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54 Supplying assembly for notching plotters.

57 The supplying assembly comprises a frame which supports on the top thereof a notching plotter, arranged between a pair of flanged cylinders for guiding the material to be notched, there being moreover provided a unwinding assembly for unwinding the material to be notched, which is supported by the frame and controlled by a sensor for adjusting the material amount fed by this unwinding assembly so as to provide the same material amount both upstream and downstream of the plotter.

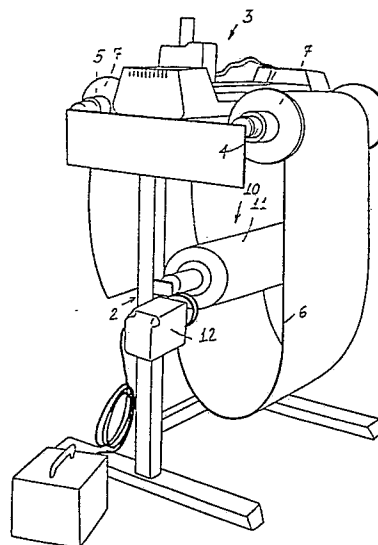


Fig. 1

Description**SUPPLYING ASSEMBLY FOR NOTCHING PLOTTERS**BACKGROUND OF THE INVENTION

The present invention relates to a supplying assembly for notching not perforating plotters.

As is known, notching plotters are commercially available which are used for notching words, patterns and the like on adhesive materials and other elements.

However, known notching plotters are affected by limitations related to the size of the words or patterns which can be made, which size is generally smaller than 150 cm.

This limitation is essentially due to the construction of these known plotters and, in this connection, it should be pointed out that words or patterns of a size greater than the mentioned maximum size would be scarcely accurate.

In fact, in conventional plotters the material to be notched is arranged under the cutting knife by means of two side rubber small wheels which press the material against an embossed cylinder.

During the cutting operations a great size material would be subjected to high tension stresses which would prevent the notched words from being perfectly closed.

Moreover, since the notching knife starts to cut from a side edge of the material, this knife subject the material being processed to a side pressure tending to displace said material, with a consequent poor accuracy of the words or patterns being made.

SUMMARY OF THE INVENTION

Thus, the main object of the present invention is to overcome the above mentioned drawbacks, by providing a material supplying assembly, specifically designed for a notching not perforating plotter, which affords the possibility of making wordings or patterns of great size, even greater than 10 m, with a great working accuracy.

Another object of the invention is to provide such a plotter in which the side stresses exerted by the notching or cutting knife are reduced to a minimum, thereby affording a more accurate processing of the material being notched.

Yet another object of the invention is to provide such a plotter which is very reliable and safe in operation and which, moreover, can be constructed starting from easily available components and materials.

According to one aspect of the present invention, the above mentioned objects, as well as yet other objects, which will become more apparent herein-after, are achieved by a material supplying assembly for notching not perforating plotters, characterized in that said material supplying assembly comprises a bearing frame supporting on the top thereof a notching plotter, arranged between a pair of cylin-

ders for guiding the material to be notched, there being moreover provided a material unwinding assembly supported by said bearing frame and controlled by a sensor adapted to control the length of the material being unwound from said unwinding assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent from the following detailed description of a preferred embodiment thereof, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

figure 1 is a schematic side perspective view of the material supplying assembly according to the invention;

and
figure 2 is another side view clearly illustrating the subject supplying assembly for supplying material to be notched to a notching not perforating plotter.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figures of the accompanying drawings, the material supplying material specifically designed for notching not perforating plotters according to the present invention comprises a bearing frame, indicated overall at the reference number 1, which advantageously comprises double-T shaped side uprights 2.

The bearing frame 1 supports, on the top thereof, a notching plotter, of conventional type, indicated at the reference number 3.

A main feature of the present invention is that upstream and downstream of the notching plotter 3 there are provided a first guide cylinder 4 and a second guide cylinder 5, which are mounted on sliding bearings for displacing the material to be processed with a very reduced friction.

As is shown the cylinders 4 and 5 are provided with end flanges 7, specifically provided for guiding the material being notched.

This material is unwound from an unwinding assembly, indicated overall at the reference number 10, which unwinding assembly comprises a unwinding cylinder 11, driven by a motor 12, in turn controlled by a sensor, for adjusting the length of the material being unwound, which sensor can consist of a microswitch 13, a photocell or the like.

The provision of this motorized unwinding assembly is very important since, by adjusting or controlling the amount of the material being unwound or supplied, it will be possible to provide, both upstream and downstream of the plotter, the same material amount; in this way the material will be well balanced and the cutting knife will be not subjected

to undesired tension stresses susceptible to prevent the formed wordings from perfectly closing.

In fact, owing to the disclosed arrangement, the material being processed will be not subjected to tension due to material portions hanging down upstream or downstream of the plotter.

