June 11, 1929. M. FREEMARK 1,716,689

EMERGENCY BELT

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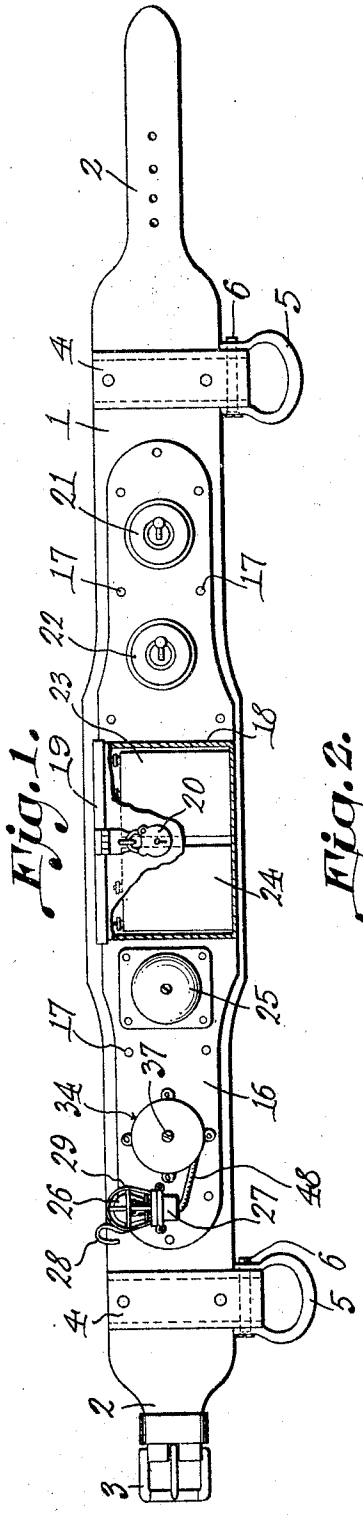


Fig. 1.

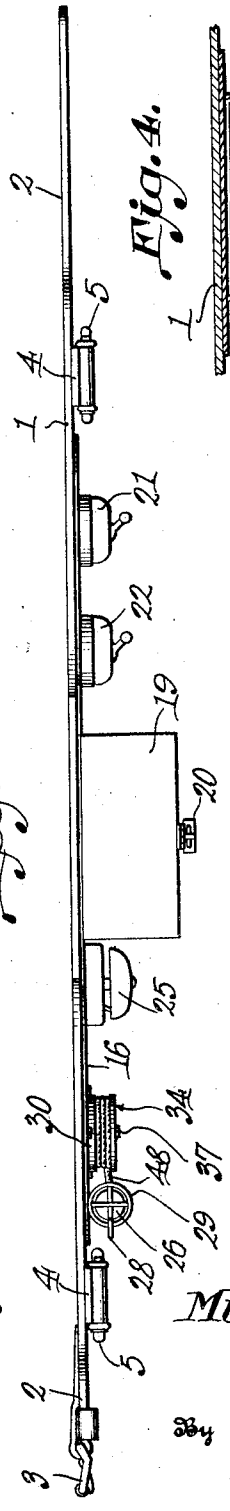


Fig. 2.

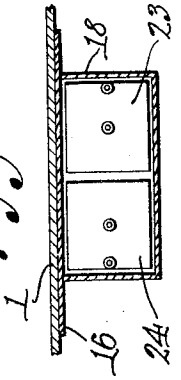


Fig. 4.

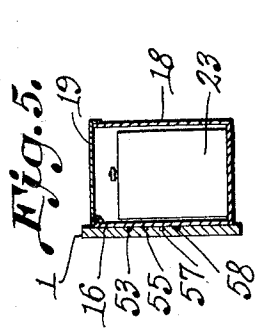


Fig. 5.

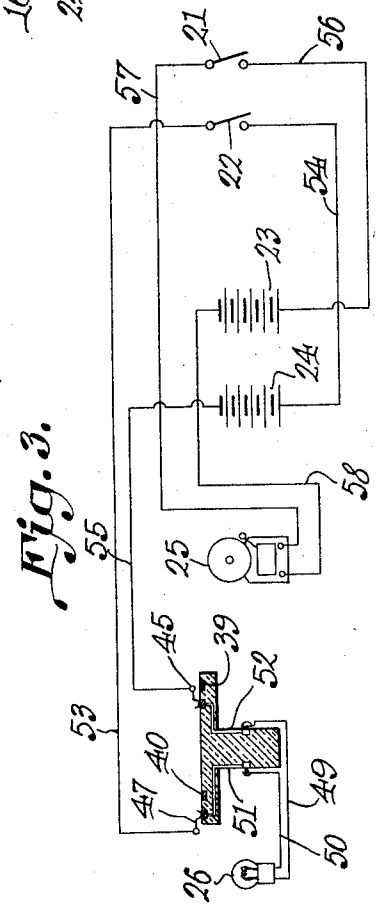


Fig. 3.

