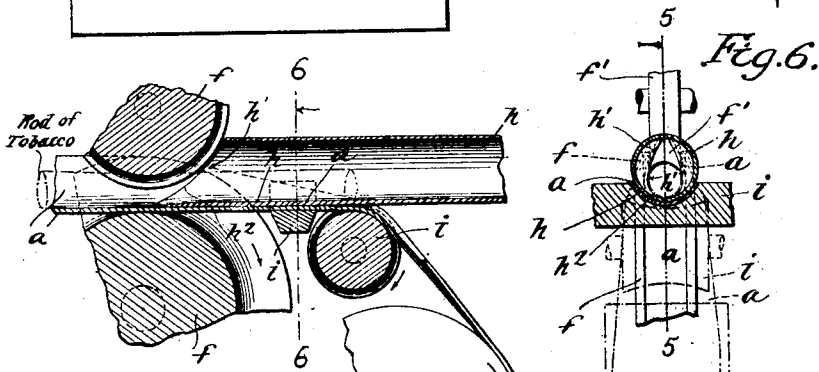
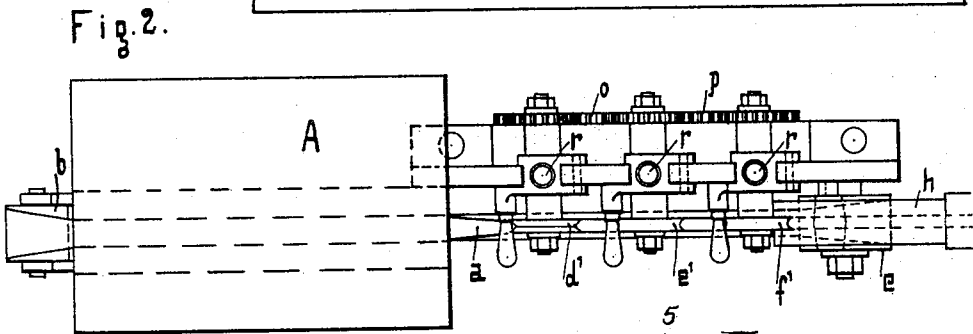
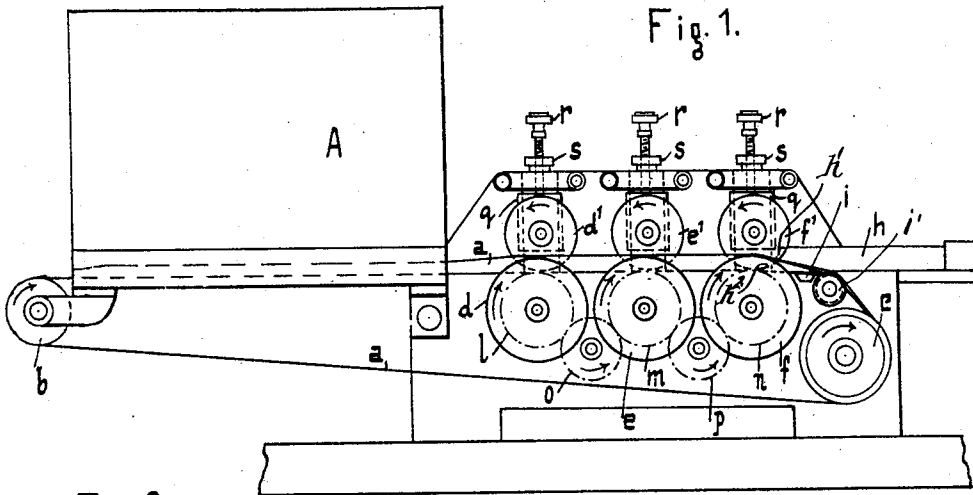


M. C. GRAHL.
CIGARETTE MACHINE.
APPLICATION FILED DEC. 16, 1913.

1,399,209.

Patented Dec. 6, 1921.



Witnesses:
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UNITED STATES PATENT OFFICE.

MAX CLEMENS GRAHL, OF DRESDEN-LÖBTAU, GERMANY, ASSIGNOR TO UNIVERSELLE CIGARETTEN-MASCHINEN-INDUSTRIE SYSTEM OTTO BERGSTRÄSSER AKTIENGESSELLSCHAFT, OF DRESDEN-LÖBTAU, GERMANY.

