April 12, 1927. 1,624,235

B. E. HALL

PAPER CUTTER

Filed May 27, 1925 2 Sheets-Sheet 1

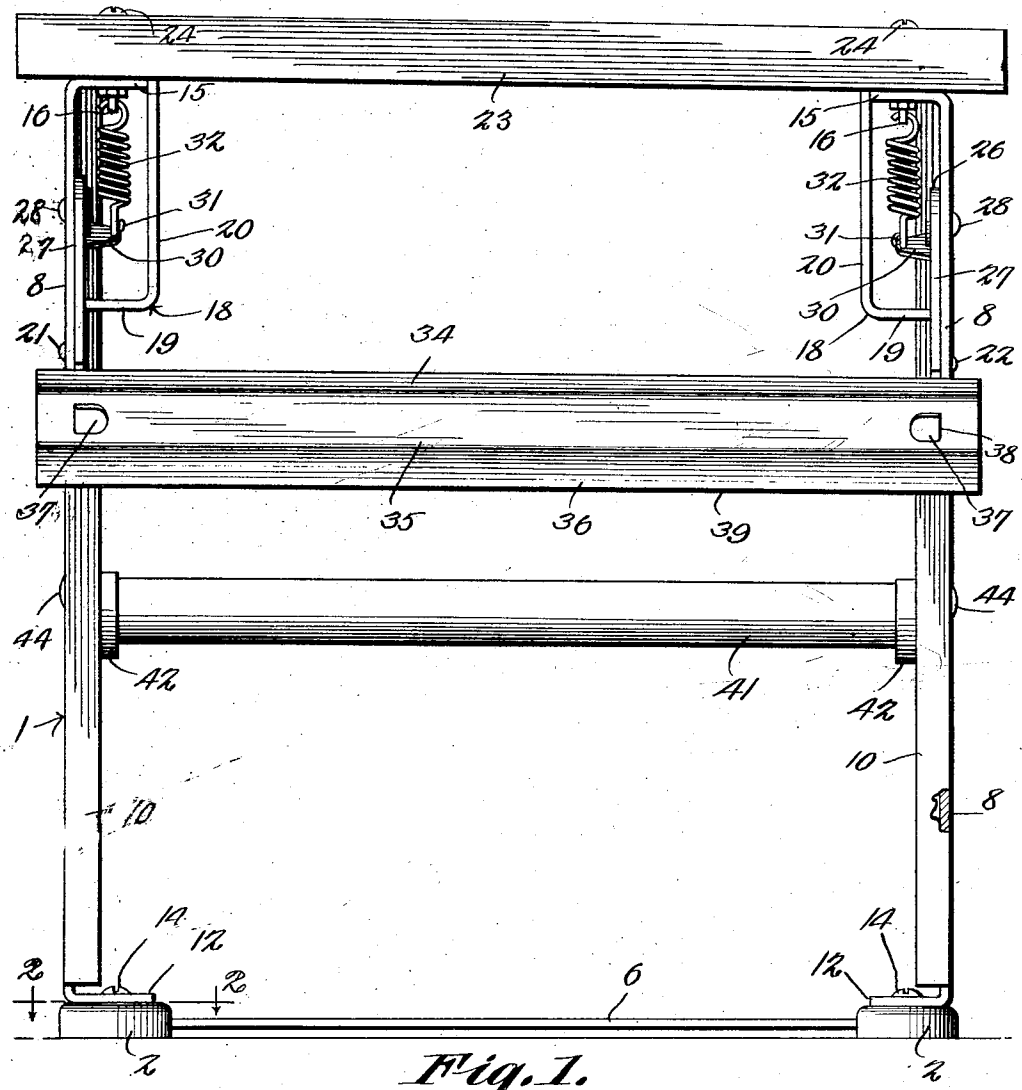


Fig. 1.

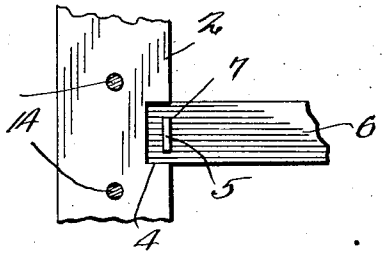


Fig. 2.