Another important feature of the invention is the provision of the flanges 7 on the cylinders, which flanges are so arranged as to be able of engaging with the side edges of the material to be notched, with the advantage of reducing to a minimum the side stresses exerted by the knife during the cutting step which, as is known, starts from a side of the material.

Thus, the cylinders 4 and 5 allow for the material to slide always with a perfect arrangement, thereby affording the possibility of making very large size wordings or patterns.

From the above disclosure it should be apparent that the invention fully achieves the intended objects.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within the spirit and scope of the appended claims.

Claims

1- A material supplying assembly for notching not-perforating plotters, characterized in that said material supplying assembly comprises a bearing frame supporting on the top thereof a notching plotter, arranged between a pair of cylinders for guiding the material to be notched, there being moreover provided a material unwinding assembly supported by said bearing frame and controlled by a sensor adapted to control the length of the material being unwound from said unwinding assembly.

2- A material supplying assembly according to claim 1, characterized in that said guide cylinders are provided with variable flanges adapted to engage with the side edges of the material to be notched.

3- A material supplying assembly according to claim 1, characterized in that said guide cylinders are mounted on low friction sliding bearings.

4- A material supplying assembly according to claim 1, characterized in that said material unwinding assembly comprises a unwinding cylinder driven by a sensor controlled motor.

5- A material supplying assembly according to claim 4, characterized in that said sensor consists of a microswitch.

6- A material supplying assembly according to claim 4, characterized in that said sensor consists of a photocell.

7- A material supplying assembly according to claim 4, characterized in that said sensor is adapted to control the length of the material being supplied so as to provide the same

material amount both upstream and downstream of said plotter.

8- A material supplying assembly according to claim 1, so designed and arranged as to make notching operations on practically unlimited size materials.

