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(54) Title: SUPPORTING TOOL FOR SUPPORTING CYLINDRICAL PARTS, LIKE LANDING GEAR RODS AND CYLIN-
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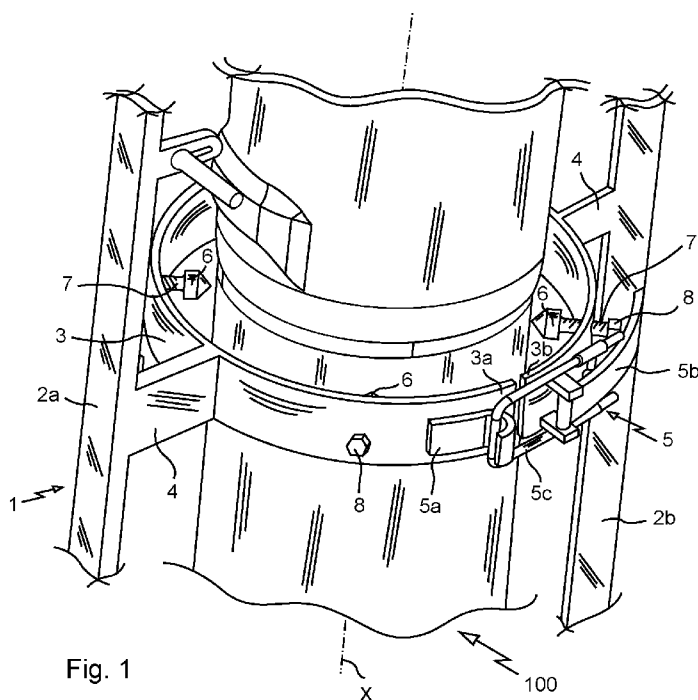


Fig. 1

(57) Abstract: Supporting tool (1) for supporting a substantially cylindrical part, like a landing gear rod or cylinder, said supporting tool comprising a metallic frame carrying at least one metallic ring (3) in electrical conductive relation with the frame, wherein the metallic ring carries a plurality of conical spikes (6) of non-conductive material projecting inward so as to engage the part with limited contact surface when said part is in place within the tool, said ring being openable so as to allow the part to be inserted into the ring and closable after the part has been inserted.



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**SUPPORTING TOOL FOR SUPPORTING CYLINDRICAL PARTS,
LIKE LANDING GEAR RODS AND CYLINDERS**

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TECHNOLOGICAL BACKGROUND

Supporting tools are known for supporting parts during specific treatments, like electrolytic coating.

Such tools must be designed to support the part with minimal contacting surface to allow the near
10 totality of the surface of the part to be accessible for treatment. However, such tools must also provide a good stability of the part when in position into the tool.

OBJECT OF THE INVENTION

An object of the invention is to provide a
15 supporting tooling which is easy to manipulate and which provides minimum contacting surface with the part to support.

BRIEF DESCRIPTION OF THE INVENTION

To this end, the invention calls for a supporting
20 tool for supporting a substantially cylindrical part, like a landing gear rod or cylinder, said supporting tool comprising a metallic frame carrying at least one metallic ring in electrical conductive relation with the frame, the metallic ring carrying a plurality of conical
25 spikes of non-conductive material projecting inward so as to engage the part with minimum contact surface when said part is in place within the tool, said ring being openable so as to allow the part to be inserted into the ring and closable after the part has been inserted.

30

In a particular embodiment, the ring includes two separate members, said members being equipped with locking means for separating or joining the member in a circular shape ring.

Preferably, the frame also includes two members, each ring member being carried by one of said frame members.

BRIEF DESCRIPTION OF THE FIGURE

5 The invention will be more deeply understood in the light of the following description of particular embodiments of the invention, in view of the unique figure which is a partial view of a supporting tool according to the invention, with a cylindrical part in
10 place into the tool.

