

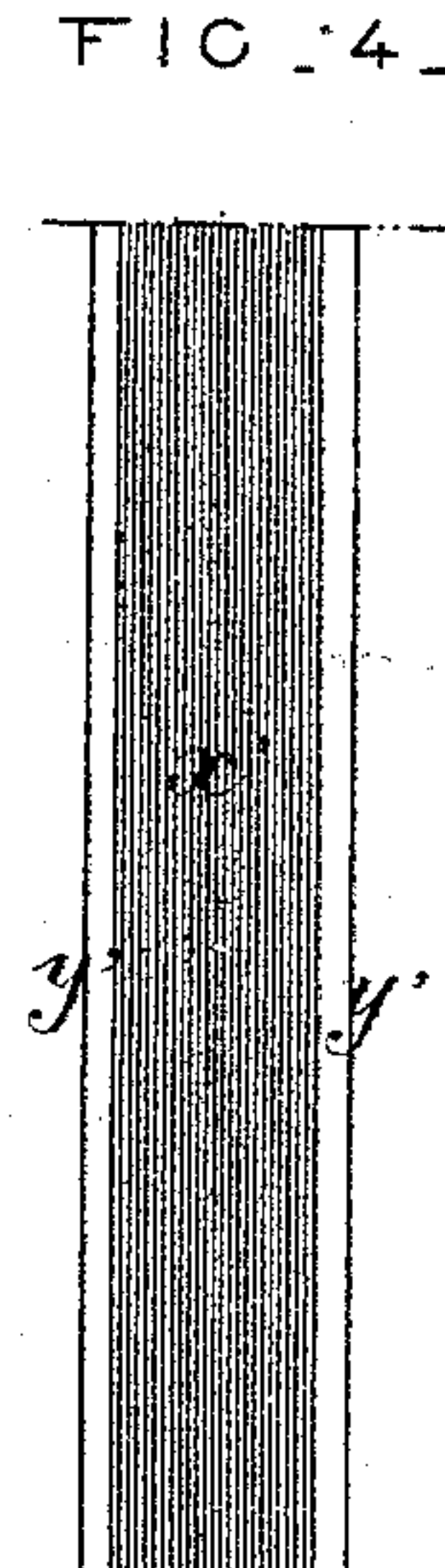
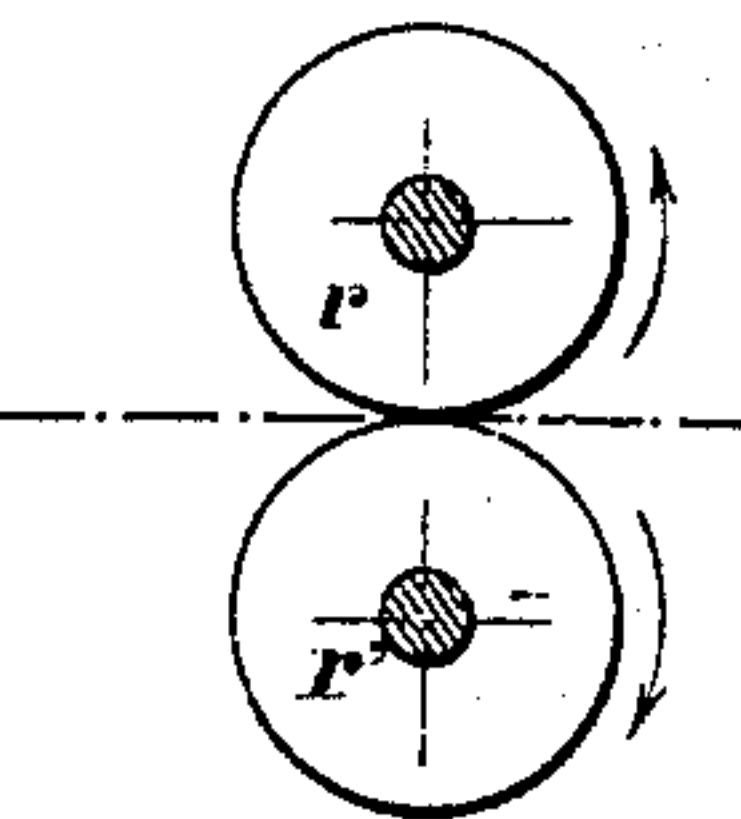
