G. ATHERTON.

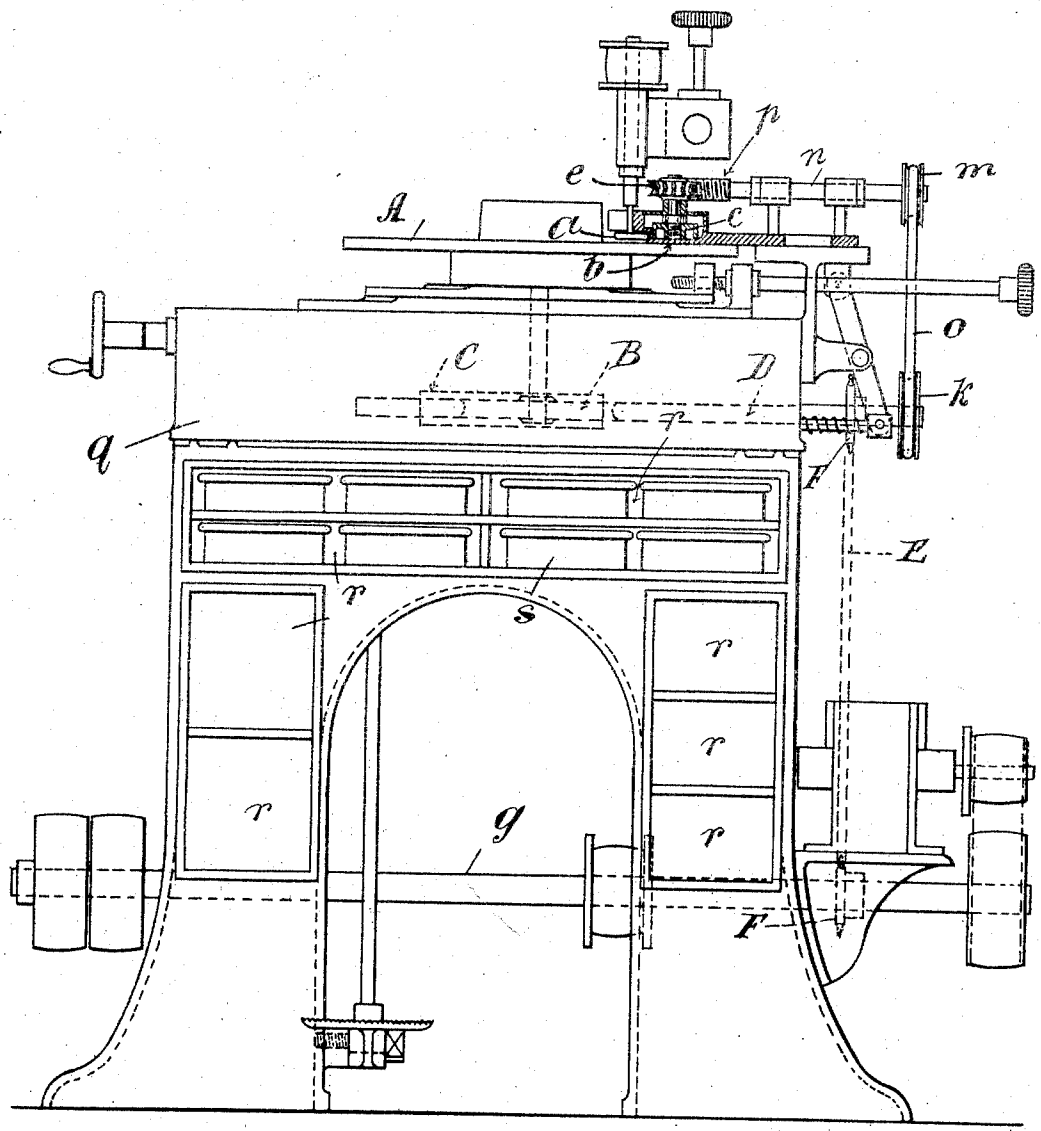
APPARATUS FOR CURLING AND IRONING THE EDGES OF HAT BRIMS.