DETAILED DESCRIPTION OF ONE EMBODIEMENT OF THE INVENTION

 The figure 1 illustrates a supporting tool 1 according to the invention, supporting a landing gear rod 100. The landing gear rod has a main portion that is
15 essentially cylindrical in shape, and the invention is more particularly about holding such a part.

 The supporting tool 1 includes a frame having at least two parallel metallic members 2a,2b, that run along the part. For the sake of description, the part is
20 supposed to extend essentially along a longitudinal axis X. One can see that the parallel members 2a,2b are essentially parallel to axis X.

 A plurality of rings 3 extend in between the parallel members 2a,2b. Only one is visible on the figure
25 1. The central axis of each ring 3 coincides with axis X. Each ring 3 is held by the parallel members 2a,2b by means of brackets 4 extending between the parallel members and the ring. The brackets 4 ensure an electrical continuity between the parallel member of the frame and the rings 3.

30 Each ring 3 is split so as to exhibit two free ends 3a, 3b that can be spaced apart in order to let the part 100 penetrate into the ring 3. The free ends 3a,3b are equipped with a locking member 5 so as to allow the ring 3 to be closed when the part 100 is in place into
35 the ring 3. In this particular embodiment, the locking

member 5 is of the toggle fastener type and includes a hook 5a carried by the free end 3a, a lever 5b articulated on the free end 3b, and a buckle 5c articulated on the lever 5b and projecting so as to engage the hook 5a.

The ring 3 is equipped with a plurality of non-conductive conical spikes 6 carried by respective screws 7 engaged into corresponding threaded orifices of the ring 3. The spikes 6 may be made in PVC or similar isolating material. The spikes project inwards the ring 3 so as to contact the part 100. When the part 100 is in place into the supporting tool and the locking member 5 is fastened, the conical pikes engage the part 100 to exert a slight pressure on the part 100, but within a very limited contact surface. Such a pressure can be easily tuned by simply turning the screws 7 by means of heads 8 thereof.

The spikes also electrically isolate the part 100 from the metallic frame. This is very advantageous as far as electrolytical coating or similar operations are concerned.

Other variants of the invention as easily derived from this particular embodiment. In a first variant, the ring 7 may be made in two half-rings, therefore exhibiting four free ends. The half-rings may then be equipped with two locking members for fastening the free ends two by two. In an other variant, the frame itself may be split into two half-frames that may be approached of the part from opposite sides, and then fastened one to the other. The half-rings would then be fastened so as to tightly surround the part 100.