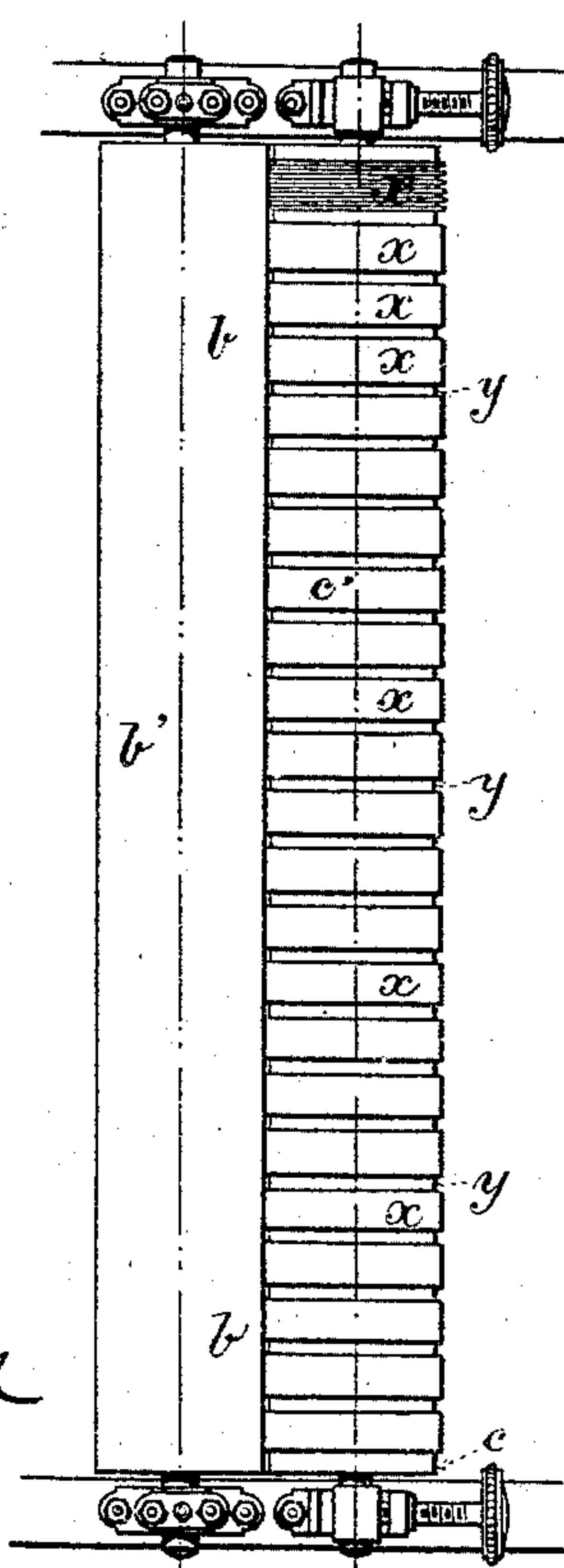
