(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 429 266 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90312538.3**

(51) Int. Cl.5: **A63B 55/08**, B62D 51/00

(22) Date of filing: **16.11.90**

(30) Priority: **18.11.89 GB 8926133**

(43) Date of publication of application:
29.05.91 Bulletin 91/22

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

(71) Applicant: **Oakley, Robert Charles**
45 The Street, Brundall
Norwich, Norfolk(GB)

(72) Inventor: **Oakley, Robert Charles**
45 The Street, Brundall
Norwich, Norfolk(GB)

(74) Representative: **Jones, William**
Willow Lane House Willow Lane
Norwich NR2 1EU(GB)

(54) Improved golf trolley.

(57) A golf trolley fitted with an odometer. The odometer is driven from a sensor in the wheel unit (14) of the trolley and is itself mounted adjacent the trolley handle (18). The revolutions of the wheel show in a digital display in the handle region and the display gives a read out of distance travelled and/or distance remaining to be travelled to reach a given hole of a golf course. The odometer drive from the wheel may be mechanical instead of electrica. The invention may be incorporated in a newly built trolley or retrofitted to an existing one.

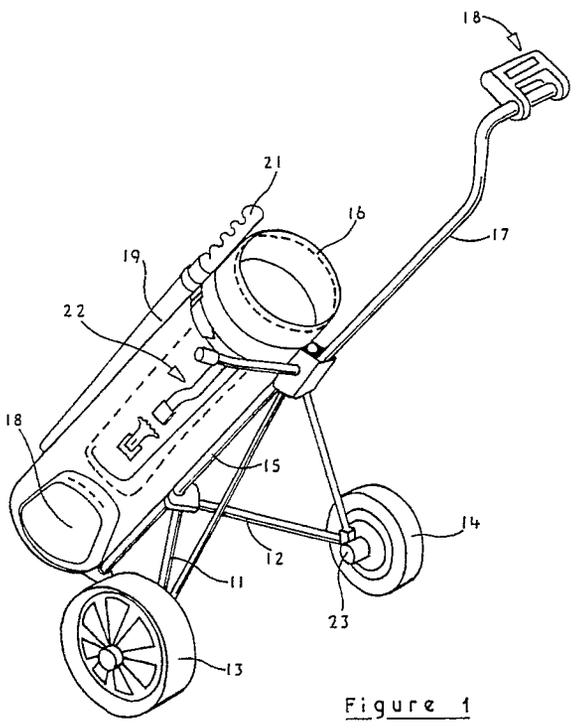

Figure 1

EP 0 429 266 A1

IMPROVED GOLF TROLLEY

The invention relates to golf trolleys.

Golf trolleys have been a familiar sight in this country for many years. Nowadays they are usually made of sturdy but relatively lightweight tubular steel or aluminium framed construction and they have relatively small diameter wheels. The basics of their design have remained unchanged, though, and any alterations have been mainly cosmetic in nature.

It is conventional to designate the successive holes of a golf course by their respective yardages from the tee. These yardages will be known to the player before he starts his round. The "par stroke value attributed to each hole will also be known.

What is not known, however, to the individual player is the distance that he habitually hits his first drive. It is not at all uncommon for players to attempt to pace out that distance, from the tee, to where their ball has fallen; on the well known basis that the length of a grown man's stride is approximately one yard. But this is at best an approximation.

What every player does do, however, is to wheel his club trolley with him as he walks from one shot to the next. He will do this, without thinking about is consciously, even when he attempts to pace accurately the distance he has hit his drive. Odometers - mechanisms which monitor the revolution of a wheel of a bicycle, convert the monitored revolutions into a distance-travelled read out, and display the read out to the cyclist - are known in themselves. They have never previously, as far as the present applicant is aware, been sued on golf trolleys. Fitting an odometer to a golf trolley will enable the golfer to be shown accurately how far he has wheeled his trolley on any given journey from one shot to another; and this is the essence of the present invention.

As well as being new, a golf trolley fitted with an odometer is believed to involve an intensive step. Easily the most common use - if not the only one - of odometers is in monitoring the revolution of bicycle wheels. Cyclists and golfers do not habitually fraternise and it would not, therefore, be obvious for someone seeking to improve the design of a golf trolley to look to the cycling art for his design improvements. And it has already been pointed out that, because the design of golf trolleys has not needed improvement over the years, it has not received any and has remained essentially static. There is thus no apparent need to investigate the design of golf trolleys at all, since they perform their primary function perfectly well.