CIGARETTE-MACHINE.

1,399,209.

Specification of Letters Patent.

Patented Dec. 6, 1921.

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To all whom it may concern:

Be it known that I, MAX CLEMENS GRAHL, a citizen of the Kingdom of Saxony, German Empire, residing in Dresden-Löbtau, in the Kingdom of Saxony, in said Empire, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification.

This invention relates to cigarette machines in which the tobacco is formed into a rod and continuously fed to the wrapping mechanism.

The object of the invention is to provide a rod forming mechanism of simple construction adapted to shape the tobacco into the form of a rod and feed it with facility and without friction to the wrappers.

Figure 1 of the accompanying drawings represents a side elevation of one embodiment of this invention.

Fig. 2 represents a plan view thereof.

Fig. 3 represents a transverse section taken in front of the first pair of rod-forming rolls.

Fig. 4 represents a section taken in front of the second pair of rod-forming rolls.

Fig. 5 represents an enlarged longitudinal section on line 5—5 of Fig. 6, through the delivery portion of the rod-forming band and through the tapered end of the rod receiving tube and through the concave guide for holding said band in contact with said tube and through the final guide roller in rear thereof.

Fig. 6 represents a transverse section on line 6—6 of Fig. 5 looking toward the left.

The endless band *a*, which travels in the direction of the arrow is conducted in known manner over the two driven rollers *b* and *c*. The upper part of the band *a* passes first through the slit-shaped aperture in the hopper *A* containing the tobacco. In this hopper the devices for preparing and distributing the tobacco (pronged rollers and scrapers) are arranged in known manner. Here the band receives a stripshaped layer of tobacco. Immediately behind the tobacco hopper are arranged the profiled roller pairs *d*, *d'*; *e*, *e'* and *f*, *f'* respectively. Between these pairs of rollers the band passes and is thereby bent into the shape of an U-shaped

gutter. The pair of rollers *e*, *e'* makes the deep U-shaped gutter and gives the string of tobacco *g* an essentially circular section or rod-like form. The pair of rollers *f*, *f'* is of a similar profile as the pair of rollers *e*, *e'*. Behind the rollers *f*, *f'* the band is carried downward.

A tube *h* is disposed in alinement with the upper run of the endless band *a*. This tube has its receiving end disposed adjacent to the rollers *f*, *f'*. This receiving end is truncated in its upper part forming a tapered extension in its lower arc. This tapered extension projects partially between the rolls to near the bight thereof. A rotary guide *i* having a grooved periphery is disposed below said band underneath the receiving end of said tube and serves to shape and hold said band in contact with the tapered arc-shaped receiving end of said tube. The string or rod of tobacco thereby enters the sleeve *h*. For insuring a smooth entrance the band traveling downward is pressed by the suitably shaped fitting *j* which encompasses the sleeve from outside, against the wall of the said sleeve.

On the shafts of the rollers *d*, *e*, *f* are fitted toothed wheels *l*, *m* and *n* respectively, which mesh with the wheels *o* and *p* respectively, which are revolved in the direction of the arrows shown. Thereby the rollers *d*, *e* and *f* are revolved likewise in the direction of the arrows shown at a velocity which corresponds to the feed of the band. In thus revolving they carry with them the upper rollers *d'*, *e'* and *f'*. These rollers are journaled in vertically adjustable bearings. The pressure of these rollers is adjustable by means of the set screws *r* and then the rollers are locked in their adjusted position by means of the lock nuts *s*.

As, now, the band passes at the parts where it is bent into the shape of a U-shaped gutter and where the string of tobacco is formed, between profiled rollers, which revolve at a velocity corresponding to the rate of the feed, the friction is reduced to a minimum.

I claim:

A cigarette machine comprising a traveling band, means for feeding the tobacco onto

said band, a series of grooved rollers disposed in pairs, traveling in the same direction as the band at their points of contact therewith and operative to shape said band
5 around the tobacco and form it into a rod, a tube having a tapered extension projected into the angle of the bight of the last pair of rollers, a concave guide adapted to hold said band in contact with said tapered ex-
10 tension, and a rotary grooved guide roller

disposed under said band adjacent to said tube.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

MAX CLEMENS GRAHL.

Witnesses:

OTTO WOLFF,
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