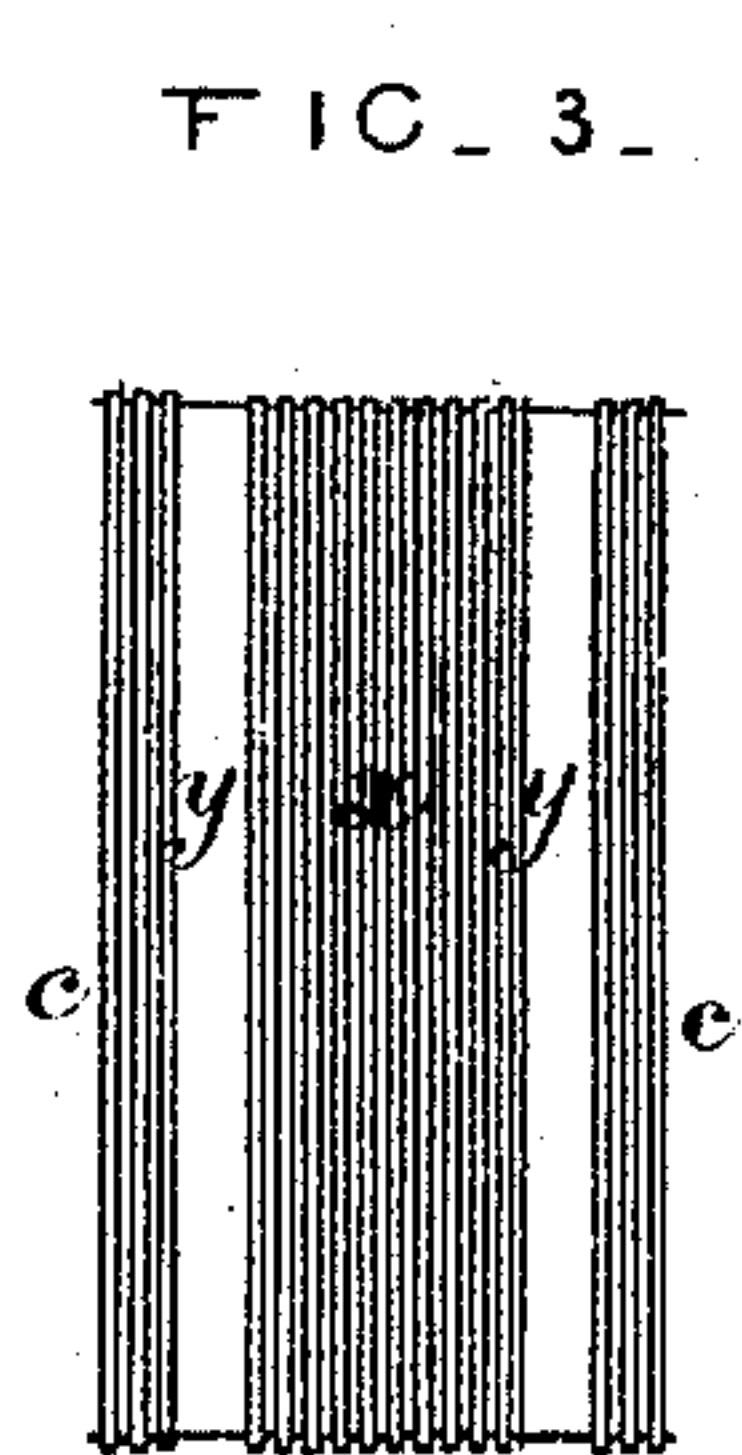
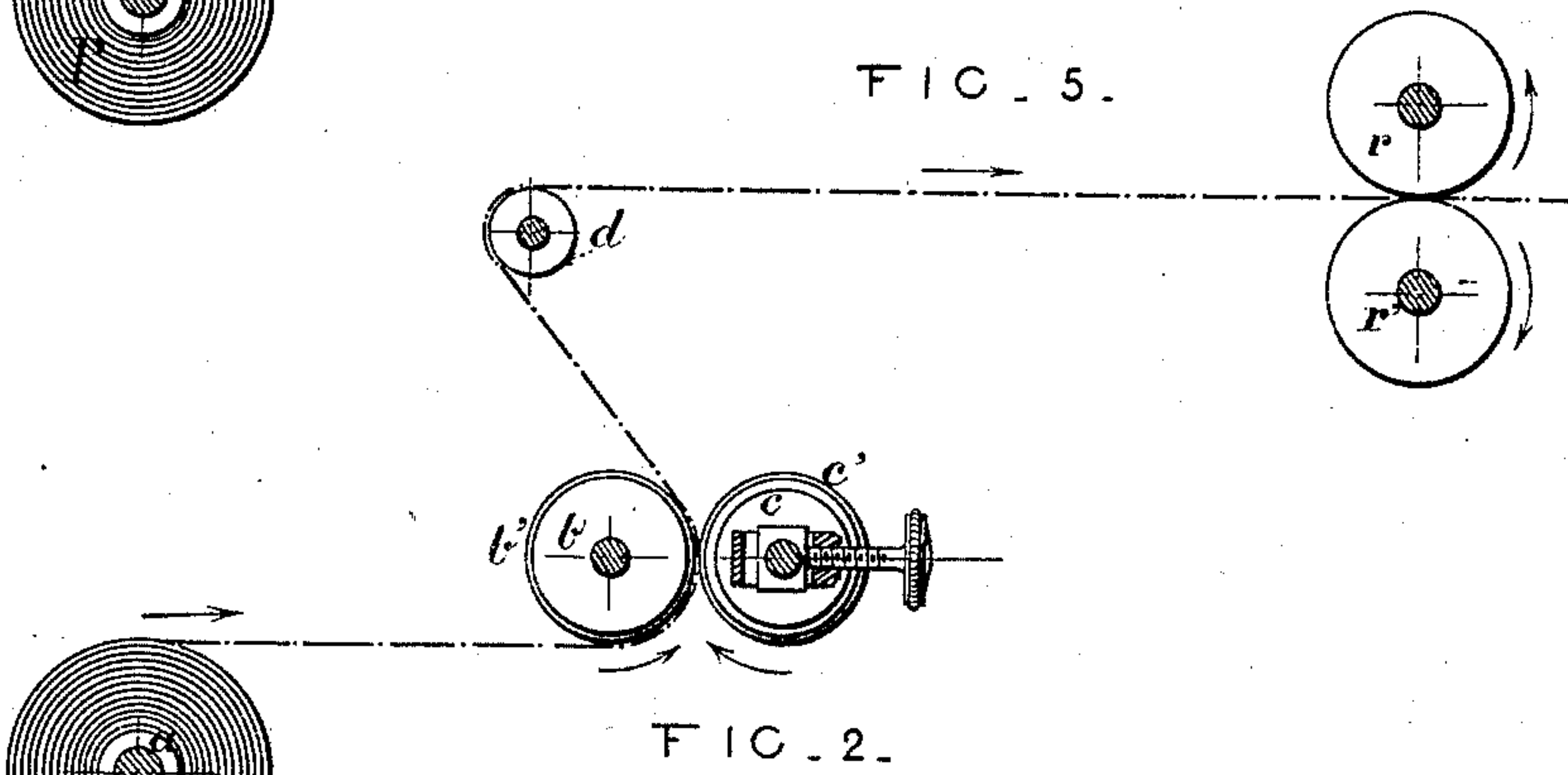
