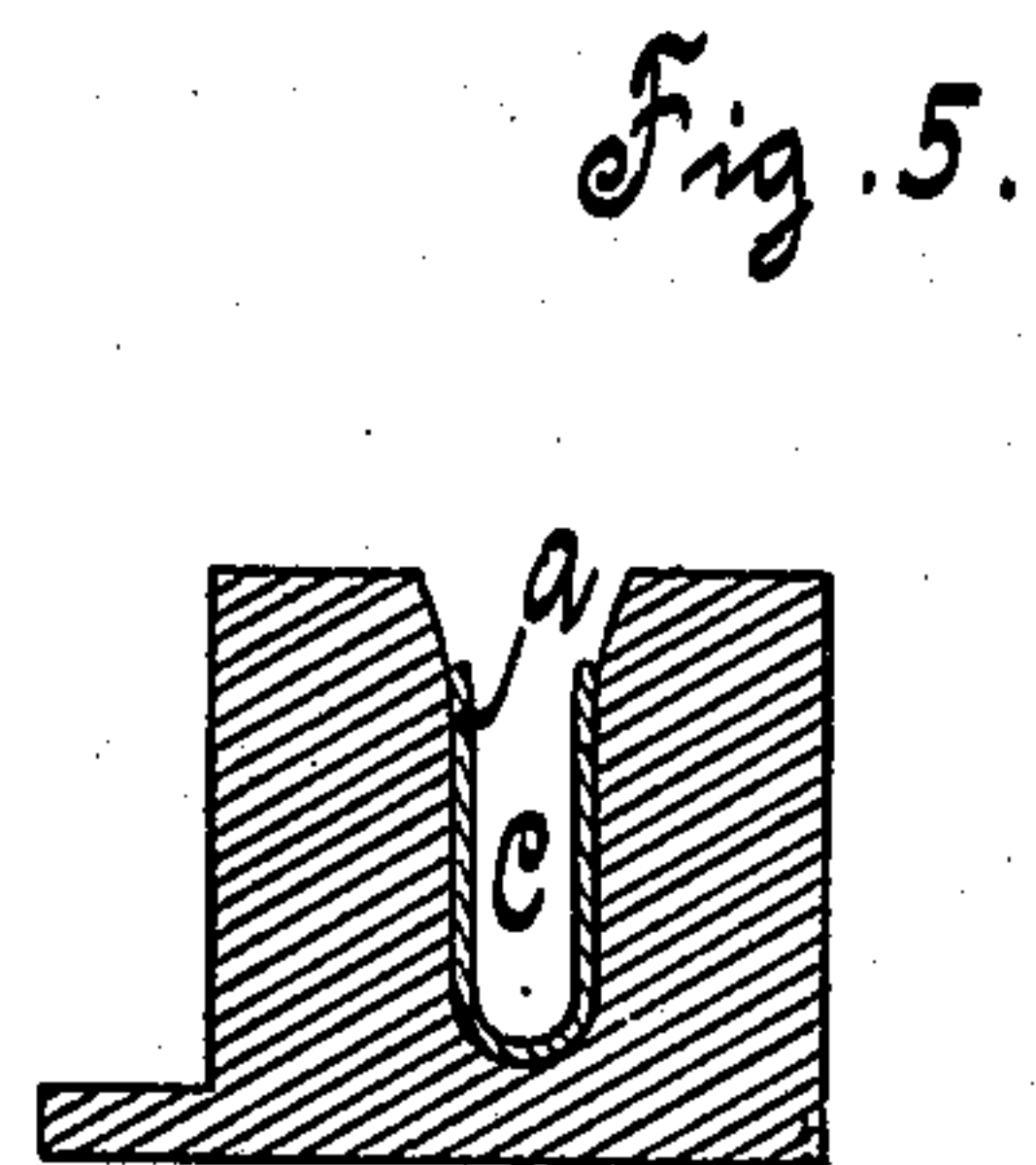
