3 Sheets—Sheet 1.

D. W. DeFOREST.

Manufacture of Plug Tobacco.

No. 202,245. Patented April 9, 1878.

Fig. 1.

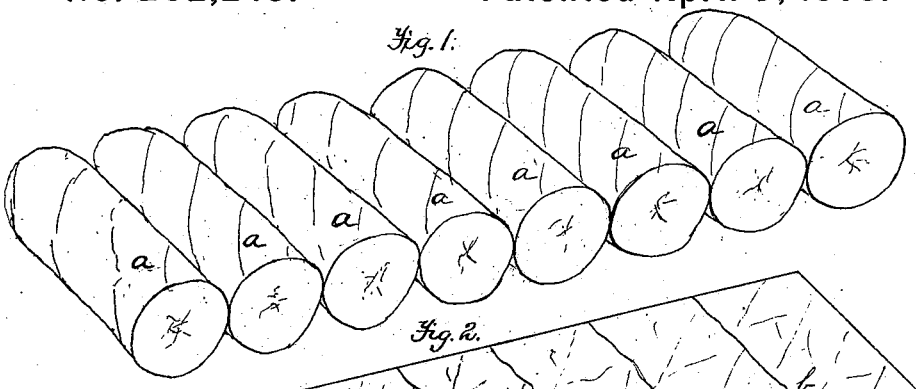

Fig. 2.

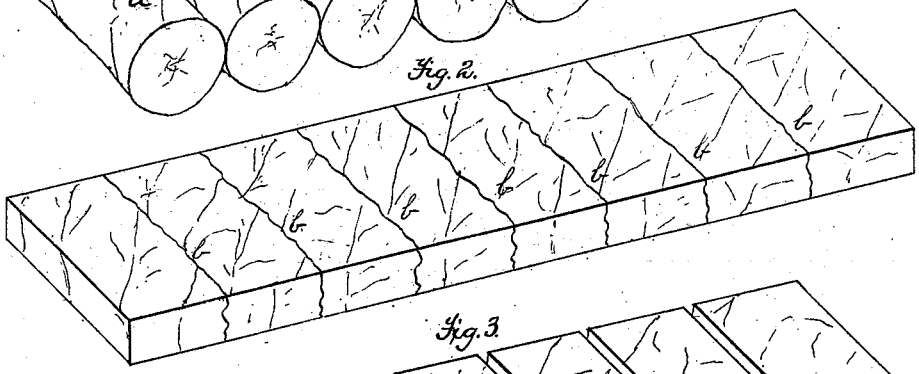

Fig. 3.

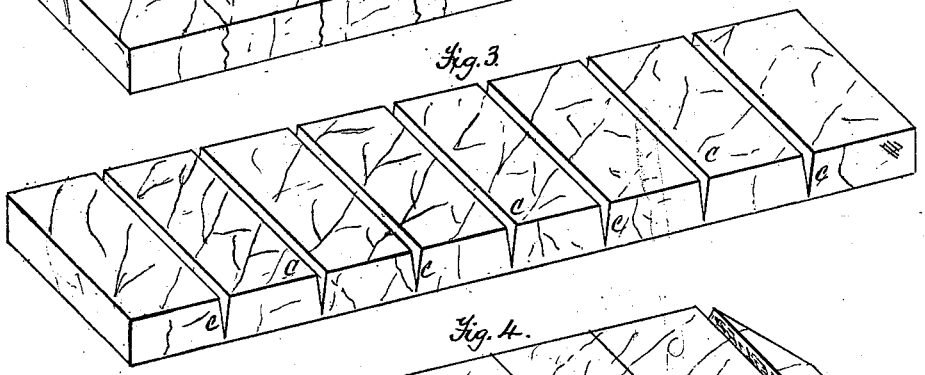

Fig. 4.

