

PATENTS EXAMINATION BOARD

PRACTICAL LEGAL PROBLEMS

SUPPLEMENTARY EXAMINATION PAPER: 29 NOVEMBER 2018

EXAMINERS: R BAGNALL

D DOHMEN

MODERATOR: C E PUCKRIN S.C.

DURATION: READING TIME:	1 HOUR
EXAMINATION TIME:	4 HOURS
TOTAL:	5 HOURS

NOTES TO CANDIDATES:

1. Attached to the paper are copies of the following documents:
  - (i) A copy of the Patents Act No. 57 of 1978;
  - (ii) A copy of the Patent Regulations 1978; and
  - (iii) A copy of the Uniform Rules of the High Court under the Superior Courts Act 10 of 2013 (Rules 6, 14, 17, 18, 19, 21, 22, 23, 24, 25, 30, 35, 36 and 37).
  
2. Each candidate is also allowed access to (1) one dictionary during the Exam.

3. This paper consists of 18 pages in total and includes the following documents:
  - (i) Questions 1 to 3 (100 marks) - (Pages 1 to 3);
  - (ii) Document A: Letter from Eric Invent (your client) – (Page 4);
  - (iii) Document B: Proposal: Tyre Valve Cap Removal Device and Tyre Valve Cap – (Page 5 to 7);
  - (iv) Document C: ZA 2007/4321 – (Page 8 to 11);
  - (v) Document D: Bottle Caps Weekly, 20<sup>th</sup> July 1984 – (Page 12 to 14);
  - (vi) Document E: EP 854321.A1 – (Page 15 to 18).
4. Prior to the hand out of the answer papers, candidates will have the opportunity to read the above documents and make notes for 60 minutes (1 hour).
5. Where appropriate reference should be made to case law and conclusions should be supported by reasons and arguments.

**QUESTION 1****(40 marks)**

You receive the attached documents A and B from your client. After considering document A and B you check the South African Patent Office Register and find that Autoparts's South African Patent Number ZA2007/4321 (Document C) was filed on 10 November 2007 without claiming priority from any earlier application. All formalities were correctly complied with and ZA 2007/4321 is currently in force.

In a brief additional prior art search, you find an extract from Bottle Caps Weekly, 20 July 1984 (Document D).

Please provide your client with advice on whether your client's proposed tyre valve cap removal device, valve cap and kit containing the removal device and cooperating valve cap infringes Autoparts's South African patent.

**QUESTION 2****(40 marks)**

Please provide your client with advice on the validity of Autoparts's patent.

**QUESTION 3****(20 marks)**

Please provide your client with strategic advice on how to proceed with the possible commercialisation of its products and what counter options are available to Autoparts.

\*\*\*\*\*

**TOTAL: 100 marks**

## DOCUMENT A

Dear Patent Attorney

5 I am a small entrepreneur and have a few inventions for which I have obtained patents for at the South African Patent Office. I have been working on a tyre valve cap and tyre valve cap removal device which I have shown in confidence to car accessory manufacturers with a view to licensing them to make these items and sell them through retail stores. Considerable interest was generated. My proposal to them is described and illustrated in Document B attached.

10 The form of plastic or metal valve cap associated with vehicle tyre valves is very well known and has been in operation for quite some time. There are inherent disadvantages in this cap design since the cap itself is exposed to the elements and builds up soil deposits and the cap can easily become cross-threaded with the thread on the valve stem. In addition, the amount of torque required to unscrew the cap may sometimes be quite high and causes problems for some drivers. There is also a tendency for the cap to become lost or broken whilst removed from the valve. I was hoping the tyre valve cap removal device and valve cap would be sold as a kit.

15 As you can imagine, I was rather dismayed to receive a letter yesterday from a well-known manufacturer of vehicle accessories, Autoparts. Autoparts was one of a number of companies I have visited over the last few weeks. Autoparts advises me to stop my activities because they say that the products in my drawings infringe their South African patent which is enclosed herewith (Document C). They want an undertaking from me within 20 14 days that I will discontinue my activities, or they will take "action" against me.

