



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 420 382 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.05.2004 Bulletin 2004/21

(51) Int Cl.7: **G09F 9/00, B65F 1/14**

(21) Application number: **03257079.8**

(22) Date of filing: **10.11.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(72) Inventor: **Lowe, Peter**
Brierley Hill West Midlands DY5 3RF (GB)

(74) Representative: **Chettle, Adrian John et al**
Withers & Rogers,
Goldings House,
2 Hays Lane
London SE1 2HW (GB)

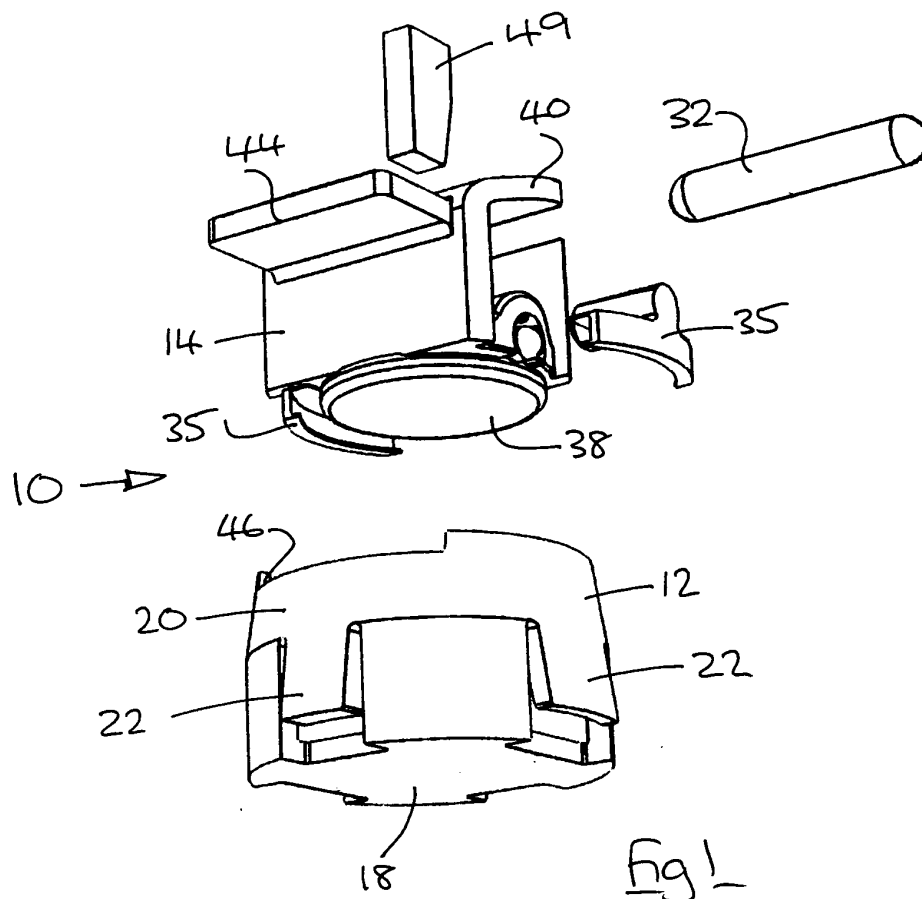
(30) Priority: **15.11.2002 GB 0226735**

(71) Applicant: **Egbert H. Taylor & Company Limited**
Elmley Lovett, WR9 0QZ Worcestershire (GB)

(54) Improved electronic identification device housing

(57) A universal holder for electronic identification devices comprises an outer socket (12) having retention barbs (22) and an inner holder (14) for one of several

identification devices (32,38,49) and having a bias spring (40). The holder is particularly adapted to the hollow comb bar of a waste container.



EP 1 420 382 A2

Description

[0001] The present invention relates to a housing for an electronic identification device and in particular to a housing for use with a waste container.