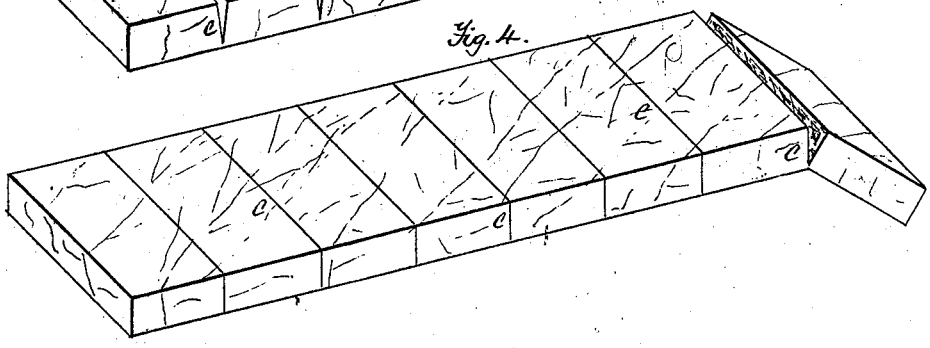

Fig. 13.

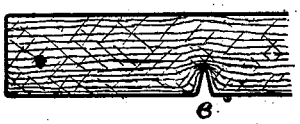

Fig. 14.

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Fig. 5.

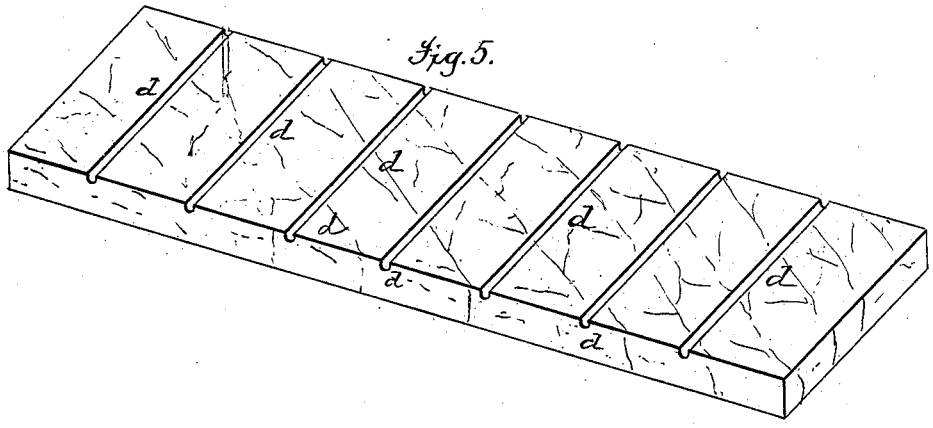


Fig. 6.

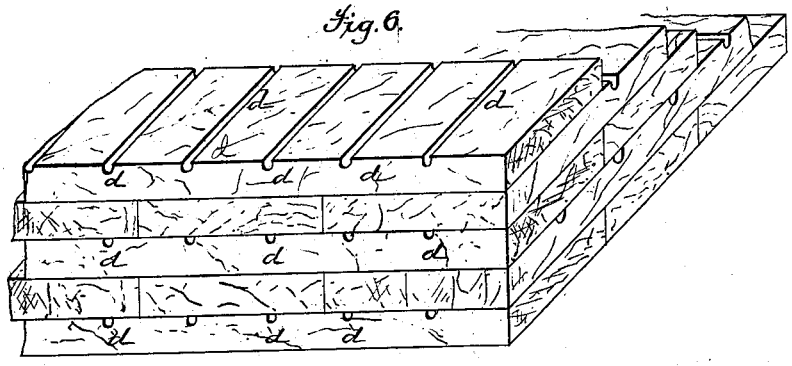
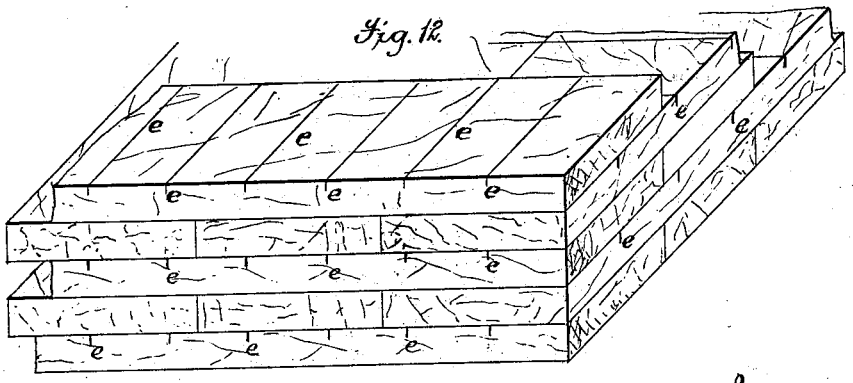


Fig. 12.



