Sept. 8, 1925. 1,552,546

H. DE SMITH

CUTTING AND SCORING ATTACHMENT

Filed May 3, 1922

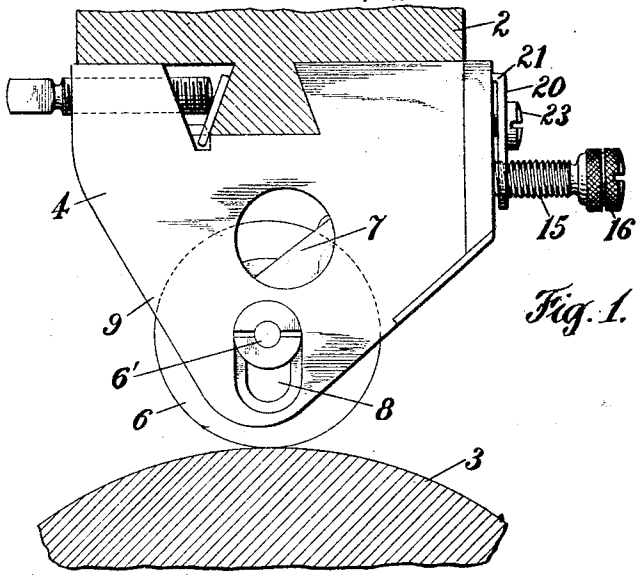


Fig. 1.

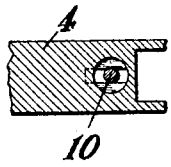
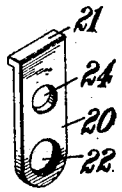


Fig. 3.

Fig. 4.



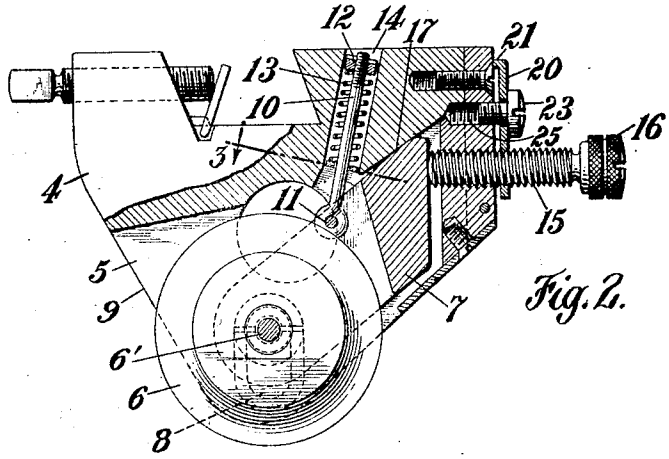


Fig. 2.

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UNITED STATES PATENT OFFICE.

HENRY DE SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO M. D. KNOWLTON COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

CUTTING AND SCORING ATTACHMENT.

Application filed May 3, 1922. Serial No. 558,245.

To all whom it may concern:

Be it known that I, HENRY DE SMITH, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cutting and Scoring Attachments; 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.

This invention relates to improvements in cutting and scoring devices of the type disclosed in Letters Patent No. 865,020 granted September 3, 1907, and which are used for cutting and scoring paperboard in the manufacture of boxes and other articles.

In this type of device there is employed a holder block, adapted for detachable connection with the cutter-bar of the machine on which the device is used, a cutter disc mounted in said block, and means for adjusting the cutter disc in the block for the purpose of regulating the depth of cut to be made by it in the paperboard.

The main object of my present invention is to provide an improved means for effecting the adjustment of the cutter disc and maintaining it in its adjusted position. Such means is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a cutter and scorer constructed in accordance with my invention, the same being shown attached to the supporting cutter-bar of the machine and in operative relation to its co-acting bed-roll.

Fig. 2 is a side view of the device in section and elevation.

Fig. 3 is a sectional detail on the section line 3—3 of Fig. 2, and

Fig. 4 is a perspective view of a clamp member for holding the cutter and its associated parts in adjusted position.

The cutter-bar 2 and the bed-roll 3 are of usual construction and arrangement as found in paperboard cutting and scoring machines now on the market, the said cutter-bar being supported centrally above the bed-roll for the support of the cutters and the bed-roll being adapted to carry the paperboard beneath said cutters to be cut and scored by them.

