No. 731,144. PATENTED JUNE 16, 1903.

R. M. VAUGHAN.

MACHINE FOR PRIZING PLUG TOBACCO.

APPLICATION FILED JULY 11, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

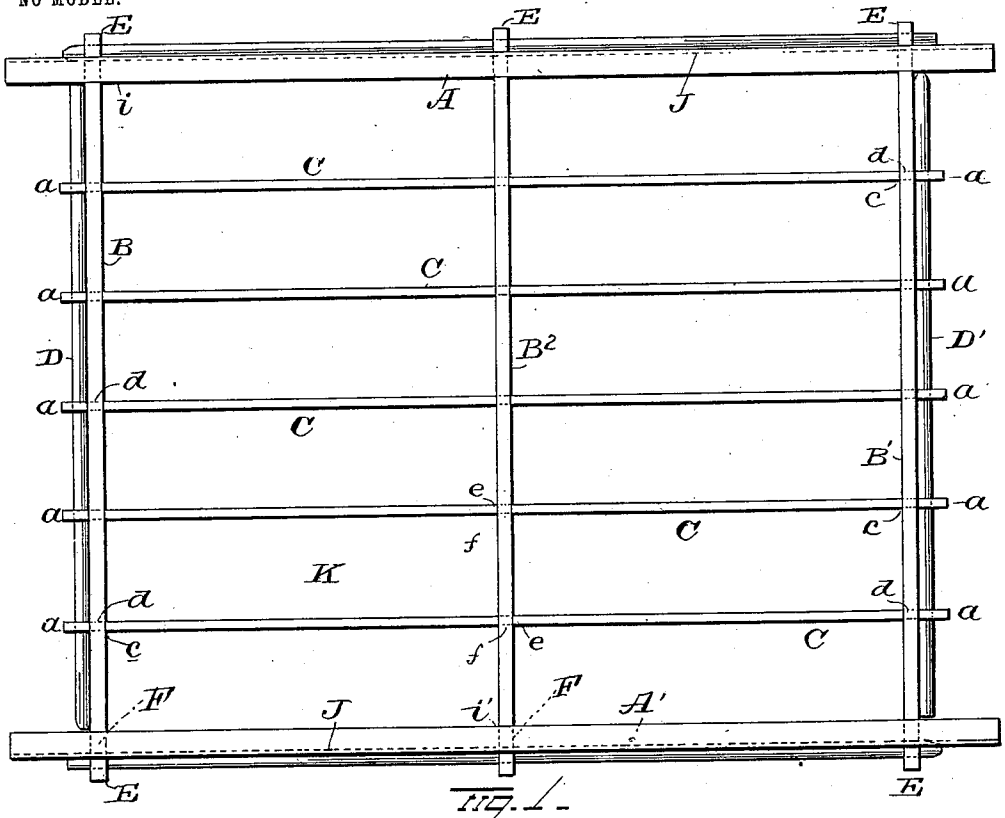


Fig. 1.

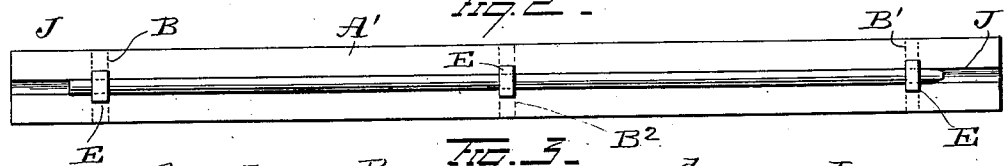


Fig. 2.

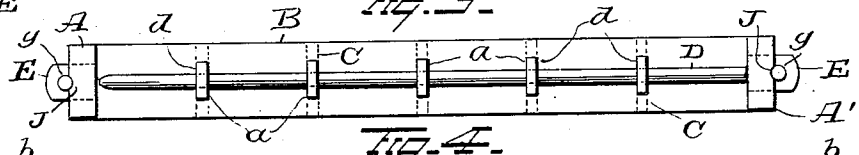


Fig. 3.

Fig. 4.

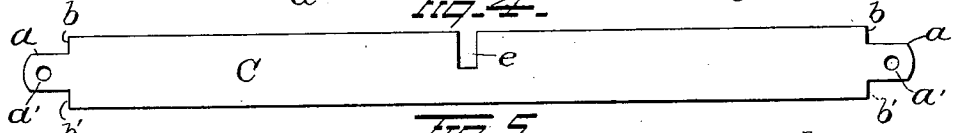
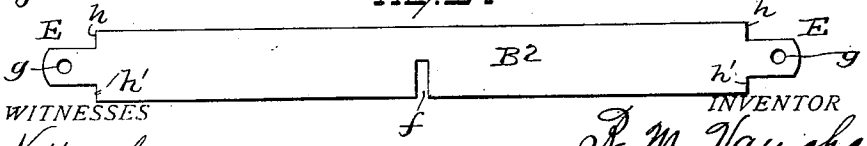


Fig. 5.