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No. 202,245. Patented April 9, 1878.

Fig. 7.

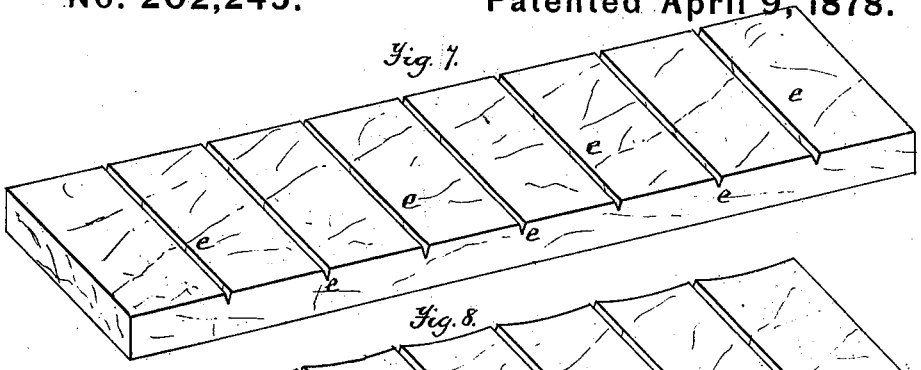


Fig. 8.

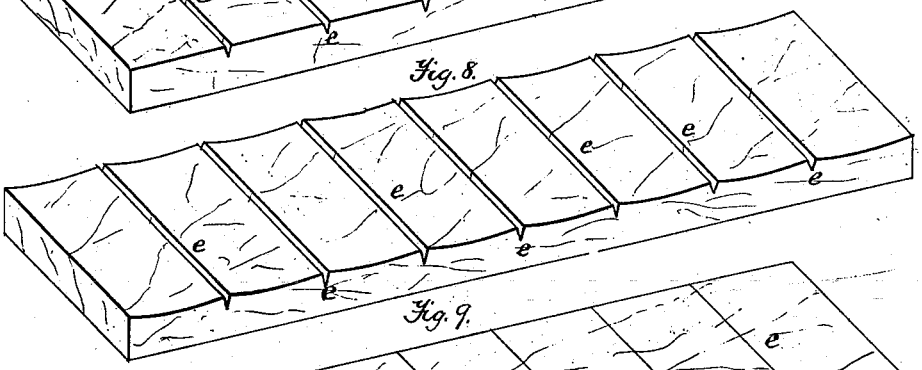


Fig. 9.

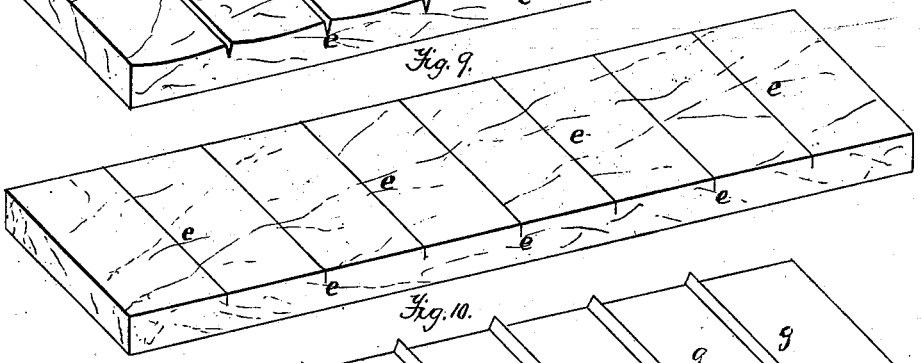


Fig. 10.

