Feb. 8, 1955 N. HAMILTON 2,701,540

WARNING SIGNAL AND METHOD OF MANUFACTURING THEREOF

Filed July 9, 1953

Fig. 1.

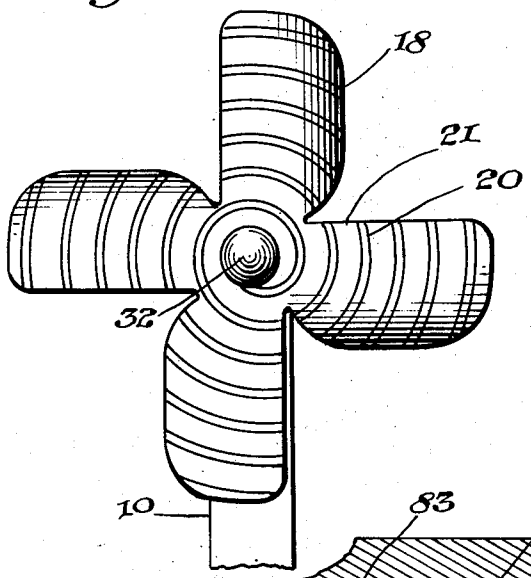


Fig. 3.

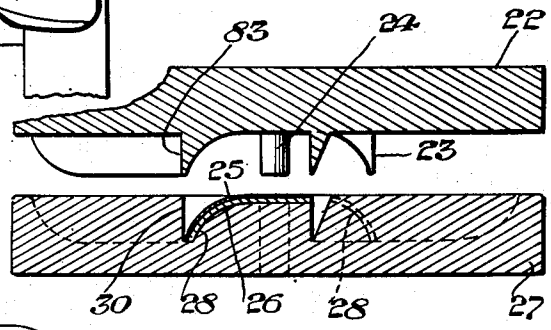


Fig. 2.

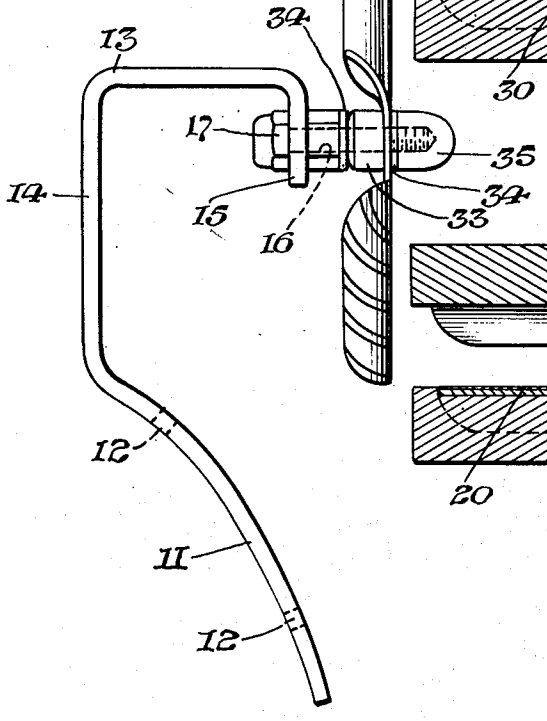
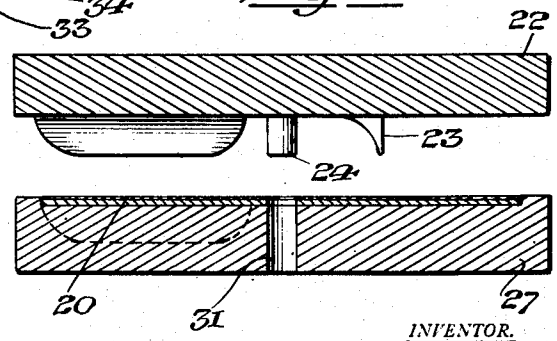


Fig. 4.



INVENTOR.
Neil Hamilton
BY Darby & Darby
ATTORNEYS.

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WARNING SIGNAL AND METHOD OF MANUFACTURING THEREOF

Neil Hamilton, Mamaroneck, N. Y.

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3 Claims. (Cl. 116—35)

The present invention relates to warning signals and particularly to a warning signal which is in motion during use.

In a specific application of the device it is intended to be attached to the rear of a bicycle and it is made in the form of a propeller which is wind driven due to the motion of the bicycle, the propeller being coated with a fluorescent substance in a distinctive pattern so that rotation thereof attracts the attention and makes the device exremely effective as a warning signal.

Additionally, the invention comprehends the method of producing a propeller as has been above-described in which the propeller is stamped from a metal sheet and the decorative pattern is simultaneously applied to the sheet.

It is an object of the invention to provide a rotary warning signal having a distinctive pattern on the rotary portion of the signal.

It is another object of the invention to provide such a signal particularly adapted for mounting on a vehicle such, for example, as a bicycle and wherein the distinctive pattern is applied in a fluorescent coating so that the warning signal will give off light when excited by the lights of other vehicles.

It is a further object of the invention to provide a method for producing the rotary element of such a warning signal by means of which the element is stamped from a sheet of metal or other suitable material and a desired pattern is simultaneously applied to at least one face of the metal sheet.