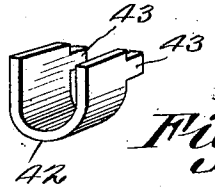


Fig. 3.

Inventor

B. E. Hall

By C. A. Snow & Co.

Attorneys.

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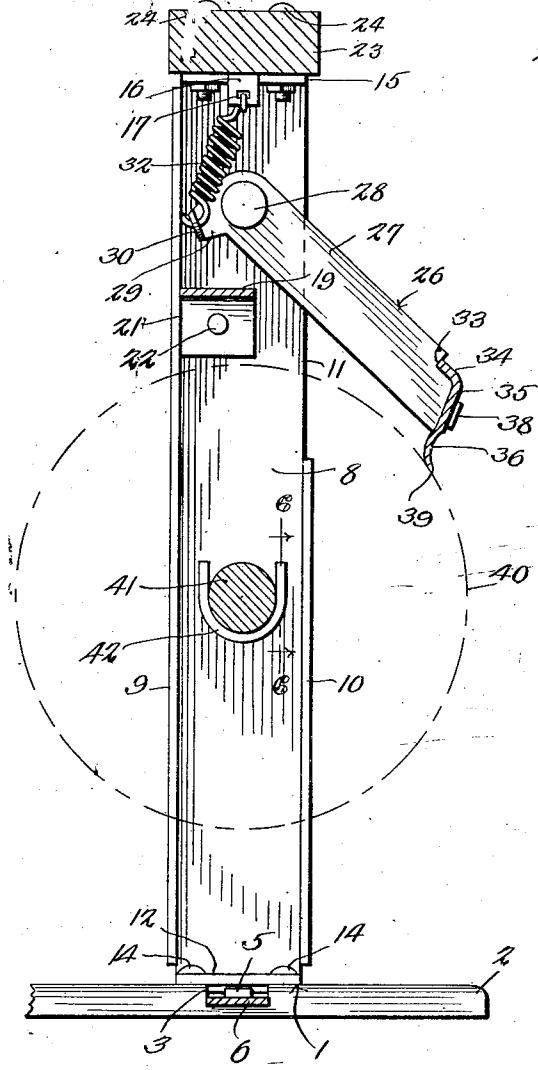


Fig. 4.

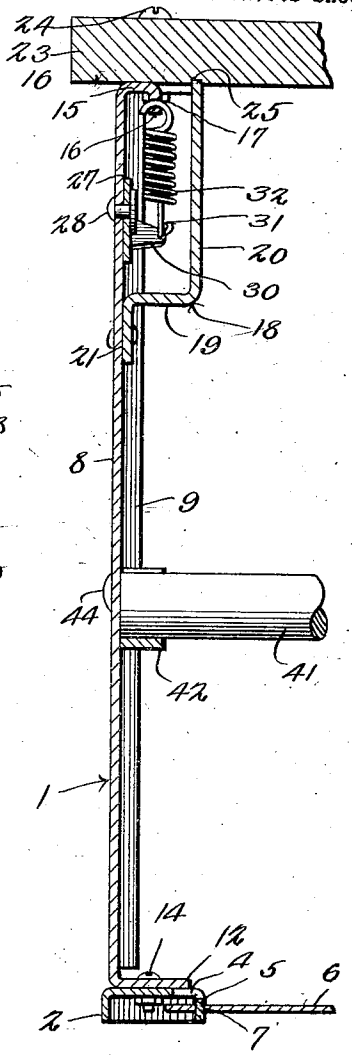


Fig. 5.

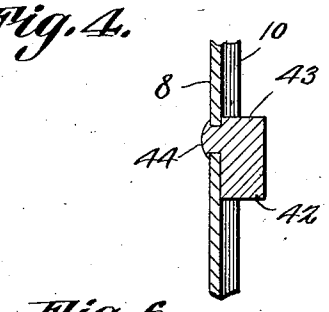


Fig. 6.

Inventor

B. E. Hall

By C. A. Snow & Co.

Attorneys.

Patented Apr. 12, 1927. 1,624,235

UNITED STATES PATENT OFFICE.

BERNARD E. HALL, OF MARTINSVILLE, INDIANA, ASSIGNOR TO THE DAVIS LUMBER CO., OF MARTINSVILLE, INDIANA.