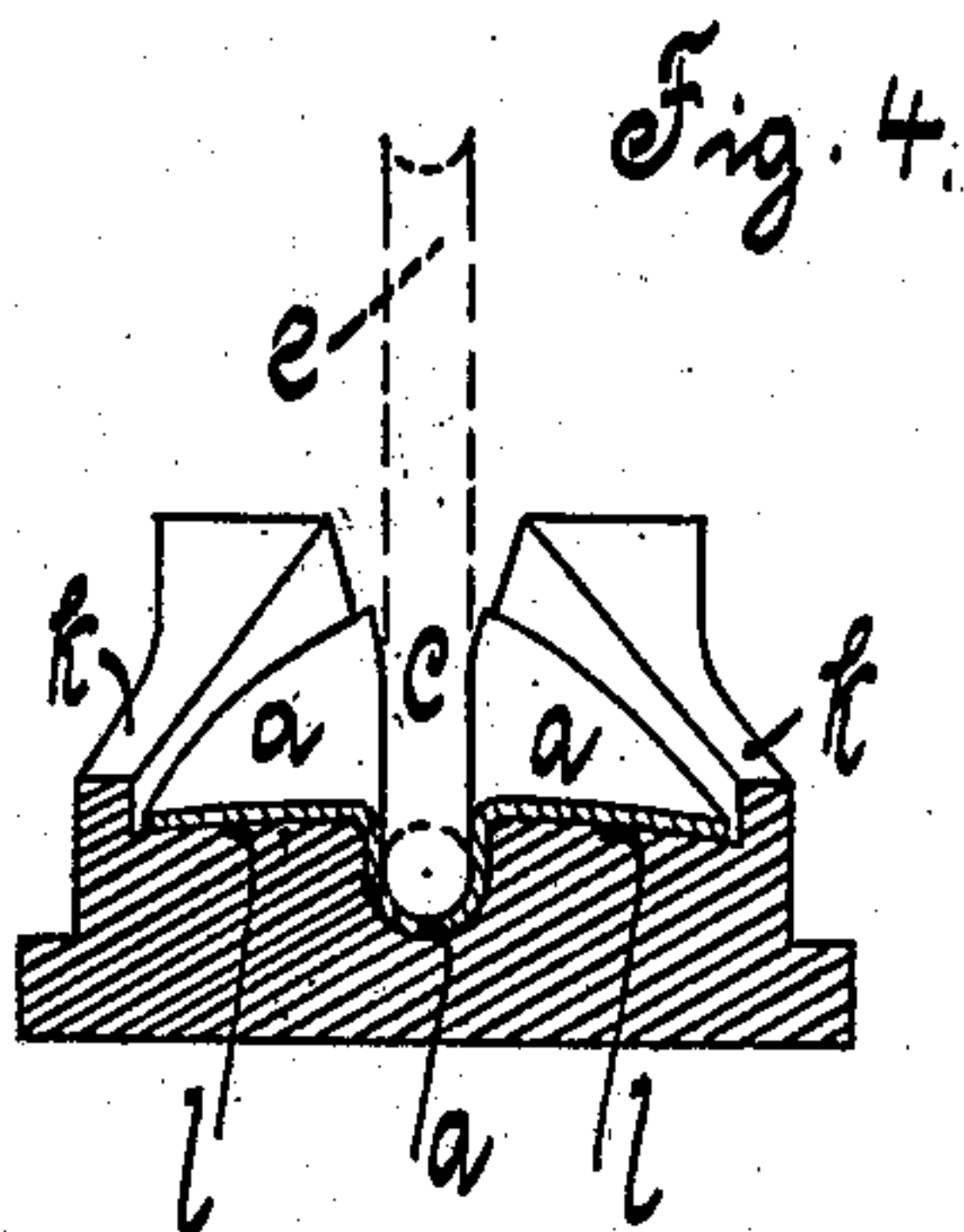
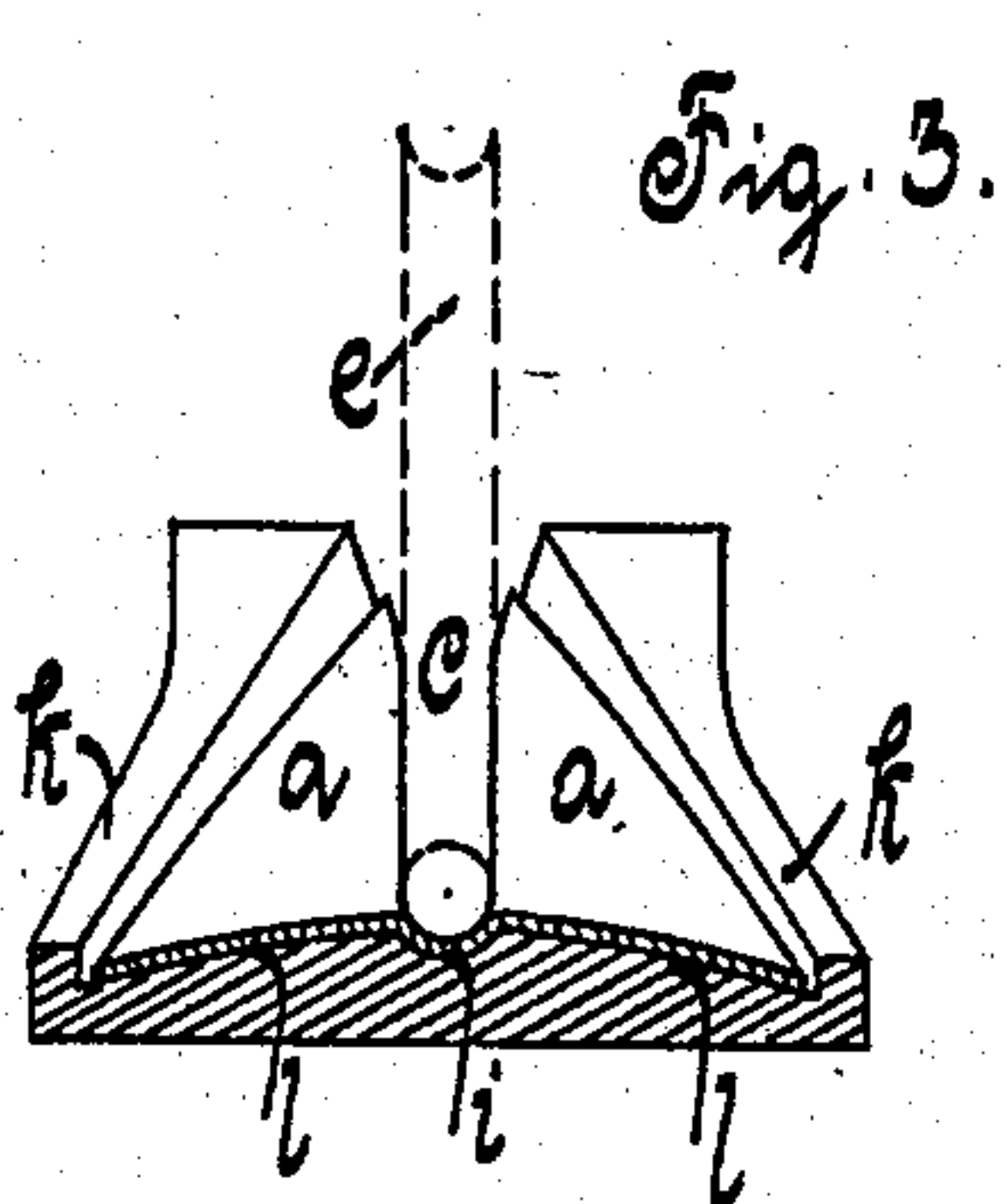