Other objects and features of the invention will be apparent when the following description is considered in connection with the annexed drawings, in which,

Figure 1 is a front elevation of the rotary warning signal of this invention;

Figure 2 is a side elevation of the device of Figure 1;

Figure 3 is a cross-sectional view of a punch and die designed to punch the rotary element of the device of Figure 1 from a sheet of metal and to simultaneously apply to that sheet a spiral pattern of fluorescent paints of different colors and to cause the adherence of the sheet of material on which the pattern is printed to the metallic rotary element; and

Figure 4 is a cross-sectional view of the punch and die set of Figure 3, the view being taken on the plane at right angles to the view of Figure 3.

Referring now to the drawings, there is shown at **10** a bracket. The bracket **10** has a curved lower portion **11** which is particularly designed to fit the curvature of the mudguard of a bicycle, the bracket being provided with holes **12** by means of which it may be bolted or otherwise suitably fastened to a mudguard. The upper portion **13** of the bracket is bent off from the vertical portion **14** thereof and is again bent to provide a second vertical portion **15**. The vertical portion **15** is provided with an aperture therein and a shaft **16** is provided and mounted in that aperture. Shaft **16** is provided with screw threads at its ends and is mounted in the aperture in the bracket by means of nuts **17** both threaded on the shaft, one at either side of the bracket portion **15**.

The warning signal proper comprises a propeller-like member **18** in the particular instance being four-bladed. This element is stamped from a sheet of material, ordinarily metal, and the propeller blades are shaped as shown and are bent in the manner shown particularly in Figure 2, that is, so that as the bicycle is propelled forwardly the air currents set up will cause clockwise rotation of the propeller **18**.

A spiral pattern **20**, preferably of fluorescent paint, is applied to the propeller **18**, the background **21** being first applied and that background being likewise preferably of fluorescent paint and of a different color than the spiral stripe **20**. Thus as the propeller rotates a complete spiral

is seen due to the normal retentivity of the eye although actually the spiral is interrupted between the propeller blades.

Referring now to Figures 3 and 4, there is shown therein a punch and die suitable for stamping out the propeller blade, bending the blade edges in the manner described, and for applying a sheet of paper or other flexible material bearing the pattern to the supporting metallic propeller. In Figures 3 and 4 the punch member is indicated at **22**, this member being provided with cutting edges **23** shaped to produce the four-bladed propeller as indicated in Figures 1 and 2 and being also provided with a central cylindrical punch **24** adapted to stamp out a central opening in the propeller element **18**. Prior to performing the stamping operation a sheet of paper bearing thereon a complete spiral pattern preferably in two colors and preferably in fluorescent ink or paint, is placed upon the sheet material, the paper being indicated at **25** and the sheet material at **26**.

Cooperating with the punch **22** is a die member **27** shaped as indicated at **28** to bend the cut blades into the desired form, the cutting edges being shown at **30**. In addition, the die member is provided with a central bore **31** which cooperates with the punch **24** to provide the central opening **32** in the propeller.

The propeller **18** thus formed is then fixedly mounted on a bushing **33** which bushing may have a turned down portion at the right end thereof as seen in Figure 2 onto which the central opening **32** of the propeller **18** is force fitted. The propeller with its bushing **33** is then mounted upon the shaft **16** with a washer **34** on either side of the bushing after which a cap nut **35** is threaded onto the threaded end of the shaft **16** and tightened thereupon. The unthreaded portion of shaft **16** is of proper length so that the bushing is not clamped between the washer **34** by the nuts **17** and **35** but is instead freely rotatable upon the shaft.

While I have described preferred embodiments of my invention it will be understood that many other modifications may be made without departing from the spirit of my invention. I wish therefore to be limited not by the foregoing description, but on the contrary solely by the claims granted to me.

What is claimed is.

1. The method of producing a wind driven bladed rotary member which comprises placing a sheet of metal on a die, placing a sheet of paper bearing a pattern thereon on said sheet material, and stamping material from said sheet to produce a blade outline and simultaneously adhering said pattern bearing material to said sheet material, cutting said pattern bearing material in the blade outline and bending both the pattern material and underlying sheet material to complete the blade outline.

2. A method as claimed in claim 1, characterized in that a center hole is punched in the pattern bearing material and simultaneously in the sheet material.

3. A warning signal comprising a bracket, a driven rotary member rotatably mounted on said bracket, said member having a plurality of blades formed integrally from a single sheet of material and having corresponding edges thereof bent from the plane of said material, said blades carrying a pattern thereon composed of a fluorescent coating, said pattern comprising a spiral stripe of fluorescent material upon a contrasting background, said pattern being interrupted between said blades and giving the appearance of continuity when said member rotates.

References Cited in the file of this patent

UNITED STATES PATENTS

1,402,382	Shailer	Jan. 3, 1922
2,613,463	Transue	Oct. 14, 1952

FOREIGN PATENTS

431,117	Great Britain	July 1, 1935
511,730	Germany	Nov. 1, 1930

OTHER REFERENCES

A. B. C. of Luminescence, pub. by the New Jersey Zinc Co., 160 Frant St., New York, New York. (Copy in Div. 54.)