[0002] It is becoming increasingly common for waste containers or bins to be fitted with an electronic identification device. The identification device is typically interrogated when the container is emptied and hence details such as the address of the building to which the container belongs can be obtained for e.g. billing purposes. In the case where the container is emptied by it being lifted and tipped by a lifting mechanism of a waste collection vehicle, the identification device may advantageously be interrogated by apparatus provided on the lifting mechanism.

[0003] Problems exist in the location of the identification device on the waste container so that it can be accessed by the interrogation apparatus and yet does not impede the lifting mechanism. Furthermore the identification device must be positioned such that it is not damaged by the lifting mechanism or during general wear and tear that may reasonably be expected to be experienced by the waste container. Advantageously, the identification device should be positioned such that it cannot be interfered with by persons having malicious intent.

[0004] According to the present invention there is provided an electronic identification device holder for a waste container, the holder comprising a body adapted to receive and retain one of several electronic identification devices, the body being provided with one or more resilient barbs to, in use, retain the holder at a predetermined location on a waste container.

[0005] In a preferred embodiment the body is manufactured from a plastics material. The body may be provided with a plurality of barbs. The body may be provided with means adapted to, in use, exert a locating force on the body. Such means may comprise a spring member which, in use, is deflected by a portion of the waste container. The body may further be provided with an anti-rotation means to prevent rotation of the body relative to the waste container, in use. The anti-rotation means may comprise a member which is adapted to engage a surface of the waste container, in use. The body may comprise a base and insert fittable to the base. In a preferred embodiment the base is provided with one or more barbs and the insert is provided with the spring member. Preferably the insert is adapted to receive and retain the electronic identification device and may be further provided with the anti-rotation means.

[0006] In a preferred embodiment the base comprises a continuous peripheral wall defining a socket adapted to substantially receive an insert. The wall is preferably substantially circular, and defines at one end a mouth for the insert. The other end of the wall is preferably substantially closed so as to define a blind recess into which the insert is placed.

[0007] In the preferred embodiment the insert is a tight friction fit within the wall, and defines an end stop for engagement with the wall to limit insertion thereof. The end stop preferably also constitutes anti-rotation means, and comprises a projection engageable in a recess of the mouth.

[0008] The insert is preferably adapted to multiple kinds of electronic identification device. In a preferred embodiment a through hole of the insert is adapted to receive a cylindrical pin type identification device. The through hole is also adapted to receive at either end an arcuate support member of a disc-like identification device whose planar surface is parallel to the axis of the through hole. Such support members may be moved together or apart to accommodate discs of different diameter. The axis of the through hole is preferably perpendicular to the insertion axis of the insert.

[0009] The outer end of the insert preferably defines spring arms to bear on the waste container in use. In the preferred embodiment the spring arms are oppositely directed, and define between them a recess for a wedge like identification tag insertable along the insertion axis of the insert.

[0010] In the preferred embodiment, in use, the identification device is wholly within said peripheral wall.

[0011] Preferably the holder is adapted for insertion through a hole into chamber, a side of the chamber opposite said hole bearing on said spring member, and the barbs engaging the inner periphery of said hole. The base of said holder is preferably flush with the outer surface of said hole and located against the side wall thereof. In the preferred embodiment the anti-rotation means bears on another side of said chamber, substantially perpendicular to said opening.

[0012] The holder is preferably insertable into the comb bar of a waste container, and in another aspect the invention comprises any holder defined above installed within a comb bar and bearing on the inner walls thereof.

[0013] An embodiment of the present invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows an exploded view from below and to one side of a holder according to the present invention;

Figure 2 shows an exploded view from above and to one side of the holder of Figure 1;

Figure 3 shows a view from above and to one side of an enlarged scale holder in an assembled condition;

Figure 4 shows an enlarged perspective view of the insert;

Figure 5 shows an alternative perspective view of the insert; and

Figure 6 shows a holder installed in a lifting bar of a waste container.

[0014] Referring firstly to Figures 1 to 5 there is shown an electronic identification device holder generally designated 10. The holder 10 comprises a base 12 and an insert 14 which, in use, is receivable in a recess 16 of the base 12. The base 12 has a floor 18 around which is provided a wall 20, the floor and wall 18,20 between them defining the recess. The base is further provided with a plurality of resilient barbs 22 which extend outwardly from the wall 18. In the embodiment shown the base 12 is provided with four barbs 22 which are spaced approximately equidistantly around the wall 20.