APPLICATION FILED OCT. 3, 1908.

927,313. Patented July 6, 1909.

5 SHEETS—SHEET 1.

FIG. 1.



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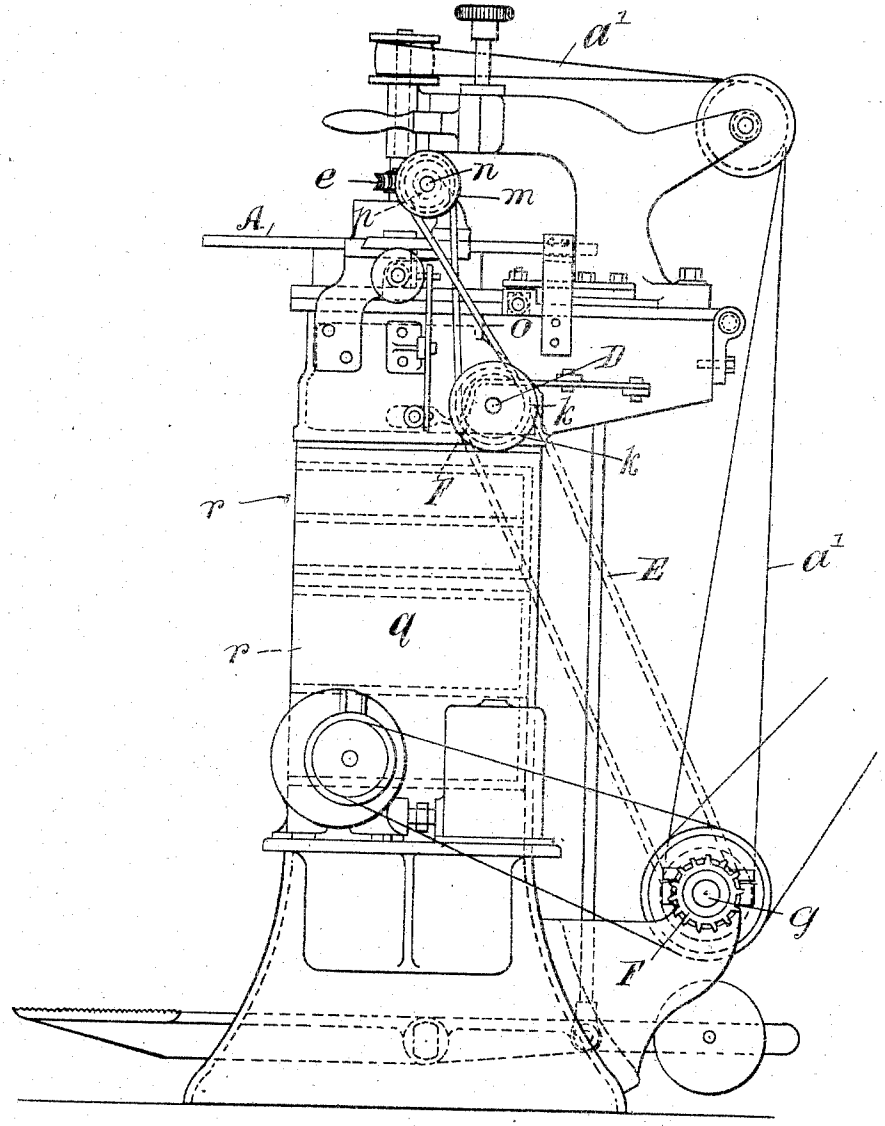
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5 SHEETS—SHEET 2.

FIG. 2.



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5 SHEETS—SHEET 3.

FIG. 3.

