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METHOD OF MAKING CIGARETTE PAPERS

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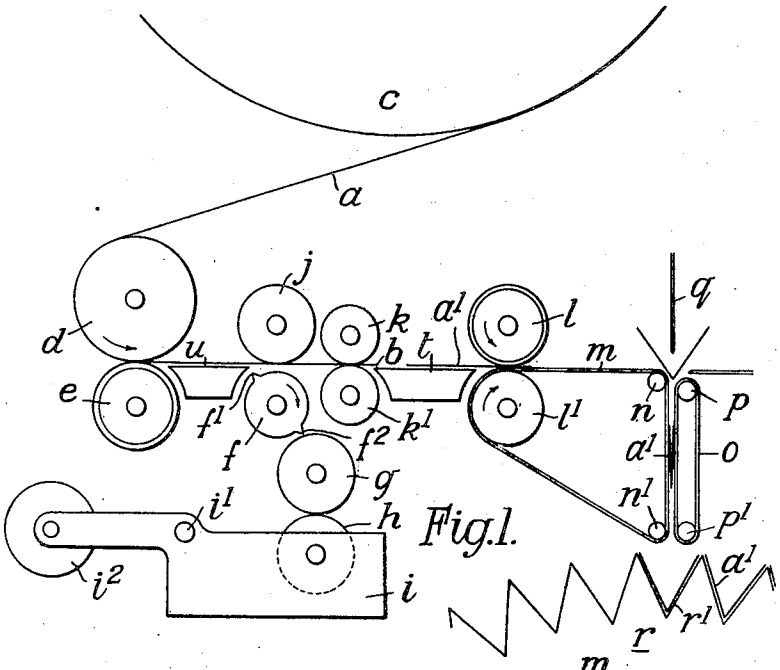

Fig.1.

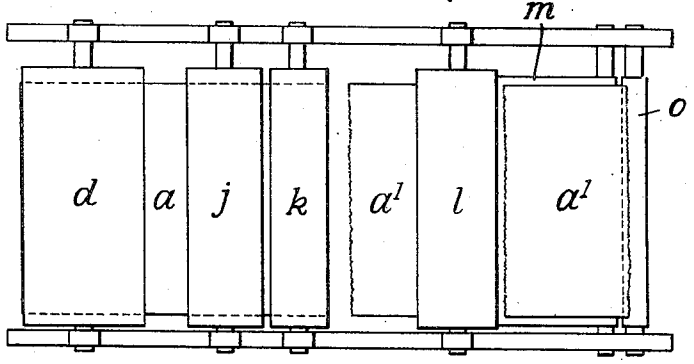

Fig.2.

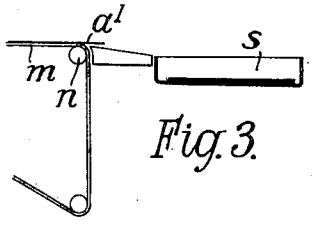

Fig.3.

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METHOD OF MAKING CIGARETTE PAPERS

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6 Claims. (Cl. 164—17)

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This invention relates to the manufacture of small cigaret papers of the ungummed kind and intended for hand-made cigarets. Such cigaret papers are usually each of a size about 38–40 mm. wide by 70 mm. long and the edge of the ungummed paper is intended to be moistened by the tongue of the user and to be stuck down on the underlying paper around the rolled cigaret.

The invention has for its objects to simplify the manufacture of these cigaret papers, to avoid waste, to prevent the longer sides of the finished papers from being damaged by handling during manufacture, and also to give better fibrous side-edges to the finished paper and therefore a more secure seam to the cigaret when rolled and finished.

According to the method of the present invention a strip or web of the paper from which the small cigaret papers (or leaves) are to be made, is moistened with transverse lines spaced apart to correspond with the width of a finished cigaret paper and the lineate strip is subsequently torn along said moistened (and thereby weakened) lines one at a time. These lines may be, for example, spaced apart by 40 mm. and the width of the paper strip may be 70 mm., and the said lines demarcate the longer sides of the finished cigaret paper. The strip is fed forward, mechanically marked with the moistened transverse lines and subjected to a mechanical device for tearing the strip thereby to detach the foremost cigaret paper. The mechanical device is preferably in the form of a pair of geared-together breaking rollers having a higher peripheral speed than the speed of the approaching lineate strip so that the said strip is tensioned and broken at the moistened (and weakened) line at the rear of the oncoming cigaret paper. The line-moistening action preferably takes place on the underside of the paper strip against a complementary backing member.

The invention is hereafter described with reference to the annexed drawings in which:

Fig. 1 is a diagrammatic side elevation of a suitable machine for carrying out the invention and leading to a known folding and interleaving device. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a view of part of Fig. 1 showing a modification.

Strips from a paper web *a* and cut to a width (e. g. 70 mm.) corresponding with the length of a finished cigaret paper, are moistened transversely at intervals *bb* which correspond with the width of the cigaret paper (e. g. 40 mm.) by a wetted marking or imprinting device. The web *a* is directed from bobbin *c* between feed rollers

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de to the said marking device. This wetted device is shown in the form of a constantly driven roller *f* having diametrically opposite ribs f^1f^2 raised above its periphery. The ribs f^1f^2 may be of rubber and are kept wet by contact with a transfer roller *g* itself in contact with a supply roller *h* dipping into a liquid trough *i* and journaled in the walls of the trough. This trough *i* is pivoted at i^1 and provided with a counterweight i^2 so that the supply roller is kept in contact with transfer roller *g* and the ribs f^1f^2 are constantly wetted as roller *f* is rotated. The ribs f^1f^2 extend across the width of the paper strip *a* and act on the underside of the said paper strip *a* to imprint the moistened line and to press the paper strip against a backing member *j* shown in the form of a loose roller. One revolution of roller *f* imprints two moistened lines 40 mm. apart. These transverse lines thus indicate and demarcate the longer sides of the finished cigaret paper.