The odometer may be constructed so as to convert, in conventional manner, the revolutions of the golf trolley wheel into a digital display which is carried on the odometer itself. But is would be advantageous if the display were to be more easily legible and were to be mounted, for example, on or adjacent the handle region of the trolley. This is especially so because many golfers can be elderly and would find it far easier not to have to bend down to read a display adjacent the wheel hub of the trolley.

The eyesight of the older golfer might also be such that he welcomes a display rather nearer his normal line of vision. And that leads on to a further improvement in the inventive concept whereby the display is deliberately magnified so as to permit more easy reading of it.

The odometer may be a mechanically-driven odometer such as is used for bioycles. But in this day and age there is no reason why it should not be electrically, electronically or electro-mechanically driven. All these possibilities increase the versatility of the invention by increasing the range of options for mounting, constructing and driving the odometer.

Whilst the odometer might, again conventionally, give a direct read out of distance travelled by the trolley between re-setting the odometer, this need not necessarily be so. In the special circumstances of golfing, it might be more advantageous for the odometer to progressively subtract the distance travelled from the known distance from the tee to a given hole. The read out then given will be the yardage remaining between the ball and the hole when the golfer has teed off and has walked to where has ball lands. The means for constructing the odometer to work in this way, and the incorporation into it of a simple means for presetting a given yardage into it as the tee, can again be supplied by the skilled addressee of this specification, although specific embodiments will be described herein.

The invention is applicable as a modification of existing golf trolleys as well as being able to be built into new trolleys from the outset. The invention therefore uncludes within its scope the combination of a wheel unit with an odometer, the two being specifically adapted and constructed to work in co-operation such that the wheel, when fitted to a golf trolley with the odometer, drives the odometer to cause it to display a read out of distance travelled and/or distance remaining to be travelled to reach a hole of a golf course which hole is a known and pre-settable distance from the point the wheel started to travel.

One presently preferred embodiment of the invention, in both its broad inventive aspects - i.e

as a golf trolley fitted with an odometer, and as a wheel unit and odometer combination for fitment to such a trolley - is illustrated in the accompanying drawings. It will now be described with reference to those drawings. It is not the only way in which the invention might be put into practice. But it is currently the best way known to the applicant.

In the drawings:

Figure 1 shows a golf trolley in perspective;

Figure 2, also drawn in perspective but to an enlarged scale, shows the odometer-containing region of the trolley handle; and

Figure 3, drawn to approximately the same scale as Figure 2, shows the Figure 2 unit and its handle region in plan.

The embodiment illustrated is constructed in accordance with the objects of the invention to assist a golfer to make a more accurate judgement of distances as he plays his succession of golf shots -especially intermediate shots between the tee and the green. The odometer and wheel unit which incorporates one of these broad aspects of the invention can either be built into a "customised golf trolley" or be capable of attachment to a standard one. The particular embodiment illustrated is a conversion of such a standard trolley.

As Figure 1 shows, the greater part of the trolley construction is relatively conventional and its details can be supplied without inventive thought by the reader of this specification. A relatively lightweight foldable tubular metal frame incorporates struts referenced 11, 12 respectively supporting wheels 13, 14 with a frame backbone 15 supporting a golfing bag 16 and with a push-pull shaft 17 forming an extension of the backbone 15.

The details of the bag 16 need not be enlarged upon. As illustrated, it exhibits an outside pocket 18 and a sheath 19 for housing an umbrella 21, as well as a carrying handle 22. But it is readily removable from the wheeled frame trolley and it could be replaced with any one of a number of available alternative bags.

The push-pull shaft 17 ends in a handle region referenced generally 18 in Figure 1. This handle region is initially made as a separate set of components from the rest of the trolley, and is illustrated in more detail and to an enlarged scale in Figures 2 and 3.

The handle 18 together with the wheel unit 14 and a cable linking them, forms an attachment by which the initially standard illustrated golf trolley can be converted to a trolley embodying the invention.

Initially the trolley has two wheels each of which is identical to the wheel 13 shown. that is, a freely rotatable wheel, fixed to the outer end of its respective one of the structs 11 and 12. One of these standard wheels it taken off - a simple enough operation not requiring further description - and is replaced with the wheel unit 14. Unit 14, like the one that it replaced, embodies a freely rotatable wheel. But the hub unit 23 about which the wheel rotates contains a sensor which counts the wheel revolutions. The sensor construction need not be detailed and can again be selected from known alternatives if desired.

