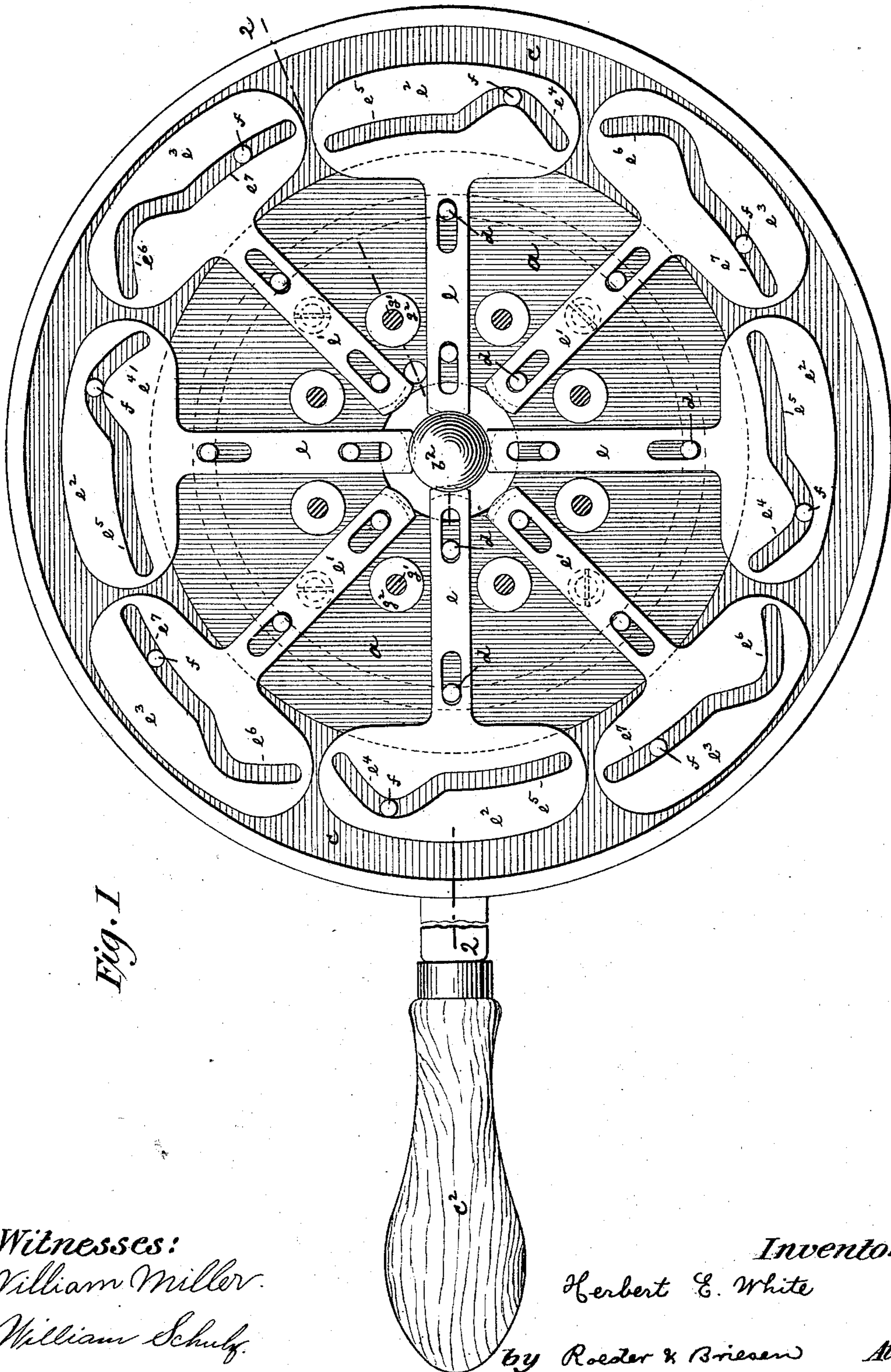
Patented Sept. 6, 1898.

H. E. WHITE.
MACHINE FOR CUTTING INCANDESCENT MANTLES.

(Application filed Feb. 5, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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William Schulz.

