

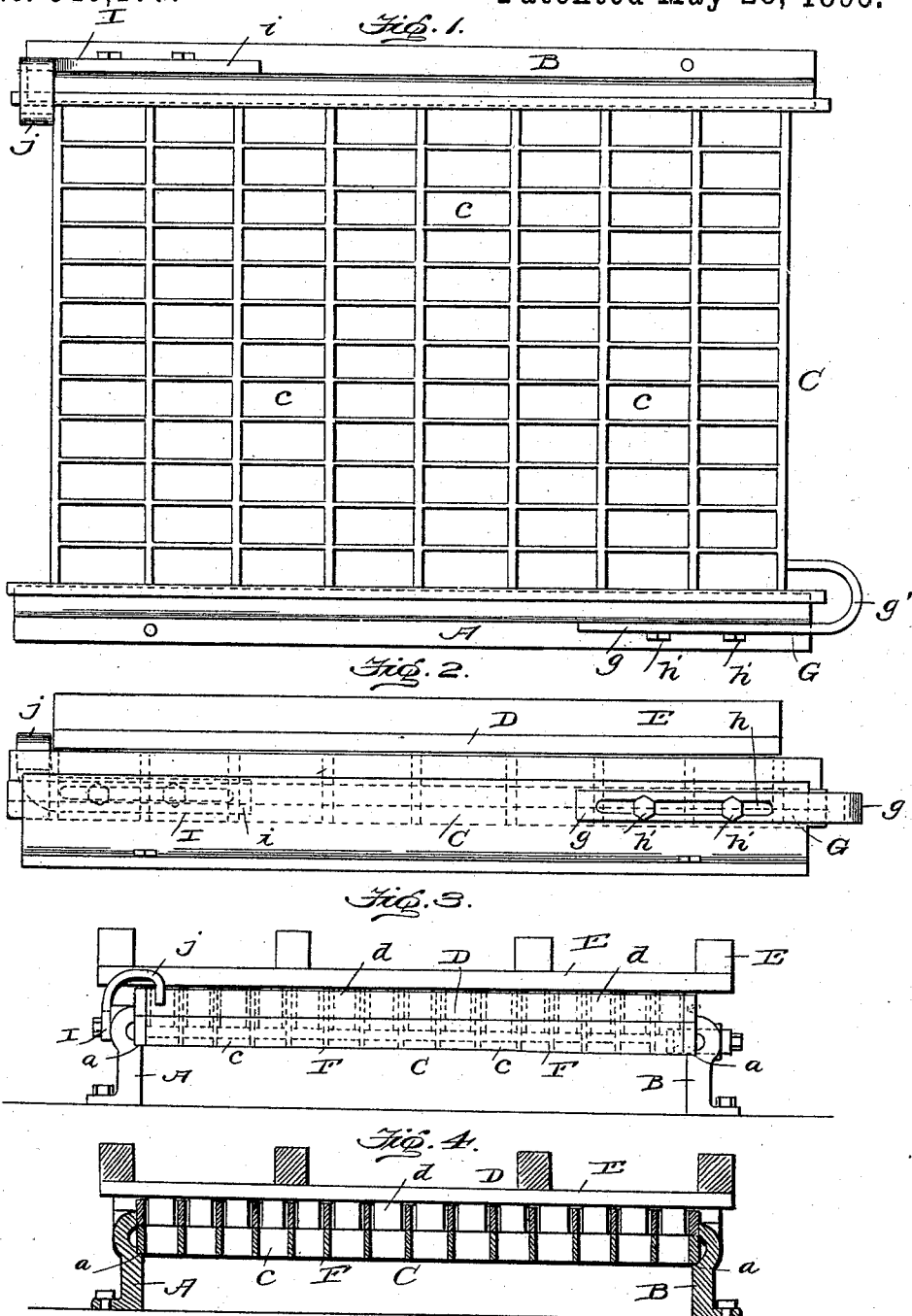
(No Model.)

W. P. MAYO.

APPARATUS FOR FILLING PLUG TOBACCO MOLD FRAMES.

No. 540,177.

Patented May 28, 1895.



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APPARATUS FOR FILLING PLUG-TOBACCO MOLD-FRAMES.

SPECIFICATION forming part of Letters Patent No. 540,177, dated May 28, 1895.

Application filed December 4, 1893. Serial No. 492,752. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. MAYO, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Apparatus for Filling Plug-Tobacco Mold-Frames; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the art of shaping and pressing plug tobacco as now practiced, it is customary to employ two skilled workmen on opposite sides of the hydraulic press. These workmen handle the shapes or molds, and they are engaged in breaking up the shapes, and in putting up the same. The "lumps" of tobacco to be pressed and shaped are required to be placed by these workmen in the mold frames previous to introducing the "sinker" frames into the mold frames, and it is found that these workmen are employed two thirds of their time in placing the "lumps" of tobacco by hand in the mold frames, which is a slow method of filling said mold frames. As these pressmen are necessarily skilled workmen in their particular line and command good salaries, the cost of their labor in large factories is quite an expense.