WITNESSES

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 6.

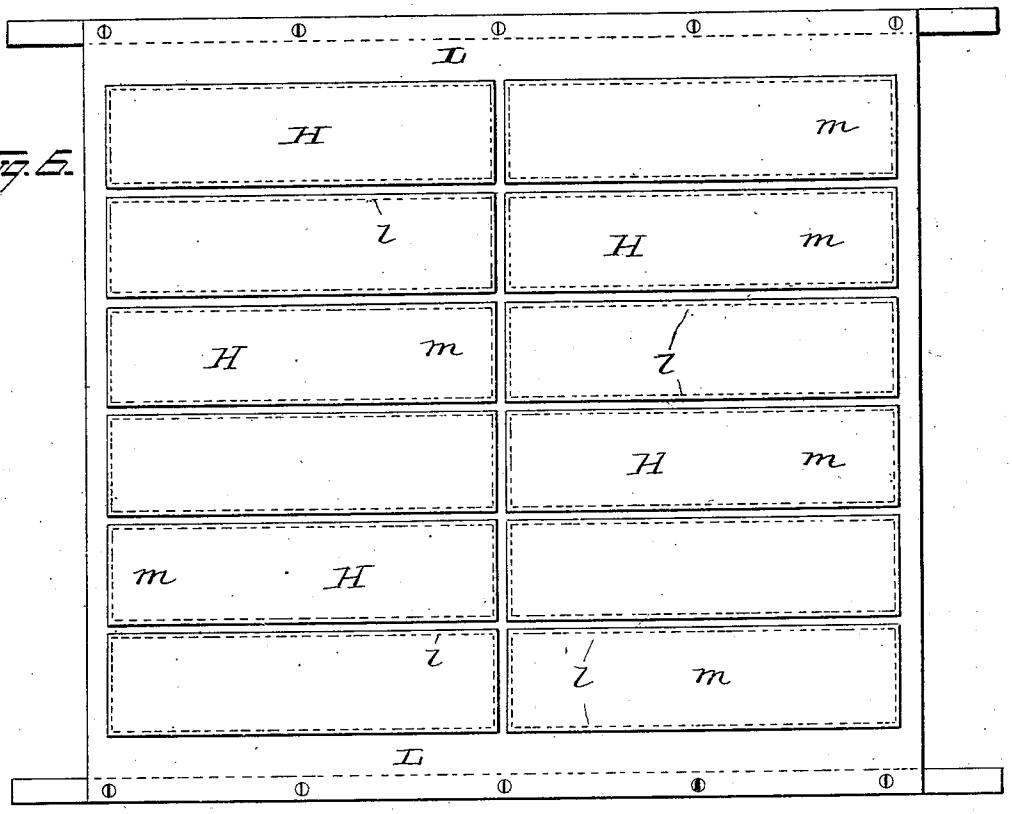
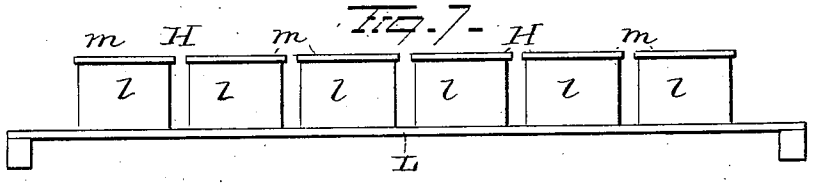


Fig. 7.



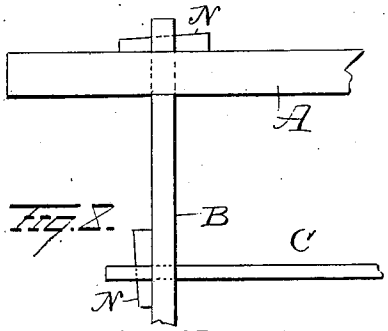


Fig. 8.

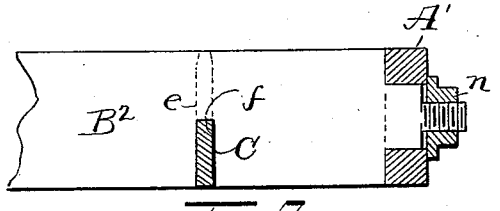


Fig. 9.

WITNESSES

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No. 731,144. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

ROBERT M. VAUGHAN, OF RICHMOND, VIRGINIA, ASSIGNOR TO SAMUEL P. MAYO AND WILLIAM J. WHITEHURST, OF RICHMOND, VIRGINIA.

MACHINE FOR PRIZING PLUG-TOBACCO.

SPECIFICATION forming part of Letters Patent No. 731,144, dated June 16, 1903.

