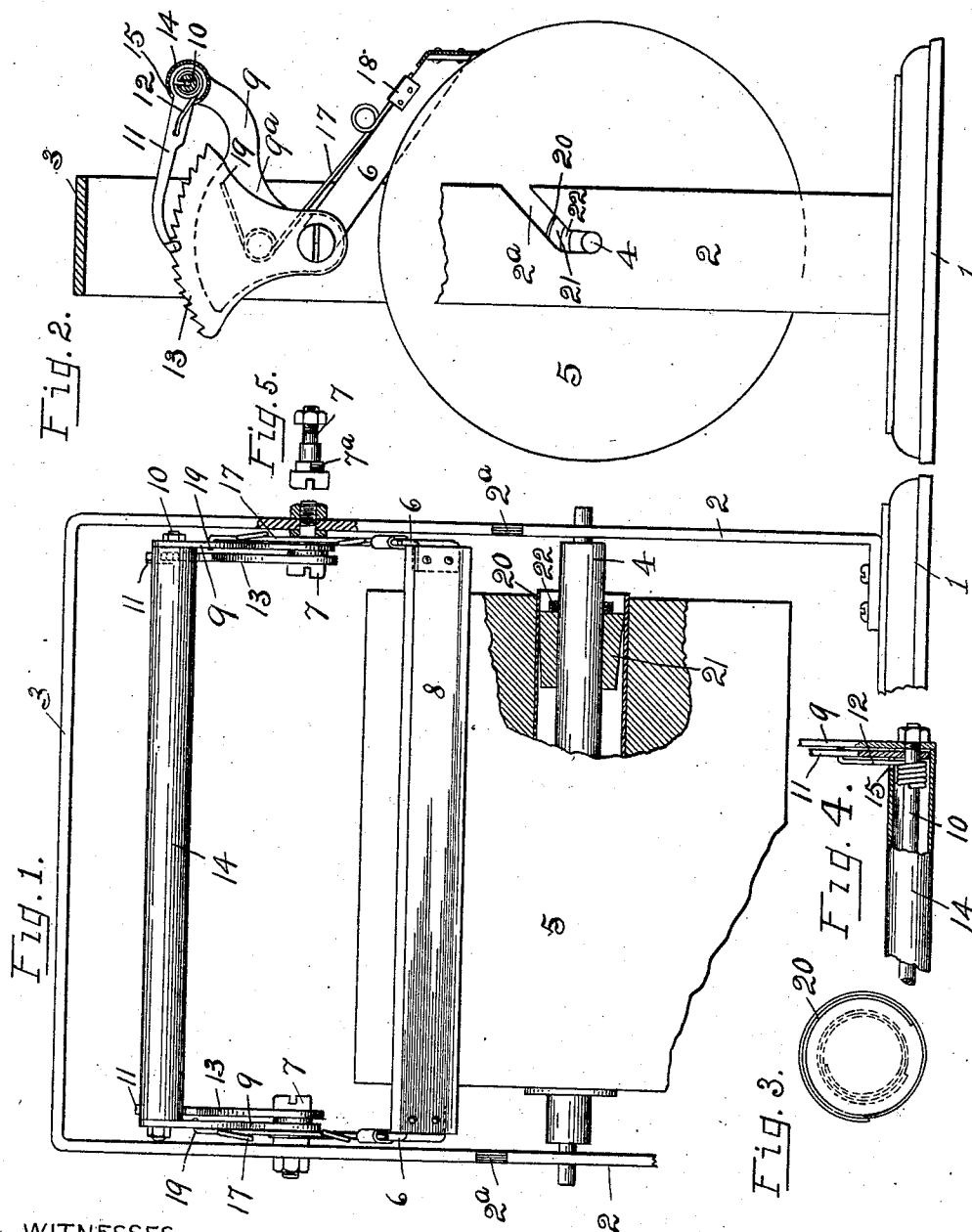


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M. McMAHON.
PAPER ROLL HOLDER AND CUTTER.

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PAPER-ROLL HOLDER AND CUTTER.