The object that I have in view is to accomplish the filling of these mold frames at much less expense and with more rapidity, and at the same time relieve the attendants at the hydraulic press of the labor of filling the mold frames, so that it is only necessary for them to place the mold and sinker frames under the pressure head of the press.

According to my present invention, I employ a filler frame, which may be simple and cheap in construction, and which can be filled with the lumps of tobacco by the labor of boys or girls employed in the factory. This filler-frame containing the plugs or lumps of tobacco to be shaped, is adjusted to align or coincide with the mold frame, after which said lumps in the filler-frame are all expelled, at one operation, from said filler-frame into the mold-frame by the action of plungers carried by a reciprocating cross-head.

The invention consists in the combination with a bed or suitable guides, of a mold-frame

fitted thereon, a filler-frame adjusted to coincide with the mold-frame, and a cross-head carrying plungers which, as they are moved, enter the cells of the filler-frame and act to expel the plugs from said filler-frame into the mold-frame.

My invention further consists in the combination with a mold-frame-bed or guides, of a mold-frame adapted to be placed therein, a stop arranged in the path of said mold-frame to limit the movement of the same within said guides or bed, a filler-frame, and another stop in the path of the filler-frame to limit the movement of the latter so that its cells will be brought into line with the cells of the mold-frame, whereby the lumps of tobacco are adapted to be properly expelled from the filler frame into the mold-frame when they are acted on by the plungers of the cross-head; and the invention further consists in the construction and combination of parts which will be hereinafter fully described and pointed out in the claims.

To enable others to more readily understand my invention, I have illustrated the preferred embodiment of my apparatus in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top plan view showing the mold-frame within its bed or guide and the stops for the mold-frame and the filler-frame. Fig. 2 is a side elevation showing the filler-frame adjusted to align with the mold-frame. Fig. 3 is an end elevation illustrating the guides, the mold-frame, the filler-frame in line with the mold-frame, and the plungers of the cross-head in the act of expelling the lumps of tobacco from the filler-frame into the mold-frame. Fig. 4 is a vertical sectional view through the filler-frame, the mold-frame, and the plungers in the position shown by Fig. 3.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A, B, designate the guides or the bed on which the mold-frame, C, is supported.

D is the filler-frame which is placed upon or above the mold-frame, and E is the cross-head that operates above the filler-frame and carries the plungers, F, adapted to operate within the filler-frame and expels the lumps

of tobacco from the filler-frame into the mold-frame at one operation.

The guides, A, B, are arranged parallel with each other, and at a suitable distance apart to accommodate the mold-frame, C. These guides are fixed to a suitable frame, and they may be bolted thereto so as to be adjustable, to vary the space between the same and to accommodate the different widths of mold frames that may be used. These guides are each recessed along their upper, inner edges to provide the seats, *a, a*, on which the lower edges of the mold-frame is adapted to rest; and the seats are located at such distance below the upper edges of the guides that said upper edges of the guides are extended above the mold-frame and serve to properly direct the filler-frame when it is placed upon the mold-frame and between the guides.

The mold-frame, C, is constructed in the manner well known to those skilled in the art, and it is divided by longitudinal and transverse partitions into a series of compartments or cells, *c*, which correspond in size to the lumps of tobacco it is desired to compress within the mold-frame.

The filler-frame, D, is constructed so as to be cheap, but it is similar to the mold frame in that it is divided by longitudinal and transverse partitions into a series of cells or compartments, *d*, which correspond in area to the cells *c*, in the mold-frame. Said filler-frames are made to correspond to any size of mold-frames now in use or to be supplied hereafter to meet the demands of the trade; and said filler-frames can be made of wood, metal, or any other material.

The filler-frames are designed to be filled with the lumps of tobacco by boys or girls in the factory, and as the press-room of the factory is usually crowded with presses and other machinery, the filling of these frames, D, can be done by cheap labor in any convenient part of the factory, after which the filled mold-frames can be placed on trucks and carried to the hydraulic press to be placed by the pressmen along with the sinker frames in the press, in order to subject the lumps to pressure and give them the desired shape of the plug of tobacco.

The mold-frames are placed in the guides, A, B, by sliding them on the seats, *a, a*, from one end of the guides, and this sliding movement of the mold-frame is limited by means of a stop, G, shown by Figs. 1 and 2 of the drawings. This stop is made from a straight bar or metal and bent or curved to form the shank, *g*, and the hook, *g'*. The shank is provided with a longitudinal slot, *h*, through which passes the bolts, *h'*, that serve to clamp the shank to one of the guides, A, and the hook, *g'*, extends around one end of the guide, A, so that its free end terminates in the path of the mold-frame.