Application filed July 11, 1902. Serial No. 115,234. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. VAUGHAN, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Machines for Prizing Plug-Tobacco; 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.

My invention relates to an improvement in machines for prizing plug-tobacco, the object being to provide a machine of such construction that each one of a series of receptacles constituting the shaper-frames or molds will be of exactly the same size, and thereby permit of the employment therewith of a series of sinker-frames of uniform size and shape and which will fit into the shaper-frames so snugly and perfectly as to produce finished plugs free from fins or excrescences on its ends or sides.

Prior to my invention machines for prizing plug-tobacco have been composed of side rails, cross-bars connecting the side rails, and slats parallel with the side rails, which parts have been arranged to form a series of receptacles constituting shaper-frames or molds. These parts have been made of metal permanently riveted together at their meeting edges and sufficiently strong to withstand the great pressure (amounting to three hundred tons, more or less) to which plug-tobacco is subjected in the operation of "prizing." In riveting the plates together it has been found impossible to produce the shaper-frames or molds of exactly the same size, owing to the distortion and unequal expansion of the metal resulting from the operation of riveting. The metal plates constituting the sides and ends of the molds or shaper-frames are comparatively thin, and in the operation of permanently securing them together by riveting it has been found that owing to the lack of uniformity in the size and quality of the rivets used no two rivets will have imparted to them the same numbers or force of blows or strokes, which operate not only to upset and head the rivets, but to more or less unevenly expand and distort the plates. The effect of this is to produce shaper-frames or molds which so vary in size as to render it necessary to accurately fit a sinker-frame or plunger to correspond to the irregularities of each one of the shaper-frames or molds, because in order to prevent the formation of fins or excrescences on the sides or ends of the completed plug the sinker-frame must fit within the mold most accurately and snugly. The operation of separately fitting a sinker-frame or plunger for each one of a series of molds is slow and expensive, and further objectionable because as thus constructed the parts are not interchangeable, and in the event of any injury to the frame or a portion of it new parts must be manually fitted one to correspond to the other.

The object of my invention is to obviate the undue expense and the objectionable features incident to the construction referred to; and with this end in view the invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a shaper-frame or mold, illustrating one embodiment of my invention. Fig. 2 is a view in side elevation; Fig. 3, a similar view in end elevation. Fig. 4 is a side view of one of the metal slats. Fig. 5 is a side view of one of the cross-bars. Fig. 6 is a plan view of the sinker-frame. Fig. 7 is an end elevation. Figs. 8 and 9 illustrate modifications of the invention.

A A′ are the side rails, B B′ B^2 the cross-bars, and C the slats. The slats C are made of steel, preferably cold-rolled steel plate, and are provided at each end with a tenon *a*, having a hole *a′* extending through it. The shoulders *b b′*, formed on each end of the slat, are made perfectly flat and smooth, so as to fit snugly and firmly against the smooth flat surfaces *c* on the inner sides of the cross-bars B B′. The tenons *a* on the ends of the slats snugly fit and project through the elongated slots *d*, formed in the cross-bars B B′. The ends of the slats are secured in place by means of the steel rods D D′, which fit snugly within the holes in the tenons and serve to

maintain the shoulders $b\,b'$ at each end of the slats in firm and snug contact with the smooth flat inner side or surface c of the cross-bars.

At the longitudinal center of each slat is formed a slot e, equal in width to the thickness of the middle cross-bar B^2, while the latter is provided with a series of slots f, equal in width to the thickness of the slats. These slots are of such length that when the slats and cross-bars are assembled and secured together in the manner shown the upper edges of the slats and cross-bar B^2 will be flush with one another. The cross-bar B^2 is preferably made of considerably-thicker steel plate than is employed to make slats in order that it shall constitute a thoroughly strong, rigid, and reliable end wall for the two adjacent molds. The side walls of the slots in the slats abut against the opposite sides of the cross-bar, while the side walls of the slots in the cross-bar abut against the opposite sides of the slats, and hence the parts mutually cooperate in producing a strong, unyielding, and reliable juncture and fastening at the adjacent ends and corners of the molds or shaper-frames.

The cross-bars B, B′, and B^2 are each provided at their opposite ends with tenons E, each of which has a hole g formed therein. The tenons E are constructed to snugly fit within and project through the rectangular slots F, formed in the side rails A. The ends of the cross-bars are secured in place by means of steel rods H H, which pass through the holes g in the tenons E. The shoulders $h\,h'$ on each end of the cross-bars are made perfectly flat and true, so as to fit squarely and firmly against the inner sides $i\,i'$ of the side rails. In order that the ends of the cross-bars shall be drawn snugly and firmly against the inner sides of the side rails and be retained against any displacement, a longitudinal groove J is formed in the outer side of each side rail, such groove intersecting the rectangular openings formed therein. The fastening-rods are seated within these grooves, which are of such form and depth that when the rods are secured in place the latter will operate to maintain the ends of the cross-bars snugly against the inner sides of the side rails and will be prevented from slipping and becoming displaced by their extended frictional contact with the grooves J.