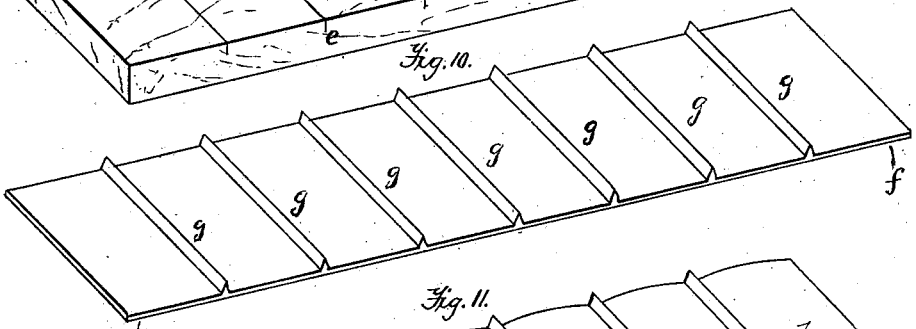
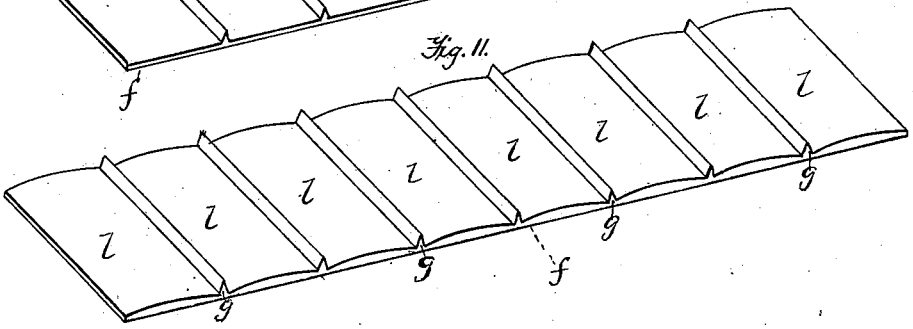


Fig. 11.



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UNITED STATES PATENT OFFICE.

DAVID W. DE FOREST, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MANUFACTURE OF PLUG-TOBACCO.

Specification forming part of Letters Patent No. **202,245**, dated April 9, 1878; application filed April 1, 1878.

To all whom it may concern:

Be it known that I, DAVID WILLIAM DE FOREST, of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Processes of Making Plug-Tobacco, and in plug-tobacco produced thereby; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

Heretofore efforts have been made to produce large plugs of tobacco provided with means for determining where portions of a definite size are to be removed therefrom for retail sales or other purposes.

Large plugs have heretofore been made provided with such means from lumps of tobacco, each lump being covered by a wrapper, which lumps were placed side by side in the shapes or forms commonly used, then subjected to pressure, which caused them to run into each other, and form irregular junctures, but making single plugs, so that in retail sales, or for other purposes, portions of a definite size could be separated from the plugs by tearing or cutting at or near the line of juncture of the contiguous lumps.

In Fig. 1, I have shown a number of such lumps, *a*, each covered with a wrapper, placed side by side, as they would be in the shapes or forms, ready to be subjected to pressure therein, and in Fig. 2 a plug of tobacco produced from such lumps, showing the irregular junctures *b*.

The expense of making plug-tobacco by this mode was very great, as the lumps had to be made up separately, then each covered with a wrapper, then placed in the shapes or forms, and then subjected to pressure, involving the use of valuable material and labor.

Large plugs of tobacco have also heretofore been made provided with such means, consisting in partially severing at intervals the lumps after they are covered with wrappers, from which such plugs are to be made, as shown in Fig. 3, at *c*, and then subjecting the lumps and coverings to pressure, which caused an adhesion of the sections, which might be easily broken off, as shown in Fig. 4.

As both the fillings and the coverings of the lumps are partially cut when they are subjected to pressure to cause adhesion of the sections the juices of the tobacco and the licorice, or other material which is added to the tobacco-leaf before being put into the lump are expressed, and, exuding from between the sections, destroy the quality and appearance of the plugs.

Large plugs of tobacco have also been made with depressions or indentations running across their faces, which indentations or depressions are made by wires forced into said faces in compressing the plugs, as shown in Figs. 5 and 6, at *d*.

When the plugs, with such indentations or depressions in their faces, are packed in the box for shipment and sale, spaces *d* are formed, as shown in Fig. 6, in which dampness and air tend to collect, tending to cause, and causing, mold and funk, thus injuring the plug-tobacco.

The object of my invention is to manufacture plug-tobacco provided with means for indicating where portions of a definite size are to be severed and removed therefrom for retail sales and other purposes, and for indicating other devices which shall obviate the objections existing in the modes of manufacture described by me, and other objections; and my invention consists in the process of making plug-tobacco, and in the plug-tobacco produced thereby, which I will now fully describe, and then clearly claim.

