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A CASE STUDY RELATED TO COUNTERFEITING A PATENTED PRODUCT

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Abstract: *The current paper shows a case study based on the judicial expertise in a conflict of interest related to the infringement of a patented product, a connection piece which ensures the transition from the pipes of polyethylene to those of metal, for the networks of natural gas. For an accurate description of the case, the authors illustrate the technical and judicial problems that led to disputes, and they refer to the way in which the expertise was completed and the case solved.*

Keywords*: Intellectual property disputes, patented products, expertise, transition piece*

1. Introduction

The design and completion of the systems of supply with natural gas is regulated by specific technical norms. At the end of the connection of polyethylene, the following transition pieces are used for

- DN greater than or equal to 63 mm, heads of connection without protection anode (reiser), where the polyethylene/steel transition is achieved above the soil, at the level of the vertical end of the connection;
- DN greater than 75 mm, heads of connection with a specific type of insulation or equal and protection anode, which have certified and technically developed components.

Figure 1 shows the head of a connection without the protection anode, which has the following components: 1-polyethylene pipe; 2-sealing; 3—metallic wire; 4—protective pipe (steel); 5—pipe of polyethylene; 6—transition piece polyethylene-steel.

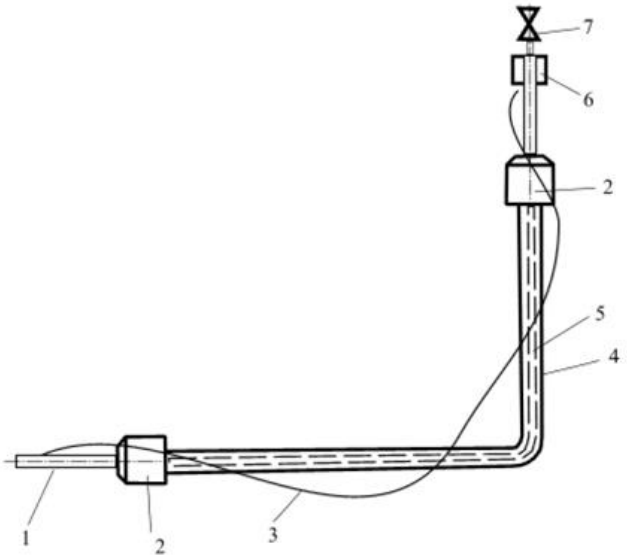

Fig. 1. Head of connection

2. The technical problem

A group made of four inventors, which included a certified one, conceived and patented a transition piece 6, called by the authors PAT1 (Figure 2).

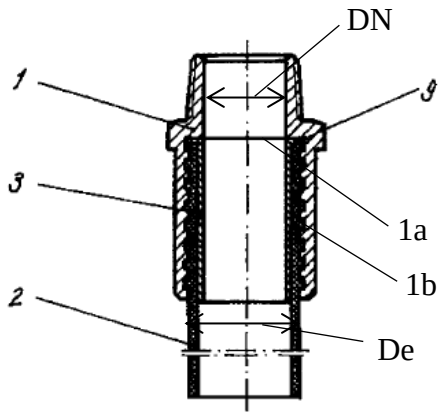

Fig. 2. Transition piece (PAT1)

The connection piece PAT1 presented in Figure 2 consists of a crimping between the metallic nipple 1 and the polyethylene pipe 2, using an intermediate piece 3 made of copper. When the invention is applied, the polyethylene pipe 2 is welded to the underground main pipe, which is also made of polyethylene. Nipple 1, made of steel, is equipped in its inner side with bore with two diameters DN/De and a shoulder 1a. On the De diameter part, there are applied a number of radial channels marked with 1b.
The technology of completion of the connection between the polyethylene pipe 2 and the metallic nipple is completed in accordance with the schematic in Figure 3.

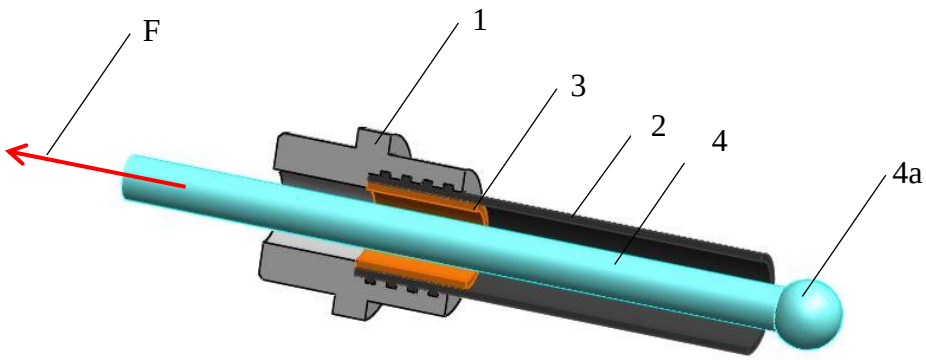

Fig. 3. The procedure of crimping

At an end of the polyethylene pipe 2 there is introduced the intermediate piece 3, which is then introduced, together with pipe 2, in nipple 1.
Rod 4 is introduced through the polyethylene pipe and it is connected to a hydraulic system of traction, which exerts force F. The spherical part 4a of the rod crosses the intermediate piece 3, it deforms it and ensures that the polyethylene pipe fits in the radial channels 1b, making thus possible the polyethylene-steel connection.