25 I was aware of Autoparts's patent as a result of a search I did on a commercial database. It was listed under patents relating to vehicle accessories. Frankly, it doesn't look like my tyre valve cap removal device and it doesn't appear to cover valve caps designed to cooperate with my removal device. As a result, I didn't pay any attention to it. As I see it the patent describes a different accessory to mine working on a different principle. My valve cap is just a modification of a conventional idea. In fact, I have enclosed an extract of European Patent Application No. 854321.A1. (Document E) which I found in one of my searches and I think it is much more like Autoparts's device than mine.

30 I need your advice about my situation.

Kind regards

Eric Invent

**PROPOSAL: TYRE VALVE CAP REMOVAL DEVICE and TYRE VALVE CAP**

Tyre valve cap removing devices involve the application of a larger amount of torque than can be delivered by the fingers of the hand directly to the valve cap.

5 Generally this is achieved by using a rotational device on the valve cap which is larger than the valve cap and thus the greater torque transferred from the larger device to the smaller valve cap enables the valve cap to be turned more easily

My device operates on a slightly different principle, since I have noticed that the fingers are also capable of turning rotational devices which are smaller than the valve cap with great force and with more precision thereby applying variable torque (greater or smaller). Thus, the device has a portion of substantially larger external diameter than the cap and thus a greater turning force may be applied by gripping said portion between the fingers. A tapered diameter portion (stem) incorporated into the device allows a variable torque to be applied depending upon where the device is gripped by the user. If the stem is gripped between forefinger and thumb and quickly rotated the device "spins" and the cap is unscrewed or screwed on the valve more quickly and easily than would otherwise be the case. If the valve cap is difficult to loosen, the larger diameter portion of the device is gripped and turned to provide a greater mechanical advantage so that a greater torque can be administered. In addition, the stem could be suitably dimensioned to provide the secondary function of being a valve core extractor.

Figure 1 is a perspective exploded view of a device for removing a valve cap and cut-away portion of a tyre valve;

Figure 2 is a longitudinal sectional view of the device engaged on the valve cap.

The device 1 comprises a generally cup shaped base portion 1a joined to a central smaller cup shaped portion 1b having a relatively long, axial, tapered stem 1c. The free end of the tapered stem 1c is rounded and has longitudinal serrations 1d to enable a good grip to be achieved on the stem by the fingers of a user. The device 1 could be made of any suitable material (e.g. rubber or any composite material or metal alloy) but in this instance is of plastics or nylon and is integrally made.

30 The annular wall 1e of the base 1a is of uniform thickness except for four equally-spaced tapered gripping ribs 1f. The gripping ribs 1f grip onto the serrated surface S of valve cap C by engaging in grooves G between the serrations which threadably engages the cap onto the end E of tyre valve V. The internal surface of cup-shaped portion 1a is inclined at about 10° to the axis shown in Figure 1. Both cup-shaped portions 1a and 1b have external serrations 1g and 1h respectively. Four equally spaced, concentric, axially extending apertures 1i on the angular radial rim 1j of the base portion 1a aid the

manufacture of the device 1. The device 1 is introduced in the direction of arrow X axially onto the cap C once the ribs 1f have been aligned with the grooves G on cap C. The ribs 1f are a tight fit in grooves G. The device 1 is pushed onto the cap as far as it will go with the radial faces of the ribs 1f engaging the curved radial faces G' on the grooves G. Once the device 1 has been pushed onto the cap C as far as it will go the device 1 can then be rotated anti-clockwise in order to release the cap from the valve V. The cup-shaped portion 1b of the device is similar in diameter to that of cap C to give a similar turning force to initially loosen the threaded engagement by gripping and turning the portion 1b. The end of the device 1k can be inserted into the open end of a valve V to push the valve stem M downwards to let air out of the tyre.

Although my tyre valve cap removal device has been described and shown in Figure 1 using a specially designed valve cap C in which the ribs co-operate with the grooves on the removal device, I believe the device can be used with most currently available plastic valve caps. Therefore, I propose that the tyre valve cap and tyre valve cap removal device are sold as individual items and also as a kit containing the device and a number of co-operating valve caps, sensibly five valve caps, one for each tyre on the vehicle and one for the spare tyre.

