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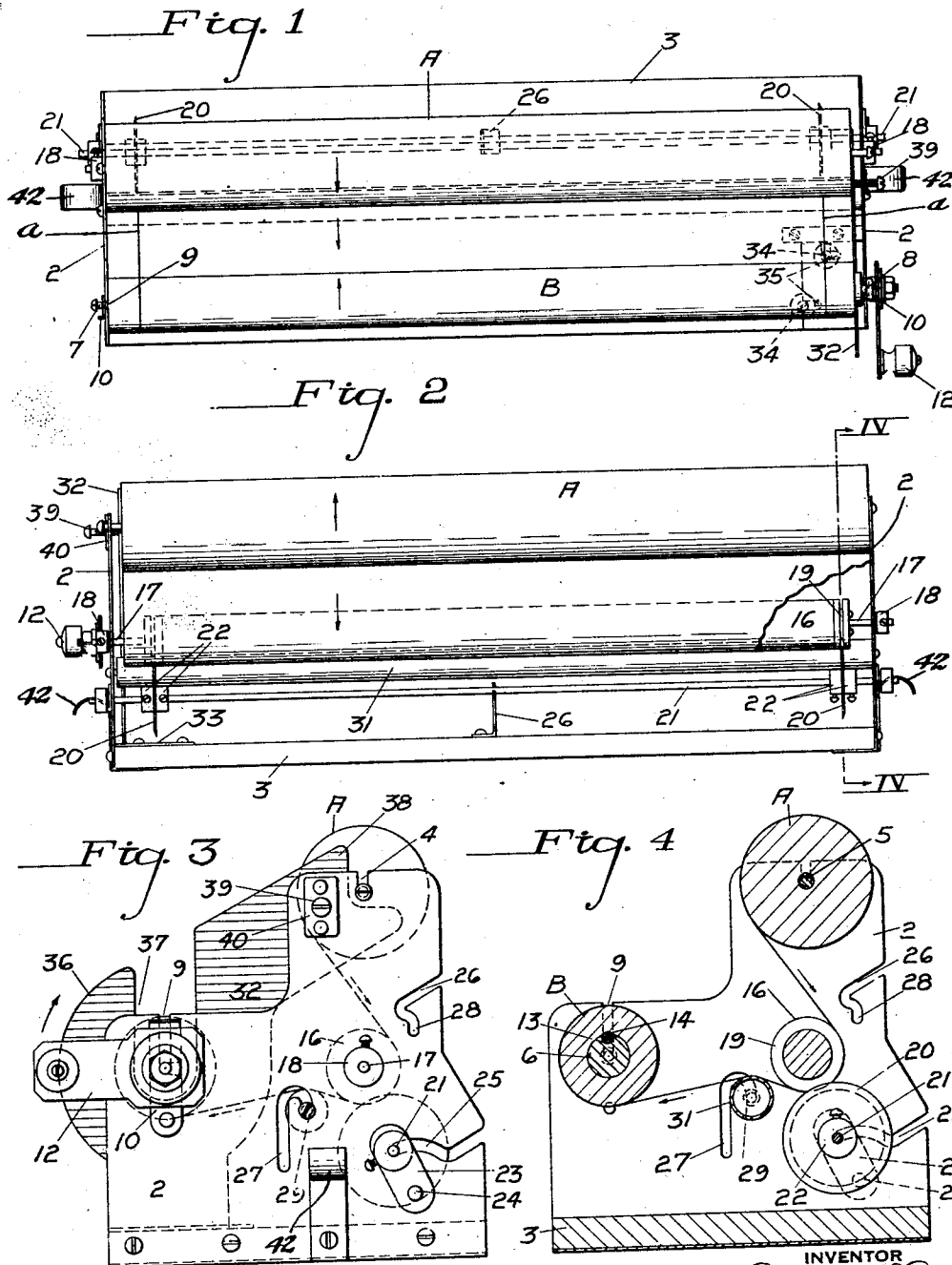
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E. C. F. ERNST