In the illustrated embodiment, however, a sensor mounted in the static part 23 of the hub transmits its revolution-count electrically through a cable 24 (Figure 3) to the odometer-containing handle region 18 of the trolley. This cable 24 is threaded through the hollow tubes of the trolley frame, emerging from the open end of shaft 17 and entering the odometer casing 25 as shown in Figure 3. The odometer itself, which can be of known kind, gives a digital liquid crystal display behind a lens 26 which weather proofs the odometer and which - optionally - magnifies the LCD display with the advantages previously touched on.

The sensor in the hub unit 23, at the same time as it counts the revolutions of the wheel, produces sufficient electrical power to maintain a rechargeable battery pack which could be incorporated in any suitable position on the trolley but preferably is incorporated within the odometer casing 25. This battery pack functions as a power source for a simple computer, also incorporated into casing 25, which not only powers the LCD display but also enables the user to select - via push buttons -whether he wants the distance covered to be recorded; whether, conversely, he wants to know the distance remaining to a given preprogrammed distant tee; whether he wants to clear the recording altogher in preparation for the next tee; or whether he wants to hold, without clearing, a given display.

Respective push buttons 27, 28, 29 and 31 project from the odometer casing 25 to enable these selections to be made.

The casing 25 is built around a hand grip 32 which comprises a suitably resilient finger-grip-indented covering moulded around a tubular core. The core 33 (Figure 2) is a progressively tightening frictional portion fit over the shaft 17. The original hand grip (not shown) supplied with the trolley is removed and the grip 32, 33 pushed home in its place. The cable 24 is then linked to its sensor hub unit 23 by threading it through the tubular frame of the trolley in the most appropriate manner.

The casing 25 can rotate about the hand grip core 33. It is a relatively tight but nevertheless movable frictional fit on that core. It can therefore be adjusted to the most convenient viewing angle by an individual golfer and, once set in that angle, will tend to stay there unless it is fairly strongly pushed out of its setting.

As mentioned above, other ways exist of putting the invention into practive. The sensor/generator could be, for example, a "bottle" styled electrical dynamo of the kind well known from the field of cycle dynamos. Alternatively the cable 24, instead of being an electrically conductive cable, could be a cable sheathing a rotary mechanical drive from the hub 123 to the odometer. In that latter case it is likely that the drive and drive cable, having to pass in a relatively smooth curve from end to end, would not go through the trolley frame but would be clipped or taped to the outside of the frame; although at best, they could emerge part-way from the frame in order to describe the necessary continuous curve.

Other modifications may be made. A unit such as the one illustrated, once in general use in the golfing world, could well generate a demand for more functions. For example, electronically generated spoken output, score recording, dual or multi-player uses, read-outs for technical advice or the rules of the game. Perhaps also the incorporation of other devices, such as a theft alarm, diary, pager, calculator, dictation machine or golf game with LCD display behind lens 26.

Any or all of these could well be accommodated if the volume of manufacture for the thus-generated market justifies their incorporation. None of them would have occurred without the basic inventive concept and this simply points out the inherently inventive nature of the concept as such.

Claims

1. The combination of a wheel unit with an odometer, the two being specifically adapted to be fitted to a golf trolley and being constructed to work in co-operation such that the wheel, when fitted to the trolley with the odometer, drives the odometer to cause it to display a read out of distance travelled and/or distance remaining to be travelled to reach a hole of a golf course which hole is a known and pre-settable distance from the point the wheel started to travel.

2. Apparatus according to Claim 1 and including means operatively linking the wheel unit to the odometer in such a way that, when both are fitted to the trolley, the odometer can be mounted remote from the wheel unit.

3. Apparatus according to Claim 2 and in which the odometer is adapted to be mounted on or adjacent the handle region of the trolley.

4. Apparatus according to any of the preceding Claims and in which the odometer display is magnified so as to permit easy reading of it.

5. Apparatus according to any of Claims 2 to 4 and in which the means operatively linking the odometer to the wheel unit travels through at least part of the trolley frame when the odometer and wheel unit are mounted on the trolley.