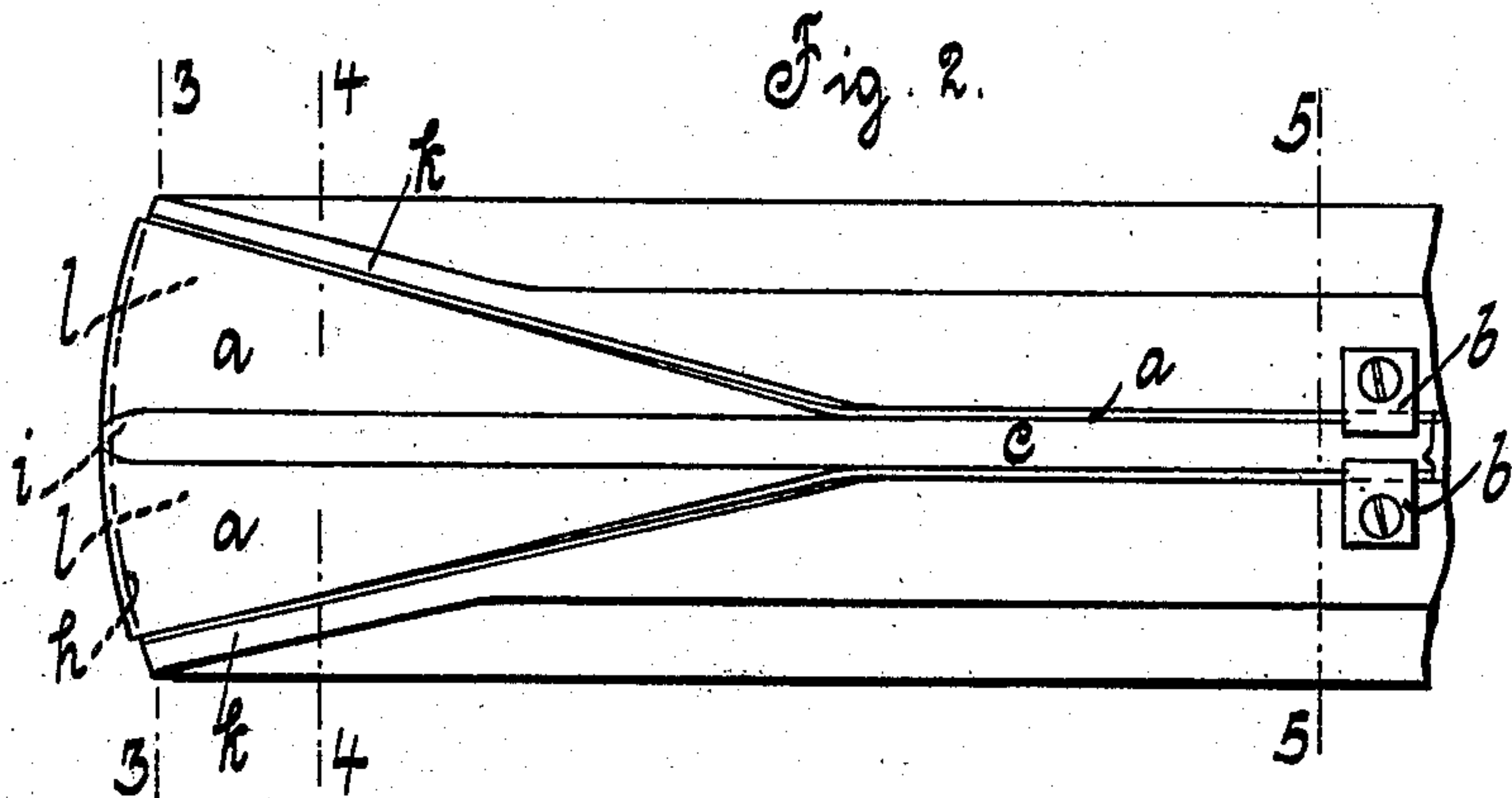
