

COMMISSIONER'S DECISION

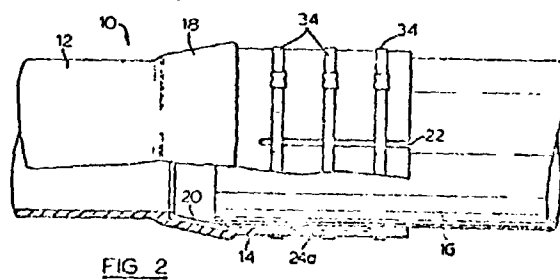
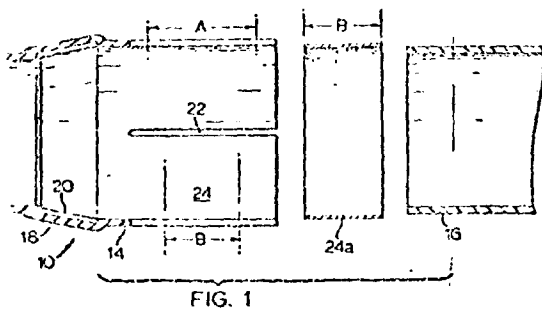
OBVIOUSNESS: Pipe Coupling Arrangement

A sealed joint is obtained by using sealing and abrasive rings in a plastic pipe bell into which a spigot is inserted. External clamping means are used to withstand high axial separation forces. The claims were rejected, but it was held the application should not have been refused. Amendments were suggested.

Final Action: Modified.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated April 30, 1975, on application 150,074 (Class 285-52). The application was filed on August 23, 1972, in the name of Amsey Buehler et al, and is entitled "Mechanically Locked Bell And Spigot Coupling For Ducts." The Patent Appeal Board conducted a Hearing on May 19, 1976, at which Mr. K.M. Garrett represented the applicant.

This application relates to a pipe coupling arrangement wherein a sleeve ring of double-sided emery cloth assists in retaining the two pipe members in position. Figures 1 and 2 reproduced below illustrate the invention.



Claim 1 of the application reads as follows:

A bell coupling construction for a plastic duct comprising, a bell housing section of greater cross-sectional area than said

duct and connected thereto by a neck portion; at least one open-ended axially aligned slot formed in the wall of said bell housing, said slot extending from the open end of said bell housing to a location adjacent said neck portion, and substantially annular retaining means located around the inner surface of the bell housing section intermediate the ends of said slot, said retaining means being characterized by a substantially abrasive, inwardly directed surface adapted to engage with an inserted spigot section of a second duct member.

In the Final Action the examiner refused the application for lack of patentable subject matter in view of the following references:

United States

3,252,192

May 24, 1966

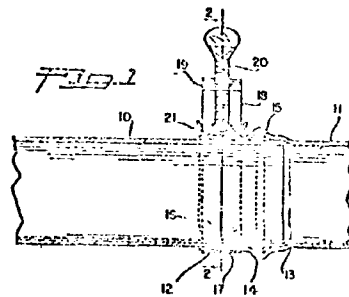
Smith

2,702,716

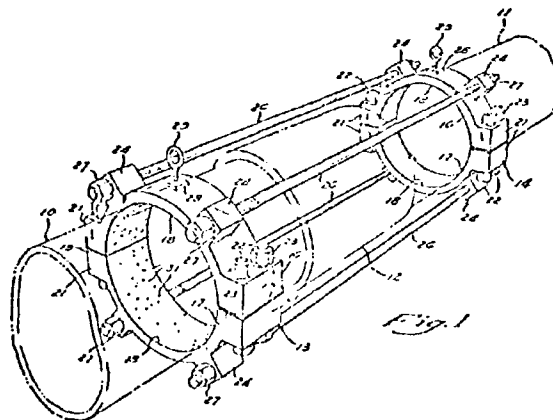
Feb. 22, 1955

Basolo et al

The Basolo reference relates to joints for fluid conductors using a coupling tubing body having longitudinal slits on which encompassing clamps firmly engage the attaching ends. Figure 1 shown below represents the Basolo joint.



The Smith reference relates to a clamping device for holding adjacent ends of pipes in a fixed position relative to each other. Figure 1 of this patent shown below is representative of the arrangement used.



Claim 1 of the patent reads:

A clamp for gripping a tubular article having a cylindrical surface comprising a pair of opposed and similar members each formed with a semi-cylindrical gripping surface, a pressure flowable adhesive coating on each gripping surface, a layer of relatively closely packed generally spherical ductile particles secured to said members by said adhesive, said layer of particles having a substantially uniform thickness of less than about twice the diameter of said particles and more than the diameter of any single particle, a majority of said particles being within a size range of about twenty-five thousandths and about fifty thousandths of an inch in diameter, the radius of curvature of said gripping surfaces being substantially equal to the radius of curvature of said cylindrical surface plus the thickness of said layer, and tightening means associated with said members to press said gripping surfaces tightly against an encircled cylindrical surface, said adhesive coating permitting relative movement between said particles to insure substantially uniform gripping of said cylindrical surface.

In the Final Action the examiner stated (in part):

The application is directed to the concept of providing an annular abrasive means between two mating annular surfaces of a bell and spigot-type of joint. Specifically, the application describes a bell and spigot-type of pipe joint comprising an integral clamping means formed on the extreme end of the bell portion of one of the pipes; the abrasive means being situated between the inner cylindrical surface of that portion of the bell formed into a clamping means and the spigot.

The applied patent to Smith teaches the concept of providing an annular abrasive means between the inner cylindrical surface of a clamp and the mating surface of a pipe.