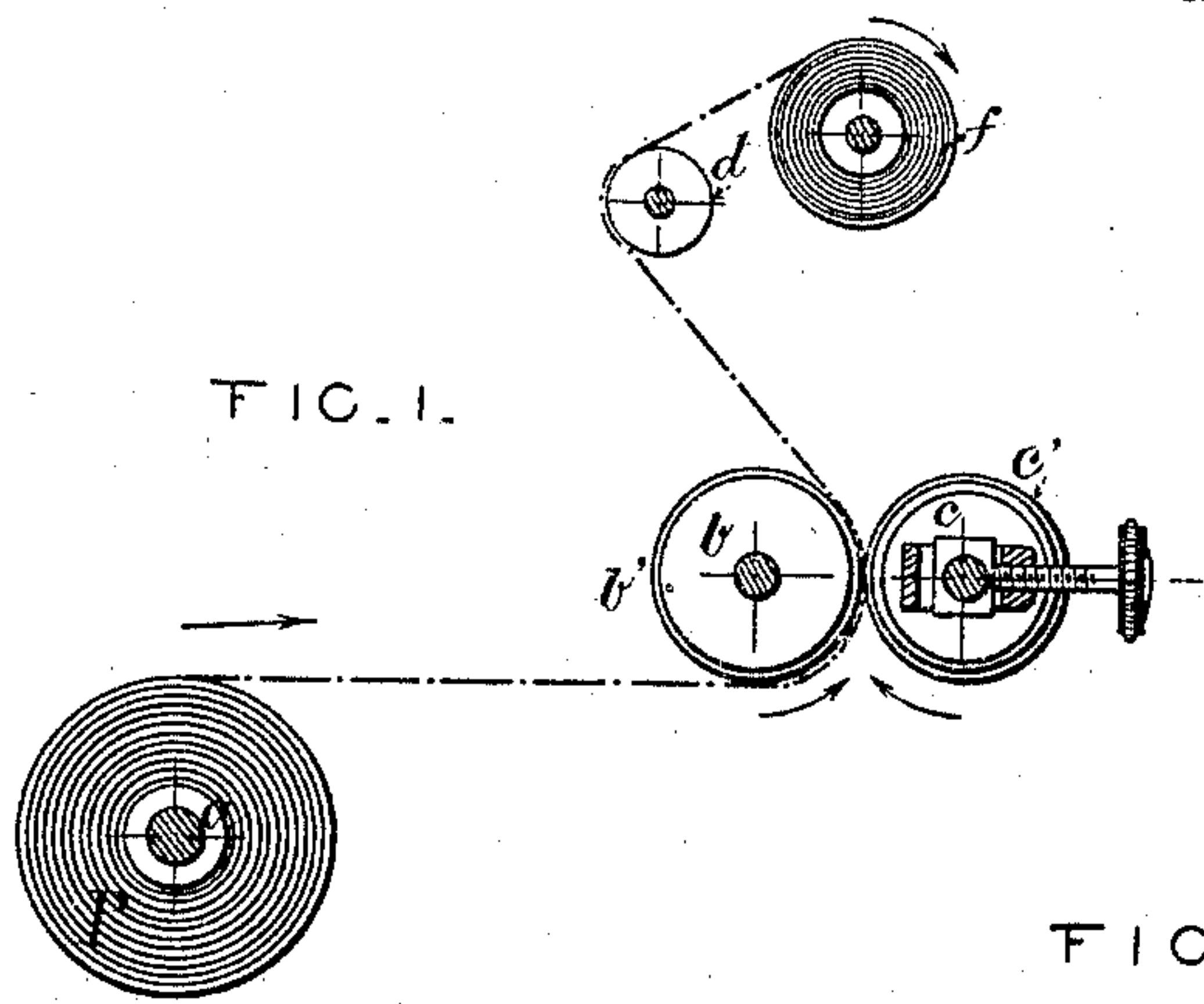
(No Model.)