[0015] The insert 14 comprises a hollow cylindrical body portion 24 upon either side of which are provided upstanding guide members 26. The guide members 26 are connected to the body portion by 24 by webs 28. The interior 30 of the body portion 24 is shaped to receive a cylindrical electronic identification device 32. The device typically comprises a number of electronic components which are encapsulated in a glass or plastic body. The interior 30 is provided with a plurality of ribs 34 which ensure that the device 32 centrally locates within the interior 30. The ribs 34 may be deformable so as to grip the device 32.

[0016] Opposite location members 35 have a cylindrical protrusion 36 for insertion in the cylindrical interior 30 and have depending arms which define arcuate channels 37 facing towards each other. These members are adapted to engage the periphery of a disc like identification device 38 (Fig.1) so as to retain it against the underside of the insert 14.

[0017] It will be understood that the members 35 are movable relatively inwardly to accommodate discs 38 of smaller size, and that the protrusion 36 may be arranged to be a tight sliding fit in the interior 30 so as to hold the disc in place (Fig.4).

[0018] The guide members 26 are provided at the outer ends with opposed spring members 40. One of the guide members 26 is further provided with a large laterally extending guide fin 44 whereas the other is provided with a narrow fin 45. It will be noted that the wall 20 of the base 12 is provided with corresponding recesses 46,47 which receive the guide fins when the base 12 and insert 14 are fitted together. The fins and recesses thus define an alignment feature which prevents the insert 14 being fitted to the base 12 incorrectly.

[0019] The axis 40 defines a central opening 48 adapted to permit a wedge-like identification device 49 to be received in a recess of the insert by way of friction fit.

[0020] In use, one electronic identification device 32, 38, 49 is fitted to the insert 14, and the insert 14 fitted to the base 12 where it is temporarily retained, for example by friction fit. The assembled holder 10 can then be fitted to a waste container. Figure 6 shows the holder 10 located within the hollow section of a waste container comb bar 60. In order to receive the holder 10 the comb bar is provided with a hole in the underside thereof through which the holder 10 may be introduced as indi-

cated by arrow 50. The hole is sized such that the barbs 22 are depressed as the holder passes therethrough. It will be understood that once the holder 10 is fully introduced into the comb bar 48 the barbs 22 spring back to their original position, thus preventing the holder 10 from being easily removed back through the hole. The guide fin 44 is positioned adjacent a side wall 52 of the comb bar 60 to prevent rotation of the holder 10. The spring members 40 are compressed against an upper wall 54 of the comb bar and thus downward pressure is maintained on the barbs 22 to prevent lateral movement of the holder 10 in the comb bar 60.

[0021] The base 12 and insert 14 are advantageously moulded from a plastics material. The mould for the base 12 may be configured such that fitting instructions may be provided on the base 12. In the embodiment shown the base is marked with an indication as to which side of the holder 12 is to be regarded as the front.

Claims

1. A holder for one of several electronic identification devices, said holder (10) comprising a body adapted to receive and retain an electronic identification device (32,38,49), said body (10) being insertable through an aperture into a chamber, having resilient means (40) for biasing said body (10) outwardly of said aperture, and having one or more retaining barbs (22) engageable on the inside of said aperture.
2. A holder according to claim 1 and comprising a socket (12) having said one or more barbs (22), and an insert (14) for the socket (12) wherein the insert (14) has said resilient means (40).
3. A holder according to Claim 2 wherein said insert further includes retention means for an electronic identification device.
4. A holder according to Claim 3 wherein said insert includes a substantially cylindrical aperture (30) adapted to receive a cylindrical identification device (32).
5. A holder according to Claim 4 and further including two arcuate retainers (35) each comprising a substantially cylindrical portion (26) for insertion one in each end of said aperture (30), each retainer (35) having an inward facing depending arcuate channel (35) adapted to engage the periphery of a disc like identification device (38).
- 55 6. A holder according to any one of claims 2-5 wherein said insert (14) includes oppositely directed cantilever spring arms (40) on the outer end thereof, said arms defining therebetween an opening (48) to an

internal recess of said insert, said recess being adapted to receive a wedge like identification device (49).