I embed portions of the wrappers in the face or faces of the lumps of tobacco at intervals, as shown in Figs. 7, 8, and 13, at *e*, and then subject the lumps to pressure, which closes up the openings made by the embedding, and produces almost unbroken surfaces on the finished plugs, the embeddings indicating where the portions of the plugs are to be severed when desired, as shown in Fig. 9, at *e*.

I prefer to embed portions of the wrappers in the faces of the plug and close the openings made by the embedding in the following manner: I place in the bottom of the shapes or forms commonly used in the manufacture of plug-tobacco plates *f*, having projections *g* on their upper surfaces, as shown in Fig. 10, these projections being preferably wedge-

shaped, as shown, to permit their easy withdrawal from the wrappers and embeddings, their edges, however, not being short enough to cut the wrappers. The bottoms of these plates *f* rest upon the sheet-iron plates commonly used beneath each set of shapes and forms, when the latter are placed one on top of the other in the hydraulic press.

The lumps of tobacco for the plugs covered with wrappers are placed in the shapes or forms on top of the plates *f* and projections *g*. The followers commonly used are inserted in the shapes or forms. Pressure is applied, when the projections *g* embed portions of the wrappers in the faces of the lumps at intervals, such embeddings running across the lumps, as shown in Fig. 7. Pressure being removed, the lumps with portions of their wrappers embedded in their faces are placed in the pots or finishers commonly used for finishing plug-tobacco in the hydraulic press, and are there subjected to pressure, one layer of lumps running in one direction and the contiguous layers running across them, which pressure causes the openings in the embeddings *e* to be closed, or nearly closed, as shown in Fig. 9, giving the plugs almost unbroken faces without injurious indentations or depressions. The plugs are then packed into boxes under pressure, where they form almost a solid mass, as shown in Fig. 12.

In some cases the plates *f* may be provided with raised surfaces *l* between the projections *g*, as shown in Fig. 11, to depress those portions of the lumps between the embeddings *e* of the wrappers, as shown in Fig. 8, and thus enable the openings caused by the embeddings of the wrappers to be more completely closed, when the lumps are subjected to pressure to finish them into plugs.

The projections *g* may be placed upon the sheet-metal plates on which the shapes or forms rest in the hydraulic press; or the plates *f*, provided with these projections, may be placed with the latter downward upon the tops of the lumps in the shapes or forms under the lower faces of the followers; or the latter may be provided with such projections on their under surfaces instead.

If the portions of the wrappers are to be embedded in the lower and upper faces of the lumps and plugs, the projections may be used beneath and above the lumps in the shapes or forms.

Instead of embedding portions of the wrappers in the faces of the lumps in the shapes or forms, as just described, the lumps may be taken in the condition they commonly leave the shapes or forms, and placed in the finishers or pots, plates being placed between each layer of lumps, provided with projections *g*, (or, if desired, with raised surfaces *l*,) which projections, when the lumps are subjected to pressure, embed portions of the wrappers at intervals in the faces of the lumps, and when the raised surfaces *l* are used they depress the lumps between the embeddings of the wrapper, as before described. After sufficient pressure has been applied the lumps are removed from the pots or finishers, and then replaced therein with the common plain-faced sheet-metal finishing-plates between the contiguous layers, and again subjected to pressure to close the openings caused by the embeddings of the wrappers and finish the plugs, when they are removed and packed under pressure into boxes.

Instead of the projections *g* being straight, as shown in the drawings, they may be shaped in the form of letters or symbols and used to embed portions of the wrappers in the faces of the lumps in the form of letters, words, or symbols, which, when the embeddings are closed, are legible in the plugs.

By my invention plugs of tobacco are produced provided with means for indicating where determined portions of the plugs are to be removed, and for other purposes. These means do not injure the plugs of tobacco in any way, but leave them in substantially the same condition as ordinary solid plugs, so far as packing and preservation are concerned.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of preparing plugs of tobacco for sale, consisting in first embedding portions of their wrappers at intervals in the faces of the lumps, and then compressing the latter to close up the openings of the embeddings and finish said lumps into plugs, substantially as described.

2. A plug of tobacco having portions of the wrapper embedded in its face or faces, and the openings caused by said embedding closed, substantially as described.

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

DAVID WILLIAM DE FOREST.

Witnesses:
M. B. PHILIPP,
A. P. MCKEEL.