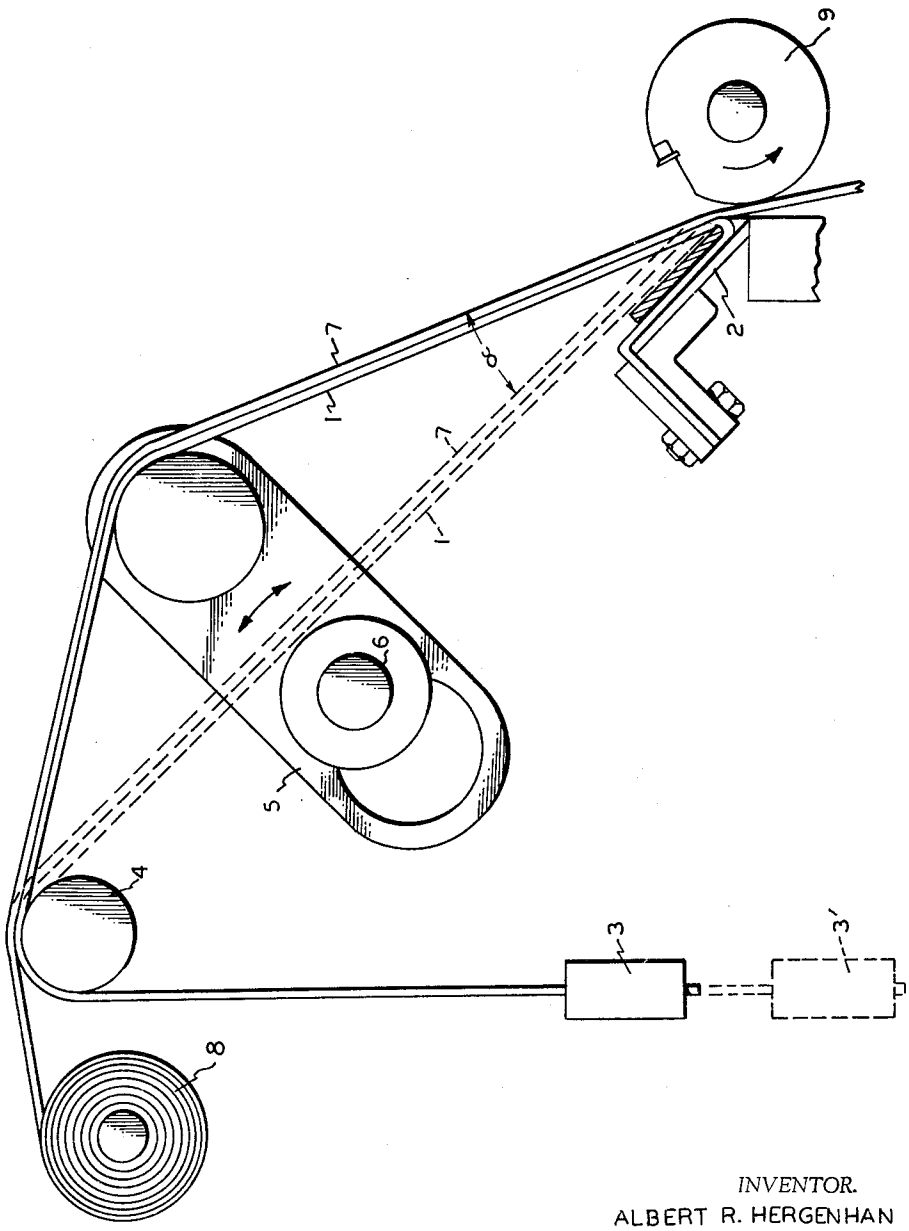
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VARIABLE ANGLE FEED MEANS FOR PAPER CUTTERS

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VARIABLE ANGLE FEED MEANS FOR PAPER CUTTERS

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This invention relates to a device which is useful in cutting sheet material and, more particularly, to a means for guiding sheet material from a stock source to the cutter.

