(No Model.)

F. N. McKEAN.

Machine for Booking and Cutting Cigar Wrappers.

No. 240,529. **Patented April 26, 1881.**

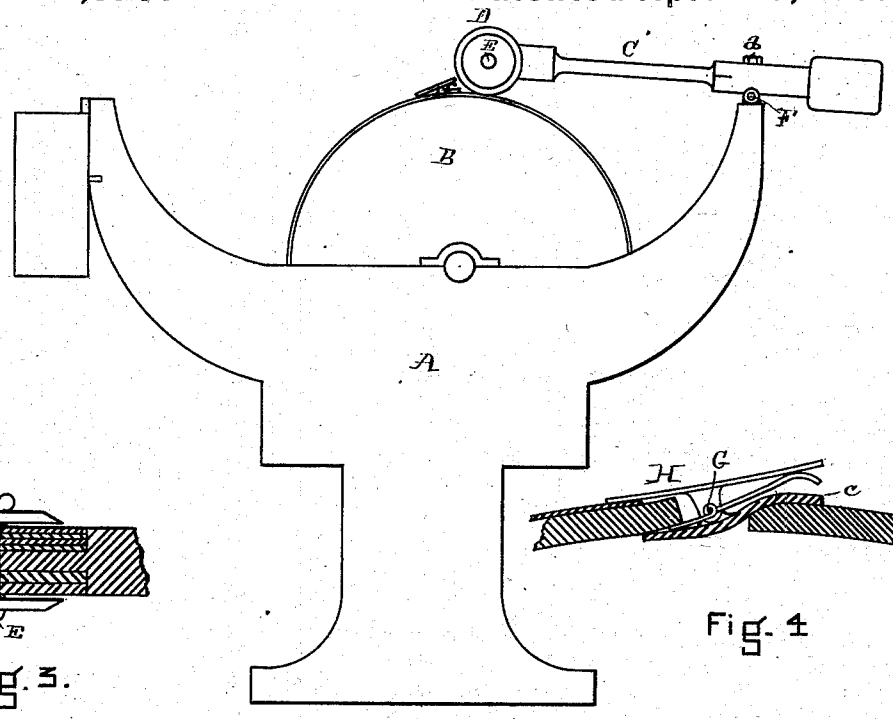


Fig. 1

Fig. 3.

Fig. 4

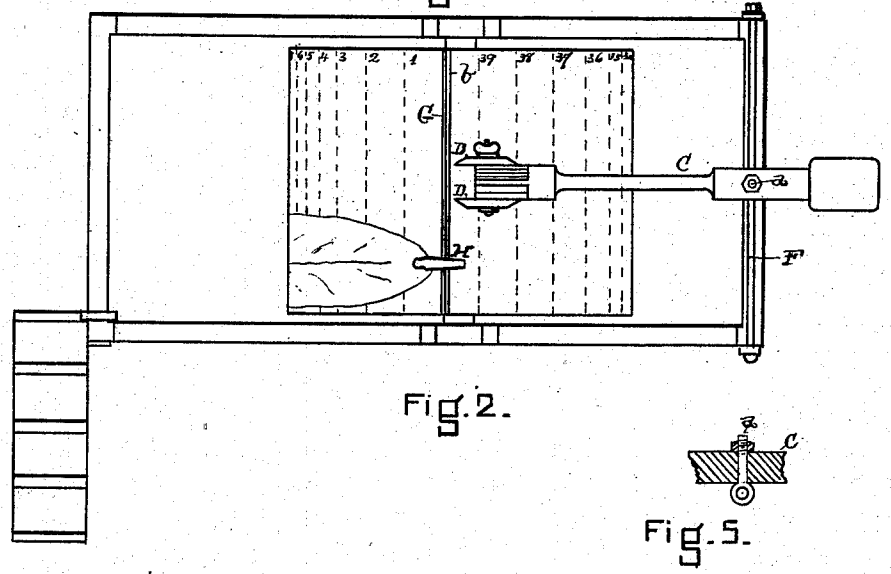


Fig. 2.

Fig. 5.

WITNESSES

L. L. Tilden

C. A. Ryan

INVENTOR

Frank N. McKean

By C. B. Tilden

Attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK N. McKEAN, OF NASHUA, NEW HAMPSHIRE.

MACHINE FOR BOOKING AND CUTTING CIGAR-WRAPPERS.

SPECIFICATION forming part of Letters Patent No. 240,529, dated April 26, 1881.

Application filed February 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANK N. McKEAN, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Machines for Booking and Cutting Wrappers for Cigars, of which the following is a specification.