PAPER CUTTER.

Application filed May 27, 1925. Serial No. 33,245.

This invention is a device adapted to hold a roll of paper, to the end that the paper may be drawn from the roll and torn off across a cutter. The objects of the invention are to improve the cutter and the means for mounting and actuating it; to improve the frame which carries the cutter and, generally, to improve and enhance the utility of devices of that sort to which the invention appertains. The machine is characterized by simplicity of design, affording economical manufacture and easy operation. The posts of the frame, although properly reinforced, are so constructed that the roll of paper may be mounted in place readily. Improvements in the bearing of the roll spindle are contemplated. The device embodies novel means for holding the knife either in contact with the roll of paper, or in a raised position, so that the roll may be mounted without difficulty on the frame.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 shows in elevation, a device constructed in accordance with the invention; Figure 2 is a fragmental section taken on the line 2—2 of Figure 1; Figure 3 is a perspective showing one of the bearings; Figure 4 is a vertical section; Figure 5 is a vertical section at right angles to the cutting plane in Figure 4, parts being broken away; Figure 6 is a fragmental section on the line 6—6 of Figure 4.

The device embodies a substantially vertical frame 1 which is a composite structure, the frame embodying base members 2, which are of inverted trough-shape and closed at the ends. In the inner flanges of the base members 2 there are notches 3 communicating with openings 4 in the tops of the base members 2. Lugs 5 upstand from the inner flanges of the base members 2 at the bottom of the notches 3. A brace strip 6 is provided. The brace strip 6 is supplied with openings 7 receiving the lugs 5. By inclining the base members 2 transversely, the ends of the brace strip 6 may be inserted into the openings 4, and when the base members 2 are brought back into the same horizontal plane, as in Figure 1, the lugs 5 on the base members will be received in the openings 7 of the strip 6, the ends of the strip 6 resting on the inner flanges of the base members 2 at the bottom of the notches 3, the tops of the base members 2 overhanging the ends of the strip 6 and preventing the strip from moving upwardly out of engagement with the lugs 5.

The frame 1 embodies posts 8, which may be channel members. The flanges 9 and 10 of the posts 8 stiffen the posts and make it possible for them to be made out of thin metal stock. For a purpose to be described hereinafter, the upper portions of the flanges 10 are cut away, as at 11. At their lower ends, the posts 8 are provided with inwardly extended feet 12 connected by securing elements 14, such as bolts, with the upper portions of the base members 2. At their upper ends, the posts 8 have inwardly extended wings 15. Anchor pieces 16 are struck downwardly from the inner ends of the wings 15 and have openings 17. Angle brackets 18 are provided. Each angle bracket 18 comprises a substantially horizontal body 19 provided at one end with an upstanding arm 20 and at the opposite end with a depending foot 21 attached by a rivet 22, or otherwise, to the post 8. The frame 1 embodies a top bar 23, which may be fashioned from wood. The top bar rests on the wings 15 at the upper ends of the posts 8. Securing members 24, such as bolts, connect the top bar 23 with the wings 15. When the securing members are tightened up, they cause the upper ends of the arms 20 of the angle brackets 18 to be embedded a little, as shown at 25, in the top bar 23, so as to prevent the arms 20 from springing at their upper ends, either to the right or to the left in Figure 5.

The machine includes a cutter frame 26. The cutter frame 26 embodies side arms 27 located inside of the posts 8, and connected to the posts by pivot elements 28, so as to enable the cutter frame 26 to be swung vertically on the main frame 1. The arms 27 of the cutter frame 26 are equipped at their inner ends with projections 29 having inwardly extended flanges 30 supplied with openings 31 wherein are mounted the lower

ends of retractile springs 32, the upper ends of the springs being mounted in the openings 17 in the anchor pieces 16 which are struck from the wings 15 at the upper end of the posts 8. Near to their outer ends, the side arms 27 of the cutter frame 26 are provided with shoulders 33 against which abuts a rearwardly extended flange 34 at the upper end of a blade 35 which abuts against the ends of the arms 27, the blade 35 comprising a concaved portion 36 extended below the arms 27. The arms 27 have reduced end fingers 37 extended through openings 38 in the blade 35 and clinched down on the blade, as in Figure 1, to hold the blade on the arms 27.