No. 842,487.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MICHAEL McMAHON, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Paper-Roll Holders and Cutters; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in paper-roll holders and cutters, and has for one of its objects to provide a knife or cutting attachment of improved construction which is not dependent upon the weight of the paper-roll for its binding contact therewith, but is provided with independent means whereby the tension of the knife upon the roll may be readily and quickly increased or diminished as the size of the roll may require.

To these ends my invention consists of certain novel features of construction, combination, and arrangement of the parts, as is hereinafter fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved paper-roll holder and cutter with portions of the same broken away and in partial section. Fig. 2 is a side elevation thereof with the upper part of the frame and the cutting attachment in vertical cross-section. Fig. 3 is an end view of my improved paper-roll bushing with its compressed state shown in dotted lines. Fig. 4 is a detail in partial section of one end of the knife-operating handle and its attached parts, and Fig. 5 is a detail of the bolt carrying the cutting attachment.

Referring to the drawings, 1 represents the base, 2 2 the uprights or standards, and 3 the top connecting-piece or horizontal brace, which together form the frame of an ordinary paper-roll holder. The uprights 2 are provided with horizontally-alining diagonally-disposed slots 2^a, which form bearings for removably receiving the ends of the shaft 4, on which the paper-roll 5 is mounted, or they may be provided with any other suitable means for supporting the paper-roll, the

frame shown being merely illustrative of the general type of holders of this class.

The cutting attachment comprising one of the features of my present invention consists of the knife-carrying arms 6 6, which are pivoted at their inner ends to bolts 7 7, secured in axial alinement to the inner sides of the opposite uprights 2 2, and are rigidly connected at their outer ends by the knife 8, which knife has its cutting edge preferably disposed obliquely to its major portion and normally bearing against the surface of the paper-roll 5, as shown.

Pivotally mounted on each pivot or bolt 7 in flush position to the arm 6, and preferably at the inner side thereof, is an independently-movable lever-arm 9, which has its inner portion preferably broadened, as shown at 9^a. A rod 10 connects the opposite lever-arms 9 at their outer ends and carries a pawl 11 adjacent its point of connection with each arm, which pawls are actuated by springs 12 normally engage the teeth of the segmental ratchets 13, carried by the bolts 7 7. Each bolt 7 is formed on its inner end with a squared portion 7^a, on which the associated segmental ratchet is mounted, thus maintaining the ratchets in fixed positions relative to the movable arms or members 9.

A sleeve 14 encircles the rod 10, forming the handle proper of the cutting attachment, and is provided at its ends with radial slots 15, through which the pawls 11 loosely project, as shown in Figs. 2 and 4. This sleeve is mounted to have a turning movement relative to the rod 10, so that a turning thereof in the proper direction effects a release of the pawls 11 from the teeth of the ratchets 13 in opposition to the tension of the springs 12.

The knife 8 is normally maintained in yielding frictional contact with the surface of the paper-roll 5 by the springs 17, which connect the knife-carrying arms 6 with the associated lever-arms 9 and have their tensions adjusted by an oscillatory movement of the lever-arms 9. These springs each have one end slidably mounted in a retaining strap or member 18, secured to the top of the associated knife-arm 6 adjacent its outer end, thence passes along the top of said arm to a point at the side of the broadened portion 9^a of the associated arm 9, where it is formed with a coil, from whence its terminal

projects at an angle to its major portion and is fixed to the arm 9, as at 19, thus adapting a movement of the arms 9 toward or away from the knife 8 to cause an increased or diminished tension on the springs 17.

It is apparent in the operation of the device that as the paper-roll diminishes in size the tension of the springs 17 will weaken in the same proportion, due to the gradual dropping of the knife relative to the adjusted position of the lever-arms 9. When the springs 17 thus become weakened, the operator bears down on the handle 14, which causes a movement of the lever-arms 9 toward the knife-arms 6 and a consequent strengthening of the tension of the springs. To raise the arms 9 for the purpose of releasing the tension of the springs 17 and raising the knife 8, the operator turns the sleeve or handle 14 on its axis sufficiently to raise the pawls 11 from engagement with the ratchet-teeth and then raises said handle to the desired position.