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Fig. 6.

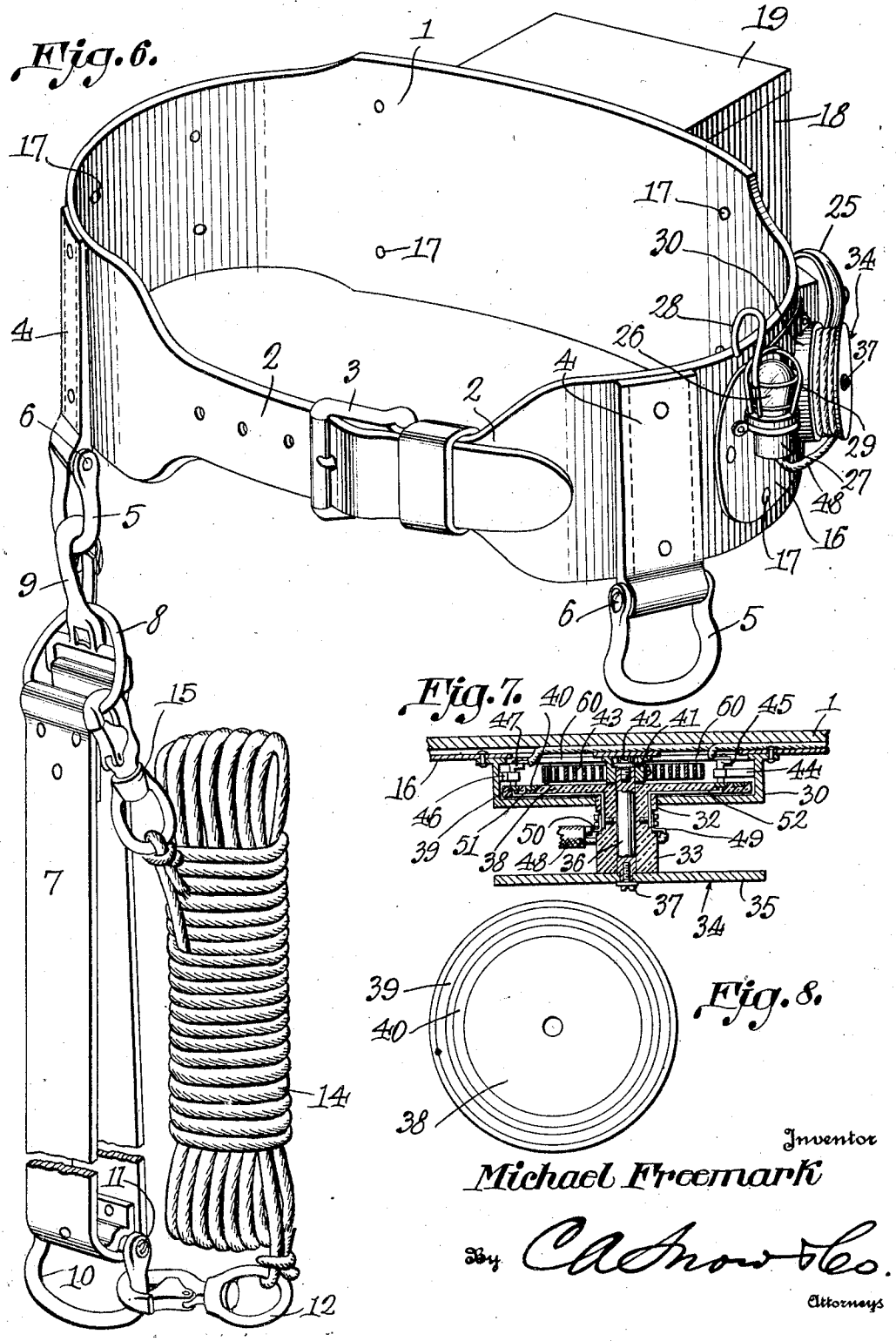


Fig. 7.

Fig. 8.

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Patented June 11, 1929. 1,716,689

UNITED STATES PATENT OFFICE.