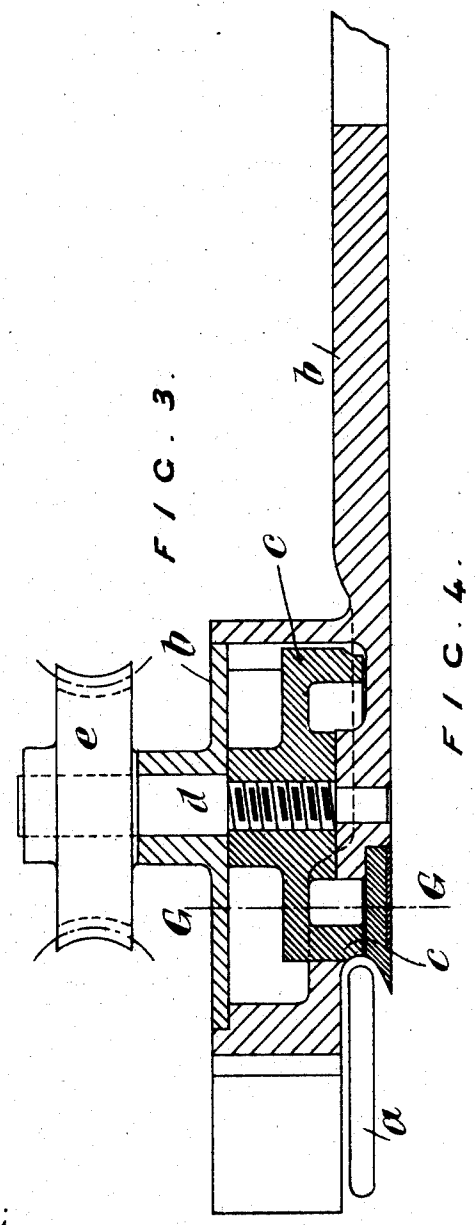
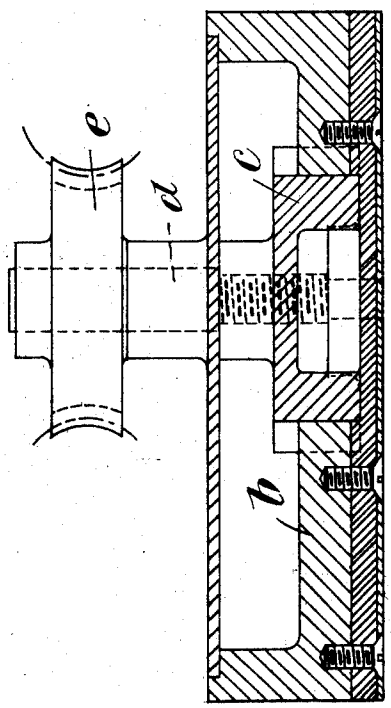


FIG. 4.



Witnesses
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5 SHEETS—SHEET 4.