20 represents a diametrically or radially adjustable cylindrical bushing which is adapted to be compressed to a suitable size to be inserted within the axial opening in a paper-roll before the shaft 4 is passed there-through and to automatically adjust itself to completely fill such opening when released by the person placing it therein. This bushing is formed of spring sheet metal, which is rolled into cylindrical forms, as shown in Fig. 3, with its lapped portions loosely passing each other, whereby it may be more compactly compressed, as shown by dotted lines, Fig. 3, to enable it to be inserted within a paper-roll and then to expand and fill the opening when released. When the bushing 20 has been inserted within the axial opening of a paper-roll, the shaft 4 is concentrically secured therein by the usual tapered collars 21, which are placed over the ends of the shaft and forced into the ends of the bushing. The collars 21 when forced within the ends of the bushing 20 are prevented from an outward movement on the shaft 4 by elastic collars 22, one of which is mounted on each end of the shaft in flush position with the outer end of the contiguous collar 21. It is thus apparent that a bushing 20 when secured within a paper-roll will support the portion of the roll disposed between the collars 21 and maintain a perfectly level surface thereon until it is entirely unwound, which level surface facilitates the cutting operation, and also that a single bushing may be used in connection with paper-rolls having different-sized openings.

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

1. In combination, a paper-roll, a knife normally coacting with its surface, means movable relative to the knife and having

spring connection therewith whereby a relative movement of either causes an adjusting of the tension of the spring, a fixed ratchet member, and pawls carried by said means for engaging the ratchet-teeth and retaining the means in adjusted position.

2. In combination, an oscillatory knife, lever means movable relative to the knife, spring connection between the knife and said means adjustable by a relative movement of said parts, a ratchet member having a fixed position relative to said knife and means, and pawls carried by said means for engagement with the ratchet member.

3. In combination, an oscillatory knife, a lever member movable relative to the knife, spring connection between said parts for imparting opposite directions of movement thereto and being adjustable by a relative movement of said parts, a fixed ratchet member, and pawls for engagement with the teeth of said ratchet member, said pawls being carried by the lever member, and movable by a movement of the handle of the lever member to effect their disengagement from the teeth of the ratchet member.

4. In combination, the frame-uprights, a knife having its arms pivoted to the opposite uprights, two lever-arms pivoted to the opposite uprights, spring connection between the knife-arms and lever-arms and having its tension adjusted by a relative movement of said knife and lever-arms, a handle connecting the lever-arms and adapted to have an axial movement, ratchet members fixed to the frame, and pawls carried by the lever-handle for engagement with said ratchet members and adapted to be moved out of engagement therewith by an axial movement of the handle.

5. In combination, an oscillatory knife, a lever-arm movable relative thereto, and having a common axis therewith, a spring having portions bent at angles to each other and the outer end of one portion fixed to the lever-arm and the outer end of the other portion in sliding engagement with the knife-arm, said spring having its tension increased by a converging movement of the knife and lever-arms, and means for retaining the parts in adjusted position.

6. In combination, a frame, a knife having two spaced arms pivoted to the frame, a lever-arm having a common pivot with each knife-arm, spring connection between the knife and lever-arms whereby a relative movement of said arms causes an adjustment of the spring tension, a rod connecting the two lever-arms, two fixed ratchet members, pawls carried by the rod for engagement with the ratchet-teeth, and a sleeve encircling said rod and movable to effect a disengagement of the pawls from the ratchet-teeth.

7. In combination, a frame, axially-dis-

posed pivots carried by each side of the frame,
a knife having arms mounted on said pivots,
a lever having its fulcrum on said pivots,
ratchet members carried by said pivots but
5 fixed relative to the knife and lever, pawls
carried by the lever for engagement with
said ratchet members, and springs for main-
taining the knife and lever in spaced relation
and adapted to have its tension regulated by

an adjustment of the lever relative to the knife.

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

MICHAEL McMAHON.

Witnesses:

C. W. OWEN,
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