The cutting and scoring device embodying my invention as here shown comprises a holder block 4 having means at its upper end for adjustable connection with the cutter-bar 2 and in its lower portion having a vertically arranged open groove 5 to receive the cutter disc 6 and certain of its associated supporting and adjusting parts. The cutter disc 5 is adapted to be supported in a manner to permit of its adjustment toward and from the bed-roll 3. To provide for this, it is here shown as journaled on an axle pin 6′ mounted in the lower end of an adjustable carrier 7 and having its opposite ends engaging in elongated slots 8, 8, in the opposite side walls 9, 9, of the holder block, the said slots preferably being arranged in a vertical plane intersecting the axis of the bed-roll and constituting a guide for the axle pin and cutter thereon during adjustment of the same towards and from the bed-roll, as disclosed in the aforesaid patent.

The adjustable carrier 7 for the cutter is also located in the groove 5 of the holder block and is bifurcated at its lower end to receive the cutter disc, as shown in Fig. 2. This carrier is yieldingly held in a normal raised position with the axle pin at the upper ends of the guide slots 8 by means of a threaded pin 10, which is pivotally connected at its lower end with the carrier at 11 and at its upper end provided with an adjusting nut 12 resting upon the upper end of a coiled spring 13 seated within an opening 14 in the holder block as shown. By turning the nut 12 up and down on the pin 10, the tension of the spring 13 will be adjusted to properly support the carrier 7.

As a means for effecting a vertical adjustment of the carrier 7 and supported cutter 6, an adjusting screw 15, having a milled operating head 16, is threaded into the front wall of the holder block with its inner end extending into the groove 5 of the latter and engaging with the end wall of the carrier therein as shown. By turning this adjusting screw inwardly against the engaging end of the carrier, it will cause the latter, by reason of its contact with an inclined guide wall 17 at the upper side of the groove 5, to move downwardly and thereby lower the supported cutter disc towards the bed-roll 3, the direction of movement of the cutter disc being controlled by the guide

slots 8 as before described. If it is desired to raise the cutter disc, this may be effected by simply turning the screw 15 in the opposite direction, as the carrier will be raised and follow the screw by the action of the spring 13 against the nut 12 on the pin 10.

After the cutter and its carrier have been properly adjusted by the action of the screw 15, it is then necessary, in order to maintain such adjustment, to fasten the screw against turning movement. This I accomplish in a simple and effective manner by providing a clamp member 20, having at one end an inwardly turned lip 21 for engagement with the face of the holder block to hold the member in spaced relation thereto, and adjacent its other end having a threaded opening 22 engaged by the screw 15. Intermediate of its ends, said clamp member is engaged by the head of a set screw 23 which passes loosely through an opening 24 therein and engages the holder block within a threaded opening 25. By tightening up on the set screw 23, the clamp, through its threaded connection with the screw 15, is caused to clamp and lock said screw against turning movement. By loosening the set screw 23, the clamp member is thereby released from its binding engagement with the adjusting screw 15 and permits of the latter being readily turned to effect any desired adjustment of the cutter in the manner described.

What I claim is:—

1. A cutting or scoring attachment comprising a holder block having a groove in its lower end the upper wall of which constitutes a guide wall, a cutter and a carrier therefor located in said groove, a spring yieldingly holding the cutter carrier in sliding contact with said guide wall, an adjusting screw threaded into the holder and operative to engage the cutter carrier and adjust the same with respect to said guide wall, a clamp member held in spaced relation to the outer face of the holder and having a threaded opening engaged by the adjusting screw, and adjusting means loosely engaging said clamp member to cause it to bind the adjusting screw and hold the latter against turning.

2. A cutting or scoring attachment comprising a holder block having a groove in its lower end the opposite side walls of which are provided with elongated slots and the upper wall of which constitutes a guide wall, a cutter and a carrier therefor located in said groove, an axle pin on which the cutter is mounted having its ends slidably supported in said elongated slots of the holder block walls and also having connection with the cutter carrier for movement therewith, an adjusting screw threaded into the holder block and operative to engage the cutter carrier and adjust the same with respect to said guide wall, a pin pivotally connected at one end with the cutter carrier, a spring engaging said pin and yieldingly holding the carrier in sliding contact with both said guide wall and the end of the adjusting screw, and means for holding the adjusting screw against turning.

3. A cutting or scoring attachment comprising a holder block having a groove in its lower end the opposite side walls of which are provided with elongated slots and the upper wall of which constitutes a guide wall, a cutter and a carrier therefor located in said groove, an axle pin on which the cutter is mounted having its ends slidably supported in said elongated slots of the holder block walls and also having connection with the cutter carrier for movement therewith, an adjusting screw threaded into the holder block and operative to engage the cutter carrier and adjust the same with respect to said guide wall, a pin pivotally connected at one end with the cutter carrier and having an adjusting nut threaded thereon, a spring engaging said nut on the pin and yieldingly holding the carrier in sliding contact with both said guide wall and the end of the adjusting screw, and means for holding the adjusting screw against turning.

In testimony whereof I affix my signature.

HENRY DE SMITH.