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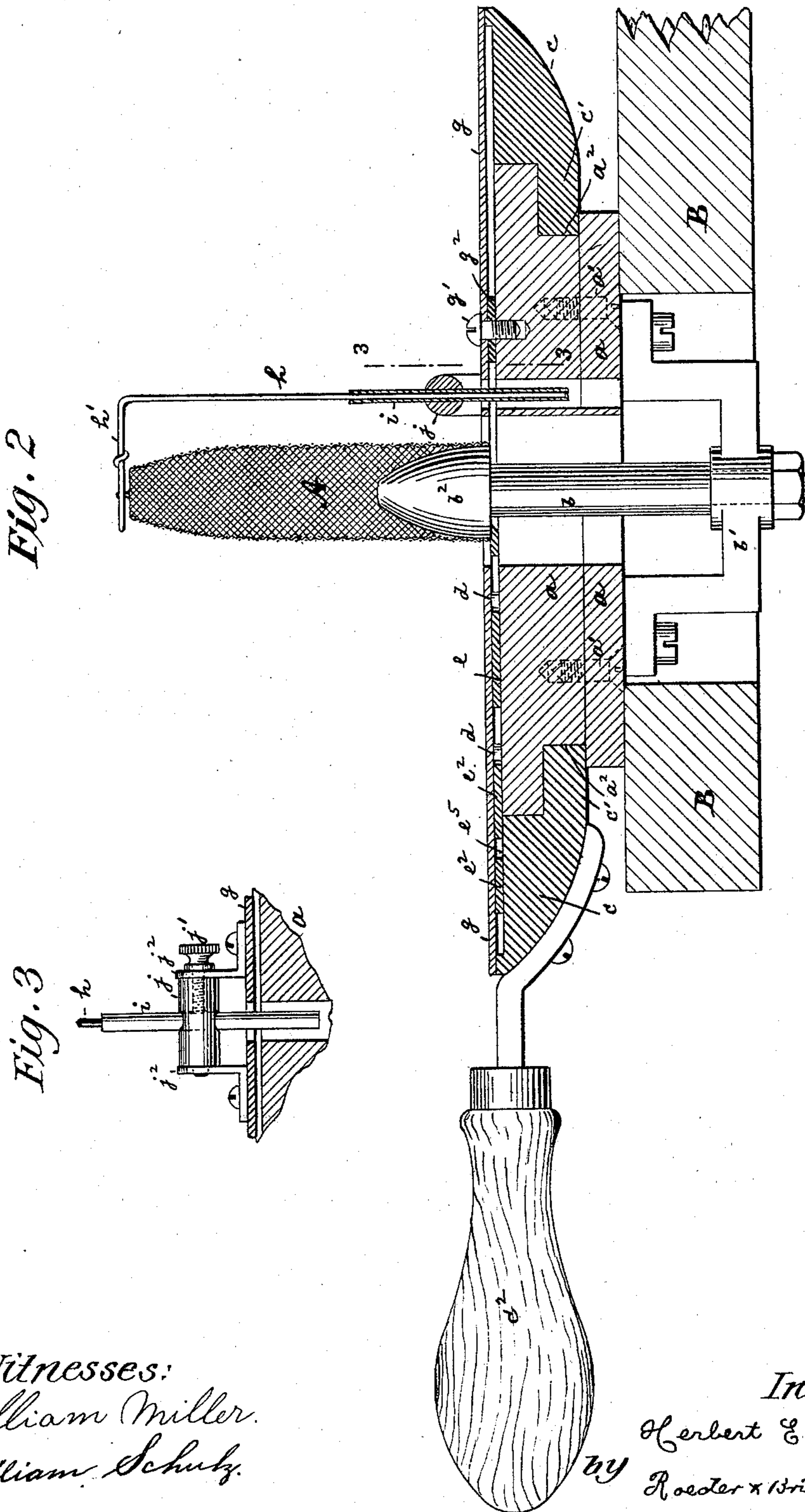
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(Application filed Feb. 5, 1898.)

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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

HERBERT E. WHITE, OF NEW YORK, N. Y.

MACHINE FOR CUTTING INCANDESCENT MANTLES.

SPECIFICATION forming part of Letters Patent No. 610,213, dated September 6, 1898.

Application filed February 5, 1898. Serial No. 669,255. (No model.)

To all whom it may concern:

Be it known that I, HERBERT E. WHITE, of New York, (Brooklyn,) county of Kings, and State of New York, have invented an Improved Machine for Cutting Incandescent Mantles, of which the following is a specification.

This invention relates to a machine for rapidly cutting or trimming off the lower ends of incandescent mantles. Owing to the extreme fragility of these mantles the cutting operation must be so performed that the mantle is not unduly squeezed or compressed between the cutting-blades, as otherwise cracks or breaks would result. By my apparatus a number of incisions are first made around the mantle, and then the unsevered portions between such incisions are cut. Thus compression does not take place between the knives, as the mantle has room to swell laterally between them, and cracks or breaks will consequently be avoided.

In the accompanying drawings, Figure 1 is a plan of my improved machine with the upper portion and face-plate removed; Fig. 2, a cross-section of the machine complete on line 2 2, Fig. 1; and Fig. 3, a vertical section of the upper portion of the machine on line 3 3, Fig. 2.