The lineate strip next passes between draw-rollers kk^1 geared together and rotating at the same peripheral speed as the rollers *de*; the rollers kk^1 engage the strip and pass it to the tearing or breaking device. This device for tearing or breaking the paper at the moistened (and thereby weakened) lines is shown as a pair of geared-together rollers ll^1 extending across the full width of the strip *a*, which are rotated at an increased peripheral speed (e. g. 30% faster than that of the draw rollers kk^1) so that the approaching paper strip is engaged, tensioned and detached at the oncoming transverse line. The breaking action is in the nature of a snatch or tug so as to detach the foremost cigaret paper at its trailing edge after the lineate strip has been tensioned between the leading and trailing demarcation lines or edges of the foremost cigaret paper.

The trough *i* is supplied with water or other suitable liquid adapted to be absorbed by the paper *a* at the imprinted lines. The liquid may be water to which starch has been added.

The fact that the strip *a* is moistened at e. g. 40 mm. intervals with lines extending across the strip renders the paper at those lines weaker than the dry remainder of the paper so that this weaker portion yields to the tensioned pull of the breaking device. Each time a moistened line is torn, the trailing edge of one paper or leaf and the leading edge of the next paper will be affected and their fibres exposed.

An endless conveyor belt *m* is shown passing around the roller l^1 and around guide rollers nn^1

so that after passing through the breaking rollers ll^1 the detached paper or leaf a^1 is delivered on to the said conveyor belt m. The belt m has a vertical run between rollers n and n^1 and a second travelling endless belt o is provided also having a vertical run and passing around rollers pp^1. A folder blade q of the known type and adapted to rise and fall, engages the cigaret paper or leaf a^1, folds it and pushes it between the travelling vertical runs of the conveyor belts mo so that it reaches the advancing notch r^1 in the interleaving drum r.

In the arrangement shown in Figure 3, the detached cigaret papers or leaves a^1a^1 are delivered to the top run of the conveyor band m leading to a collecting tray s located at a level lower than that of said top run so that said papers slide into said tray.

A torn edge with exposed fibres provided at each longer side of the finished paper or leaf renders it immaterial which side is outermost of the finished cigaret and which face of the outermost side of the paper is on the underside when the seam is being closed. The fibres are exposed by the tearing action along the moistened lines so that a very secure seam can subsequently be made on the rolled cigaret. The cigaret paper quickly dries by evaporation of the remaining moisture and is then ready for use.

A table or the like supporting platform t is shown between the draw rollers kk^1 and the breaking rollers ll^1 to guide the advancing strip a in its passage to the breaking rollers. This table is intended for use when a gap exists between the draw rollers and the breaking rollers. Preferably the breaking rollers are located at such distance from the lineation device f that the foremost cigaret paper is detached before the succeeding cigaret paper is moistened at its rear line.

A table or supporting platform u may also, if desired, be provided after the rollers de and in advance of the wetting roller f.

The driving rollers may be rotated in any suitable manner. For example, the feed rollers de, the wetting roller f, the draw rollers kk^1 and the breaking rollers ll^1 may all be fitted with gear wheels driven from a master shaft.

This method of making ungummed cigaret papers having on two opposite sides their fibres exposed along the whole length of each such side, is capable of producing finished cigaret papers at high speed and in the region of 800 to 1000 a minute.

What I claim is:

1. A method of making cigaret papers from a paper strip which includes the steps of feeding forward said strip, moistening said strip with transverse lines imprinted by means of a rib-fitted roller, wetting the said-rib-fitted roller from a liquid-transfer roller, tensioning said lineate strip and subjecting it to the detaching action of a pair of associated breaking-rollers between which the strip passes.

2. A method of making cigaret papers from a strip, which includes the steps of advancing said strip, wetting it at spaced intervals with a transverse line imprinted by the rotation of a rib-fitted roller, maintaining the operative face of said rib-fitted roller wetted from a constant supply of liquid, and conducting said lineate strip to between a pair of breaking-rollers, the peripheral speed of which is greater than the speed of the travelling strip.

3. A method of making cigaret papers from a paper strip, which includes the steps of feeding forward said paper strip, passing said strip below a complementary backing, subjecting the underside of said strip to the action of a wetted roller pressing against said backing and having ribs raised above the surface of said roller, passing said lineate strip between draw-rollers and leading it to between geared-together breaking rollers, whereby said breaking rollers detach the foremost cigaret paper at its moistened join with the following cigaret paper.

4. A method, according to claim 3, which includes the step of guiding the travelling lineate strip over a table to the said breaking rollers.

5. A method of making cigaret papers from a paper strip which includes the steps of feeding forward said paper strip, mechanically imprinting said strip with moistened transverse lines spaced apart to correspond with the width of a finished cigaret paper, subjecting said lineate strip to a mechanical device for tearing said strip between the foremost paper and the next succeeding paper to detach thereby the foremost cigaret paper, and timing the tearing operation to take place immediately before the remainder of the paper strip is again mechanically imprinted with a moistened line.

6. A method of forming finished cigaret papers from a strip of paper of a width corresponding with the length of the desired cigaret paper, which includes the steps of feeding forward said strip, moistening said strip at intervals corresponding with the width of the desired cigaret paper, mechanically tensioning the said paper strip between the leading and trailing edges of the foremost cigaret paper and mechanically detaching said foremost cigaret paper at its trailing edge.

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