DISPENSER AND CUTTER FOR ROLLED PAPER AND THE LIKE

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This invention relates to a dispenser and cutter for rolled wrapping paper, corrugated paper and the like. It is customary in many packing and shipping rooms to employ rather primitive methods and means in dispensing and cutting wrapping paper, corrugated paper and the like as well as other kinds and forms of sheet material. For example, the rolls of paper generally stand on end on the floor and the paper is unrolled therefrom by hand and then cut to the approximate size desired by means of a pair of scissors or a knife, razor blade or the like. In some cases, the rolls of paper are mounted on a horizontally supported broomstick or pipestem and the paper may somewhat more conveniently be drawn therefrom. But the cutting operation still remains hazardous and antiquated.

It is the principal object of this invention to provide a device which adequately supports a roll of paper or other sheet material, irrespective of its weight and dimensions, within reasonable limitations, and which conveniently dispenses the paper and cuts the same to the desired size. More specifically, the device herein claimed includes a paper roll supporting frame which may be mounted on a flat horizontal surface, such as the top of a table, or on a vertical surface, such as the wall of a shipping room, or in such unusual and generally inaccessible location as the underside of a table top. The device also includes a roller on which the paper roll may rotatably be mounted. Also included in the device herein claimed is a cutting bed on which the paper may be cut to selected size, and guide rollers are provided to guide the paper to said bed. Furthermore, the paper is held in cutting position on the cutting bed by means of a guide roller which prevents it from falling to the cutting bed. And finally, a transversely movable carriage is provided with a cutting blade removably secured thereto so that the paper may be severed along any selected transverse line by simply moving said carriage across the paper in either transverse direction.

Among the important features of this invention are the following: 1. A frame having a four-way mounting for a paper roll supporting roller, so that said roller will be adequately supported irrespective of the position of the frame, that is, whether the frame stands on a horizontal surface or is hung from an overhead support or is mounted on a vertical surface. 2. A guide roller which performs several simultaneous functions: It helps guide the paper to the cutting bed, it weights the paper down to the cutting bed, thus helping to hold it in place for the cutting operation, and it serves as a guide rod or rail for the carriage to which the cutting blade is secured. 3. A transversely movable carriage which carries a cutting blade removably secured thereto. 4. A removable double-edged cutting blade which rides in a transverse groove formed in the cutting bed and which is adapted to cut the paper on either transverse stroke, that is, whether moved transversely across the paper in one direction or in the opposite direction. 5. An open framework wherein the paper roll supporting roller may be reached both from the front and from the back. This is especially advantageous where long batteries of paper dispensing and cutting units are set up on long wrapping tables. The shipping clerks who wrap the packages stand on one side of the table and draw wrapping paper from the front of the respective paper dispensing devices, the people who service said paper dispensing devices occupy the opposite side of the table.

A preferred embodiment of this invention is shown in the accompanying drawing in which:

Fig. 1 is a side view of a paper dispensing and cutting device made in accordance with this invention and showing it mounted on a horizontal surface.

Fig. 2 is a plan view of said device, looking in the direction of arrows 2, 2 of Fig. 1.

Fig. 3 is an enlarged, fragmentary perspective view of the cutting bed of the device, the cutter supporting carriage, and the guide rods on which said carriage rides, including the guide rod which serves as a weight to hold the paper down upon the cutting bed.

Fig. 4 is an enlarged, fragmentary view of the side frame of the device, showing the ends of the two guide rods on which the carriage is mounted.

The paper dispenser and cutter 10 shown in the drawing is provided with a framework which comprises a base 12, a cross member 14 in front of the base, a cross member 16 behind the base, a pair of side frame members 18 and 20 and a pair of side wall members 22 and 24 respectively. The base 12 may comprise a channel member and so also the cross member 16. Cross member 14 on the other hand constitutes, preferably, an angle iron. The two side wall members 22 and 24 may comprise a pair of plates bent at right angles at their lower ends to form a pair of feet 22a and 24a respectively. Base 12 and cross member 14 may be welded or bolted to the side wall members or they may be secured thereto in any other conventional manner. Should bolts be used, it may be found desirable to employ a pair of angle irons 26, shown in Fig. 4, to secure the base and possibly also cross member 14 to the side plates 22 and 24.

