Jan. 8, 1952 C. C. McGAUGH 2,581,549

REFLECTING SIGNAL GLOVE

Filed Aug. 28, 1950 2 SHEETS—SHEET 1

Fig. 1

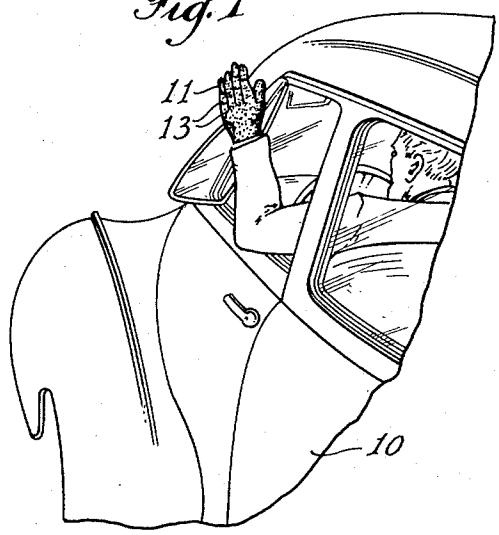


Fig. 2

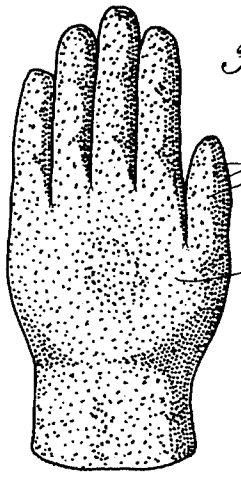


Fig. 4

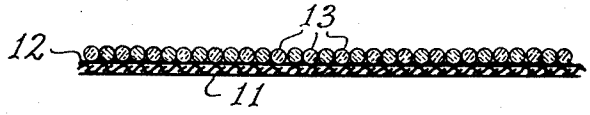
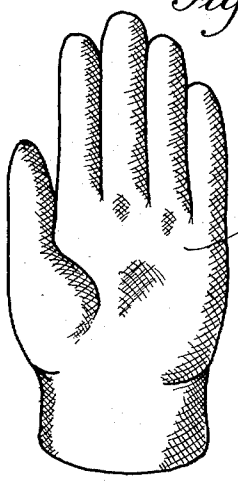


Fig. 3



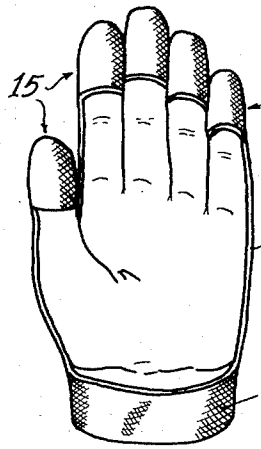


Fig. 5

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Jan. 8, 1952 C. C. McGAUGH 2,581,549

REFLECTING SIGNAL GLOVE

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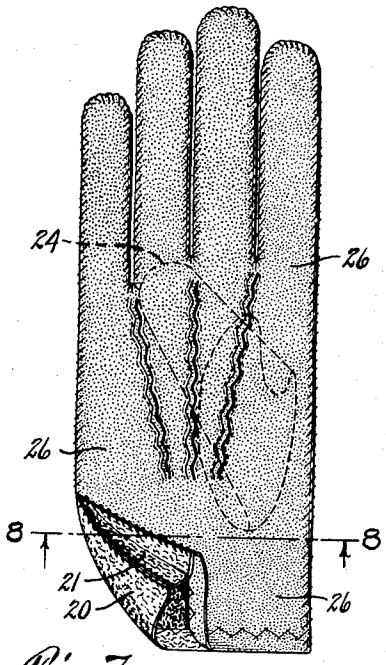


