

(No Model.)

C. K. PICKLES.
MANUFACTURE OF CIGARETTES.

No. 569,052.

Patented Oct. 6, 1896.

Fig. 1.

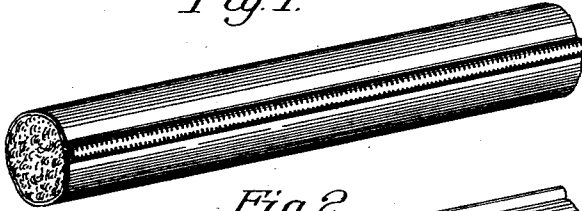


Fig. 2.

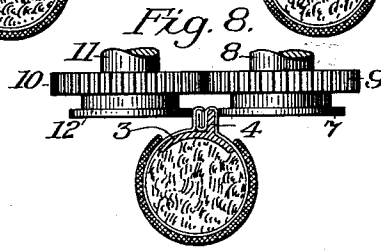
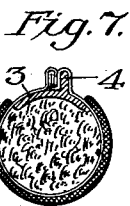
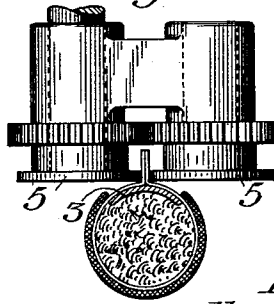
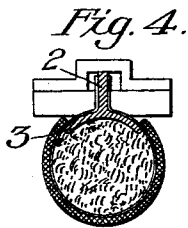
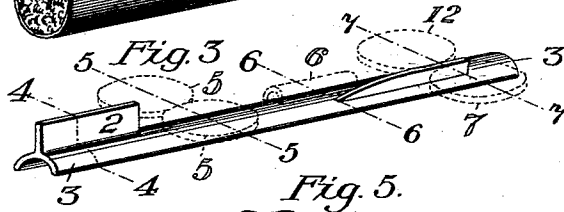
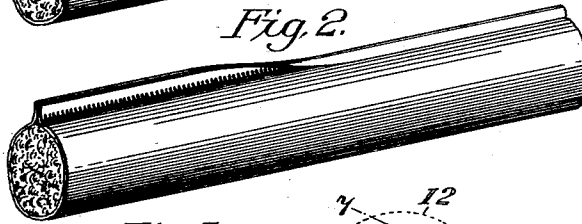


Fig. 10.



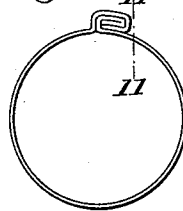
Fig. 11.



Fig. 9.



Fig. 12.



Witnesses.

Chas. E. Rice
A. Weaver

Inventor.

Chas. H. Pickles,
by Carr & Carr,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES K. PICKLES, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO J. V. PICKLES, OF SAME PLACE.

MANUFACTURE OF CIGARETTES.

SPECIFICATION forming part of Letters Patent No. 569,052, dated October 6, 1896.

Application filed March 14, 1896. Serial No. 583,177. (No model.)

To all whom it may concern:

Be it known that I, CHARLES K. PICKLES, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in the Manufacture of Cigarettes, of which the following is a specification.

My invention relates to the manufacture of cigarettes, and has for its object to form a cigarette in which the edges of the tubular wrapper are turned outwardly and folded back to form a seam lying flat against the body portion.

To this end my invention consists in a wrapper having a flat seam secured to the exterior of the body, as hereinafter described and claimed.

It also consists in the process of and machine for making the same and in the details hereinafter fully described in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of a finished cigarette. Fig. 2 is a perspective view showing a cigarette in the process of manufacture. Fig. 3 is a perspective view of the interior supporting-finger and showing in dotted lines the exterior devices for crimping and folding the wrapper. Figs. 4, 5, 6, and 7 are vertical cross-sections on the lines 4 4, 5 5, 6 6, and 7 7 of Fig. 3. Fig. 8 is a vertical cross-section on the line 7 7 of Fig. 3, showing also a crimping mechanism. Fig. 9 is a view similar to Fig. 5, showing one edge of the wrapper folded over the other before being subjected to the crimping operation. Fig. 10 is an enlarged detail illustrating the crimp of Fig. 5. Fig. 11 is a sectional detail on line 11 11 of Fig. 12, and Fig. 12 is an end view of the finished wrapper.

My machine, like other cigarette-machines, comprises an endless belt or band for supporting and advancing the paper wrapper and the tobacco filler, folding-guides cooperating therewith to fold the wrapper into tubular form, or, when the filler is fed simultaneously with the wrapper, to cause such wrapper gradually to encircle the filler, and means for uniting the edges of the wrapper. Any suitable folding-guides may be used up to the stage where the wrapper has been folded

around the filler in tubular form with its edges nearly but not quite meeting. Suitably located to fit between such edges at this stage of the operation is a thin hanger or plate 2, depending from the fixed frame of the machine. This hanger or plate 2 supports a curved guide or finger 3, over which the edges of the wrapper are drawn, and which extends forwardly inside of said wrapper to form a support for a fin or rib 4, hereinafter mentioned.