55

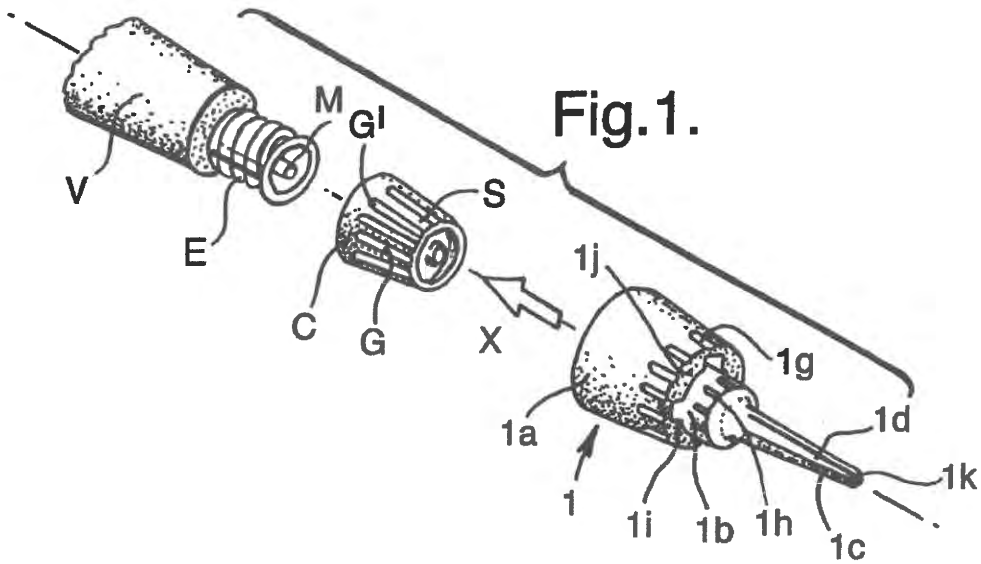
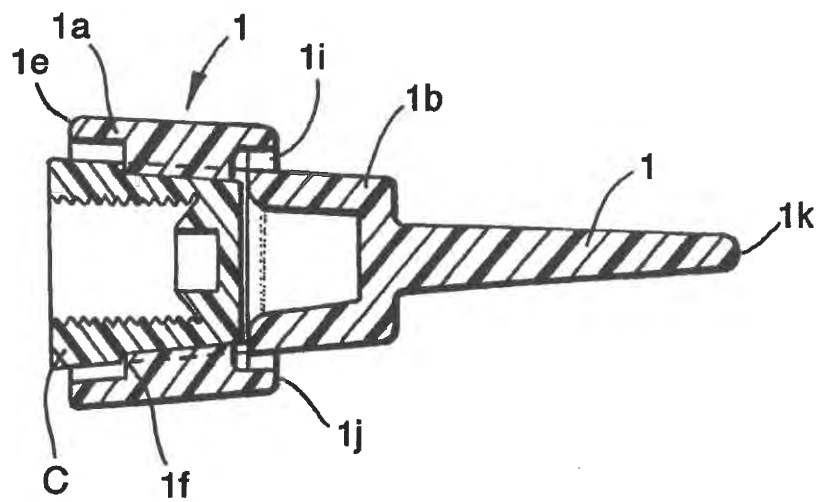


Fig. 2.



ZA 2007/4321

Filing Date: 10 November 2007  
Grant Date: 27 July 2008  
Patentee: Autoparts

5 **Vehicle Accessory**

This invention relates to vehicle accessories and particularly to a device for facilitating the removal, storage and replacement of the dust cap of a vehicle tyre.

10 The conventional dust cap is a push on or screw threaded cap which is taken on and off the tyre valve manually. Dust caps become very dirty and greasy over time on the tyre which makes them difficult and unpleasant to remove in order to access the tyre valve. Also the dust cap is easily mislaid while accessing the tyre valve, for example to check the tyre pressure.

There is a need for a means for removing, storing and replacing the conventional dust cap which does not involve the user in touching the dust cap.

15 An object of the present invention is to provide a device which enables a conventional dust cap to be removed easily from the valve of a vehicle tyre, which enables the cap to be stored safely and which enables the dust cap to be replaced on the valve of the tyre after an operation such as inflation has been performed on the tyre, all without soiling the hands and ensuring that the dust cap is safely stored whilst the operation is performed.