Fig. 7

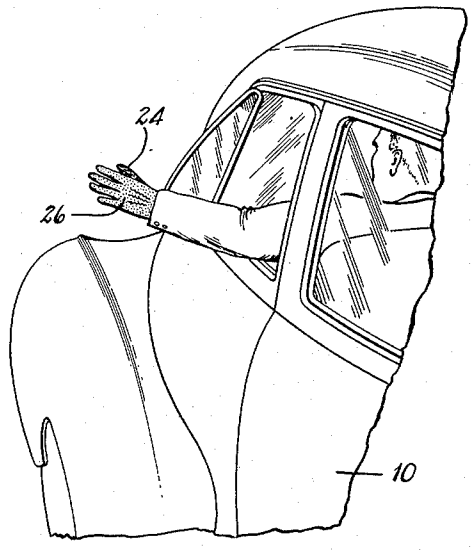


Fig. 6

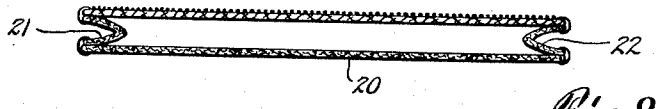


Fig. 8

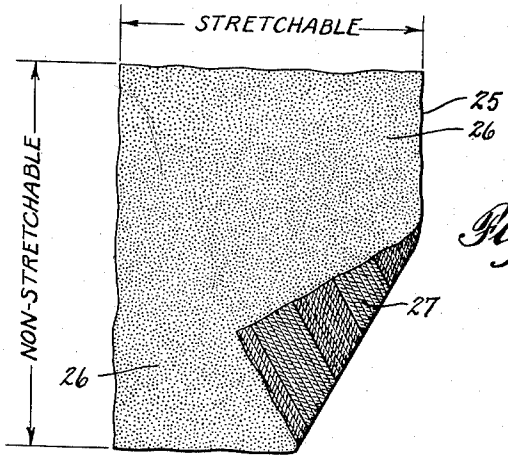


Fig. 9

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UNITED STATES PATENT OFFICE

2,581,549

REFLECTING SIGNAL GLOVE

Calvin C. McGaugh, Dallas, Tex.

Application August 28, 1950, Serial No. 181,773

5 Claims. (Cl. 88—80)

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The invention relates to signaling gloves and more particularly to a new and useful glove having unique light reflecting characteristics so that it can be used for traffic signals as well as a glove.

The present application is a continuation-in-part of my co-pending application Serial No. 110,445, filed August 5, 1949.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Figure 1 is a fragmentary rear perspective view of an automobile showing a hand signal indicating a right turn and disclosing on the hand of the vehicle operator the reflecting glove of the present invention;

Figure 2 is an elevational view of the back of the glove showing the reflecting surface;

Figure 3 is a view of the palm of the glove;

Figure 4 is a fragmentary section of the fabric composing the back of the glove and showing thereon a layer of reflecting elements;

Figure 5 shows a modified form of the invention in which the palm of the glove is substituted by finger type retainers affixed to the reflecting back of the glove;

Figure 6 is a view similar to Figure 1 showing a modified and improved form of the glove used in indicating a left-hand turn;

Figure 7 is an elevation showing the back of the glove with a corner turned to disclose the interior and palm-side construction;

Figure 8 is a section on line 8—8 of Figure 7; and

Figure 9 is a plan view of a fragment of the light-reflecting fabric used in my glove with a portion turned to show the inside surface and with legends indicating the stretchability thereof.

The invention is directed to providing a novel and useful glove which possesses all of the desirable characteristics of a well-made and attractive conventional glove of leather or the like, but which is provided, over at least a substantial area of its surface, with a continuous layer of light-reflecting material which can be used in giving signals in the dark, such as hand traffic signals. While various hand-attached articles carrying one or more light-reflecting elements have heretofore been proposed, these articles have not been satisfactory either as gloves or as reflecting hand-signal devices.

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My invention overcomes the drawbacks of the prior art by providing a glove which is of generally conventional appearance, shape and feel and which can be used exactly like any other glove for driving, protection and ornamentation of the hands and other conventional purposes. At the same time at least one surface of the glove, comprising preferably the back of the hand and fingers thereof, is uniformly coated with a continuous and uniform light-reflecting material which, when struck by a beam of light in the dark provides a brilliant and clear reflection. An important object of the invention is that the light reflected from the surface of the glove gives the physical outline and visual impression of a human hand so that normal hand traffic signals will be clearly apparent and will be readily distinguishable as such from other adjacent lights occurring in automobile traffic.

Another object of the invention is to provide such a glove in which the fabric or material used to support the light-reflecting coating is compatible with other materials, such as leather, used to make up the glove, so that a glove made partially of leather and partially of such fabric, for example, will conform accurately and comfortably to the shape and movements of the hand of the wearer. In this connection, the invention provides a novel form of luminous or light-reflecting fabric specially designed to simulate and act physically like leather normally used in a glove.

Another object of the invention is to provide such a glove which will be completely free from projections or solid rigid attachments which may interfere with the comfort and safety of its use in driving and other pursuits.