The depending hanger or plate 2 forms a guide-plate against whose sides the edges of the wrapper are turned radially outward as the wrapper is closed in around the filler. Beyond the depending hanger 2, where there is nothing to separate the outturned edges of the wrapper 2, is located a pair of corrugating, crimping, or indenting rollers or wheels 5, arranged tangentially to the cylindrical body of the wrapper or cigarette-rod, between which rollers or wheels said outturned edges are guided and thereby corrugated, crimped, or indented in the part immediately adjacent to the cylindrical body. The forming-guides are arranged, however, so that the outturned edges extend far enough beyond the crimped, corrugated, or indented portion to allow the outer portion to be folded back toward the cylindrical body and when so folded to be corrugated, crimped, or indented near or at the fold without interfering with the first series of crimps, corrugations, or indentations. The outturned edges of the wrapper are folded or doubled back after passing the crimping-rollers by a guide 6, arranged suitably for the purpose.

The curved guide or finger 3, which extends forwardly inside of the closed wrapper, has an axial raised rib or fin 4 arranged beyond the guide-plate or folder 6 and at a slight angular distance from the plane of the depending plate which supports the curved guide or finger itself, whereby a portion of the cylindrical body of the wrapper is bent upwardly alongside of the downturned folded edges. A wheel 7 with a smooth rim is arranged tangentially to the cylindrical wrapper to bear against the paper on the rib or fin 4. The shaft 8 of this wheel is rigidly

journalled and is provided with a gear-wheel 9, meshing with a similar gear 10 on a parallel shaft 11, which carries a crimping, corrugating, or indenting roller or wheel 12 directly opposite the smooth wheel and arranged to bear against the folded edges above the first line of corrugations. The effect of this arrangement is that any desired pressure may be applied with the crimping, corrugating, or indenting roller 12, as the rib or fin 4 is relieved of undue stress by the unyielding smooth wheel directly opposite the crimping or corrugating wheel and opposing an equal resistance thereto. The rib or fin 4 therefore constitutes a flat or smooth abutment against which the crimping or corrugating wheel presses the folded edge portion, while the paper immediately in contact with said abutment on each side thereof, and being a part of the cylindrical body of the wrapper, remains practically smooth.

Beyond the crimping and the smooth wheel, which thus cooperate, the rib or fin 4 gradually declines toward the curved guide or supporting-finger 3, which also terminates shortly beyond said wheels. The portion of the wrapper which was looped up over the rib or fin 4 is drawn out again into cylindrical form by the expansive force of the tobacco filler, which also expands to fill the space occupied by the curved guide or finger 3. Likewise when the wrapper is made alone the elasticity of the paper tends to unfold the crease caused by the fin and to draw such loop out into cylindrical form. The compression of the folded edges against the part of the wrapper next to the fin, by means of the crimping or corrugating roller 12, causes the adhesion of the folded portion to such part so tightly that, when this part is drawn down into cylindrical form, as above stated, the folded portion follows and lies flat against it. It is noted that the seam thus formed has two rows of corrugations, crimps, or indentations, both of which are made by devices exterior to the wrapper, and therefore capable of exerting any desired pressure; that the folded portions are interlocked together and lie flatwise on the exterior of the wrapper, and that the body portion of the wrapper has no crimps, corrugations, or indentations.

It is obvious that the process and mechanism hereinbefore described are equally applicable to the manufacture of cigarettes, whether separately or in continuous rods subsequently cut into length, and whether the wrappers are first formed into empty tubes or are filled with tobacco, as hereinbefore described, simultaneously with their own manufacture. It is also obvious that considerable variation may be made from the specific mechanism herein described without departing from my invention, and I do not wish to restrict myself to such mechanism. For instance, by a slight modification of the folding-guides one of the edges may be folded over the other, as shown in Fig. 9, before the

first crimping, or both may be interlocked together before such crimping. It is also obvious that the portions folded together to form the seam may be secured to the body portion by any suitable pasting device, in which case there is no necessity for crimping, corrugating, or indenting such seam, although I prefer in all cases to corrugate the outturned edge portions immediately next to the cylindrical body.

What I claim is—

1. The process of making cigarette-wrappers which consists in forming the wrapper into a cylinder with its edges turned outwardly, folding such outturned edges back and corrugating, crimping or indenting the edge portion against the body portion while a part of the body portion projects abnormally and is sustained internally, substantially as herein set forth.

2. The process of making cigarette-wrappers which consists in forming the wrapper into a cylinder with its edges turned outwardly, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper while the adjacent portion of the body is projected abnormally and sustained internally and externally, substantially as herein set forth.

3. The process of making cigarette-wrappers which consists in forming a wrapper into a cylinder with its edges turned outwardly, crimping, corrugating or indenting such outturned portions immediately next to the cylindrical body of the wrapper, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper, substantially as herein set forth.

4. The process of making cigarettes which consists in simultaneously advancing the wrapper and the filler, causing the wrapper to encircle the filler with the edges of the wrapper turned outwardly, folding such outturned edges back and corrugating, crimping or indenting the edge portions against the body portion, while the adjacent part of the body portion projects abnormally and is sustained internally and externally, substantially as and for the purpose set forth.

