

[54] AIR ACTUATED SKI SPEEDOMETER

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[51] Int. Cl. .... G01p 5/02

[58] Field of Search ..... 73/228, 189, 186

[56] References Cited

UNITED STATES PATENTS

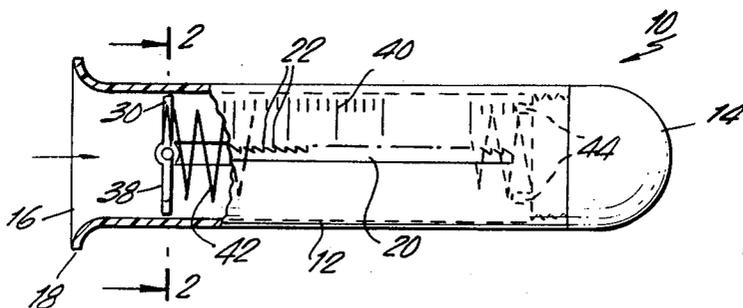
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[57] ABSTRACT

A ski speedometer for registering the highest speed attained by a skier during a predetermined ski run. The ski speedometer employs a tube having an air inlet and a spring pressed plate actuated by air passing into the tube. An indicator is attached to the plate and positioned outwardly of the tube for cooperating with indicia on the tube for providing a direct readout of the actual highest speed attained by the skier, until the ski speedometer has been reset.

5 Claims, 5 Drawing Figures



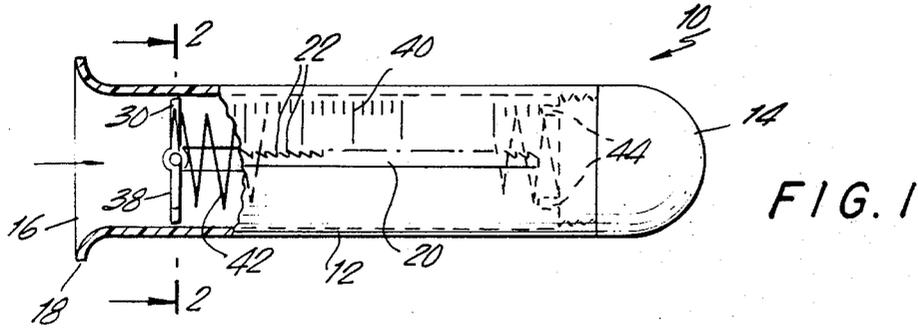


FIG. 1

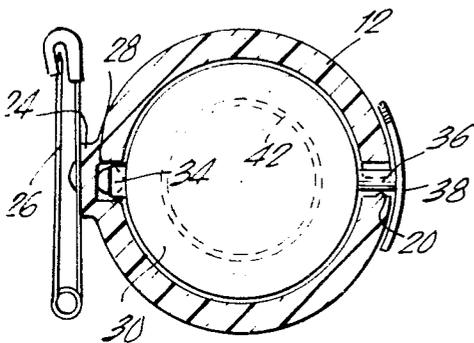


FIG. 2

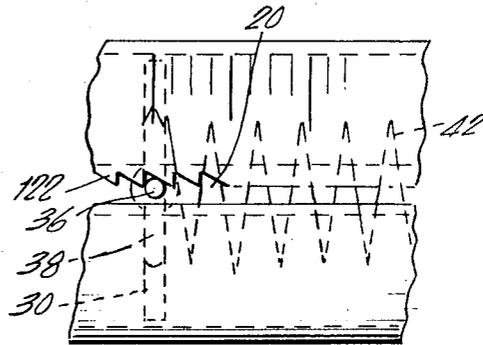


FIG. 3

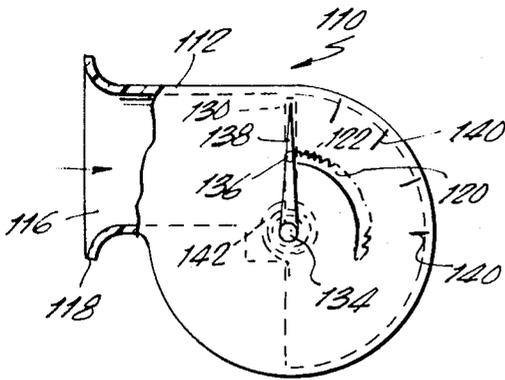


FIG. 4

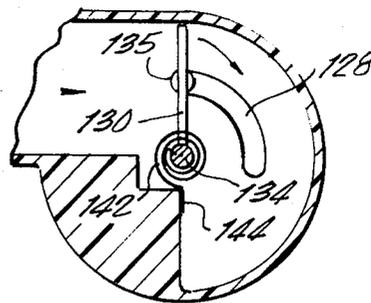


FIG. 5

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## AIR ACTUATED SKI SPEEDOMETER