6. Apparatus according to any of Claims 3 to 5 and in which the odometer is housed in or forms part of a casing which shrouds the handle of the trolley in use.

7. Apparatus according to Claim 6 and in which the odometer casing can rotate about the handle and can be adjusted to selected positions by the user.

8. Apparatus according to Claim 7 and in which the odometer casing is a relatively tight but nevertheless movable frictional fit on a handle which, when the apparatus is fitted to an existing trolley, can replace the conventional trolley handle as the wheel unit similarly replaces the conventional trolley wheel.

9. Apparatus comprising a wheel unit and an odometer constructed and arranged substantially as described herein with reference to and as illustrated in any appropriate combination of the accompnaying drawings.

10. A golf trolley incorporating apparatus in accordance with any of the preceding Claims.

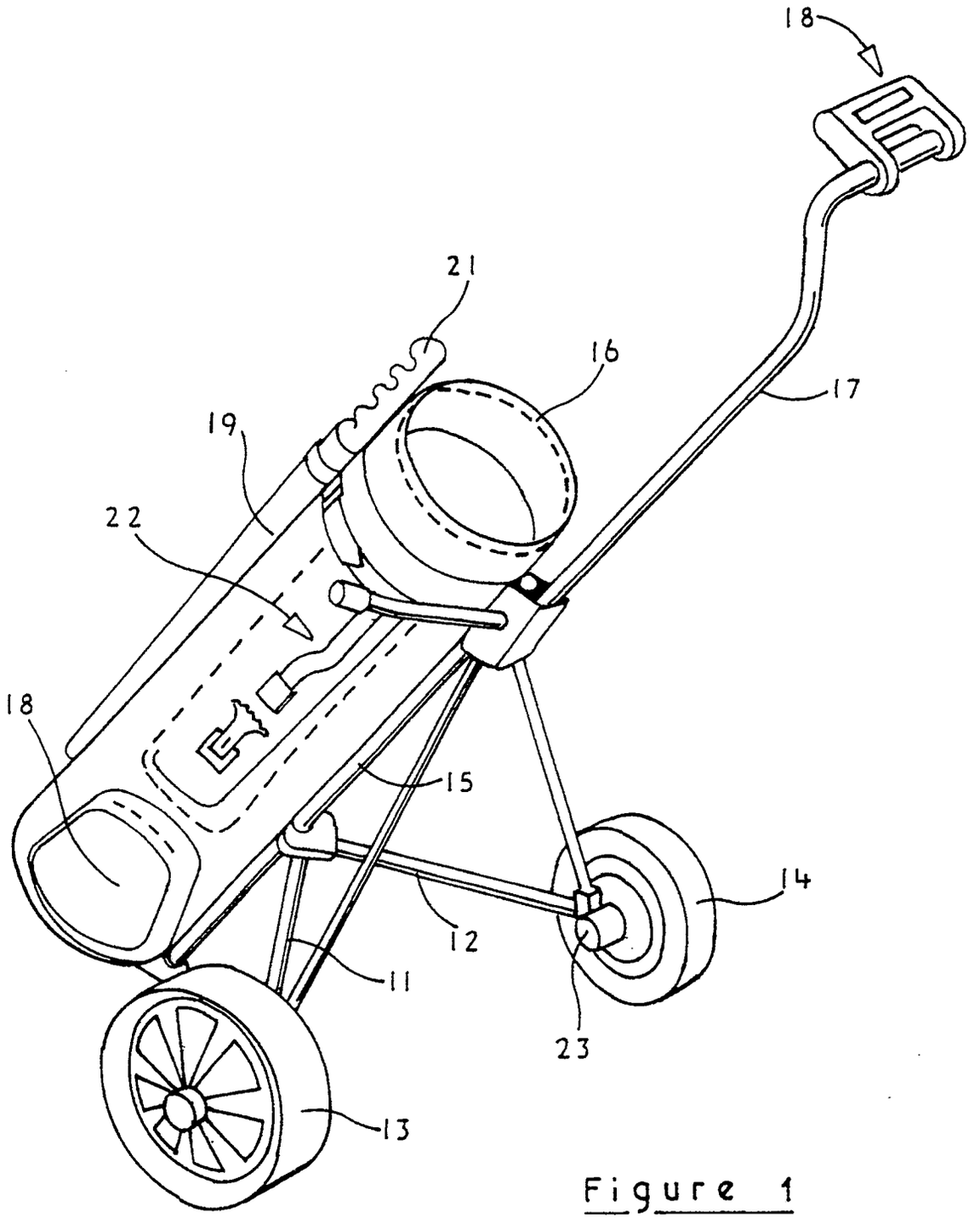

Figure 1

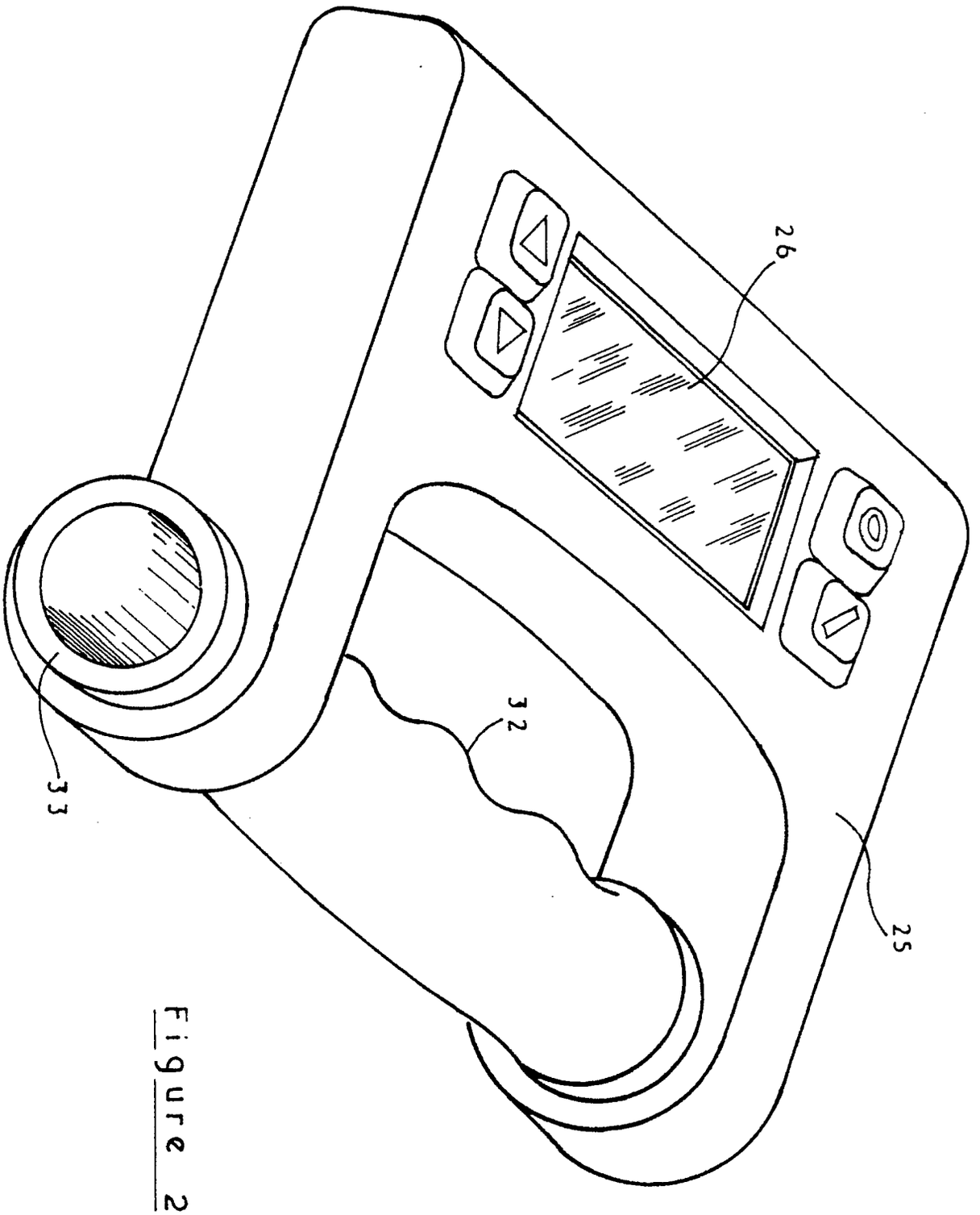

Figure 2

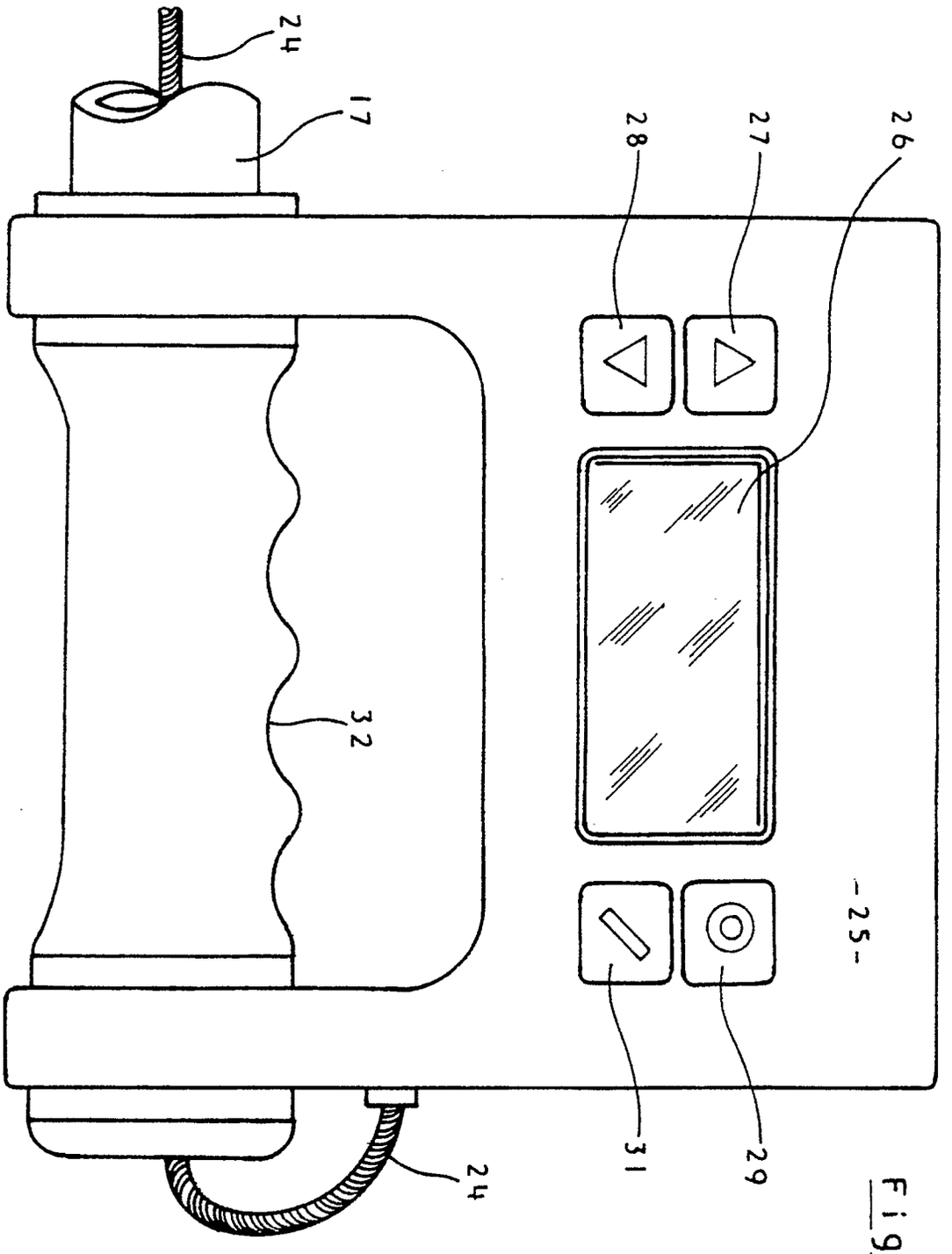

Figure 3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 31 2538

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	GB-A-2 125 349 (J.M. WORTHINGTON) * Page 1, lines 1-54; page 2, line 121 - page 3, line 6 *	1-5,9,10	A 63 B 55/08 B 62 D 51/00
X	EP-A-0 281 846 (W.L. CORMIER) * Column 2, line 51 - column 3, line 19 *	1-5,9,10	
A	GB-A-1 353 704 (R.M. HOLLIS) * Column 4, line 129 - column 5, line 4 *	6	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A 63 B

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	15 January 91	GERARD B.E.

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same catagory
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention

E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons

&: member of the same patent family, corresponding document