5. The process of making cigarettes which consists in simultaneously advancing the wrapper and the filler, causing the wrapper to encircle the filler with the edges of the wrapper turned outwardly, crimping, corrugating or indenting such outturned portions immediately next to the cylindrical body, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper, substantially as and for the purpose set forth.

6. A cigarette-wrapper consisting of a tubular body having its edge portion turned outwardly, said outturned portions being crimped, corrugated or indented together, immediately next to the body, and being folded

back and corrugated at the fold against the body, whereby said portions form a seam lying flat on the exterior of the body, substantially as described.

5 7. A cigarette consisting of a filler and a wrapper therefor, said wrapper having its edge portions turned outwardly and crimped, corrugated or indented together, immediately next to the body, and being folded back and
10 corrugated at the fold against the body, whereby said portions form a seam lying flat on the exterior of the body, substantially as described.

8. A cigarette-machine comprising, in combination with devices for folding the wrapper in tubular form and folding its edges together, an interior curved guide supporting a radially-raised fin, and devices arranged tangentially to the wrapper for pressing the folded
20 edge portion against said fin, substantially as set forth.

9. A cigarette-machine comprising, in combination with devices for simultaneously advancing the wrapper and the filler and for
25 folding the wrapper into cylindrical form around said filler and folding its edges together, an interior curved guide supporting a radially-raised fin and devices arranged tangentially to the wrapper for pressing the
30 folded edge portion against the fin, substantially as set forth.

10. In a cigarette-machine, the combination with devices for folding the wrapper into tubular form and folding its edges together,
35 of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and devices on the opposite side of said fin for pressing the folded edge portions against said fin,
40 substantially as and for the purpose set forth.

11. In a cigarette-machine, the combination with devices for simultaneously advancing the wrapper and the filler, and for folding the wrapper in tubular form around said filler
45 and folding its edges together, of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and devices on the opposite side of said fin for pressing the folded edge
50 portion against said fin, substantially as and for the purpose set forth.

12. In a cigarette-machine, the combination with devices for folding the wrapper into tubular form and folding its edges together,
55 of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and a crimping, corrugating or indenting wheel on the opposite side of said fin for pressing the
60 folded edge portions against said fin, substantially as and for the purpose set forth.

13. In a cigarette-machine, the combination with devices for simultaneously advancing the wrapper and the filler, and for folding the wrapper into cylindrical form around said
65 filler and folding its edges together, of an interior curved guide supporting a raised fin,

a smooth wheel opposite said fin and forming an abutment therefor, and the crimping, corrugating or indenting wheel on the opposite
70 side of said fin for pressing the folded edge portions against said fin, substantially as and for the purpose set forth.

14. In a cigarette-machine, the combination with devices for folding the wrapper into
75 tubular form with outturned edge portions, of a pair of crimping, corrugating or indenting wheels arranged tangentially to the body portion to operate on the outturned portions, a folding-guide arranged to fold back said
80 outturned portions, a curved guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extend-
85 ing beyond said folding-guide, and a device opposite said fin on the side with the folded portions for securing the folded portions to the body, and a smooth abutment arranged opposite said device on the opposite side of
90 said fin, all substantially as and for the purpose set forth.

15. In a cigarette-machine, the combination with devices for folding a wrapper into tubular form with outturned edge portions, of a
95 pair of crimping, corrugating or indenting wheels arranged tangentially to the body portion, to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved guide suspended
100 from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-guide, and a crimp-
105 ing, corrugating or indenting wheel arranged opposite said fin on the side with the folded portions, and a smooth wheel arranged opposite said wheel on the other side of said fin, all substantially as and for the purpose set
110 forth.

16. In a cigarette-machine, the combination with devices for simultaneously advancing the filler and the wrapper and for folding the wrapper into tubular form with outturned
115 edge portions, of a pair of crimping, corrugating or indenting wheels, arranged tangentially to the body portion to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved
120 guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-
125 guide, and a device opposite said fin on the side with the folded portions for securing the folded portions to the body, and a smooth abutment arranged opposite said device on the other side of said fin, all substantially as
130 and for the purpose set forth.

17. In a cigarette-machine, the combination with devices for simultaneously advancing the filler and the wrapper, and for folding the

wrapper into tubular form with outturned
edge portions, of a pair of crimping, corru-
gating or indenting wheels arranged tangen-
tially to the body portion, to operate on the
5 outturned portions, a folding-guide arranged
to fold back said outturned portions, a curved
guide suspended from the frame and extend-
ing from the first-mentioned folding devices
in position to be inside of the wrapper, a
10 raised fin on said curved guide close along-
side of and extending beyond said folding-

guide, and a crimping, corrugating or indent-
ing wheel arranged opposite said fin on the
side with the folded portions, and a smooth
wheel arranged opposite said wheel on the 15
other side of said fin, all substantially as and
for the purpose set forth.

CHARLES K. PICKLES.

Witnesses:

CHAS. E. WISE,
FERD A. BENEKE.