MACHINE FOR TRIMMING WALL PAPER

Filed Feb. 21, 1927

2 Sheets-Sheet 1



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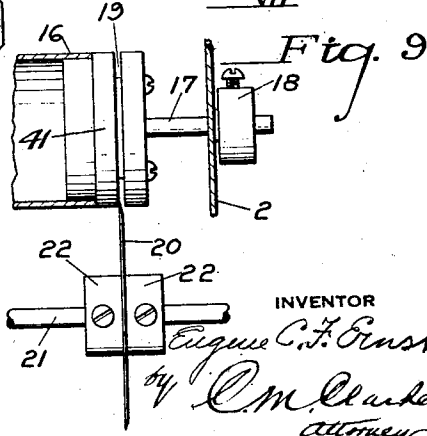
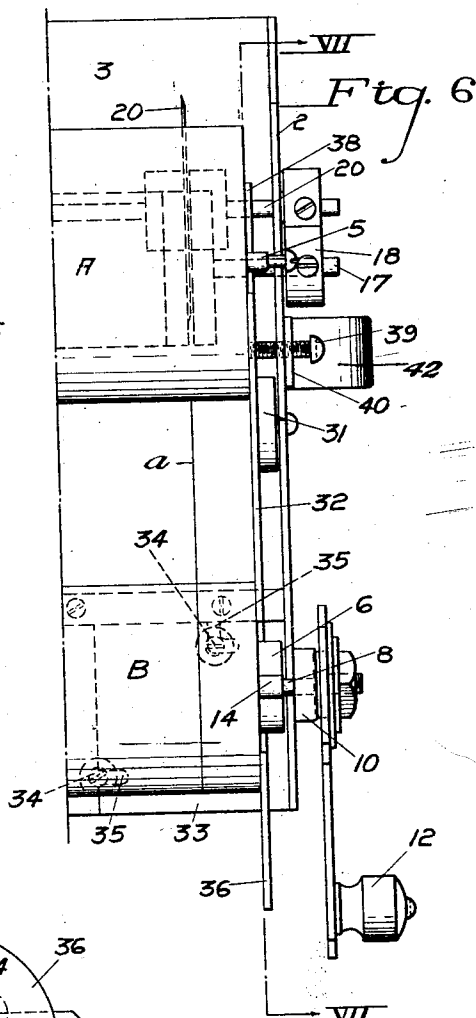
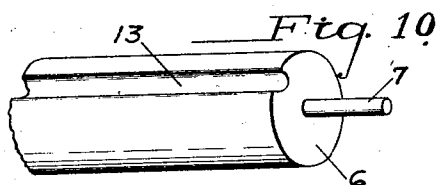
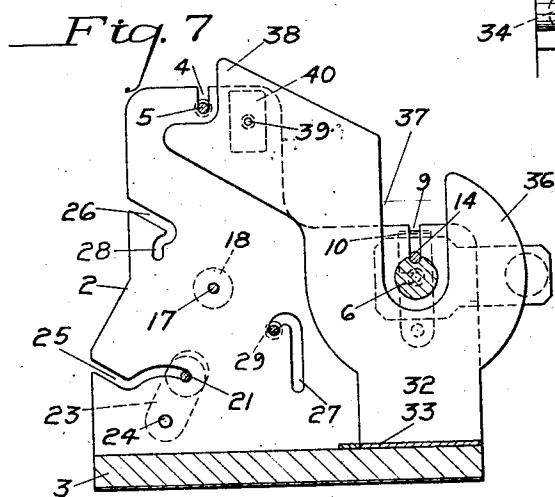
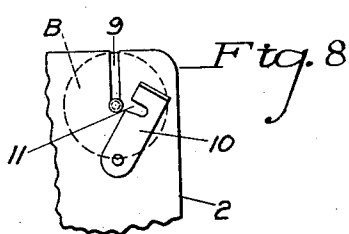
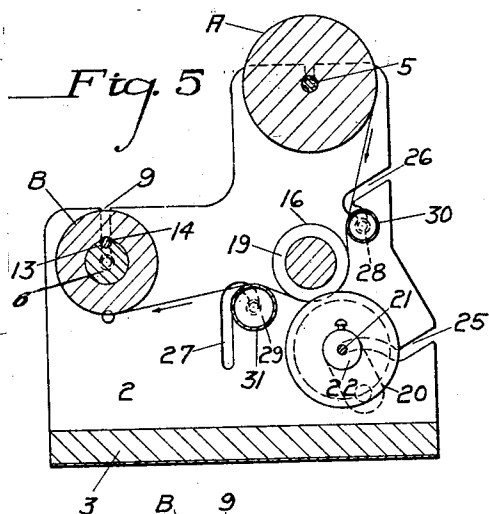
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MACHINE FOR TRIMMING WALL PAPER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TRIMMING WALL PAPER.