A further object of the present invention is to provide a kit comprising a valve cap and a corresponding valve cap removal device.

20 According to the invention there is provided an accessory for vehicles comprising a tubular member having at one end retaining means suitable for removing and storing a tyre valve cap and the opposite end being adapted to facilitate rotation of the tubular member by reducing the amount of torque required to rotate the tubular member when removing the valve cap.

30 For example, the tubular member is preferably of circular cross-section but it would be understood that this is not a precise requirement and the diameter may vary along its length.

In a preferred embodiment of the invention, the tubular member is provided with a knurled portion to provide a gripping surface when screwing or unscrewing the dust cap from the valve of the tyre.

35 In a further embodiment, one end of the tubular member may be provided with an end dimensioned to be inserted into the tyre valve to release air therefrom, preferably, tapered to a pointed end for this purpose. However, in yet an alternative embodiment,



both ends of the tubular member may be provided with the tapered bore and divergent splines such that either end of the device may be used to retain and replace the dust caps of the valves of vehicle tyres.

40 The invention will now be described in detail by way of example with reference to the accompanying drawings wherein:

Figure 1 is a plan view of the device of the invention;

Figure 2 is an end view taken in the direction of arrow A of Figure 1.

45 The accessory comprises a tubular member 1 preferably cylindrical having an open end 2 formed with a tapered bore 3, the internal wall 4 of the bore 3 being provided with a plurality of spaced tapering splines or ridges 5 which diverge outwardly from the base 6 of the bore towards the open end 2 of the tubular member.

50 The splines or ridges 5 provide a gripping and locating surface for the dust cap (not shown) of the valve of the vehicle tyre, enabling the device to be located over the dust cap and the latter unscrewed by rotating the device and retaining the unscrewed dust cap therein. The unscrewing operation can be performed without touching the dust cap thereby preventing soiling of hands and retaining the dust cap in a safe place until the operation on the tyre has been performed and the dust cap is required to be rescrewed on the valve of the tyre. We have found in practice that with currently available soft plastic  
55 dust caps, the best grip is obtained if the splines or ridges 5 form an angle of between 10° and 20° with the axis of the tubular member.

60 The opposite end 7 of the cylindrical member 1 is provided with a knurled exterior surface 8 to allow the device to be gripped more firmly for unscrewing and replacement of a dust cap. The portion 9 intermediate the ends 2 and 7 is of reduced cross-section as shown, but may be continuous if required. The end 7 can be extended to a tapered point capable of being inserted into the tyre valve to release air.

65 A further embodiment provides an accessory as defined herein in which the retaining means has an internal shape designed to co-operate with the external shape of a designer valve cap. Such shapes could be, for example, hexagonal, octagonal or the valve cap could be provided with ridges, lugs or holes which co-operate with a "key" provided on the accessory. Such valve caps are known and can be provided as a kit together with the valve cap removal device of the invention.

What we claim is:

70

1. An accessory for vehicles comprising a tubular member having at one end retaining means suitable for removing and storing a tyre valve cap and the opposite end being adapted to facilitate rotation of the tubular member by reducing the amount of torque required to rotate the tubular member when removing the valve cap.

75

2. An accessory for vehicles according to claim 1 wherein the retaining means comprises a cup with an internal taper provided with a plurality of spaced ridges diverging outwardly towards the respective end of the member and providing a gripping and retaining surface.

80

3. An accessory for vehicles according to claim 2 in which the internal taper forms an angle of from  $10^\circ$  to  $20^\circ$  with the axis of the tubular member.

85

4. An accessory for vehicles according to any of claims 1 to 3 wherein the opposite end of the tubular member is of greater diameter and is provided on the exterior thereof with a knurled surface to allow the tubular member to be gripped and rotated.

90

5. An accessory for vehicles according to any of claims 1 to 4 in which the opposite end is adapted to be inserted into the valve of the tyre to depress the pin of the valve and thereby release air from the tyre.

95

6. An accessory for vehicles according to any of claims 1 to 4 wherein the opposite end is also provided with retaining means suitable for removing and storing a tyre valve cap.

7. A vehicle accessory kit comprising a conventional or designer valve cap and an accessory as defined in any of claims 1 to 6 wherein the accessory is specifically adapted to co-operate with the valve cap.