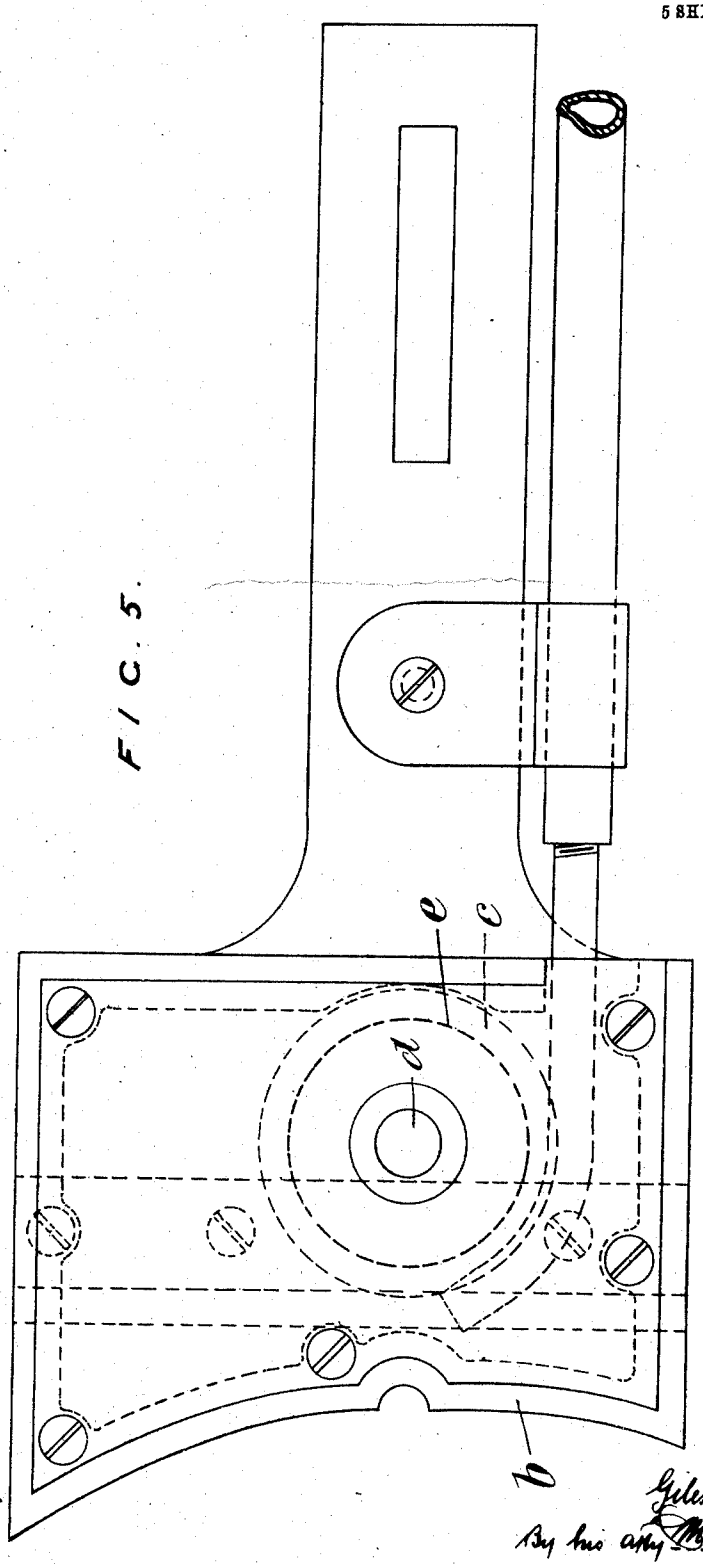


FIG. 5.

Witnesses
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5 SHEETS—SHEET 5.

FIG. 7.