Application filed February 21, 1927. Serial No. 169,715.

My invention refers to an improvement in machines for trimming rolls of paper, or similar material, and is especially designed for the purpose of trimming the blank or surplus edges of wall paper. It has in view to provide a light, portable, self-contained device, capable of being easily handled and manipulated, with means for adjustment to different length of rolls, means for simultaneously slitting the paper at each edge as it is unrolled from the original roll and re-rolled, means for adjustment to varying lengths of rolls, and other features of construction and operation as shown in the drawings and hereinafter described.

In the drawings:

Fig. 1 is a plan view of the machine, with the paper rolls in position;

Fig. 2 is a front elevation from the opposite side;

Fig. 3 is an end view of Fig. 2, showing the winding crank;

Fig. 4 is a cross section on the line IV—IV of Fig. 2;

Fig. 5 is a similar cross section, but showing the original paper roll reversed;

Fig. 6 is a full size plan view of one end of the machine, showing the adjustable supporting bracket;

Fig. 7 is a cross section on the line VII—VII of Fig. 6, on the same scale as Figs. 4 and 5;

Fig. 8 is a detail view, showing the locking latch for the trimmed roller shaft;

Fig. 9 is a sectional detail view, showing the cutting mechanism at one end of the tension roll; and

Fig. 10 is a partial detail view in perspective, showing the winding roll.

The main framework of the machine consists of endmost bracket plates 2, 2, of thin, light sheet metal, as aluminum, secured against the ends of a main cross board or base member 3 in any suitable way. At their upper portions, brackets 2 are each provided with open sockets 4 for rotatably supporting the roll-supporting rod 5, which is shouldered and grooved to rotatably seat in each such socket, against endwise movement, and carrying the untrimmed roll A. At the lower opposite side of the machine is a winding shaft 6 having endmost bearing studs 7, 8, journaled in bearing slots 9 of plates 2, and held against accidental removal by pivoted locking keepers 10, slotted at 11, to fit over and secure the studs while in use.

Shaft 6, which may be of wood, is preferably of sufficient diameter to form a good winding rod of ample diameter, and stud 8 is extended sufficiently to attach a turning crank 12 for winding the trimmed roll B. Shaft 6 is preferably grooved, as at 13, so that a rod 14 may be inserted before winding, which rod extends peripherally beyond the shaft, and is easily removable endwise. By this means, the wound and trimmed roll may be easily loosened for free removal, without binding.

The cutting or slitting of the margin of roll A on the severing line *a* at each end is effected by means of annular grooves 19 at each end of an intermediate roller 16 journaled by shaft extensions 17 in end plates 2, and provided with limiting abutments 18 at each end. The ends of roller 16 are preferably solid, providing hubs 41 having at each end the annular cutting groove 19, while the body of the roll is of a polished tube, for lightness.