My invention relates to mechanism used in preparing the wrappers for cigars. In this manufacture certain selected leaves are used to form the outer wrapper, and of these leaves but one side can be turned outermost. As the fibers or reticulations of the leaf branch outward and toward the end of the leaf it results, as is well known to those skilled in the art, that every leaf must cut both right-hand and left-hand wrappers. The cutting of these by hand involves some difficulties. After the leaves are stripped they must be booked. This consists in laying the leaves open, carefully smoothing them out to remove all wrinkles and folds, and laying one leaf upon another until a "pad," as it is called, is formed, weighing from two to two and one-half pounds. These pads are formed in order to prevent the leaf from drying too rapidly, and also to keep its surface as smooth as possible, in order to put it in proper condition for cutting into wrappers. It is generally customary to keep the leaves in the pad for several days after they are booked, in order to prevent their curling when they come to the block to be cut, some manufacturers, in fact, keeping a supply on hand from four to five days in advance. To cut the wrappers by hand, the leaf must be spread smoothly upon a block after it has been stripped in the manner described. The stripping is accomplished by removing the central stem, which runs from end to end of the leaf, the latter being kept constantly in a slightly-moist condition, to enable it to be handled. As it has been slightly dampened, and is a little drier upon and near its edges than it is in the central portions, the whole leaf has, when extended upon a plain surface, a strong tendency to curl. As there are no means of holding it in place, except the hands of the operator, it is a work of great difficulty to cut the wrapper so smoothly and accurately that it will not require trimming afterward in order to remove the ragged edges of the projecting extremities of the stems. Moreover, the operator must judge of the length and width of the wrapper he is cutting by his eye, and this requires long practice, and, even in the hands of a skillful workman, perfect uniformity is never achieved.

My invention consists, therefore, in a certain novel construction and combination of mechanism for booking and cutting wrappers, whereby I not only avoid many of the objections met with under the hand method, but also gain some highly important advantages in point of economy of material, greater accuracy in the work, and a very considerable saving in time and labor. In the present state of manufacture in this country, and with the great competition which is met with, these advantages are of the utmost importance.

I will first describe the construction and mode of operation of my machine, and will then proceed to point out the special advantages resulting from my invention.

Referring to the drawings forming part of this application, Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a detail view of a part detached. Fig. 4 is a detail view; and Fig. 5 is a view of a portion of the handle of the cutting-tool.

A, in the drawings, indicates the frame of my machine, which may be of any suitable form, and of metal or wood. The upper portion of this frame consists of a rectangular support, (shown in plan in Fig. 2,) with its ends raised, as seen in Fig. 1. A little to the right of the central point of the frame I journal a cylinder, B, formed of any suitable material, though for the sake of lightness I prefer wood. This cylinder or drum is covered by a zinc jacket, which is so applied that its surface is perfectly smooth and free from all indentations or inequalities, the wood beneath furnishing support for the zinc and preventing its surface from becoming indented in use.

Upon the end of the frame which is nearest the axis of the drum B, I place a movable cutting-tool, constructed in the following manner and having a free lateral movement, and also capable of swinging axially or radially upon its attaching-bolt. This cutting-tool consists of a handle, C, having at its free end two disks,

D D, journaled upon a pin or bolt, E, which passes through the end of the handle. These disks D have their outer edges ground off beveling, so as to form a sharp cutting-edge next to the handle. They are so mounted as to turn freely upon the pin E, and, by the construction shown in Fig. 3, they may be set nearer to or farther from each other, in the manner presently to be described. The handle C is attached to the frame by means of an eyebolt, *a*, (seen in Fig. 1,) which passes up through the handle, and its eye running upon a wire rod, F. By this construction it will be seen that the tool may be freely moved in all directions, as it traverses the rod F from side to side of the frame and also swings upon the bolt *a* radially.

In applying the zinc covering to the drum the ends of the metal do not fully meet, a space being left between them, as shown at *b*, Fig. 2. A wire, G, is placed in the center of this open space, and upon this wire is placed a clip or spring presser-plate, H, having its upper part resting upon the surface of the zinc. The construction of this clip is shown in Fig. 4, the under portion or plate, *c*, being shorter than the upper, and so constructed that its end lies under the edge of the zinc. The wire G passes through ears on this clip, whereby it may be moved from side to side of the drum or adjusted at any desired point by sliding upon the wire G.

The operation of my machine is as follows: The operator takes his seat upon the side in such a manner that his right hand will be nearest the cutter-handle C. The tobacco-leaves, for convenience, may be hung over the opposite end of the frame, convenient to the left hand of the operator. These leaves need not have been booked, and the amount of moisture they contain need not be so particularly regarded as would be necessary in cutting by hand. The operator takes the upper leaf from the pile, strips out the central stalk, opens the leaf, and lays it upon the drum, opening the spring-clip H with the right hand and inserting the tip of the leaf under it. This clip firmly holds the tip in position during the remainder of the operation on the leaf, and is equivalent to a third hand to the operator. He next stretches the leaf smoothly upon the surface of the drum, booking it out carefully, so as to remove all folds and curls until it lies smoothly against the surface of the zinc. As this operation proceeds from the tip toward the butt of the leaf, the drum is revolved slowly toward the right, and the leaf is stretched toward the left of the operator.