The present invention relates to a ski speedometer adapted to be attached to a garment of a skier for providing an indication to a skier of the highest speed which the skier has attained during a run down a ski trail.

Skiing as a sport has become a wide spread recreational and entertaining pursuit for enormous numbers of enthusiasts. As the skier becomes more expert, the speed at which the skier travels over the various ski trails and slopes increases and becomes not only quite thrilling, but actually becomes a challenge so that more and more speed is sought and attained. Because of this, the knowledge of the actual speed which the skier has attained becomes desirable to a great number of skiers.

The present invention provides an inexpensive device which may be readily attached to a garment of the skier in a convenient manner and which is so arranged that the air passing by the skier during the skier's run down a ski trail will be automatically registered and the ski speedometer is so arranged that it will indicate and maintain an indication, until reset, of the highest speed which had been attained during a predetermined period.

The construction of this invention features the use of a tube in which a plate is mounted. Guide means are provided constraining the movement of the plate when actuated by air passing into the tube due to the skier's movement. These guide means include a toothed slot, and a pin carried by the plate which is engageable in a ratchet and pin type connection with the toothed slot for maintaining the plate in its farthest advanced position when actuated by air passing into the tube caused by the skier's travelling over a ski slope.

In one embodiment of the invention the ski speedometer is in the form of a longitudinally arranged tube with the guide means including a longitudinally extending slot.

Another form of the invention includes a horn-shaped tube with the guide means including an arcuate toothed slot.

Still further objects and features of the present invention reside in the provision of an air actuated ski speedometer which is simple in construction, capable of being manufactured out of readily available materials including synthetic plastics and the like, which may be secured to a garment of a skier by means of a safety pin or clip, and which is inexpensive to manufacture, thereby permitting wide use and distribution in the sport of skiing and the like.

These, together with the various ancillary objects and features of the present invention, which will become apparent as the following description proceeds, are attained by this air actuated ski speedometer, preferred embodiments of which are illustrated in the accompanying drawing, by way of example only, wherein:

FIG. 1 is an elevational view of a ski speedometer constructed in accordance with the concepts of the present invention, with parts being broken away to show other parts in section;

FIG. 2 is an enlarged vertical sectional view, taken along the plane of line 2—2 in FIG. 1;

FIG. 3 is a partial enlarged detail view illustrating the manner in which the plate and indicator are locked in the position for indicating the highest speed attained;

FIG. 4 is a view similar to FIG. 1 of a modified form of the invention; and,

FIG. 5 is a partial longitudinal sectional detail view illustrating details of construction of the embodiment of the invention shown in FIG. 4.

With continuing reference to the accompanying drawing, wherein like reference numerals designate similar parts throughout the various views, and with initial attention to the embodiment as shown in FIGS. 1 through 3, reference numeral 10 generally designates a ski speedometer constructed in accordance with the concepts of the present invention. The ski speedometer includes a tube 12 molded out of any suitable synthetic plastic material, such as polystyrene, polyvinyl chloride, or the like, and which may have a closed end 14 and an open end 16 having a lip 18 forming the outermost edge thereof and forming an air intake opening into which air may be forced due to the motion of the skier.

An elongated longitudinal slot 20 is formed in the tube 12 and extends the major portion of the length of the tube 12 and is provided with a plurality of downwardly extending ratchet teeth 22. The tube 12 may be molded with a thickened portion 24 to which a safety pin 26 or like fastener, such as a clip, is attached for detachably securing the ski speedometer to the clothing of the user, including any suitable garment, such as a cap, the shoulder of the ski jacket, waist band or the like, in an attitude where the open end 16 is directed forwardly of the normal motion of the skier so that the air passing by the skier during the skier's movement will enter the open end 16.