Base 12 and cross member 14 constitute the position of the device herein claimed, reference being now made to the cutting bed on which the paper is disposed during the cutting operation and on which the cutting operation takes place. Cross member 14 is disposed in parallel relation to the bed, a relatively short spaced distance in front of the bed. A channel 28 is accordingly provided between the base 12 and the cross member 14 and it will be seen in Figs. 1 and 3 that it is through said channel that the cutter 30 travels.

Side walls or plates 22 and 24 perform several important functions. In the first place, they constitute structural components of the framework of the present device. They are permanently fastened to base 12 and cross member 14 and they combine with said base and cross member to form a rigid structural unit. The feet 22a and 24a of the two side wall members may be screwed or otherwise fastened to a suitable supporting surface 32 and holes 34 are accordingly formed in said feet to accommodate the screws or other fastening members.

The side walls 22 and 24 also serve as supports for guide rod or roller 36 and, in a sense, as supports for guide rod or roller 38, on which carriage 40 travels. Cutter 30 is mounted on said carriage and transverse movement of said carriage and said cutter is accordingly required for each cutting operation. It will be noted that guide rod 36 is supported by the two side walls a spaced distance...
More specifically, the guide rod 36 projects into registering holes formed in the two side walls and nuts 42 on the outside of said walls and nuts 44 on the inside of said walls secure said rod thereto and prevent either axial or other movement of said guide rod relative to said side walls. Cut-outs 46 are formed in the two side walls immediately above base 12. Guide rod 38 is freely mounted in said cut-outs, that is, it is free to move upwardly and downwardly, within reasonable limitations, in said cut-outs and it is also free to rotate therein. A washer 48 is secured to each end of guide rod 38 by means of a screw 50 and it will be noted in Fig. 4 that these washers are disposed outside the two side walls 22 and 24 so as to prevent axial movement or displacement of said guide rod 38 relative to the two side walls. Guide rods 36 and 38 are maintained in parallel relation to each other as well as to base 12 and channel 28. It is therefore possible for carriage 40 to travel on said guide rods and at the same time to retain its cutter 30 in operative position in said channel 28.

Carriage 40 is a cast or machined block which has a transverse hole 52 formed therein to accommodate fixed guide rod 36. Below hole 52 is a relatively deep groove or channel 54 which is open at the bottom and which accommodates freely movable guide rod 38. Carriage 40 also has a groove 56 formed therein to accommodate cutter 30 and a set screw 58 fixes said cutter in said groove. A handle-shaped portion 60 is also formed on carriage 40 so that it may be moved manually from side to side guide rods 36 and 38. Washers 62 are provided on guide rod 36 to serve as bumpers relative to said carriage so that it may be moved sidewardly without striking the side wall members 22 and 24.

Guide rod 36 supports carriage 40 at the same time that it serves as a guide rail therefor. Guide rod 36 holds the carriage a spaced distance above base 12 so that paper 64 may be drawn under said carriage without any interference on the part of the paper relative to the carriage or on the part of the carriage relative to the paper. Guide rod 38 supports the carriage in a different sense: its function is to prevent pivotal movement of the carriage about the longitudinal axis of guide rod 36. Thus it is, that cutter 30 is always maintained in proper angular position relative to channel 28.

It has been stated that guide rod 38 serves as a guide member relative to the carriage. It also performs another function, namely that of guiding the paper or stock carried by the carriage to base 12 during the dispensing and cutting operations. Guide rod 38 is free to move vertically within reasonable limitations and it rests freely upon the paper as the paper is drawn across the base and then cut in the manner hereinafter described. Since guide rod 38 is free to rotate as well as to move vertically, it serves also as a roller to facilitate the dispensing operation. Stated differently, it rotates in and by reason of engagement with the paper as the paper is pulled forwardly across the base from paper roll 66.

The cutting operation is exceedingly simple to perform. The carriage is at either end of the base when the paper is pulled from the paper roll to appropriate length. The carriage is then moved transversely across the paper in a single cutting stroke. It will be noted that cutter 30 is beveled so that its center portion 30a projects downwardly into channel 28 and its two end portions 30b and 30c respectively project upwardly above the level of the top surface of base 12 and cross member 14. This shape enables the cutter to "ride up" upon the paper in its transverse movement across the paper and at the same time it tends to cam the paper down during such transverse movement. The cutter is sufficiently sharp so that a single transverse cutting stroke is all that is required to sever the paper along channel 28. It will be understood, of course, that this beveled shape of the cutter is purely illustrative and that the cutter may be provided with other functional shapes equally adapted to perform the same cutting function. Illustrative is a circular cutter since a portion thereof would project downwardly into channel 28 and portions thereof would also project at the same time above the top surfaces of base 12 and cross member 14.