I wish at this point to call attention to one extremely important point. I have already mentioned the fact that the spring-clip, which holds the tip of the leaf, was equivalent to an additional hand, as it holds the leaf and allows the operator to use both hands in booking it out. It should also be noted that the cylindrical surface of the drum, upon which the leaf is laid, also has a powerful effect in preventing it from curling after it has once been smoothed and pressed down upon the drum, as the leaf clings to the curved face of the drum and retains its position far more perfectly than would be possible with a flat surface.

When the leaf is properly booked out, the operator, holding his left hand upon its butt to keep it in place, grasps the handle C of the cutting-tool and swings the cutting-disks down against the surface of the drum. He first adjusts its position, so that one of the disks will run over the edge of the leaf and trim it. He then cuts directly down through the center of the leaf, nearest the butt, in order to form the butt-wrappers, and after these are cut the tool is swung around so as to run quartering over the drum, and these wrappers are severed and laid aside. He then, in the same manner, cuts the tip-wrappers, which consumes the entire leaf. The entire cutting is performed by revolving the drum with the left hand and pressing the cutters down upon its surface with the right, the disks turning as they run over the surface, so that all shearing cuts are avoided.

The surface of the drum is laid off into equal spaces by lines parallel with its axis, with the interval of an inch between them. These lines are indicated in Fig. 2, and may be numbered on the edge of the drum, so that the operator can cut his wrappers of any required length and secure perfect uniformity without being compelled to rely upon his eye. As to the width of the wrapper, I determine it by setting the two disks of the cutter at the desired distance apart by means of removable blocks I I, placed on the end of the handle between the disks, as seen in Fig. 3. This, however, may be accomplished by any other means, as I by no means confine myself to the special construction shown. It should also be noted that although I use a cutter having two disks, which may both cut at the same time, by merely turning the handle slightly, one disk only will come in contact with the leaf, so that the operator, should the form or condition of the leaf require it, may cut a single wrapper at a time, instead of cutting two.

The advantages of my invention will be readily apparent to any person who is skilled in the art to which it belongs. It effects a great economy of time, not only from the fact that it operates more speedily, but for the important reason that in using it the leaves do not need to be booked and put up in pads, as is the case in hand-cutting, thus saving one very essential and laborious step in the process of manufacture. An average workman will "book out" and "cut" upon my machine as much tobacco as can be booked alone by hand during the same time. Again, in cutting with my disk-cutters, instead of a knife, which is drawn over the leaf, I sever the ends of the stems cleanly and neatly, so that the wrapper does not require any trimming after it is cut. This is an important factor in economy of time, as in hand-cut wrappers nearly half have to be trimmed off after cutting. Again, I effect

a considerable saving in stock, since the leaf is not handled so much as in the hand method, and therefore runs less risk of being torn. By spreading upon a drum, instead of upon a plain level surface, I also avoid tearing in a considerable degree; and, especially, by cutting with a rolling instead of a drawing edge, I contribute largely to the same result. Furthermore, by using my machine the degree of moisture in the leaf is not of so much importance, as I can easily cut a leaf which is so wet that it would tear to pieces under a knife. Moreover, by my invention an ordinary workman may cut wrappers of the best quality, a little practice being all that is needed to make his work as good as that of the best hand-cutter. Thus an inexperienced workman may perform, at a low rate of wages, the same labor for which skilled operators have heretofore been required, and to whom the highest wages are paid.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In machines for booking and cutting wrappers for cigars, the combination, with a rotating cylinder having a suitable fastening device for holding the leaf, of one or more disk-shaped cutters mounted upon a support having both a lateral and pivotal adjustment, and adapted to rest upon the surface of the cylinder and to turn upon the same as it revolves, substantially as and for the purpose set forth.

2. The combination, with the metal-covered cylinder, of a spring-clamp adjustable laterally upon the periphery of said cylinder, and the movable cutting-tool having disk-shaped cutters and mounted upon a handle having both lateral and pivotal adjustment.

3. The combination, with the cylinder B, having a metallic covering, of the movable cutting-tool having disk-cutters D D, the clip H, wire G, and eye-bolt *a*, having lateral adjustment upon the bar F, as and for the purpose set forth.

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

FRANK N. McKEAN.

Witnesses:
L. L. TILDEN,
CHAS. B. TILDEN.