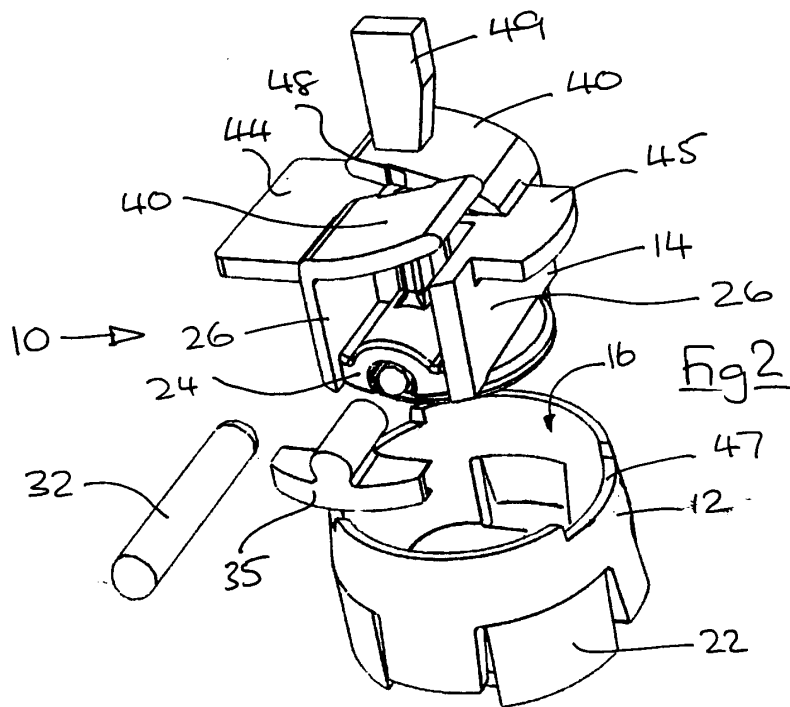
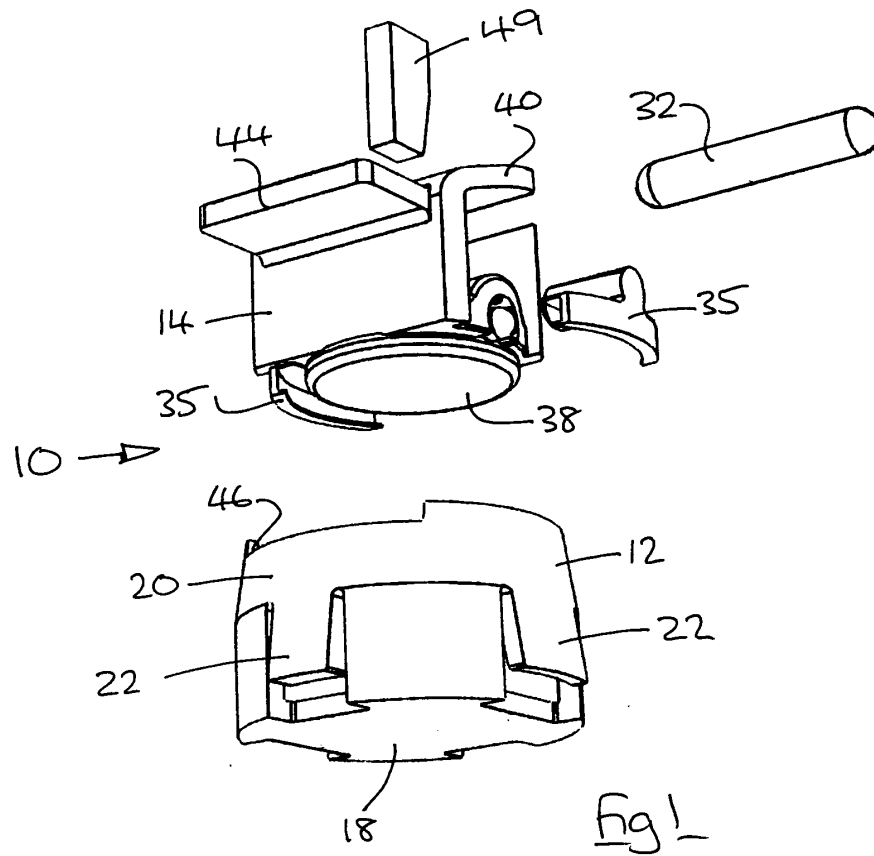
7. A holder according to any of claims 2-6 wherein said insert includes a laterally extending arm (44,45) engageable in a respective close fitting recess (46,47) of said socket (12) so as to arcuately orientate said insert and socket. 5
10
8. A holder according to Claim 7 wherein said arm (44,45) is adapted to limit insertion of said insert (14) into said socket (12). 15
9. A holder according to Claim 7 or Claim 8 wherein said arm (44) projects laterally outwardly of said socket (12) and is adapted for engagement with a wall of a chamber so as to prevent relative rotation of said holder. 20
10. A holder according to any preceding claim and of resilient plastics material wherein said one or more barbs (22) and resilient means (40) are integrally moulded. 25
11. A holder according to any preceding claim wherein said sokcet (12) is substantially circular and is closed at one end. 30
12. In combination, a holder according to any preceding claim and a hollow comb bar of a waste container, wherein said comb bar defines said chamber and said aperture is on the underside thereof, the spring means acting on the inner top wall of the comb bar, and said one or more barbs acting on the inside periphery of said aperture. 35