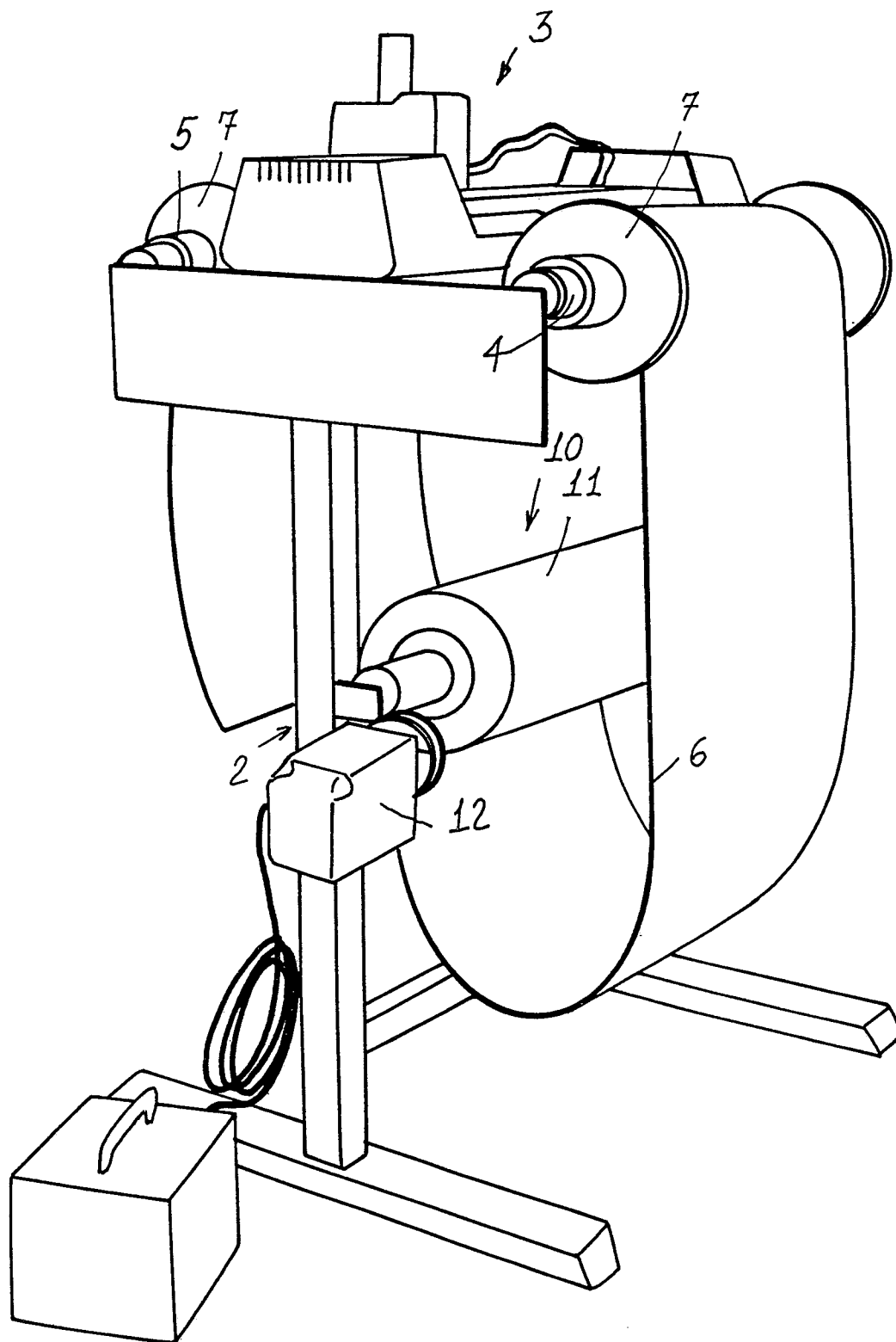


FIG. 1

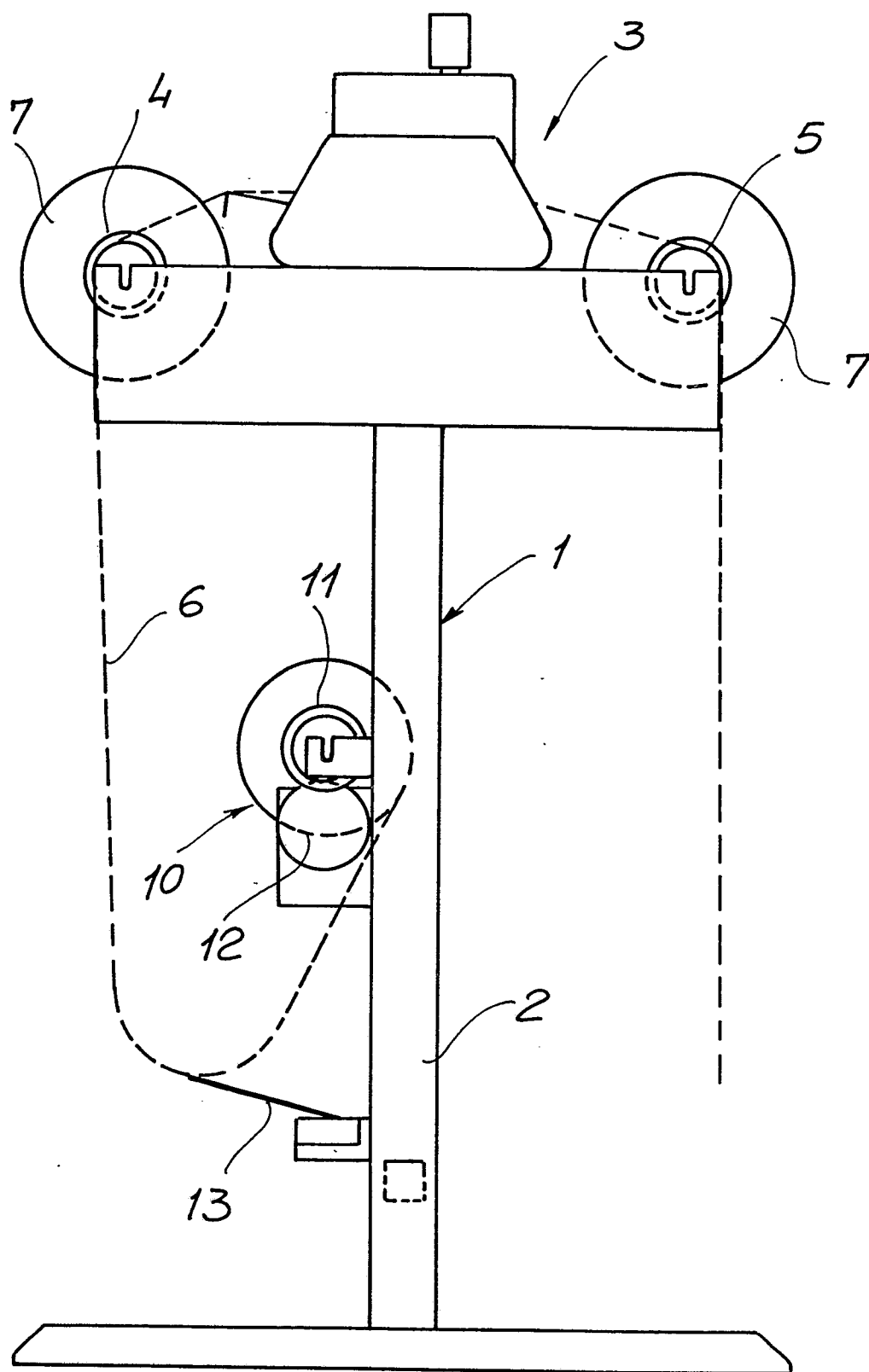


Fig. 2