After a while, three of the inventors that completed connection PAT1 patent a new transition piece, called by the authors PAT2 (Figure 4).
The connection PAT2 consists of a nipple 1, equipped with circular grooves in which the polyethylene pipe 2 is crimpled with an intermediate piece 3, made of copper. On the outer side of nipple 1, there is mounted a metallic pipe 4, and the drainage tube 5 is mounted onto it. The potential leakage of gas in the area close to the connection enters the drainage tube 5, through area f between the pipe 4 and the pipe 2, and exits it through hole d.

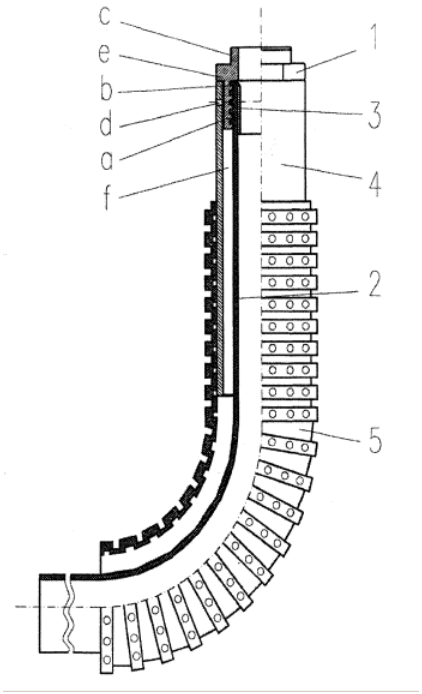

Fig. 4. Connection for the gas networks (PAT2)

3. The judicial problem

The four inventors that obtained patent PAT1 (Figure 2) used in common the invention for a while, as partners of a company A. Due to misunderstanding, one of the inventors, the owner of the patent, sets his own company B which produces and sells the patented product, which is similar to the one produced by company A, but, as a result of not paying the fees for holding the patent, he loses his rights of patent ownership. The other three associates conceive and patent a new transition piece (PAT2), which includes the technique of the former patent, which they improve, by adding a drainage tube, whose role is to tap any potential gas leakage (Figure 4). After obtaining patent PAT2 for the improved connection, company A contacts the gas supplier, who decides to accept, beginning with that moment, only the use of the connections with a drainage tube, in accordance with PAT2. Company B adjusts to the circumstance and produces the improved connection, in accordance with PAT2. As owner of the new patent, company B complains to the Prosecutor's Office of the county's High Court of Justice and asks that the production of the improved connection by company B be forbidden.
In order to solve the dispute, the court relies on technical experts, who are asked to answer the following objectives:

A. If there are differences between the description of the invention, the claims and the drawings of the two patents PAT1 and PAT2 in the documents regarding the invention, and if the answer is affirmative, the expert is required to specify their nature.

B. If company B produces and sells the product under the name “Transition piece for gases” based on patent PAT1, or on patent PAT2.
C. If the products made by company B, “Transition piece for gases”, and those made by company A, “Connection pieces for gas networks”, products gathered by the prosecution, are identical, and if they are not, the experts are required to specify the nature of their difference.
D. If PAT2 could have been completed based on the procedure and the device claimed in PAT1.
E. If the product "Transition connection for gases” made by company B based on PAT1 can be a component of the product "Connection for gas networks” made by company A in accordance with PAT2, or vice versa.
F. If the technical solution of evacuation of the accidental gases from the area of connection, by equipping the end of the connection with a drainage tube, appears in the claims of both patents, and if it is an element that differentiates them;
G. If the claims of the patents owned by the two parties do not refer to the technical solution mentioned in E, the expert will specify whether the equipment of the connection piece with a drainage tube such the one mentioned by the party whose patent does not include this claim is the object of counterfeiting.

4. Completion of the expertise

4.1 The comparative analysis of the two patents

In order for the expert to identify the differences between the two products, there have been analysed the description, claims and drawings of patents PAT1 and PAT2. To highlight the conceptual difference between them, there are shown parallelly (Table 1) the representative figures and the claims of the analysed patents. According to Art. 34 of the law, "the extent of the protection granted by the patent is determined by the content of the claims to be interpreted in relation to the description and the drawings of the invention”.