Side frame members 18 and 20 may constitute a pair of castings and they may be provided with feet 18a and 20a respectively. Holes 18b and 20b may be provided in said feet so that screws or other fastening members may be inserted therethrough to secure said side frame members to a suitable support such as supporting surfaces 32 shown in Fig. 1. Cross member 16 is welded, bolted or otherwise secured to the two side frame members and bolts 18c and 20c secure the forward ends of said side frame members to base 12. See Figs. 1 and 2. Thus the base member 12, cross members 14 and 16, side plates 22 and 24 and side frame members 18 and 20 are fastened together to form a rigid structural unit.

Paper roll 66 is mounted on a roller 68 which has pins 70 extending axially outwardly therefrom at both ends. Pins 70 project into slots 72 formed at the upper ends of the two side frame members 18 and 20. These slots serve as bearing supports for pins 70 and hence for roller 68 and said roller is thereby enabled to rotate with paper roll 66 as is drawn therefrom. It will be seen in Fig. 1 that there are three additional slots 74, 76 and 78 in the side frame members 18 and 20. All four slots 72, 74, 76 and 78 perform the same function, depending upon the position which the entire unit assumes in any given position. Thus, slots 72 are used when the entire unit is supprorted on a horizontal surface 32. Should the same unit be supported on a vertical surface, then either slots 74 or slots 78 will support pins 70, depending upon which of said slots are open at the top. Similarly, the entire unit may be inverted from the position of which it is shown to occupy in Fig. 1 and secured to the underside of a horizontal support, such as a table top. In such case, slots 76 would accommodate pins 70. It will therefore be seen, that the plurality of slots shown in the drawing are provided for the purpose of adequately supporting a paper roll irrespective of the position in which the entire unit is mounted and installed. It would be necessary, in the inverted position, to provide a pair of spring tensioning members to press roller 38 against the paper. Compression springs may be employed to push said roller against the paper or tension springs may be utilized to pull said roller against the paper.

As shown in Fig. 1, the paper which the paper roll takes as it is drawn from the paper roll. It will be noted that after it leaves the roll it passes under a roller 80 which is journaled into the two side frame members 18 and 20. After the paper leaves roller 80 it passes between base 12 and guide rod 38 and as far forward thereafter as desired. The foregoing is descriptive of a preferred form of the invention. It will be appreciated, however, that the preferred form may be modified in ways and other forms may be provided within the broad spirit of the invention and the broad scope of the claim. For example, the side frame members have been described as constituting a pair of castings. If desired, they may be made of angle iron suitably welded together. If desired, they may be made in any other appropriate way. The type of material used is not critical and they may be made of iron, steel, aluminum or the like. What has been said of the side frame members is also true of all of the other structural parts of the device. They may be made of metal castings or they may be fabricated of suitable channel and angle stock.

I claim:

In a paper dispenser and cutter of the character described, having a frame, a horizontal cutting bed in said frame adapted to support a sheet of paper which is to be cut thereon, and a transverse vertical slot formed in said cutting bed, the combination of: a transverse guide rod supported by said frame above said cutting bed and in parallel relation to said slot, a transverse guide roller
rotatably supported by said frame between said transverse rod and said slot in parallel relation both to said rod and said slot, said guide roller being also vertically movably in said frame relative to said cutting bed and relative to a sheet of paper thereon, said guide roller being thereby adapted to rest upon the sheet of paper and with its weight to hold it in place flat upon the cutting bed for the cutting operation, a block slidably mounted on said transverse rod and said guide roller, said block having a transverse hole formed therein to receive said rod and a vertical slot formed therein below said transverse hole to receive the guide roller, leaving the guide roller free for vertical movement relative to said cutting bed, a cutting blade removably secured to said block, said blade extending transversely in parallel relation to said slot and in registration therewith, said blade having a downwardly projecting central portion and upwardly tapered end portions constituting the cutting edges of said blade, said central portion projecting downwardly into said slot and said end portions projecting in part downwardly into the slot and in part upwardly from said slot, a handle portion on said block, whereby the block may be moved transversely across the cutting bed on said transverse rod and said guide roller to move the cutting blade across said cutting bed and through said slot in order to cut the sheet of paper which is held in place on said cutting bed under the weight of said guide roller.

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