Opposite the slot 20 there is provided a groove 28. A plate 30 is disposed in the tube 12 and substantially fills the tube 12 though the peripheral edge thereof is spaced from the inner peripheral walls of the tube by a slight amount. The plate 30 has a projection 34 which rides in the groove 28 and carries a pin 36 which extends through the slot 20 so that an indicator 38 attached to the pin 36, which is curved to conform to the contours of the tube 12 and to be closely spaced therefrom, will move with the plate and cooperate with suitable indicia 40 on the outside of the tube 12 to indicate the actual speed of the skier.

A spring 42 preferably in the form of a coil spring biases the plate 30 and has its other end engaged with suitable detents 44 within the tube so as to normally urge the plate to its initial position as shown in FIG. 1. As air enters the opening 16 due to the speed of the skier, the spring 42 will be compressed. The slot 20 is so arranged with respect to the pin 36 that the pin 36 will ride the toothed outer portion and will engage between the teeth in the form of a pin and ratchet so that when the plate 30 has been pushed in the maximum amount, the pin 36 will lock the plate 30 in the extended position. The spring 42 will normally maintain the pin 36 resiliently in the raised locked position as shown in FIG. 3. The spring 42 and the indicia 40 will have been so calibrated that the indicator 38 will provide a direct readout in miles per hour or kilometers per hour of the actual speed of the air entering into the tube 12 and therefore a relatively accurate indication of the speed of the skier over the ski trails is obtained.

The embodiment shown in FIGS. 4 and 5 is quite similar to the other form of the invention. Herein a ski speedometer 110 is provided with a tube 112 in the ar-

cuate shape of a horn, such as a French horn, and which is provided with an opening 116 having a lip 118. In this instance the plate 130 is mounted on a shaft 134 journalled in the tube 112 and carries a pin 136 which rides in an arcuate slot 120 provided with teeth 122. A clock-type spring 142 is wrapped about the shaft 134 and normally urges the plate 130 to an initial position as shown in FIGS. 4 and 5. An indicator 138 is provided on the pin 136 outwardly of the tube 112 and cooperates with indicia 140. A guide groove 128 may be provided for cooperation with a guide projection 135 on the plate 130. The end of the spring not secured to the shaft 134 is secured to the tube 112 at 144.

In use, with the tube 112 attached to a garment of the skier so that the open end 116 is facing forwardly, air will depress the plate to a position where the pin 136 will engage the teeth 122 in the farthest position attained to indicate relative speed through rotation of the shaft 134 through actuation of the plate 130.

To reset, all that is necessary is to pull the pin 136 out of engagement with the teeth and allow the spring 142 to return the plate to its initial position much in the same manner that the pin 36 is disengaged from the teeth 22 manually and the plate 30 is allowed to return to its initial position.

The opening in the slots 20 and 120 form an outlet for air rushing into the opening 16 and passing past the plate 30 or 130 respectively. Of course, other suitable air outlets may be provided as necessary or desired in the tubes 12 and 112 respectively.

A latitude of modification, substitution and change is intended in the foregoing specification, and in some instances, some features of the invention may be em-

ployed without a corresponding use of other features.

I claim:

1. A ski speedometer for registering the highest speed attained by a skier during a predetermined period comprising a tube, said tube having an open end forming an air intake, a plate disposed in said tube, guide means on said tube, and said plate for movably mounting said plate for motion along a constrained path within said tube, spring means in said tube engaging said plate for resisting movement of said plate, indicia on said tube, indicator means carried by said plate and extending outwardly of said tube cooperating with said indicia to visually indicate amount of movement of said plate, means for retaining said plate in a position corresponding to the furthest movement from an initial position attained, and securing means attached to said tube for attaching said tube to a garment of the user in an attitude for directing air into said tube corresponding to the speed of the user, said means for retaining including a toothed slot in said tube, a pin on said plate, said pin extending into said slot and being engageable with said teeth.

2. A ski speedometer according to claim 1, wherein said slot extends longitudinally of said tube.

3. A ski speedometer according to claim 1, wherein said slot is arcuate in shape.

4. A ski speedometer according to claim 3, wherein said slot extends through an arc of substantially ninety degrees.

5. A ski speedometer according to claim 4, including a shaft journalled in said tube, said plate being mounted on said shaft and rotatable therewith, said spring means being wrapped about said shaft.

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