40

45

50

55



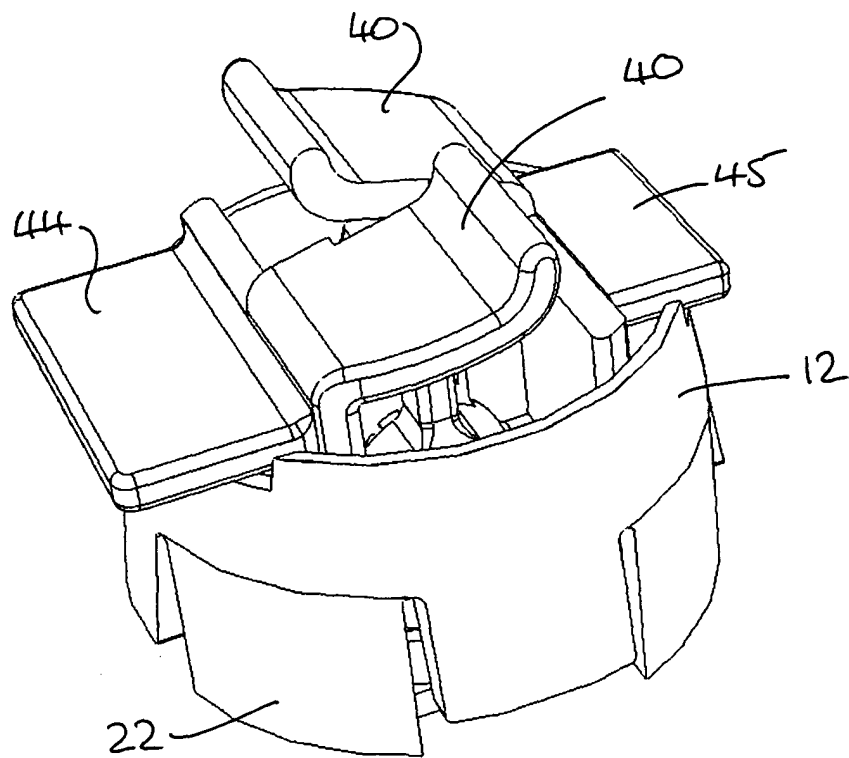


Fig 3