MICHAEL FREEMARK, OF BRECKENRIDGE, MINNESOTA.

EMERGENCY BELT.

Application filed May 20, 1927. Serial No. 192,973.

This invention aims to provide a novel form of belt, adapted to be worn by firemen, miners, and others, who must enter dangerous places, such as burning buildings. The invention aims to provide a device of the class described, so constructed that signals may be given upon occasion, means being provided whereby the wearer of the main belt may lower a person through the instrumentality of an auxiliary belt and a hand line carried on the main belt. The invention aims, moreover, to provide a novel signal mechanism and a novel means for automatically controlling the length of a conductor which is connected to a lamp on the belt.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in elevation, a belt constructed in accordance with the invention, parts being in section;

Figure 2 is a view wherein the belt is viewed edgewise;

Figure 3 is a circuit diagram;

Figures 4 and 5 are sections taken at right angles to each other through the battery box;

Figure 6 is a view wherein the article is seen in perspective;

Figure 7 is a sectional view of the reel which handles the lamp cord;

Figure 8 is a diagrammatic view illustrating the collector rings.

In carrying out the invention, there is provided a main belt 1, made of heavy leather, or any other material having great strength. The main belt 1 has reduced ends 2, connected detachably in any suitable way, for instance, by means of a buckle 3. Upright reinforcing strips 4 are mounted on the belt 1, transversely thereof, at points near to the connected ends of the belt. Loops 5 are pivoted at 6 to the lower ends of the reinforcing strips 4 and extend below the main belt 1.

The numeral 7 designates an auxiliary belt supplied at one end with an eye 8 adapted to be engaged by a snap 9 on the opposite end of the auxiliary belt. The snap 9 may be engaged with one of the loops 5 of the main belt 1, when the auxiliary belt 7 is not in use. A loop 10 is pivotally connected, as at 11, with the auxiliary belt 7. A swivel snap 12 is engaged in the loop 10, and to the swivel snap 12, a hand line 14 is connected.

When the auxiliary belt 7 is not in use, the hand line 14 is tied up into a complete roll, and a snap 15 on the hand line is engaged with the eye 8, the belt 7 being folded up, the eye 8 being engaged with the snap 9, as the snap 9 is being hooked into one of the loops 5 on the main belt 1. The wearer of the main belt 1 can carry the auxiliary belt around conveniently, and when the occasion for the use of the auxiliary belt 7 arrives, the snap 9 may be detached from the loop 5, the belt 7 may be placed around the body of a person, either the snap 15 or the snap 12, and preferably the snap 15, is set free, and the hand line 14 is undone, and, then, the person wearing the main belt 1, can lower the wearer of the auxiliary belt 7 out of a burning building, for out of any other dangerous place, by means of the hand line 14. If the wearer of the main belt 1 has occasion to use a line, he can detach both of the snaps 12 and 15 from the rings 10 and 8, respectively, of the auxiliary belt 7, and, then, the hand line 14 may be used for any purpose for which it is intended.

A resilient metal support, in the form of an elongated plate 16, is attached by securing elements 17 to the outer surface of the main belt 1, at the front thereof. The support or plate 16, is curved, and aids in holding the belt 1 in such shape that it will conform to the body of the wearer, as shown in Figure 1 of the drawings. A metal battery box 18 is secured to the plate 16, intermediate the ends of the plate, the plate forming the back of the battery box 18, as Figures 4 and 5 will disclose. The battery box 18 has a hinged top lid 19, adapted to be held closed by a lock 20. In the box 18, is mounted a cell 23 of the battery, and a cell 24 of the battery. Switches 21 and 22 are secured to the plate 16, and are located on one side of

the battery box 18, as shown most clearly in Figure 1 of the drawings. An audible signal 25 and an electric lamp 26 are mounted on the plate 16 and are located on the opposite side of the battery box 18 from the switches 22 and 21. The signal bell 25 is permanently secured to the plate 16, whereas the electric lamp 26 has its butt detachably mounted in a socket 27 that is carried by the plate or support 16. The cage for the lamp 26 is marked by the numeral 29 and has a hook 28 whereby the lamp 26 may be hung up conveniently at any place in which it is to be used.