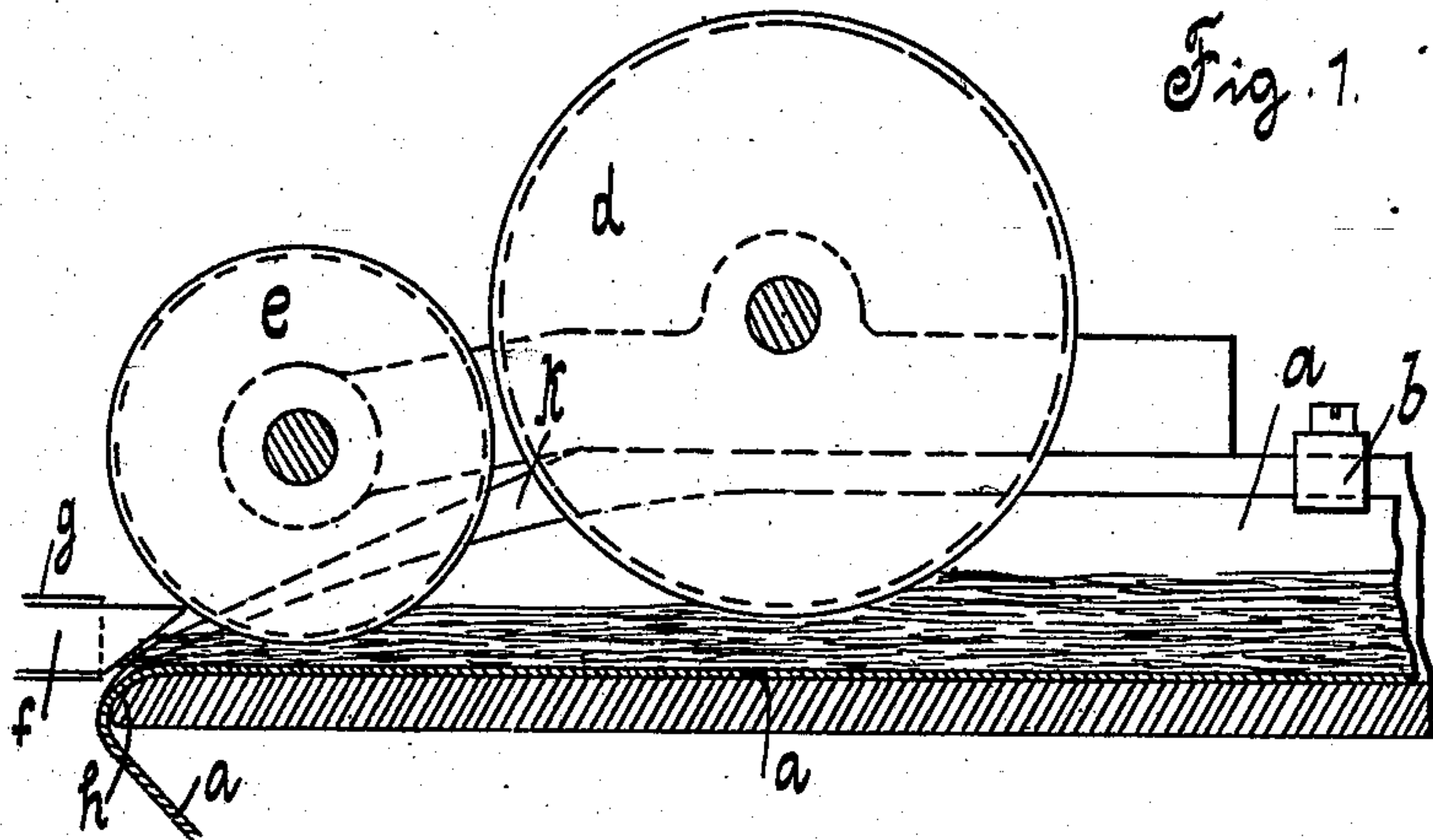