CLAIMS

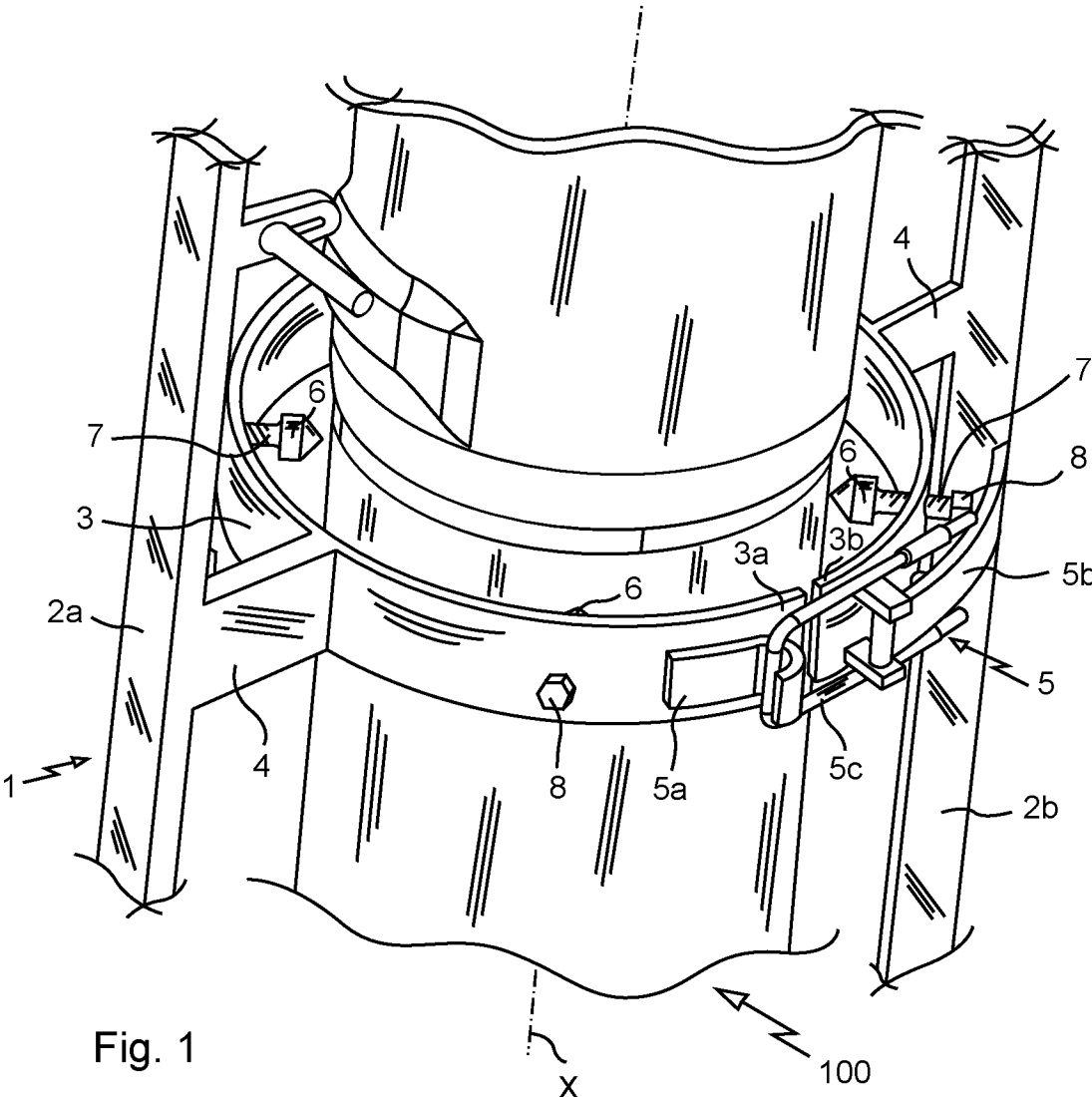
1. Supporting tool (1) for supporting a substantially cylindrical part, like a landing gear rod or cylinder, said supporting tool comprising a metallic frame carrying at least one metallic ring (3) in electrical conductive relation with the frame, wherein the metallic ring carries a plurality of conical spikes (6) of non-conductive material projecting inward so as to engage the part with limited contact surface when said part is in place within the tool, said ring being openable so as to allow the part to be inserted into the ring and closable after the part has been inserted.

2. Supporting tool according to claim 1, wherein the ring is equipped with a locking member (5) of the toggle fastener type.

3. Supporting tool according to claim 1, wherein the spikes (6) are carried by screws (7) engaged in threaded orifices within the ring (3).

4. Supporting ring according to claim 1, wherein the ring is split into two half-rings, and is equipped with two locking members.

5. Supporting ring according to claim 4, wherein the frame is split into two half-frames, each half-ring being carried by one of the half-frames.



INTERNATIONAL SEARCH REPORT

International application No
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According to International Patent Classification (IPC) or to both national classification and IPC		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004/129209 A1 (ASAKAWA HIROSHI [JP] ET AL) 8 July 2004 (2004-07-08) paragraphs [0005] - [0053]; figures 1-4 -----	1-5
A	US 4 606 891 A (MURPHY JR ROBERT J [US] ET AL) 19 August 1986 (1986-08-19) the whole document -----	1-5
A	US 2007/278093 A1 (BARNARD MICHAEL P [US] ET AL) 6 December 2007 (2007-12-06) the whole document -----	1-5
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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