The slats, cross-bars, and side rails are manufactured by suitable machinery and with such accuracy that when they are assembled and fastened together in the manner described each shaper-frame or mold K of the series will be of exactly the same size and dimensions as every other mold of the entire series, because the construction of each part is such that the side and end walls of all of the shaper-frames or molds of the entire series are firmly secured by exterior fastenings and without necessitating any upsetting or distortion of portion of the metal which enters into the construction of the shaper-frame or molds.

L is the bed plate or support of the sinker-frame and has riveted or otherwise secured thereto a series of sinkers or plungers M, each of which consists of a wooden block l and a rectangular steel plate m, the outer edges of which project laterally a slight distance from the sides and ends of the wooden block. Plates m are stamped out of sheet-steel and are all of exactly the same dimensions, and each is adapted to snugly fit in any one of the series of shaper-frames or molds. It is important and essential that the plates m be made to snugly fit within the shaper-frames in order to avoid the formation of "fins" on the edges of the plug-tobacco, which is objectionable and impairs its value and salability, and I am enabled to not only insure the production of snugly-fitting sinker-plates, but to produce them in a cheap and satisfactory manner by the use of suitable dies and with the result that all of the plates are of exactly the same size and are interchangeable one with another.

My improved machine can be produced at a comparatively small initial cost. Its construction obviates the manual fitting of each sinker or plunger to a particular shaper-frame or mold, and in the event any of the parts become broken or distorted it will permit of their ready replacement without injury or the necessity of sacrificing such parts as are not injured or broken.

Fig. 8 represents a modification in which the ends of the slats and cross-bars are drawn tightly against their seats and retained in place by the wedges N. Fig. 9 illustrates another modification in which the tenons on the ends of the slats and cross-bars are screw-threaded and secured in place by nuts n.

Owing to the fact that the slats, cross-bars, and side rails are machine-made and standardized, the parts when assembled will produce a series of shaper-frames or molds all of which will be of exactly the same size and dimensions, and the end walls of the slats and cross-bars will abut and be snugly seated against the side walls of the cross-bars and side rails and be retained against displacement by removable fastening devices located exterior to the shaper-frames or molds.

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

1. In a machine for prizing tobacco the combination with metallic side rails and cross-bars rigidly secured together, of separate metallic slats constructed with shoulders on their ends which abut and seat against the inner sides of the cross-bars, forming a series of shaper-frames or molds, and fastening devices exterior to the shaper-frames or molds and engaging said slats for securing them in place, substantially as set forth.

2. In a machine for prizing tobacco the

combination with metallic cross-bars having fixed relation to each other and provided with slots or openings, and metallic slats constructed with tenons which project through the slots in the cross-bars and with shoulders which snugly fit and seat against the inner sides of the cross-bars, of removable devices adapted to coöperate with said tenons for removably securing the slats in place, substantially as set forth.

3. In a machine for prizing tobacco, the combination with metallic cross-bars provided with slots or openings; metallic slats constructed with tenons which project through the slots in the cross-bars and with shoulders which snugly fit against the inner sides of the cross-bars, and fastening devices applied to said tenons for securing the ends of the slats in place, of an intermediate cross-bar provided with slots in which are received the central portion of the slats, substantially as set forth.

4. In a machine for prizing tobacco, the combination with side rails constructed with slots or openings, cross-bars provided with slots or openings, and with tenons projecting through the slots in the side rails, and slats provided with slots or openings and with tenons projecting through the slots in the cross-bars, of fastening devices applied to the tenons for retaining the cross-bars and slats against displacement, substantially as set forth.

5. In a machine for prizing tobacco the combination with side rails, end cross-bars, and an intermediate cross-bar, of slats interlocked with the intermediate cross-bar and provided with tenons which project through the end cross-bars, and devices applied to said tenons for drawing the inner ends of the slats snugly against the inner sides of the end cross-bars, substantially as set forth.

6. A plug-tobacco mold-frame for prizing plug-tobacco having, in combination, side rails, cross-bars, and slats, the cross-bars having fastening projections which extend through and outside of the side rails, the slats having fastening projections which extend through and beyond the outside cross-bars, all of said projections having external apertures, and four locking-bars, two of which are for the cross-bars, each being located outside of and alongside of one of the side rails and extending through all of the apertures of the cross-bar projections extending through said side rail, and the other two of said locking-bars being exterior to the two outside cross-bars respectively and each extending through all of the apertures of the slat projections extending through the corresponding cross-bar, substantially as set forth.

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

ROBERT M. VAUGHAN.

Witnesses:
J. McCAW FOX,
B. S. COMPTON.