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PAPER SLOTTING MACHINE.

APPLICATION FILED JUNE 23, 1909.

1,002,296.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

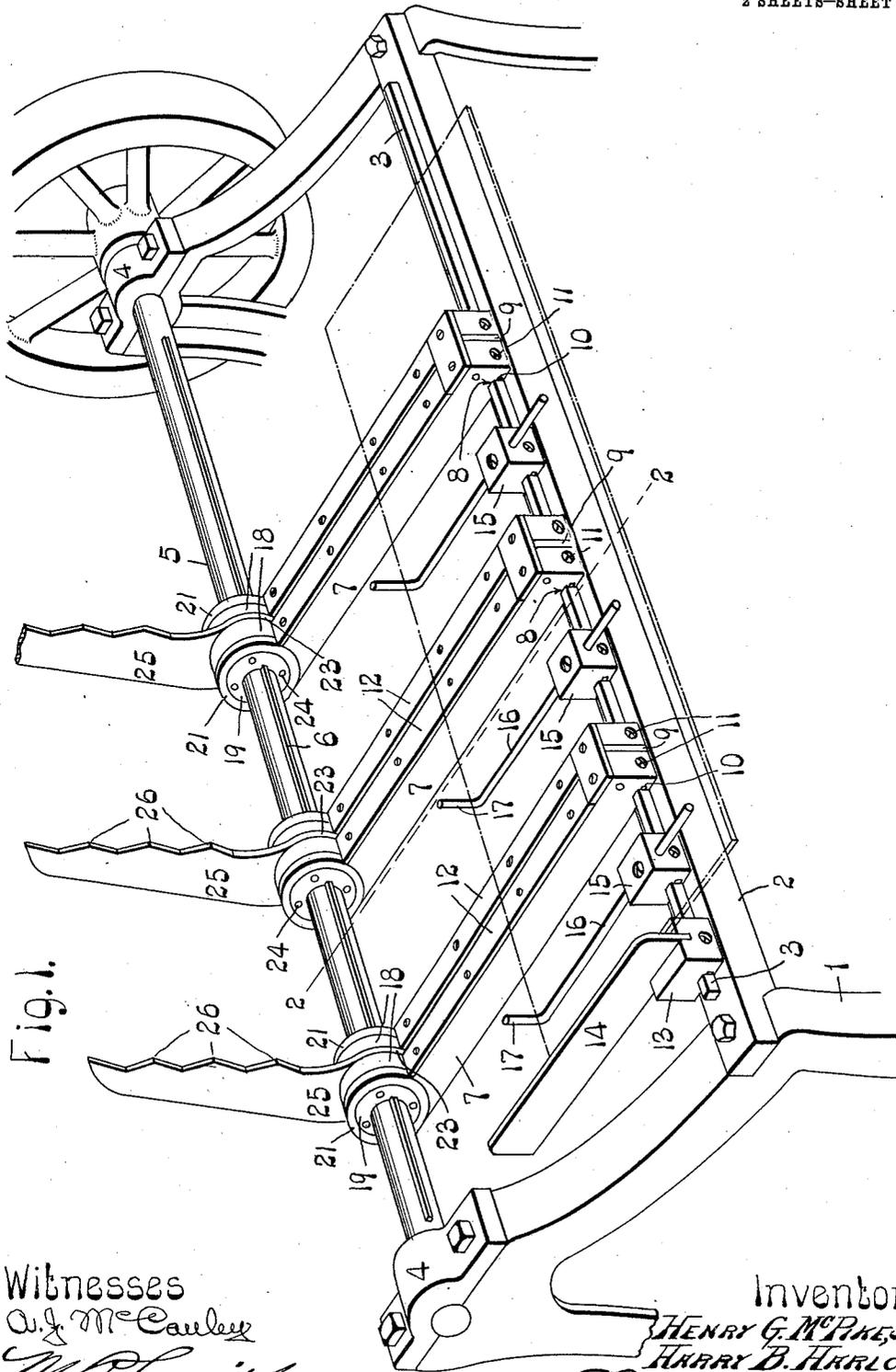


Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

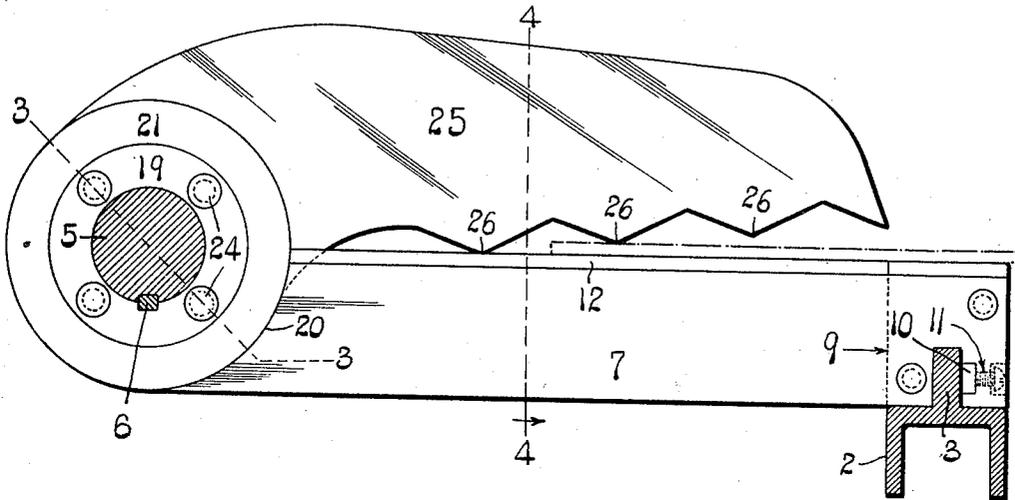


Fig. 3.