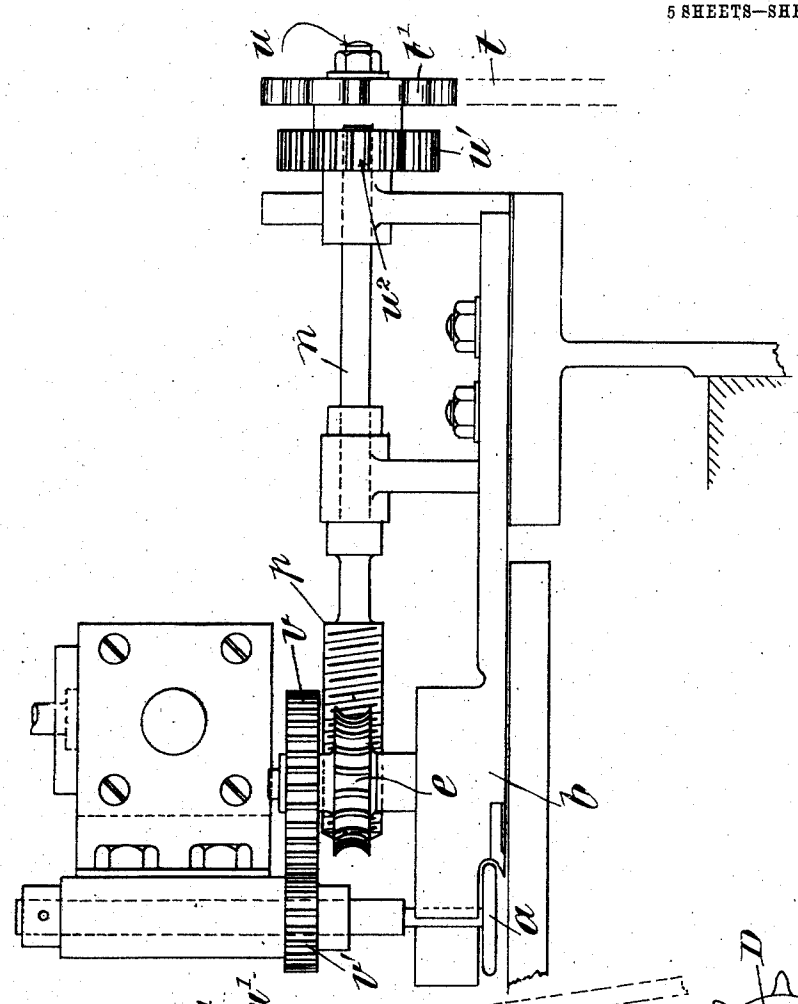
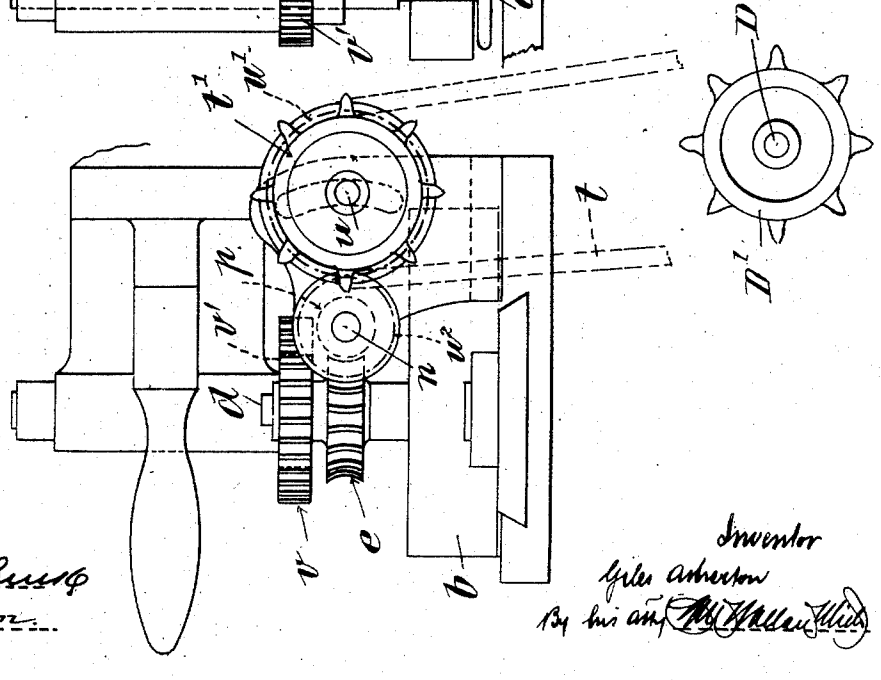


FIG. 6



Witnesses
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UNITED STATES PATENT OFFICE.

GILES ATHERTON, OF STOCKPORT, ENGLAND.

APPARATUS FOR CURLING AND IRONING THE EDGES OF HAT-BRIMS.

No. 927,313. Specification of Letters Patent. Patented July 6, 1909.

Application filed October 3, 1908. Serial No. 455,943.

To all whom it may concern:

Be it known that I, GILES ATHERTON, a subject of the King of Great Britain and Ireland, residing at Virginia Mills, Higher Hillgate, Stockport, in the county of Chester, England, hatter's engineer, have invented new and useful Improvements in Apparatus for Curling and Ironing the Edges of Hat-Brims, of which the following is a specification.

My invention relates to apparatus for curling and ironing the edges of hat brims and is an improvement upon my prior patent for such apparatus No. 683,544.

In the accompanying drawings, Figure 1 shows a front elevation of my improved apparatus. Fig. 2 is an end view thereof. Fig 3 is a sectional elevation on a larger scale of part of my invention. Fig. 4 is a section thereof on the line G. G. Fig. 3. Fig. 5 is a plan view of Fig. 3 and Figs. 6 and 7 illustrate in end and front elevation respectively a modification of that part of the invention shown in Fig. 3.