O. BERGSTRÄESSER.
CIGARETTE MACHINE.
APPLICATION FILED SEPT. 3, 1907.

899,376.

Patented Sept. 22, 1908.



Witnesses
Thomas Durant
W. M. Fairfax

Inventor:
Otto Bergsträsser
by Church & Church
his Attys.

UNITED STATES PATENT OFFICE.

OTTO BERGSTRÄESSER, OF DRESDEN, GERMANY.

CIGARETTE-MACHINE.

No. 899,376.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed September 3, 1907. Serial No. 391,131.

To all whom it may concern:

Be it known that I, OTTO BERGSTRÄESSER, a subject of the Emperor of Germany, residing at Dresden, Germany, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification.

This invention has reference to cigarette machines, which machines, as known are sometimes provided with three intermittently moved bands, namely the bottom band and the two lateral bands, which form a U-shaped groove in which a bare (that is to say, not covered with paper) tobacco rope is given the preliminary shape and is then introduced by the adhesion to the bands and if desired with the coöperation of disks giving it proper shape or conveying it through a mouth piece arranged at the end of the band guide, into paper tubes placed in front of the same. Of the three bands, the bottom band, up to the end of the band guide where it is guided downwards over the edge of the band guide canal, forms a groove of flat round cross-section, while the lateral bands traveling in vertical planes are deviated sidewise some way before.

For many reasons it is desirable to replace the three bands by a single one. As far as it is merely a question of the formation of a deep U-shaped groove, there is no difficulty. It is well known to have a single band traveling in a suitable band guide canal folded to U-shape. Difficulties arise, however, at the front end of the band guide where the hitherto lateral bands of the U-shaped band groove have to be unfolded, and the band spread out flat, and guided downwards, unless the conditions as to space allow of a gradual transition to flat shape. It is particularly necessary to take into consideration that, while the edge portions of the band which up to that point form the lateral walls of the U-shaped groove, are already spread out flat the central portion of the band still has to form up to the point of discharge, the flat groove which was formerly constituted by the bottom band, the said groove, in combination with the above mentioned disks, constituting the passage to the mouth piece.