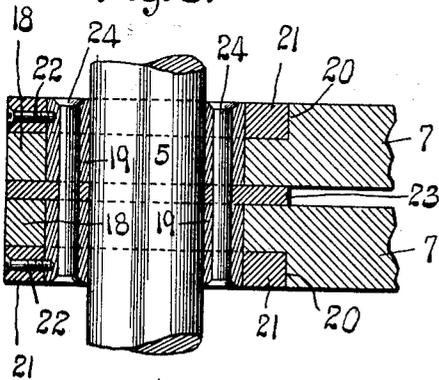
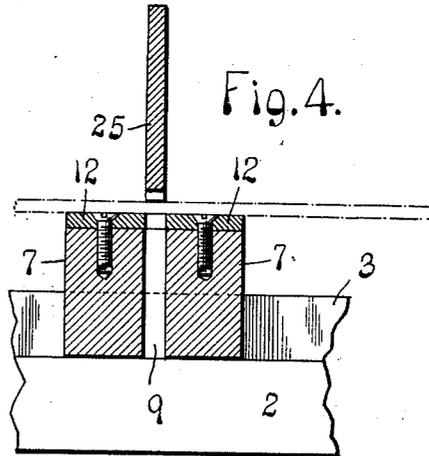


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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PAPER-SLOTTING MACHINE.

1,002,296.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HENRY G. McPIKE, Jr., and HARRY B. HARLOW, citizens of the United States, residing at Alton, Illinois, have invented a certain new and useful Improvement in Paper-Slotting Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a cardboard slotting machine of our improved construction. Fig. 2 is an enlarged transverse section taken on the line 2—2 of Fig. 1. Fig. 3 is a detail section taken on the line 3—3 of Fig. 2. Fig. 4 is a detail section taken on the line 4—4 of Fig. 2.

Our invention relates to a machine for slotting corrugated paper board, cardboard, thin veneer, and like material, used for the purpose of forming packing boxes and fillers adapted to inclose fragile articles during transportation or storage.

In packing small, fragile articles it is the practice to form a series of compartments or cells by arranging strips of corrugated paper board, or like material, at right angles to one another, and in order to do so the strips of packing material must be uniformly slotted in order to produce a structure having compartments or cells of uniform size, and we propose to provide simple, inexpensive means whereby the strips of corrugated board, or like packing material, are uniformly cut or slotted.

To the above purposes, our invention consists in certain novel features of construction and combination of parts hereinafter more fully described and claimed.

In the construction of the machine shown, we employ a pair of side frames 1, the front portions of which are connected by a rail 2, on top of which is arranged a longitudinally disposed rib 3. Formed on the rear portions of the frames 1 are bearings 4, in which is arranged for rotation a shaft 5 driven in any suitable manner, and arranged on said shaft 5 is a key or feather 6. A se-

ries of cardboard supports in the form of rails 7 are arranged in pairs and extend from the rail 2 to the shaft 5, the under sides of the forward ends of said rails being slotted, as designated by 8, in order to receive the rib 3.

Arranged between the forward ends of each pair of rails 7 is a filler block 9, and carried by the forward ends of said rails 7 is a bearing block 10, which engages the front side of the rib 3. Passing through the lower portions of the forward ends of said rails 7 are set screws 11 which bear against the block 10 and force the same toward the rib 3.

The construction just described provides for the adjustment of the forward ends of the pairs of rails 7 longitudinally upon the rail 2, and also provides for the locking of said pairs of rails 7 after adjustment.

Fixed on top of the rails 7 are strips 12 of steel or hardened metal, the inner edges of which form cutting edges, which oppose the cutting edges of the knives or cutters which pass between the pairs of strips 12 and pairs of rails 7.

Adjustably arranged on the rib 3 at one end of the machine, and preferably the right hand end thereof, is a block 13 carrying a rearwardly projecting vertically disposed plate 14, which forms a guide or gage against which the left hand end of the section of cardboard engages when said section is placed on the machine.

Blocks 15 are adjustably arranged on the rib 3 between the forward ends of the rails 7, and carried by said blocks are rearwardly projecting adjustable rods 16, the rear ends of which are bent upward to form fingers 17, which perform the function of gages against which the rear edge of the section of cardboard is positioned when placed on the machine.