The specification of such prior patent describes and illustrates an apparatus in which the hat is secured upon a brow block carried on a table A which is rotated to automatically present the hat brim through an oval path (or it might be a circular path) corresponding to the required oval (or circular) shape of the hat brim, by means of a worm wheel B gearing with a worm C on a shaft D which is driven by a chain E and chain wheel F from the driving shaft *g*. In combination with such hat rotating means I use a small ironing wheel *a* revolved by a band *a'* from the shaft *g* and working in conjunction with a hollow internally heated curling ironing tool *b*, stationary when curling and ironing operations are being performed, but slidable toward and from the revolving ironing wheel *a* to enable the hat brim to be inserted between the ironing wheel *a* and the tool *b* and removed therefrom.

My present invention relates to improvements upon the above arrangement shown on an enlarged scale in Figs. 3 to 5. I place in the interior of the hollow heated tool *b* another revolving ironing wheel *c* and cut away a portion of the curling and ironing face of the hollow tool so that the periphery of the external wheel *a* previously used by me, can come into contact with the periphery of the auxiliary wheel *c* disposed within the hollow tool. The peripheries of both wheels or one only of them, may be milled, although if found to be unnecessary or harmful to the hat brim such milling may be dispensed with.

The auxiliary wheel *c* is carried on a spindle *d* mounted to revolve in bearings in the tool *b* and carrying a worm wheel *e*. To drive this worm wheel the shaft D is provided with a pulley *k* to drive a pulley *m* on a shaft *n* by a belt *o*, which is crossed to obtain the proper directional movement of the wheel *c*. The motion of the shaft *n* by means of a worm *p* drives the worm wheel *e* and auxiliary wheel *c*. It is necessary that the peripheral speeds of the hat brim and the wheels *a* and *c* should be identical. In the modification illustrated in Figs. 6 and 7 I show how this may be conveniently attained and whereby I secure the positive driving of the wheels *a* and *c*. The shaft D, instead of a grooved pulley, is provided with a sprocket wheel D' communicating motion by a chain *t* to another sprocket wheel *t'* on a countershaft *u*. The countershaft *u* drives the worm shaft *n* by gear wheels *u' u²* whereby the worm wheel *e* is driven. The axis *d* of the wheel *c* is provided with a spur wheel *v* gearing with a spur pinion *v'* on the axis of the wheel *a*. The spur gears *v v'* are proportioned relatively to the respective sizes of the wheels *a c* to positively drive both these wheels at the same peripheral speed.

By using a wheel both on the inside and outside of the hat brim, in combination with the stationary tool and the automatic means for rotating the hat body to present the brim to the curling and ironing means in the oval or circular required path, improved results are obtained, the edge of the curl being gripped by the two revolving wheels *a c* and curling and ironing is facilitated. The two wheels also serve to assist in feeding forward the hat brim in the curling and ironing operation.

It will be understood that various sizes and shapes of wheel *c* may be used according to the type of hat brim to be curled and ironed.

In order further to increase the usefulness of the apparatus I form its stand or support *q* with a number of recesses *r*, horizontal and vertical to provide cupboards for the reception of interchangeable brow blocks *s* and templets or the like for varying sizes of

hats which are thus ready to hand when wanted. These cupboards may be open as shown or be provided with doors as desired.

I declare that what I claim is.

1. An apparatus for curling and ironing the edges of hat brims comprising a rotary ironing wheel, a hollow tool having a recess in its ironing face, an ironing wheel rotatably mounted within the tool and having a portion of its periphery occupying the recess, and means for driving the two ironing wheels.

2. In apparatus for curling and ironing the edges of hat brims, the combination of the rotary ironing wheel *a*, the hollow tool *b* having a recess in its ironing face, an ironing wheel mounted within the tool *b* and having a portion of its periphery occupying the recess, means for rotating the wheel within the tool *b*, and means connected with said driving means for driving the wheel *a*.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GILES ATHERTON.

Witnesses:

JOSHUA ENTWISLE,
NORMAN KIERNAN.