Co-acting cutter wheels or disk knives 20 are secured to rotatable supporting rod 21 by hubs 22, and the outer ends of rod 21 are mounted in swinging brackets 23 pivoted to each end plate 2, as at 24. Clearance slots 25 are cut in the end plates, providing for outward swinging of the rod 21 and disks 20 away from cutting relation to grooves 19 and for removal of the rod and disks for repair, sharpening, etc., when desired. A middle supporting bracket 26 for the rod, having an open-sided bearing, extends upwardly from the base, as shown.

The cutting disks 20 are preferably flat at one side and chamfered or beveled on the other side, as shown, so that a close cutting engagement is provided by adjusting the flat side of each inwardly extending disk against the shoulder of the groove 19, as clearly shown in Fig. 9.

Each end plate is provided at suitable locations with slots 26, 27, for rotatably supporting the stems of adjustment rollers 30, 31, having terminal necks 28, 29. Such rollers are for pressing the paper strip against roller 16 as it is drawn around in winding. By means of thus locating the cutting mechanism intermediate between the original roll A and the winding shaft 6 of roll B, the strip is drawn around roller 16 under tension, and a smooth clean shearing cut is effected at each end.

As roller shaft 6 is rotated, the middle

strip, as well as the outermost severed strips, are simultaneously wound upon it. When the entire roll is cut, all three may be removed by throwing back keepers 10, lifting out the cut roll on its shaft 6, and removing the rod 14, whereupon the middle trimmed roll and the endmost severed rolled-up waste edges may all be easily separated from the shaft.

In the use of the machine, as illustrated in Figs. 3 and 4, the inner figured surface of the original uncut roll A becomes the outer figured surface of the cut roll B. In such use, the strip leads off from roll A around roller 16, without the necessity of pressure and guide roller 30. When, however, it is desired to roll up the trimmed strip with the figured surface inside, like the original roll, said roll A is reversed end for end, as in Fig. 5, in which case, roller 30 is inserted, pressing the strip against roller 16 to stretch it tightly over the slitting groove 19 at each end. It will be understood, of course, that both rollers 30 and 31 are easily moved out of operative position by extension slots 26 and 27, having the crooked neck terminal bearings 28, 29, for easy insertion of the next uncut strip.

It will be observed that roller 16 is limited against endwise movement, with grooves 19 in fixed relation to slitting disks 20. Also, that the flat side of each disk bears against the flat face of the grooved hub at one side of the groove, at each end of the roller. By such arrangement, the disks 20 being accurately set and adjusted by set screws of hubs 22, a clean severing cut of the paper is ensured. A further advantage is that by thus maintaining the face of each knife disk in moderately tight engagement against the side of the groove, the knife is constantly sharpened by side friction as it is used, thus maintaining its efficiency.

The rotation of the knife disks 20 and stem 21 constantly maintains them in rotative operative position until the entire roll is trimmed, and when a new roll is introduced, the knives with their rod are merely removed outwardly through clearance slots 25 by rocking movement of brackets 23 at each end.

While the machine as designed is suitable for the trimming of the usual standard length wall paper roll, there are, however, sometimes slight variations in such standard length, necessitating adjustment mechanism, for which purpose my machine is provided with a supplemental supporting bracket 32. Said bracket is made of thin sheet metal, and is provided with a supporting foot piece 33, secured to base 3 by washers and screws 34, through slots 35. The main bracket 32 extends upwardly parallel with the adjacent end plate 2, having an enlarged head portion 36 for bearing engagement against the

end of the trimmed roll B. The bracket is cut out for clearance, as at 37, for the winding shaft 6, and extends upwardly and rearwardly by a terminal 30 for bearing engagement against the end of original uncut roll A.

For the purpose of bracing the free end 38 of the bracket, I provide a set screw 39 threaded in a suitable bearing nut 40, secured to the outer side of end plate 2. By adjustment of set screw 39, the free end 38 may be set in conformity with the adjustment of the bracket itself, so as to maintain a firm resisting bearing engagement against the end of the roll.