E. ABADIE.

MANUFACTURE OF RETICULATED PAPER FOR CIGARETTES.

No. 314,639.

Patented Mar. 31, 1885.



Witnesses:

Alphonse Blet
Edw. M. Harper

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UNITED STATES PATENT OFFICE.

EGBERT ABADIE, OF PARIS, FRANCE.

MANUFACTURE OF RETICULATED PAPER FOR CIGARETTES.

SPECIFICATION forming part of Letters Patent No. 314,639, dated March 31, 1885.

Application filed January 8, 1885. (No model.) Patented in France March 20, 1884, No. 161,073.

To all whom it may concern:

Be it known that I, EGBERT ABADIE, manufacturer, of Paris, in the Republic of France, have invented improvements in the make of
5 endless reticulated paper and its new application to mechanical cigarette-making, (for which I have obtained Letters Patent of France for fifteen years, dated March 20th, 1884, No. 161,073;) and I do hereby declare that the fol-
10 lowing is a full and exact description thereof, reference being made to the accompanying drawings.

Up to this day endless reticulated paper has not been used in cigarette-machines for which
15 endless paper is employed, on account of the difficulties presented by this kind of paper for sizing. It will be easily understood, indeed, that the various grooves or gofferings by which the filigrain is formed are a serious
20 objection to the two edges of the reticulated sheet being applied one upon the other. As the said grooves will very seldom coincide from one edge to the other, the sizing device, of any construction, will apply in an irregular
25 way the glue on the superposed edge, so that the sizing of the edges of the tube just formed only takes place from spot to spot, and is effectuated in a very bad condition; or the partial sizing will yield afterward to the dilata-
30 tion of the inserted tobacco slab or roll; or, if it overcomes that increase of volume, it will offer several not-sized points, by which the cigarette will be prevented totally from being smoked.

By the process to which my application for Letters Patent relates endless reticulated paper will easily be applied to mechanical cigarette-making, and affords upon the whole a
35 new product due to the said new application, and for which I claim the severalty.

In the accompanying drawings I show, in Figure 1, as a specimen, the whole of the arrangement adopted for reticulating of one
45 width of endless cigarette-paper, which disposition, or a similar one, may be interpolated between the paper-store and the cigarette-machine, in order to obtain the filigrain simultaneously with the working of the cigarette machine or machines, as described here-
50 inafter.