Fig.1.

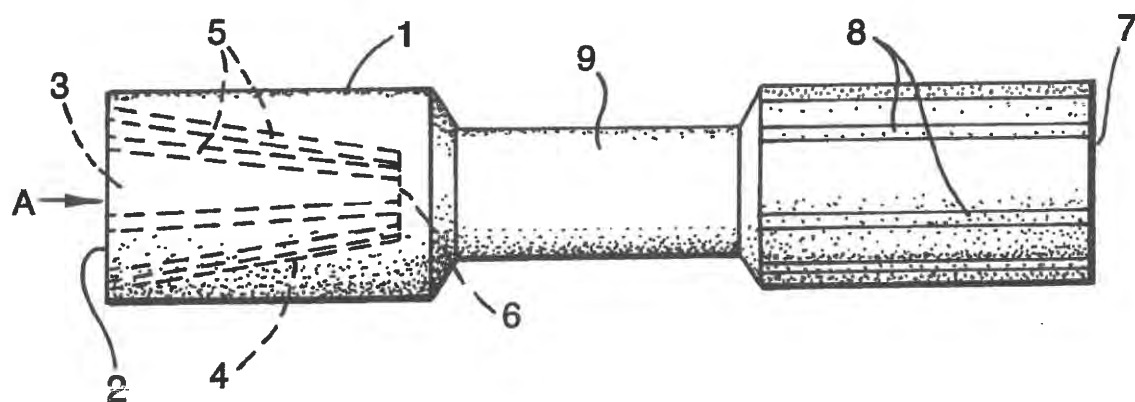
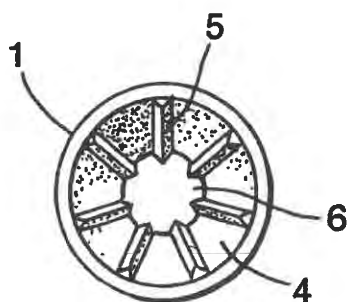


Fig.2.



Bottle Caps Weekly, 20<sup>th</sup> July 1984

Devices for removing screw threaded bottle caps

5 Today, it is frequently customary to provide a bottle containing alcohol or other liquids with a screw thread at its neck end and to close it by a screw cap provided with a seal. In addition to the thread this bottle is provided with a ring-shaped shoulder over which a lower extension of the screw cap is pressed. Between the screw cap and this lower part there is provided as a rule by cross sectional weakening, a predetermined breaking place, so that, by a powerful screwing movement, the lower part can be separated, the cap screwed off and consequently the bottle can be opened. A great disadvantage of this screw cap closure is that a not inconsiderable exertion is necessary in order to open such a closure for the first time and upon a later further use of this screw-cap closure for the closing of the bottle the danger exists of injury by the sharp edges which result upon the separation of the lower part.

15 A commonly available device for removing screw threaded bottle caps is shown in Figures 1 to 3 overleaf. Figures 1 and 3 represent the neck of a bottle, the upper end of which has screw thread which is limited at its lower end by a ring-shaped shoulder 2. Screwed onto this thread of the bottle neck 1 is a screw cap 3, the upper part 4 of which is somewhat greater in diameter and has a milled edge 4'. Mounted onto this screw cap is a device comprising a hollow body 19 and a detachable lid 21. The hollow body 19 has therein an opening 6 which is substantially the shape of a truncated cone tapering uniformly towards the upper end of the turning device, said body 19 having an annular peripheral wall, forming the wall of said opening 6, which is of truncated conical form for most of its depth, and of cylindrical form, as shown at 19', at its lower extremity. The truncated cone has a cone angle of approximately 14°. The hollow body 19 has an upper mouth which is co-axial with, and forms a continuation of, the opening 6 and is closable by the lid 21 shown in Figure 2, and a lower mouth surrounded by the cylindrical portion 19' of the aforesaid wall. The hollow body 19 is provided at its upper end with a short internal screw thread 20, and the lid 21 is provided with a short screw-threaded part 22, thereby providing screw means whereby the parts 19, 21 can be connected securely together. In order to achieve a frictional or even positive connection between the turning device and the screw cap 3, the wall of the opening 6 in the body 19 is provided, for engaging the screw cap, with a notching or grooving 7 which extends in the longitudinal direction of the turning device. In a similar way, the outer surface of the hollow body 19 is provided with a polygon-like profiling 8', as shown in Figure 3 in order to increase the grip. The turning device shown in the Figures has a length of approximately 50 mm. The

diameter of the opening 6 amounts, at its upper end, to approximately 26 mm and, at its lower end, to approximately 40 mm, whereby there is a wide range of tolerance enabling the turning device to be engaged over the screw caps of various different bottles. Of course it is also possible to increase or reduce the range of tolerance further.