By adjusting the bracket 32 snugly up against the end of roll A, any variation in length, more or less than the usual standard length of a commercial roll, may be compensated for, so that the trimmed strip as drawn therefrom and wound upon the shaft 6 will be of the proper width. The roll will also be continuously and positively guided and maintained, ensuring perfect alinement and correcting any tendency toward deviation, resulting in proper trimming.

For purposes of easily lifting or moving the machine, it is provided at each end with a grasping handle or hook 42.

The construction and operation of the machine will be readily understood from the foregoing description. It is comparatively simple and economical in manufacture, and is capable of continuously carrying out its intended functions without variation or adjustment other than as described. In removing the trimmed roll B and in introducing a fresh untrimmed roll A, it is merely necessary to insert the rod 5 loosely through the hollow center of the untrimmed roll and to locate the necks of the rod in the bearing slots 4. The free end of the strip is then passed around roll 16, and the knife disks 20 with their shaft 21 are thrown upwardly, as in Fig. 4, making an initial cut through the paper at each groove 19. Thereafter, the strip is drawn through, effecting slitting, and is secured to shaft 6, and wound thereon, after which the winding operation continues, drawing the entire strip around roller 16, effecting the slitting or severance of the margin at each end, which is also wound up on shaft 6, and eventually removed, as described.

What I claim is:

1. In combination, a base piece having upwardly extending end plates provided with slotted bearings for an unwinding shaft, similar slotted bearings for a winding shaft, pivoted slotted keepers for the winding shaft, a tension roll in the path of movement between said bearing locations having annular shearing slots at each end, and co-acting shearing disks.

2. In combination, a base piece having upwardly extending end plates provided with

slotted bearings for an unwinding shaft, similar slotted bearings for a winding shaft, pivoted slotted keepers for the winding shaft, a tension roll in the path of movement between said bearing locations having annular shearing slots at each end, co-acting shearing disks extending into said slots, and an adjustable carrying shaft therefor.

pivoted slotted keepers for the winding shaft, a tension roll in the path of movement between said bearing locations having annular shearing slots at each end, co-acting shearing disks extending into said slots, and loosely mounted guide rollers rotatably mounted in the end plates adjacent the tension roll.

3. In combination, a base piece having upwardly extending end plates provided with slotted bearings for an unwinding shaft, similar slotted bearings for a winding shaft, pivoted slotted keepers for the winding shaft, a tension roll in the path of movement between said bearing locations having annular shearing slots at each end, co-acting shearing disks extending into said slots, slotted bearings in the end plates, and an adjustable carrying shaft for the shearing disks operably mounted in said bearings.

6. In a machine for slitting the edges of wall paper, a tension roll around which the paper is drawn provided with slitting grooves at each end, end plates for supporting the tension roll having slotted bearings, and a guiding roller rotatably mounted in said slots.

4. In combination, a base piece having upwardly extending end plates provided with slotted bearings for an unwinding shaft, similar slotted bearings for a winding shaft, pivoted slotted keepers for the winding shaft, a tension roll in the path of movement between said bearing locations having annular shearing slots at each end, co-acting shearing disks extending into said slots, slotted bearings in the end plates, and pivoted supporting arms for the disk shaft adapted to swing it through said slotted bearings.

7. In a machine for slitting the edges of wall paper, a tension roll around which the paper is drawn provided with slitting grooves at each end, end plates for supporting the tension roll having slotted bearings, a rocking shaft extending through said slotted bearings provided with rotatable cutting disks operable in said slots, and supporting arms therefor pivoted to the end plates.

8. In combination with a paper trimming machine having a base and end plates and slotted bearings for an untrimmed roll shaft and a trimmed roll shaft, an end bearing plate for the roll end having a foot piece, means for adjustably securing it to the base, and a set screw mounted in the end plate and engaging the end bearing plate.

5. In combination, a base piece having upwardly extending end plates provided with slotted bearings for an unwinding shaft, similar slotted bearings for a winding shaft,

In testimony whereof I hereunto affix my signature.

EUGENE C. F. ERNST.