The rear ends of the rails 7 are provided with integral lugs 18 which encircle the shaft 5, and arranged to rotate in said lugs are collars 19 which fit snugly upon and rotate with the shaft 5 by reason of the key or feather 6.

Fitted on to the outer ends of the collars

19 and occupying suitably formed recesses 20 in the outer faces of the lugs 18 are retaining lugs 21, which are rigidly fixed to said collars 19 by means of set screws 22, or like fastening devices.

23 designates the hub of a revolving knife, which hub is in the form of a ring which fits snugly between the rear portions of the rails 7, and passing through coinciding apertures formed through the collars 19 and the interposed hub 23 are rivets 24, or like fastening devices.

By the construction just described, it will be noted that the collars 19, lugs 21 and hub 23 are rotated with the shaft 5 and bear in the rings 18 formed on the rear ends of the rails 7.

Formed on or fixed to each of the hubs 23 is a cutter arm 25 in the form of a plate of such thickness as to readily pass between the plates 12. One edge of the cutter is provided with a series of points 26 having inclined cutting edges on either side of each point, forming a zigzag cutting edge, and this edge of the plate or cutter performs the cutting or slotting operation as it passes between said plates 12. Any number of cutters and corresponding pairs of rails 7 may be located on the machine, and by loosening the set screws 11, the pairs of rails and cutters may be adjusted longitudinally and spaced the desired distances apart.

In the operation of our improved machine, the shaft 5 is rotated in any suitable manner, and the sections of cardboard, corrugated paper board, or veneer, are placed one at a time upon the pairs of rails, the left hand end of each section bearing against the gage plate 14, and the rear edge of said section bearing against the fingers 17. As the cutters 25 pass between the plates 12 located on the pairs of rails 7, the section of material will be slotted, said cutters making a shear cut through the material by reason of the points 26 on the edges of said cutters, and thus uniform and clean edged slots are formed in the material. At the time the slotting operation is performed, the rear one of the points of each knife first engages the cardboard, or like material, and in a measure clamps the same upon the supports without exerting any backward thrust on the material which is the case where the slotting device or cutter first engages against the rear edge of the section of material. The succeeding points pass through the material, and as the edges of the cutters between said points are inclined relative to the horizontal plane occupied by the strips 12, a shear cut is made through the material, and which manner of cutting can be accomplished with an expenditure of little power.

A machine of our improved construction is comparatively simple, is operated with

very little power, is readily adjusted, and very rapidly performs the work of slotting cardboard, corrugated paper board, and like material, used for packing purposes.

We claim:

1. In a machine of the class described, comprising a frame, a shaft journaled for rotation therein, a series of independently adjustable pairs of rails supported by the frame, and shaft, means whereby the rails are locked to the frame in their adjusted positions including an adjustable screw and cutters mounted to rotate with and slide upon the shaft adapted to pass between the pairs of rails.

2. In a machine of the class described, comprising a frame, a shaft journaled for rotation therein, a series of independently adjustable pairs of rails supported by the frame, and shaft, means whereby the rails are locked to the frame in their adjusted positions including an adjustable screw bearing carried by the rails, and adapted to engage the frame, and cutters mounted to rotate with and slide upon the shaft adapted to pass between the pairs of rails.

3. In a machine of the class described the combination with a rotating shaft, a blade mounted thereon, a hub therefor comprising a sleeve on either side of the blade, and fastened together, and two bearing collars attached to the ends of each sleeve.

4. In a machine of the class described, a rotating shaft, a series of blades adjustably mounted thereon, a frame supporting the shaft, a rib or rail mounted on the frame opposite the shaft and a series of work guides mounted adjustably on said rib.

5. In a machine of the class described, a frame, a shaft journaled for rotation therein, a series of arms having hubs mounted to rotate with and slide upon the shaft, each arm having a zigzag cutting edge providing a series of sharp penetrating points with inclined cutting edges on either side thereof, a series of pairs of rails forming a work support adjustably mounted on the frame and engaging the hubs of the arms so that the arms pass between the pairs of rails.

6. In a machine of the class described, a frame, a shaft journaled for rotation therein, an arm having a hub mounted to rotate with, and slide upon the shaft, said arm having a zigzag cutting edge providing a series of sharp penetrating points with inclined cutting edges on either side thereof, and a pair of rails forming a work support adjustably mounted on the frame and engaging the hub of the arm on either side thereof.

7. In a machine of the class described, a frame, a shaft journaled for rotation therein, a series of arms having hubs mounted to rotate with and slide upon the shaft, each arm having a zigzag cutting edge, compris-

ing a series of sharp penetrating points with
oppositely inclined cutting edges on either
side thereof, a pair of work supporting rails
for each cutter, the rear ends of which rails
5 are mounted on the hubs of the arms and ad-
justable gages on the support.

In testimony whereof, we hereunto affix

our signatures in the presence of two wit-
nesses, this 7th day of June, 1909.

HENRY G. McPIKE, JR.
HARRY B. HARLOW.

Witnesses:

JAMES F. WELLS,
PEARL B. BRAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."