Both parts 19, 21 can consist of metal or plastics material. In the present case, the tubular body 19 consists of, for example, aluminium or aluminium alloy, and the lid 21 of plastics material. The hollow body can be produced very economically from a cylindrical tubular extruded section. The tubular body can be given the coned shape shown by means of a suitable press mould, preferably by expansion. In the case of this method of production, the thread 20, the inner notching or grooving 7 and the cylindrical edge part 19' can be co-moulded.

The device is mountable on bottles having screw caps of different diameters and is frictionally or positively connectible to the screw cap, the device having substantially the shape of a truncated cone the internal wall thereof, being provided with longitudinal projections or grooves for engaging the screw cap, and the turning device being provided, at its upper end with an aperture which provides upper access to said opening.

The device may have a hollow body formed from an extruded tube. The device may be used both for opening for the first time of the screw cap (of a diameter compatible with the dimensions of the turning device) on a bottle and for the repeated use of the same screw cap as a closure for the bottle, the said turning device facilitating the turning of the cap and being mountable over the latter to provide protection against sharp edges which might be left by the initial removal of the cap from the bottle. The aperture facilitates removal of the bottle cap from the turning device when the bottle is not to hand.

The device is used by mounting it, if necessary with strong pressure, on the screw cap of the bottle that is to be opened, and subsequently rotating the hollow body in the opening direction. With such a device a screw closure can be opened without effort even when a strong predetermined breaking place exists between the upper and lower parts of the screw cap. The holding device advantageously remains connected to the screw cap until emptying of the bottle. If the bottle is empty, then the holding device can be removed by further rotating it with the screw cap screwed on the bottle in the screwing on direction and simultaneously withdrawing it.

1/1

Fig.1.

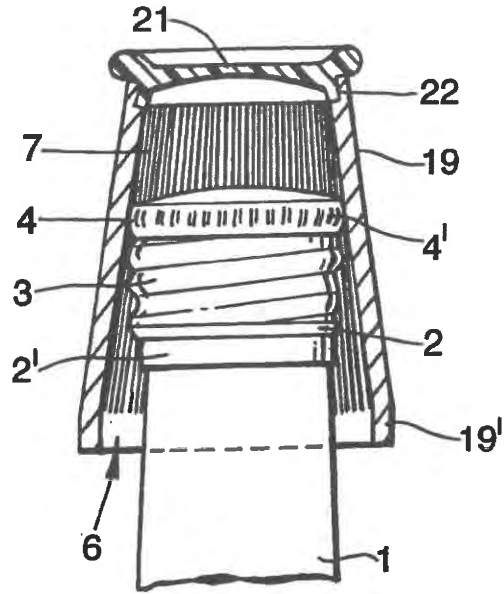
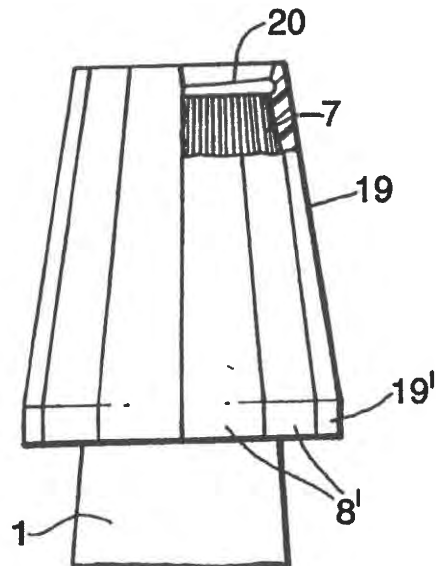


Fig.2.



Fig.3.