In general the invention comprises a glove, at least the rear outer surface of which is made of a fabric coated with a flexible plastic binding agent, which in turn is uniformly coated or covered with a layer of minute closely spaced reflecting particles such as spherical beads or plastic particles. In a commercial form of the invention, the size and distribution of said beads may be of the order of 40,000 to the square inch.

The construction of the fabric comprising at least the back portion of the glove is such that it can be suitably coated with the reflecting materials while at the same time it will cling to and conform to the normal shape and movements of the wearer's hand. The inner part of the glove, comprising the wrist, palm, thumb and inner finger faces, is preferably formed of leather of conventional construction, thus providing a comfortable and attractive surface having suitable frictional characteristics for holding the steering wheel of a car and handling other objects. In certain cases, however, the inner surface of the glove may also be made of fabric possessing suitable characteristics and for some purposes the palm or inner face of the glove may also be coated with light-reflecting material.

It will be understood that the foregoing general description and the following detailed description as well are exemplary and explanatory of the invention but are not restrictive thereof.

Referring now in detail to the present preferred embodiment of the invention, shown by way of example in the accompanying drawings and as disclosed in said parent application, reference numeral **10** denotes generally an automobile and in Figure 1 the operator of the vehicle is shown executing a right turn. On the left hand of the operator is worn a reflecting glove which consists of a fabric back **11**, the entire surface of which is covered with a suitable binding agent **12** which is usually a clear lacquer or varnish which characteristically hardens into a pliable composition to hold a coating of small spherical beads **13**. It is necessary that the coating of beads also cover the entire area of the back of the glove so that when the latter is used as a hand signal, it will be clearly recognized as a hand against the possible background of varicolored and differently shaped lights emanating from signs, street lamps, traffic signals and the like. In this manner, a motorist observing the movement of the hand wearing the glove will be instantly apprised of the warning intended by the operator of the preceding vehicle and the reflected light from the back of the glove will not be confused with other lights in the motorist's field of view.

The palm **14** of the glove is preferably composed of loosely woven fabric for suitable ventilation and is preferably devoid of any reflecting media.

In Figure 5 is shown a modified form of the invention which differs from that shown in the preceding figures only in the respect that the palm of the glove is omitted and in its stead, receptacles **15** are sewed or otherwise affixed to the back portion **16** of the glove which, as in the preceding figures has its entire outer surface coated with reflecting beads for the purpose set forth. A wrist band **17** is applied to the back portion **16** of the glove which aids the finger retainers **15** in holding the glove in proper position on the hand. The wrist band **17** may be constructed of elastic material if desired. This form of my glove is well adapted for driving because the palm is exposed to grip the steering wheel.

Referring now to the modified form of the invention shown in Figures 6, 7 and 8, a conventionally shaped glove is shown having the inner or palm portion of the hand, wrist and fingers made of a sheet of leather **20**. Side panels or gussets **21** and **22** are also made of leather sewn to the sheet **20** in any suitable or conventional manner.

The leather of the sheet **20** is arranged, as is usual in glove construction, so that the major stretchability thereof is in the direction across the hand, that is, to the right and left as seen in Figure 8, while the relatively non-stretchable direction (due to the natural differential arrangement of the cells of the leather) is lengthwise of the hand. The thumb **24** of the glove may also be conventionally formed wholly of leather, as shown, this being for the reason that in giving hand signals the thumb would normally lie behind or below the fingers and not usually be exposed for reflecting in that position. However, the invention is not limited to this construction and, like the fingers, only the inner part of the thumb may be made of leather.

The back portion of the glove is preferably made up from a single piece of textile fabric material **25** extending from the wrist line to the tips of the fingers. A sample of said material is shown in Figure 9. In accordance with the invention, it is designed on its outer surface to support a large number of closely and uniformly distributed minute spherical beads **26** of glass, plastic or the like for the purpose of reflecting light. Said beads, shown in exaggerated size relation in Figure 8, are held as a flexible coating on the upper surface of the cloth fabric **27** by means of a binding layer of suitable adhesive or plastic material which, when hardened or polymerized under heat, remains quite pliable. The particular type of beads and plastic binder preferably used by me are made by the Minnesota Mining and Manufacturing Company under the trade name "Scotch Lite" and is believed to conform generally to the disclosure of the Palmquist et al. Patent No. 2,407,680, dated September 17, 1946. However, the invention is not specifically limited to this commercial reflecting material nor to the exact constructional details of said patent, which are referred to for illustrative purposes only.