The filler-frame, D, is placed directly upon the mold-frame and supported thereon, and it is likewise shoved between the guides, A,

B, preferably from the opposite end to which the mold-frame is introduced between said guides. This sliding movement of the filler-frame is limited by another stop, I, so that the filler frame will be arrested when it rests squarely upon the mold-frame and with its cells in alignment with the cells in said mold-frame. This stop, I, is provided with a longitudinally-slotted shank, *i*, which is bolted to the other guide, B, and the end of this shank is bent upward over the guide and then carried or extended downward, as at *j* in Figs. 1 and 3, to have its free end in the path of the filler frame and above the mold-frame, out of the way of said mold-frame. The detailed construction of these stops, G, I, and the manner in which they are fastened to the guides, A, B, is not material, however, and the construction and arrangement thereof can be varied without departing from the spirit or sacrificing the advantages of my invention.

The cross-head, E, may be of any preferred construction, and the plungers, F, may be made rigid therewith in any preferred way. These plungers, F, are arranged in order to correspond to the cells, *c, d*, of the mold and filler frames, and said plungers are made of such length that they will pass into the cells of the filler-frame and expel or force out the lumps of tobacco from the filler-frame into the mold-frame.

The guides, A, B, and the cross-head and plunger, E, F, may form a part of a machine for expelling plug tobacco for which I filed an application for a patent on the 20th day of October, 1893, Serial No. 488,719, and in the present application I make no claim, broadly, for the combination with guides or bed, a mold-frame having open cells, and a reciprocating cross-head carrying a series of plungers adapted to the mold-frame.

This being the construction of my apparatus, the operation may be described as follows: The lumps of tobacco are placed in the filler-frames by unskilled labor in any part of the factory, and said filler-frames with their contents may be stacked one upon the other on a truck or other vehicle by which they can be conveniently carried to the expelling machine having the guides, A, B, and the reciprocating cross-head with the plungers. An empty mold-frame is placed between the guides, A, B, a filler-frame with the lumps of tobacco therein is placed upon the mold-frame, and the filler-frame is shoved between the guides A, B, until arrested by its stop, I, whereupon the lumps in the cells of the filler frame are brought immediately over the empty cells of the mold-frame. The cross-head is now depressed to force the plungers, F, into the cells, *d*, of the filler-frame and to act upon the plugs of tobacco therein; and these plungers, F, thereby expel the lumps or plugs of tobacco from the cells of the filler-frame into the cells of the mold-frame. The cross-head and plungers are now lifted, the empty filler-frame removed, and the mold-

frame with the plugs of tobacco therein is taken out from between the guides. The mold-frames with the lumps of tobacco therein can be placed in position under the hydraulic press, and hence it is only necessary for the pressmen to place the filled mold frames and sinker frames in the hydraulic press in order to subject them to the pressure and give them the desired shape and solidity.

From the foregoing description it will be apparent that I am able to effect considerable economy in shaping the lumps of tobacco, from the fact that I save the time and labor of skilled workmen in placing the lumps in the mold-frames and employ unskilled, cheap labor to do the work for which high priced labor has been employed.

My apparatus can also be used in turning the lumps or plugs of tobacco, that is, in turning the work from one mold frame into the other. In this kind of work, the lumps or plugs are shaped on both sides, and in the common method, the plugs after having been shaped on one side are taken or knocked out of the mold, turned over or inverted, replaced in the mold, and again placed in the press to have the unfinished side thereof shaped. I avoid this individual removal and replacement of the plugs in the mold, as by my construction, the plugs can be shaped in one mold, the mold inverted or turned bottom side up, the plugs then expelled by the plungers from the first named mold into a second mold placed beneath the same, and the mold with the half finished plugs can be acted on by the plungers or "sinker frame" to finish or shape the previously unfinished sides of the lumps or plugs of tobacco.

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

1. The combination of a mold-frame divided into a series of cells, a filler-frame provided with a series of cells which correspond in form to the cells of said mold-frame, and plungers operating within the cells of said

filler frame to expel lumps of tobacco therefrom and into the cells of the mold frame, substantially as and for the purposes described.

2. The combination of a bed or guides, a mold frame supported thereby and provided with a series of cells, an independent removable filler-frame superimposed upon said mold-frame and having cells which correspond in form to the cells of the mold frame, a cross-head, and a series of plungers carried by said crosshead and arranged to enter the cells of the filler-frame, for the purposes described, substantially as set forth.

3. The combination of guides, a lump-tobacco mold-frame supported therein and provided with a series of cells, a lump-tobacco filler-frame divided into a series of cells of corresponding form to the cells of said mold-frame, a stop on one guide in the path of the mold-frame and below the filler-frame, and another stop in the path of the filler-frame and above the mold-frame, whereby the stops are disposed to avoid interference with the adjustment of the frames with which they do not co-operate, substantially as and for the purposes described.

4. The combination with guides, of a lump-tobacco frame removably fitted thereon and divided into a plurality of compartments, another lump-tobacco frame provided with a plurality of cells which correspond in form to the cells of the first named frame and both frames arranged relatively to each other to bring their corresponding cells into alignment with each other, and means operating in one frame to expel lumps of tobacco from the cells therein and into the cells of the other frame, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM P. MAYO.

Witnesses:

HENRY E. COOPER,
H. T. BERNHARD.