European Patent Application No. 854321.A1

Filing date: 11<sup>th</sup> October 1985

Publication Date: 27<sup>th</sup> April 1987

Tool

5 The present invention relates to a tool for opening and closing the cap of a valve of an air filled tyre.

Usually, to allow the air pressure in a tyre of a car, tractor or other vehicle to be checked or the tyre to be filled with air, the cap of the valve of the tyre must be opened manually. In good circumstances this is no problem, but often the valve cap cannot be  
10 removed with bare fingers because it is stuck to the valve with dirt, ice, excessive tightening or long time storage. In this case, it is necessary to use any tool that may serve the purpose, e.g. pliers. However, the width or design of many new ornamental hub caps is such that the valve is hidden deep inside the hub cap making it difficult to access the valve cap or to grip it with sufficient force using fingers. This difficulty is further  
15 aggravated by the fact that the valve is often placed in a very narrow hole, making it impossible to use tools such as pliers. Another problem is that the cap is often dirty and wet so that one's hands and clothes are soiled.

Previously known techniques for the opening of a valve cap include a tubular tool whose one end widens conically over a short distance so that it fits onto a valve cap, the  
20 conical end is provided with three longitudinal slits forming three jags on the interior surface of the conical part to improve the grip of the tool. This solution is helpful but is unreliable in operation. The three jags alone will not ensure a sufficient grip if the valve cap is very dirty or icy and if the tool is made of a soft material, the three jags may yield and the tool rotate on the valve cap without gripping.

25 The object of the present invention is to eliminate all the drawbacks mentioned above and to achieve a reliable and low-priced tool for the opening and closing of the cap of the valve of an air-filled tyre. The tool of the invention is reliable and versatile and enables the valve cap to be gripped securely whatever the location or environmental conditions. Moreover, it is possible to keep various small objects inside the tool or to  
30 attach an air pressure gauge or a flask of de-icer in the rear part of the tool.

Thus according to the present invention there is provided a tool for opening and closing the cap of the valve of an air-filled tyre, said tool comprising a tubelike shank and a gripper which is pressed onto the cap of the valve, characterised in that the gripper which forms the front part (3) of the tool is provided with teeth (6) placed on its interior  
35 circumference longitudinally relative to the tool.

## DOCUMENT E

The invention is described in detail by the aid of the attached drawings in which:  
Figure 1 presents a partly sectioned side view of the tool of the present invention.  
Figure 2 presents the same tool and pressure gauge mounted in it in axonometric  
40 projection.

Figure 3 presents the same tool in side view section.

The body 1 of the tool is a tubular, hollow object. Its suitable length is between  
70 and 150 mm, preferably 100 mm. The end of the tool which engages the valve cap is  
the front end and the other end is the rear end. The tool is of a round form in cross-  
45 section and in its longitudinal direction, it has two parts, a front part 3 and a rear part 5  
which have a fixed diameter through out the length of the part. The front and rear parts  
3,5 are connected by a conical part 4 which has a changing outer diameter. The length of  
the front part 3 is 8 to 20 mm, the length of the conical part 4 is 40 to 80 mm and that of  
the rear part is 30 to 80 mm. The outer diameter of the front part is 10 to 17 mm and that  
50 of the rear part is 16 to 30 mm.

The interior surface of the front part 3 is conical in the longitudinal direction of  
the tool so that the inner diameter is slightly larger at the front end than at the rear end.  
The coning angle is 1-5 degrees depending on the material of the tool. In addition, the  
interior surface of the front part is provided with teeth 6 over the whole part with even  
55 spaces between teeth.

The interior surface of the front end of the rear part 5 of the tool is provided with  
three protrusions 11 lying longitudinally relative to the tool. The protrusions are low and  
have bevelled ends. The rear end of the rear part 5 is provided with a ringlike protrusion  
10 on the interior circumference. These features enable a cylindrical object inserted into  
60 the rear end of the tool to be wedged in between the protrusions 11 without touching the  
interior surface and held firmly in place by the ringlike protrusion 10.

To ensure a more secure hold, the air pressure gauge has longitudinal protrusions  
14 which correspond to protrusions 11 and are pressed against the interior surface of the  
tool when the gauge is inserted into the tool. The air pressure gauge is provided with a  
65 cylindrical part 15 corresponding to the cylindrical part 8 of the rear cover 2, and a  
cylindrical part 16 corresponding to cylindrical part 7 to prevent the air pressure gauge  
from being pushed too far into the tool. The air pressure gauge can be provided with a  
ringlike groove like that in the rear cover to lock it in place.