The textile material making up the fabric **27** is specially designed for the purposes of the invention. It is sufficiently heat resistant to withstand the application and baking operations involved in applying the reflecting material, which in practice involves heating to the temperature of 220° F., which temperature would be destructive if applied to leather. Also the fabric **27** is adapted to be made in large sheets of uniform size so that the mass production operations can be used in applying the reflecting materials thereto.

In accordance with the invention the textile fabric preferably used for this purpose is designed to have physical characteristics equivalent to those of leather, so far as fitting and conforming to the hand, both at rest and in motion, are concerned. For this purpose I have selected a fabric which is capable of differential stretching action similar to, and in substantially the same amount, that of the leather sheet **20**. That is, the fabric **27** is so made that it will stretch in the direction of the width of the glove, that is, to the right or left as viewed in Figure 8, while being relatively non-stretchable in the longitudinal direction. Such a piece of fabric, shown in Figure 9, is preferably a warp knit cotton tricot in which the stretch is chiefly across the wales or panels of the fabric. The fabric preferably used is a warp knit having an Atlas stitch. Such types of fabrics are generally well known in the art and are shown for example in Just Patent 2,338,945, Johnson Patent 2,443,279 and others. The patents referred to are illustrative of typical

warp knit tricot fabrics and are not intended to disclose the exact or specific pattern shown in Figure 9.

Said fabric as used is preferably made of cotton and the one I presently prefer is made of 50 singles of combed peeler cotton yarn. However, the particular numbers of threads and other details are not restrictive of the invention. I have also found that fabric made as stated is improved for the purposes of the invention by a substantial amount of pre-shrinking, a 56" wide piece being shrunk to 48" in the preferred practice of my invention.

Preferably the fabric is also given a suede finish treatment which gives it a feel and appearance somewhat similar to that of leather. The suede finish also facilitates application of the reflecting material and plastic bond to the fabric.

I have found that fabric made up as described is particularly useful in the construction of gloves in accordance with my invention. Not only does the glove made therewith possess virtually all the qualities of an all-leather glove so far as fit, feel, stretch and general conformability to the hand are concerned, but also the special fabric provided cooperates more effectively than ordinary fabrics with the reflecting layer so that a higher reflecting action or luminosity is provided in use.

While gloves are preferably made with fabric backs and leather palms as shown and described herein, the invention is not wholly limited to such combinations. In certain instances it may be desirable to make the entire glove of fabric like the sheet 27, and the palm side of the glove, also may be coated with reflecting material in some cases. A glove which has all its outer surfaces coated with reflecting material is particularly useful for signalling by traffic policemen, who do not use gloves primarily for gripping or steering purposes.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. A traffic-signalling glove comprising fingers, a palm portion and a back portion, all parts thereof being formed of flexible material fitting and conforming to the wearer's hand, the outer surfaces of the back portion and the backs of the fingers being formed of a warp knit tricot fabric stretchable transversely of the hand and relatively non-stretchable lengthwise of the hand coated with a substantially continuous and uniform layer of reflex light-reflecting material, said layer being pliable to conform to the material of the glove and to the shape and movements of the wearer's hand within said glove.

2. A glove according to claim 1 wherein at least the palm portion is formed of leather.

3. A glove according to claim 1 wherein at least the palm portion is formed of leather stretchable in the same sense as said fabric.

4. A traffic-signalling glove comprising fingers, a palm portion and a back portion, all parts thereof being formed of flexible material fitting and conforming to the wearer's hand, the outer surfaces of the back portion and the backs of the fingers being coated with a substantially continuous and uniform layer of reflex light-reflecting material, said layer being pliable to conform to the material of the glove and to the shape and movements of the wearer's hand within said glove, the portions which are so coated being formed of a suede-finished warp knit tricot fabric and the other parts being formed of leather.

5. A traffic-signalling glove comprising fingers, a palm portion and a back portion, all parts thereof being formed of flexible material fitting and conforming to the wearer's hand, the outer surfaces of the back portion and the backs of the fingers being coated with a substantially continuous and uniform layer of light-reflecting material, said layer being pliable to conform to the material of the glove and to the shape and movements of the wearer's hand within said glove, the portions which are so coated being formed of a single sheet of a warp knit tricot fabric with atlas stitch stretchable transversely of the wearer's hand and the other portions of the glove being formed of leather.

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REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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2,432,928	Palmquist	Dec. 16, 1947