The paper, being stored on the roller *a*, runs

between the working-rollers *b* and *c*, between which the reticulating takes place, and, finally, guided by the gearing-roll *d*, it reaches the receiver *f*, owing to the tractive power exerted
55 by the said receiver. The roller *b*, made of wood or of any suitable material, is lined with a flexible substance—felt or india-rubber *b'*.

The roller *c*, which is the essential means, is made of metal and lined externally with one
60 sole clutch, also of metal, *c'*, or with several small clutches put together. The clutch *c* carries the series of grooves *x x*, which are equidistant with the plain divisions *y y*, which all are equal, so that the widths of grooves are
65 also equal, one to the other. Each series of grooves *x*, increased by the two plain half parts of *y*, by which it is confined, has a total width exactly equal to the width required for the strap of endless paper intended for the
70 cigarette-machine.

Fig. 2, which shows in plan the disposition of the rollers *b* and *c*, and Fig. 3, where the natural size of execution for the grooves of the roller *c* is to be seen, both show very clearly
75 the disposition of the grooves *x* and of the plain dividing parts *y*. Thus it follows that the paper running between the rollers *b* and *c* receives the impression of the grooves in the said roller *c* with plain slips between each
80 strip of grooves. In that condition the reticulated paper is stored on the receiver *f*. Then it is cut by the usual means in the middle of the plain slips, in order to give bobbins formed by reticulated ribbons, a part of which is
85 shown in Fig. 4. In the said figure *a'* is the series of longitudinal grooves stamped on the paper by the roller *c*, and *y' y'* are the plain parts by which the reticulated ribbon is bordered. In such condition it will be easily un-
90 derstood that the endless reticulated paper after having been brought over by the usual devices and cut lengthwise into a sheet, to be presented in the usual manner to the tube-forming organs of the cigarette-machine, the
95 said sheet will roll like not-reticulated paper, while the sizer at the required moment applies the glue to that part *y'* which is to form the tube. Then the sized part, being applied upon the symmetrical part *y'*, will take without any
100 difficulty, being both plain.

Until now I supposed the reticulated paper

to be wound any length on the roller *a*, and of a width which would permit, after the grooves were applied, of being cut into several endless strips, each of which is intended for being employed afterward in mechanical cigarette-making. I also supposed, to simplify the operation, the reticulation to be made independently of the subsequent mechanical making of the paper tube which forms the cigarette-cover. I, however, state expressly that the endless paper may be reticulated after having been cut into strips, the width of which would be equal to the total display of the paper tube to be formed afterward, and this is a consequence thereof that the reticulation may take place simultaneously with the working of the cigarette-machine and in more or less immediate connection with it.

Fig. 5 shows the paper *p*, which is stored on the bobbin *a*, being reticulated between the rollers *b* and *c*, and thence guided by the guide-roll *d*, reaching directly the delivering-rollers *r* and *r'*, which go before the cutting, sizing, and tube-forming devices in common cigarette-machines; consequently the conveyance of the paper will be effectuated by intermittent forwarding, and owing to the more rapid working of the delivering or feeding rollers *r* and *r'* in the same way as if the said rollers were actuating ordinary paper, either reticulated or not. I also beg to state that between the guide-rollers *d* and the delivering-rollers the reticulated paper may receive any mark or impression like

the common ones, due to the means usually employed or to those for which I have obtained already Letters Patent No. 276,547, May 1, 1883, for stamping any colored impression and for bronzing in any shades. The grooves of the roller *c* may be straight, like those shown in the drawings; but they may be also depressed, sinuous, or crossed, or of any other form, provided plain strips are reserved between each series to allow the sizing and the formation of the paper tube.

With the grooves any designs, marks, or trade-marks, may be combined, to be repeated on the whole or on part of each length of strips corresponding to the length of a cigarette. Finally, the pressure of the rollers *c* and *b* required for stamping the projections of the roller *c* may be supplied and regulated by any suitable means, either by screws *v*, Fig. 2, actuating the bearings of the shaft, or by springs or any other flexible appliances.

After having now described the nature of my invention and the several means to be employed for its use, I claim—

As a new article of manufacture, cigarette-paper having reticulated central body and plain margins *y' y'* at two opposite sides, as specified.

EGBERT ABADIE.

Witnesses:

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