The ringlike protrusion 10 also performs the function of locking a rear cover 2 of  
70 the tool in position. The rear cover 2 has a short cylindrical part 8 fitting inside the rear  
part of the tool. While lending rigidity to the tool the rear cover 2 also allows small  
objects to be kept inside the tool.



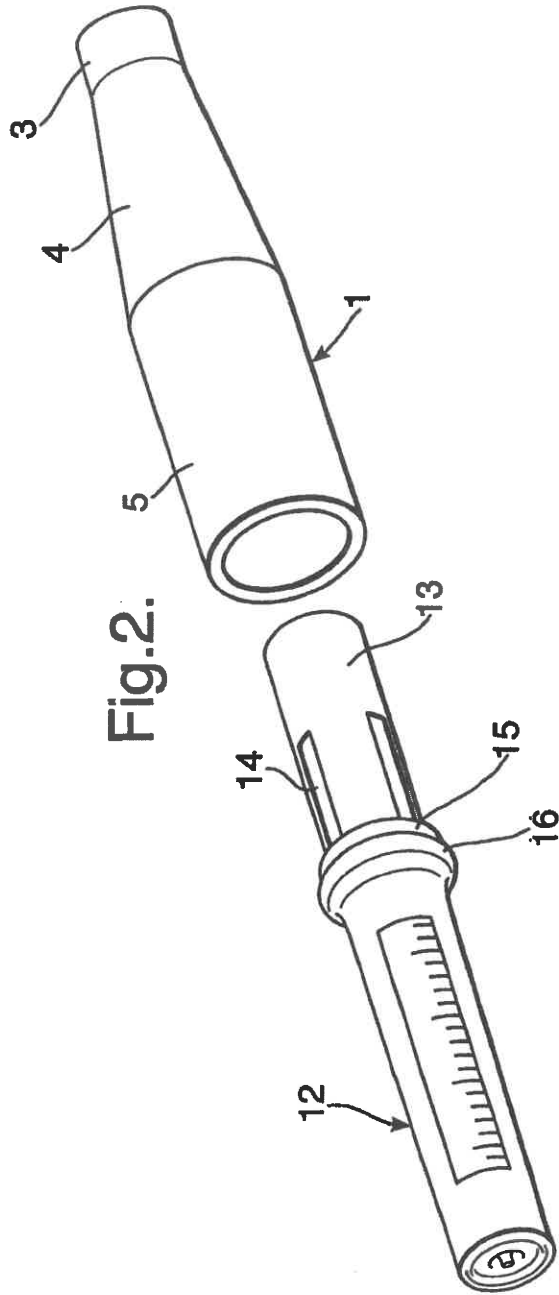
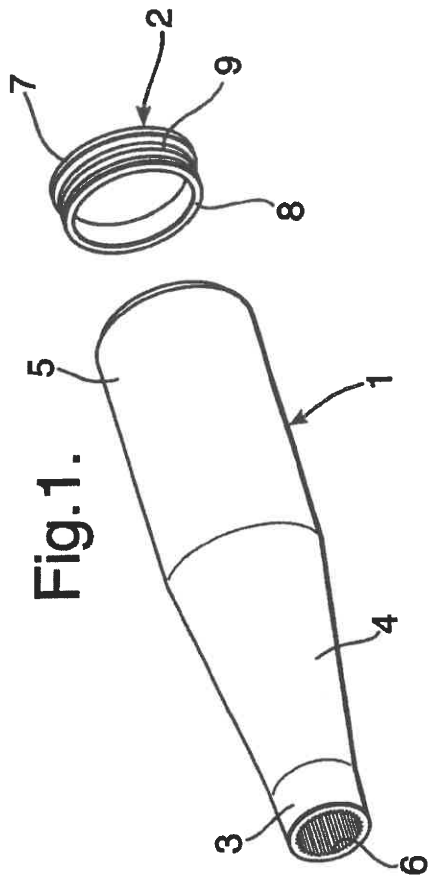


Fig.3.