The letter *a* represents the annular body or base-plate of the machine, supported on bench B and shown to be composed of an upper and a lower section connected by screws *a'*, though the base-plate may obviously be made of a single piece. Through the open center of plate *a* there extends a centering-pin *b*, secured at its bottom to a hanger *b'* of plate *a* and terminating on top in a conical head *b²*. The plate *a* is provided with a circumferential groove *a²*, that receives the inwardly-extending flange *c'* of a ring *c*, movable around plate *a*, upon which it is guided by the engagement of the parts *a² c'*. The ring *c* may be partly rotated back and forth to a limited extent by a handle *c²*.

e e' e', &c., are two sets of knives alternating with one another and extending in a radial direction from the ring *c* over plate *a* and toward the open center of the tool. These knives have slotted shanks engaged by pins *d*, that guide them during their motion. The knives are so constructed that first one

set, *e*, is caused to advance and recede, and then the other set, *e'*, is caused to advance and recede by the continued partial rotation of the ring *c*. To this effect the knives *e e'* are provided at their outer ends, where they rest upon ring *c*, with cams *e² e³*, which are alike in all respects excepting that the cams are oppositely set. Thus the cams *e²* have an eccentric groove *e⁴* and a connecting concentric groove *e⁵* all pointing circularly in one direction, while the cams *e³* have their eccentric groove *e⁶* and connecting concentric groove *e⁷* all pointing circularly in the opposite direction. Each of the cam-grooves is engaged by a pin *f*, projecting upwardly from ring *c* and serving to actuate the knives. A top plate *g*, resting upon a flange of ring *c* and attached to base-plate *a* by screws *g'*, surrounded by washers *g²*, covers and protects the knives.

It will be seen that when the ring *c* is partly rotated one set of knives, *e*, will first be moved inward and outward radially by the engagement of the pins *f* with the eccentric portion of their cam-grooves, while the other set, *e'*, will meanwhile be held stationary, as the pins *f* will travel through the concentric portion of their grooves. After the first set has completed its stroke the pins *f* will pass into the concentric groove *e⁵* of the first set and simultaneously into the eccentric groove *e⁶* of the second set. Thus the first set will be held stationary and the second set will be actuated, and in this way a single movement of the ring *c* will consecutively advance the two sets of knives one after the other. A movement of the ring *c* in the opposite direction will produce a like result, only that it actuates first the knives *e'* and then the knives *e*.

The mantle *A* to be cut projects with its lower end into the central opening of plate *a*, around head *b²* of centering-pin *b*, and is thus in the path of the bits of the knives *e e'*, such bits being formed on the inner edges of the knives.

The mantle is suspended, as usual, from the loop *h'* of an upright wire *h*, which wire is received at its lower end in a tubular pocket *i*, open on top and closed at the bottom. The tube *i* passes through a perforated holder *j*, to which it is clamped by screw *j'*, the holder being pivotally supported in bearings *j²*,

mounted on face-plate *g*. By raising or lowering the pocket *i* the elevation of the mantle may be adjusted to regulate the portion of the mantle to be severed. The pivotal connection between the holder *j* and plate *g* serves to permit the mantle to be accurately centered above pin *b*.

In use the tube *i* is set to the proper height and angle and then the mantle to be cut is suspended therefrom by slipping its wire *h* into the same. A movement of the ring *c* will now advance first one set of the knives to cut a series of disconnected slits into the mantle in the same horizontal plane, and then the second set of knives will be advanced to sever the uncut portions between the slits and form a continuous circumferential cut. Thus it will be seen that the mantle will be quickly cut, while any buckling between the knives and a consequent breaking or cracking will be prevented.

What I claim is—

1. A machine for cutting incandescent mantles, provided with knives adapted to first slit the mantle and to then cut the unsevered portions between the slits, substantially as specified.

2. A machine for cutting incandescent mantles, provided with two sets of radially-movable knives, and means for consecutively actuating such sets of knives, substantially as specified.

3. A machine for cutting incandescent mantles, provided with a base-plate, a revoluble ring, two sets of knives having oppositely-set cams, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

4. A machine for cutting incandescent mantles, provided with a base-plate, a revoluble

ring, two sets of knives having oppositely-set cams, each cam having a concentric and a connecting eccentric groove, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

5. A machine for cutting incandescent mantles, composed of an annular base-plate, a centering-pin, two sets of radially-movable knives, and means for consecutively actuating such sets of knives, substantially as specified.

6. A machine for cutting incandescent mantles, composed of an annular base-plate, a centering-pin, a revoluble ring, two sets of knives having oppositely-set cams, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

7. A machine for cutting incandescent mantles, composed of an annular base-plate, means for adjustably suspending the mantle above the same, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

8. A machine for cutting incandescent mantles, composed of an annular base-plate, a vertically-adjustable tubular pocket adapted to receive the mantle-wire, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

9. A machine for cutting incandescent mantles, composed of a pivoted perforated holder, a vertically-adjustable tubular pocket, means for adjustably attaching the tubular pocket to the holder, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

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