When the cutter frame 26 is not in use, it may be swung upwardly from the position of Figure 4 until the arms 27 engage the top bar 23. The cutter frame is held in this position by the springs 32, because, when the cutter frame 26 is swung upwardly as aforesaid, the lower ends of the springs 32 move to the right in Figure 4 past the axis of the pivot elements 28. When the device is in use, the sharpened edge 39 of the blade 35 rests on the roll 40 of paper, and is held thereagainst by the retractile springs 32, because, when the parts are arranged as shown in Figure 4, the lower ends of the springs 32 are to the left of the axis of the pivot elements 28. For convenience, the parts 27—29—30 may be alluded to as arms pivotally mounted at 28, intermediate their ends, on the posts 8 of the main frame 1. The spindle 41 of the paper roll 40 is detachably seated in U-shaped bearings 42 mounted on the inner surfaces of the posts 8. At their upper ends, the bearings 42 have reduced extensions 43 extended through the posts 8 and riveted down on the posts as at 44.

The angle brackets 18 exercise two functions: first, they serve as guards for the springs 32: second, when the paper roll 40 is not in place, they act as stops for the cutter frame 26, since, then, the springs 32 will swing the cutter frame 26 downwardly until the arms 27 rest on the body portions 19 of the angle brackets. The flanges 10 are cut away at 11 in order that the arms 27 may fit flat against the posts 8 and still swing vertically, and in order that the spindle 41 of the paper roll 40 may be placed readily in the bearings 42.

The general operation of a device of the class described is well understood by those skilled in the art, and may be dismissed with the remark that a length of paper is peeled off the roll 40 and torn free across the sharpened edge 39 of the cutter 35.

What is claimed is:—

1. In a device of the class described, a frame comprising posts in the form of channel members including reinforcing flanges, bearings on the inner surfaces of the posts and adapted for the support of a paper roll, and a cutter frame adapted for cooperation with a paper roll supported by the bearings, the cutter frame comprising arms, and means for mounting the arms pivotally on the posts, one flange of each post being cut away entirely at the upper end of each post to permit the arms of the cutter frame to work close to the posts, and to facilitate the mounting of a paper roll in the bearings.

2. In a device of the class described, a frame comprising posts, means on the posts for supporting a paper roll, a cutter frame pivoted to the posts, spring means for controlling the movement of the cutter frame with respect to a paper roll, brackets secured to the posts and guarding the spring means, the brackets comprising upwardly extended arms, a top bar cooperating with the posts, and draw-connections between the bar and posts, the arms of the brackets being prolonged far enough above the posts so that the upper ends of the arms will be embedded in the top bar by the action of the draw-connections.

3. In a device of the class described, posts provided at their upper ends with inwardly extended wings, there being anchor pieces struck downwardly from the wings, a top bar, means for securing the top bar to the wings, a cutter frame pivoted to the posts, springs connected with the cutter frame and with the anchor pieces, and means on the posts for holding a paper roll in operative relation to the cutter frame.

4. In a device of the class described, a main frame comprising channel posts having reinforcing flanges, the posts being provided at their upper ends with inwardly extended wings, there being anchor pieces struck downwardly from the wings, bearings on the inner surfaces of the posts for the support of a roll, a cutter frame adapted at its forward end for cooperation with a roll in the bearings, the cutter frame comprising arms, pivot elements connecting the arms intermediate their ends with the posts, the upper end of one flange of each post being cut away entirely, to permit the arms of the cutter frame to work close to the posts, and to facilitate the mounting of a roll in the bearings, retractile springs connected to the anchor pieces, devices for connecting the springs with the rear end of the cutter frame, the connecting devices and the anchor pieces being so located with respect to each other and with respect to the pivot elements that the springs will swing to opposite sides of the pivot elements, thereby to hold the forward end of the cutter frame on a paper roll, and in spaced relation to the roll, at different times, brackets secured to the posts and guarding the springs, the brackets comprising upwardly extended

arms, a top bar seated on the wings of the posts, and draw connections between the bar and the wings, the arms of the brackets being prolonged far enough above the posts so that the upper ends of the arms will be embedded in the top bar by the operation of the draw connections, the springs being at all times out of engagement with the top bar.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

BERNARD E. HALL.