In accordance with this invention the problem of replacing the three bands hitherto used by a single band, is solved in such a manner that at the end of the band guide and within reach of the disks aforesaid, the edge portions of the band are spread out flat

towards the discharge edge by means of gradually flattened and at the same time widened walls of the band guide canal, the bottom of the band guide canal continuing however as a flat groove to the discharge edge. The pull on the band exercised by the driving-gear, causes the band to fit exactly the guide surfaces and to arrive at the end of the band guide in the desired shape, that is to say, as a flat groove with edge portions spread out flat.

In order to make more sure of the form, and more particularly in order to prevent the mutual approach of the two band edges and formation of creases, the guide surfaces for the edge portions can be arched, so that they fall off slightly on both sides from the edges of the central groove. The curving of the discharge edge in such a manner that the two corners stand back towards the center, also contributes to the holding of the band in proper position. Both of these improvements can be used together in order to insure a perfectly tight position of the band, with perfect formation of the central groove.

The accompanying drawing shows a constructional form of the front end of the band guide with the disks or pulleys coöperating with the band and the mouth-piece according to this invention. Figure 1 being a longitudinal section, Fig. 2 a plan of the band guide canal and band. Figs. 3-5 are cross-sections on the correspondingly marked lines of Fig. 2.

The band *a* is first formed into U-shape in the well known manner and is held at *b* by means of guides engaging with its edges in such a manner that it must travel symmetrically as regards the central line of the band guide conduit *c*. Where the band still forms a U-shaped groove, the disk *d* engages with a concave grooved rim pressing from the top and producing the primary formation of the tobacco rope situated in the band guide. Within reach of the second disk *e* which has a similarly shaped circumference to the first disk, the band already forms a flat groove. The disk *e* is situated slightly lower, and accordingly places more pressure on the tobacco rope previously compressed by the disk *d*, so that the end piece of the tobacco rope outside the mouth piece *f* can be introduced therethrough into the tube *g* placed on the said mouth-piece. This introduction is effected by the advance of the tobacco rope by the adhesion of the band or by the action of the disks *d* and *e*.

As will be seen from the various cross-sections, the band guide canal becomes wider and flatter beginning from the disk *d* to the discharge edge *h*, the flat groove *i* being maintained. Owing to the outer portions *k* of the walls of the canal not being flattened to the same extent, but on the contrary being situated up to the discharge groove, above the guide surfaces *l* formed by the flattened portions, the band edges (Fig. 3) are guided to a certain extent, but the form of the band is not otherwise affected. As will be seen from Figs. 3 and 4, the said guide surfaces *l* are arched in such a way that the edges of the groove *i* are situated higher than the edges of the band. Fig. 2 shows a convex curvature of the discharge edge *h*. Both curvatures serve for the purpose hereinbefore stated.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a cigarette machine, a traveling band, means for forming said band into a U-shaped groove, a plurality of wheels adapted to engage a tobacco rope upon said band, means for flattening said band beneath the last of said wheels.

2. In a cigarette machine, a traveling band, a guide for forming said band into a U-shaped groove, a plurality of wheels adapted to engage a tobacco rope upon said band, a gradually widening and flattened portion beneath said wheels and continuing said guide and a convex discharge edge at the end of said portion.

3. In a cigarette machine, a traveling band, a guide for forming said band into a U-shaped groove, a plurality of wheels

adapted to engage a tobacco rope upon said band, a gradually widening and flattened portion beneath said wheels and continuing said guide, a convex discharge edge at the end of said portion and a progressively shallowing groove upon said flattened portion and cooperating with said wheels and said band for shaping the tobacco rope as desired.

4. In a cigarette machine, a traveling band, a guide for forming said band into a U-shaped groove, a plurality of wheels adapted to engage a tobacco rope upon said band, a flattened convex portion beneath said wheels and continuing said guide, walls to said portion extending obliquely from said guide and a convex discharge edge at the end of said portion.

5. In a cigarette machine, a traveling band, a guide for forming said band into a U-shaped groove, a plurality of wheels adapted to engage a tobacco rope upon said band, a flattened convex portion beneath said wheels and continuing said guide, walls to said portion extending obliquely from said guide, a convex discharge edge at the end of said portion and a progressively shallowing groove upon said flattened portion and cooperating with said wheels and said band for shaping the tobacco rope as desired.

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

OTTO BERGSTRÄESSER.

Witnesses:

OTTO WOLFF,
RICHARD ISSERK.