Table 1: Analysis of the claims regarding the explanatory drawings

PAT1- 4 inventors (owner: 1 inventor)	PAT2 – 3 inventors (owner: company A)
Selected representative drawing: Figure 2	Selected representative drawing: Figure 4
Number of claims: 5. Claims 1, 2 and 3 refer to the transition piece PE-Steel, in two variants of completion, and the other ones refer to the procedure and the completion of the device. **R1. Independent (main) claim:** Transition piece, **characterized by the fact that** it is equipped with a connection nipple (1) equipped with a number of circular grooves 1b and a polyethylene pipe 2, which is crimpled to the nipple by means of an intermediate piece 3. **R2. Dependent claim:** Transition connection, according to claim 1, **characterized by the fact that** the number of the grooves 1a is between 6 and 8 for DN=1 inches.	Number of claims: 2. **R1. Independent (main) claim:** Connection for the networks of gas including a nipple 1, a pipe of polyethylene 2, an intermediate piece 3, a protection pipe 4 and a drainage tube 5, **characterized by the fact that** nipple (1) is equipped in its inner side with a number of channels on which pipe 2 is sertized by means of a cylindrical ring 3, while it is equipped in its outer side with a shoulder for the protection pipe 4 and a part c with thread, which is a well-known solution in terms of tap mounting. **R2. Dependent claim:** The connection for the gas networks, in accordance with claim 1, **characterized by the fact that** the protection pipe 4 is equipped at the end of the superior end with exhaust holes d, while at the inferior end, it is covered with a drainage perforated tube 5, which collects the accidental leakage of the gases.

The selection of the element components that are identical from a functional and conceptual point of view:
nipple (1) vs. nipple (1)
the polyethylene pipe (2) vs. the polyethylene pipe (2)
the intermediate piece (3) vs. the cylindrical ring (3)
circular grooves (1a) vs. radial channels (a)

4.2 Answer to the questions

Answer to question A

Between PAT1 and PAT2 there are differences: The technical solution revealed in PAT2 improves the one in PAT1, by adding the following elements:

- protection pipe 4 (reference which has to be stipulated, based on "The norm act for the design and completion of the natural gas supply systems" I6-PE 2000; I6-PE 97)
- the perforated drainage tube, known in itself, and whose role does not change within the current invention, its role within the invention being that of ensuring the drainage of any potential leakage of gases.

Answer to question B

The product of company B was made based on PAT1, but the "drainage tube", provided in the dependent claim of patent PAT2, was added to it.

Answer to question C

The products do not differ qualitatively and conceptually.

Answer to question D

Both products can be completed using the same procedure and device. It is hard to imagine a different technological process suited to this product. For the device of application of the axial force, other technical solutions can be found.

Answer to question E

Yes, as the transition connection PE-Steel is conceptually identical in the case of both patents, and the sizes are imposed by the diameter of the pipe (DN), by means of technical measures.

Answer to question F

No, this solution appears only in the patent PAT2 and this is the element that sets the difference between the two patents.

Answer to question G

Based on the research completed, the expert finds that the equipment of the connection PAT1 with a perforated drainage tube 5, known in itself, and whose role does not change, does not constitute counterfeiting.
Moreover, taking into account the fact that PAT1 preceded PAT2, and the identity of the two solutions of crimping, the examiners should not have accepted the claim (R1) for the patent PAT2, and the inventors, knowing the solution presented in PAT1, avoided on purpose (ill-meaningly) the reference to PAT1 in the documents cited in the state-of-the-art section in the description of PAT2.
To the same extent, claim (R2) of the patent PAT2, which sets the difference between the two patents, is claim dependent on claim (R1). If R1 was granted in an erroneous manner, this can be cancelled by a court action. Under this circumstance, the dissolution of the main claim involves the dissolution of the dependent claim, which takes over the provisions of the main claim.

5. Conclusions

In what follows the authors show the important conclusions that can be gleaned from this case:

A. The complaining part, company A, committed the following mistakes:
   - In the documentation of PAT2, it should have made reference to PAT1, and it should have insisted more on the difference between the two patents, in order for it to obtain an independent claim regarding the use of the protection pipe and of the drainage tube;
   - It did not understand the role of the claims in the extension of the protection;
   - It did not rely on an expert when it completed the documentation for PAT2.

B. The company B and the owner of PAT1 did not defend themselves appropriately, as they committed the following mistakes:
   - They did not hold in force PAT1; the owner could have prohibited company A to use it, or they could have used it to negotiate its use in exchange for PAT2;
   - They did not study the documentation PAT2 after its publication, and they did not react against the patentation based on the lack of novelty of the crimping, revealed in PAT1.

C. Based on the expertise, the court did not have reasons to forbid company B to produce the transition piece equipped with drainage tube, as shown in the dependent claim of PAT2.

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[3] Iustin, Viorel. Fabricarea invenţiei protejate ca modalitate alternativă de manifestare a infracţiunii privind încălcarea dreptului exclusiv al titularului asupra obiectelor de proprietate industrială.
[4] Law no. 64/1991 regarding the patents.
[5] Rule of application of Law no. 64/1991.