In cutting sheet material such as paper, cardboard and similar materials from a roll of stock, a frequent source of trouble comes from the fuzzy edges and the slight bending of the edge which result from the prior art cutting operations. The latter effect may be compared with the bending which results from the cutting of paper with a pair of dull scissors.

It has now been found that in order to obtain the cleanest cutting edge and the maximum knife life, the angle at which the paper enters the shearing blades is very important. It has further been found that the proper angle will vary with the thickness of the stock to be cut. The present invention permits the rapid and ready change of this angle, while the web is moving. The operator can thus quickly adjust this angle and improve the quality of cutting within a matter of seconds without stopping the machine.

It is accordingly an object of the present invention to provide a guide means whereby the angle at which the paper is presented to the shearing blades may be quickly and conveniently adjusted.

It is a further object of the present invention to provide a means for cutting sheet material whereby the fuzzy cut edges and bent edges of the prior art practices are avoided.

Other and more detailed objects of the present invention will be apparent from the following description and drawings wherein the FIGURE is a representation of the present device.

In use, the device illustrated is installed in the cutter just ahead of the stationary knife. Referring more particularly to the drawing, **1** designates a belt or web which may be made of any suitable material such as leather, plastic belting, etc. In the preferred practice of the present invention "Armalon" plastic belting material in the form of a web is employed. Web **1** is secured at one end to stationary knife **2** and at its other end to a weight **3** which serves to apply tension to the belt. Stationary bar **4** serves to support belt **1** which will slide up and back over bar **4** with the movement of the belt caused by housing **5** described more in detail below.

Housing **5** is generally rectangular in end view having arcuate end sections which connect the sides of the rectangle. Housing **5** is mounted so as to pivot around point **6**. Housing **5** is free to rotate 360°.

Housing **5** is disposed to engage belt **1** in its rotation about pivot point **6**. When housing **5** is in a position so that its parallel sides are parallel with the flat surface of knife **2**, tension weight **3** moves down to its position

3′ and the angle formed between the belt and the surface of the stationary knife is zero. As housing **5** is rotated, it engages belt **1** and bows it outwardly to the position shown in full line in the drawing thus forming an angle α with the stationary knife surface. It will thus be readily seen that in the various positions of rotation of housing **5**, the angle α is caused to vary. Thus paper **7** fed from the stock roll **8** over belt **1** will enter the cutting station at a different angle.

The cutting action is effected by the cooperation of stationary knife **2** and a rotary knife **9**. The rotary knife **9** cuts the paper by a shearing action cutting through from the face of the paper against the stationary knife. This action is very much like that of a pair of shears.

In operation the sheet material **7** is fed from a roll of stock **8** to the belt **1** in any convenient manner which is well-known to those skilled in the art. Belt **1** then serves to guide the sheet material into the cutters.

While the invention has been described with particular reference to specific embodiments, it is to be understood that it is not limited thereto, but is to be construed broadly and restricted solely by the scope of the appended claims.

What is claimed is:

1. Guide means for guiding paper sheet material from a roll of paper stock to a paper cutting means comprising a belt means secured at one end thereof near the edge of a stationary knife means and at the other end thereof to a belt tension means, said belt means being slidably supported intermediate its ends by a belt supporting means, means disposed intermediate said belt supporting means and the knife end of said belt for changing the angle formed by said belt and stationary knife means; said angle changing means engaging said belt means and adapted to rotate around a pivot point spaced from its point of engagement with said belt means, whereby the rotation of said angle changing means causes a change in the angle formed by said belt means and said stationary knife means.

2. A device according to claim 1 including means for feeding said paper sheet material to said guide means and a rotary knife means which cooperates with said stationary knife means in cutting said paper sheet material.

3. A device according to claim 1 wherein said angle changing means is adapted to rotate about said pivot point for 360°.

4. A guide means according to claim 1 wherein said stationary knife means has a longitudinal axis which is substantially parallel to the belt in its region between said stationary knife means and said belt supporting means when said angle changing means is out of engagement with said belt means and wherein said longitudinal axis forms a base from which the angular displacement of the belt with respect to said stationary knife means caused by said angle changing means may be measured.

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