A housing 30 is secured on the plate 16 and is located between the bell 25 and the lamp 26. The housing comprises a bearing 32 wherein is journaled the shaft 33 of a reel 34 including a head 35. A spindle 36 extends through the shaft 33, and by means of a securing element 37 in the forward end of the spindle 36, the head 35 is held on the outer end of the shaft 33, as shown in Figure 7 of the drawings. At its rear end, the shaft 33 is provided with a disk 38 located within the housing 30. In the rear surface of the disk 38, concentric collector rings 39 and 40 are mounted, these rings being made of conducting material. A small drum 41 is secured at 42 on the rear end of the spindle 36, and to the drum 41 is connected one end of a coiled spring 43 located within the housing 30, the other end of the coiled spring being anchored upon the housing. A support 44 is mounted in the housing 30. A brush 45 is carried by the support 44 and bears yieldably upon the collector ring 40. A support 46 is mounted in the housing 30 in diametrically opposite relation to the support 41. A brush 47 is mounted in the support 46. The brush 47 cooperates yieldably with the collector ring 39.

A flexible cable 48 is wound about the spring-actuated drum 41 and is connected to the lamp 26. The cable 48 includes conductors 49 and 50. The conductor 50 is connected to a conducting strip 51 located on the shaft 33 and on the disk-like head 38, the conducting strip 51 being joined electrically to the collector ring 39. The conductor 49 is joined to a conducting strip 52 located on the shaft 33 and on the disk-like head 38. The conducting strip 52 is joined to the collector ring 40, electrically. A conductor 53 extends between the brush 47 and one side of the switch 22. A conductor 54 joins the other side of the switch 22 with one side of the battery 24. A conductor 55 extends between the battery 24 and the brush 45.

A conductor 56 extends between one side of the switch 21 and one side of the battery 23. A conductor 57 extends between the opposite side of the switch 21 and one side of the bell 25. From the opposite side of the bell 25, a conductor 58 extends to the battery 23. The conductors 53, 55, 58, 54, 56, and 57, are located between the plate 16 and the body of the belt 1 and are of course insulated from the plate 16. The plate 16 is provided, as shown in Figure 7, with openings 60, through which the conductors enter the housing 30. The electric lamp 26 may be pulled out of the socket 27 on the plate 16 and may be suspended by means of the hook 28 in any position where a light is required: or, if the operator prefers, he can carry the lamp 26 in his hand and use the lamp like a signal torch. When the lamp is carried to a remote place, the cable 48 is paid off the reel 34, the reel rotating, and the coiled spring 43 being put under tension. When the pull on the cable 48 is released, the spring 43 will automatically react and wind the slack of the cable 48 on the drum. During the time that the cable 48 is being paid out, or being reeled in, the lamp 26 will continue to burn, provided that the switch 22 is closed, because the brush 45 has continuous contact with the collector ring 40, and because the brush 47 has continuous contact with the collector ring 39. It is not necessary for the wearer of the belt 1 to search for light, because he has with him, at all times, the lamp 26, together with a means for lighting it, and the lamp may be used in any desired place, within reasonable limits, since the lamp is connected to the cable 48 that carries the conductors 49 and 50, the cable being controlled by the spring-actuated reel 34.

The lamp circuit includes a battery 24, the conductor 55, the brush 45, the collector ring 40, the conducting strip 52, the conductor 49, the lamp 26, the conductor 50, the connecting strip 51, the collector ring 39, the brush 47, the conductor 53, the switch 22, the conductor 54, and the battery 24. It is obvious that by closing the switch 22, the operator can have light whenever he needs it.

When the switch 21 is closed, there is established a circuit comprising a conductor 56, the battery 23, the conductor 58, the bell 25, the conductor 57, and the switch 21. By closing the switch 21, the bell 25 may be caused to sound, an audible signal thus being given, which will be useful when the wearer of the belt desires to make his whereabouts known.

The construction of the device is such that a fireman, miner or other person can signal, and light his way, in the instance of emergency, and, in general, a person wearing the belt described will be well adapted and furnished to carry on life-saving operations.

What is claimed is:—

1. In a device of the class described, a flexible belt having separable ends, an electric lamp, a source of electric energy on the belt, a circuit including the lamp and said

source, the circuit comprising a flexible conductor, and a spring-operated reel on the belt, the conductor being wound automatically on the reel, to keep the conductor free from the separable ends of the belt.

2. In a device of the class described, a flexible belt, an electric lamp, a source of electric energy, a circuit including the lamp and said source, the circuit comprising a flexible conductor, a reel on which the conductor is wound, and a resilient support secured to the belt and carrying both the reel and said source, the support constituting a secure place of journalling for the reel and serving as a reenforcement for the belt so that the belt will not distort under the weight of said source and of the reel, or when the reel is operated.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

MICHAEL FREEMARK.