The examiner maintains that it would be obvious and mere expected skill of one working in the art to apply the teachings of the Smith patent to any pipe clamping arrangement.

Since the applicant shows the abrasive means situated in that portion of the bell which forms a clamp, it is considered that it would be obvious to a man skilled in the art to apply the teachings of the Smith patent to this particular clamping arrangement.

In his letter of February 3, 1975 applicant argues

"The examiner has alleged that "it would be obvious to a man skilled in the art to apply the teachings of Smith to this particular clamping arrangement". By this it is assumed that the examiner is referring to a bell and spigot coupling arrangement which can be readily conceded to be known in the art. However, the bell and spigot arrangement is not one which normally leads to any type of clamping, as both the bell and the spigot mating walls are normally parallel and loose fitting".

The examiner would like to draw the applicant's attention to United States Patent 2,702,716 made of record in applicant's letter of August 27, 1974, which reference clearly teaches that a bell and spigot arrangement provided with integral clamping means is known in the art. Thus applicant's only alleged inventive step in the art is to provide a known annular abrasive means to a known clamping arrangement.

Examiner has clearly shown that applicant fails to describe and claim a patentable advance in the art in view of the teachings of the cited patent to Smith.

The applicant in his response dated July 24, 1975, to the Final Action stated (in part):

It is not clear to applicant how the pipe clamping arrangement of Smith can be applied to any pipe clamping arrangement, as alleged by the examiner, and for purposes of argument it will be assumed that it was intended to state that it is obvious to apply the teaching of the patentee to any pipe coupling arrangement. Such allegation may be readily conceded, and indeed it was contemplated by the patentee.

The Smith arrangement shows a multiplicity of parts comprising ring assemblies 13 and 14 (numbered with reference to the patent) each ring assembly including two opposed clamp members 16 and 17 which are also identical, and held together by clamping bolts 22. Clamp members 16 and 17 have a pipe contacting surface 18 to which a layer of lump-like particles 31 are adhered. Steel shot is described as being very suitable, although relatively hard and relatively small particles are more generally taught in the specification. Ring assemblies 13 and 14 clamp externally to adjacent pipes 10 and 11 upon each side of a joint therebetween formed by sealing pipe coupling 12 or other means as may be generally known in the art. The clamped ring assemblies are held together by a plurality of tie bolts 26.

The examiner states that "Since the applicant shows the abrasive means situated in that portion of the bell which forms the clamp, it is considered that it would be obvious to a man skilled in the art to apply the teachings of the Smith patent to this particular clamping arrangement". It is quite apparent that the examiner is working backwards from applicant's teaching in an attempt to show that the invention is obvious. Such rejection is manifestly unfair. As stated by Lloyd-Jacob J. in Benmax v Austin, 70 RPC 143 at 154, "the approach (to the question of obviousness) must proceed in the other direction."

...

The examiner implies that it is obvious to modify the structure as taught by Basulo et al in the light of the Smith teaching. Again it is believed that the examiner is proceeding incorrectly by making an ex post facto analysis of applicant's invention and working

backwards from it. As stated by Jenkins L.J. in *ASFA v Burntisland* 69 RPC 63 at 69 (1952) "The matter of obviousness is to be judged by reference to the state of the art in the light of all that was previously known by persons versed in the art, derived from experience of what was practically employed as well as from the contents of previous writings, specifications, textbooks and other documents". (emphasis added). The art in question cannot be precisely defined; it concerns pipe ducting such as may be employed by public or private utility companies for carrying electric power or signal transmission cables. Traditionally such ducts have been manufactured from materials such as cement-asbestos and pitch-fibre. More recently ducts have been manufactured from plastic materials such as moulded polyvinyl chloride or filament reinforced resins. A person skilled in the art should be taken to have cognizance of such types of duct; since the invention is restricted to plastic ducts the person should be versed in the properties of plastic materials. It is not believed that such person should be required to have knowledge of practise in the aircraft industry in coupling small bore, well fitting metal tubes. In fact it is well recognized by those having a knowledge of plastic materials that practises that may be common-place in engineering applications involving metals may be quite in-applicable to similar applications involving plastic materials due to the cold flow and creep that the latter materials undergo.

The question to be determined is whether the applicant has made a patentable advance in the art.

Considering first the Smith citation, we agree with the examiner that this patent shows the concept of using a pipe clamping arrangement for holding adjacent ends of pipes in a fixed position relative to each other. Smith uses a split ring assembly installed on each pipe and these assemblies are anchored to each other by a series of tie bolts. The inner surface of the split ring assembly is provided with small particles to help hold the clamped pipe in position. The applicant uses an enlarged bell portion at one end and inserts the "spigot" end of the length to be coupled thereto. He uses an annular abrasive means located on the inner surface of the bell portion and places an exterior clamp thereon to carry the axial load.

At the Hearing, the applicant emphasized that his arrangement provides a joint which possesses all necessary axial strength, and as well is easy to install. We see no reasons why we should disagree with the applicant's submission that several important and unobvious advantages flow from his

arrangement which utilizes a bell and spigot joint and an abrasive to ensure tight contact.

The applicant objected to the Basolo reference on the ground that it was first raised only in the Final Action. Basolo was cited to show that the use of a bell and spigot joint arrangement for ducting is known. On page 2 of the Final Action the report states that "The Examiner would like to draw the applicant's attention to U.S. Patent 2,702,716 made of record in applicant's letter of August 27, 1974, which reference clearly teaches that a bell and spigot arrangement provided with integral clamping means is known in the art." We note that Basolo relates to joints for tubing "such as used in aircraft, and the like." His concern is a sealing arrangement using an enclosed "o" ring to ensure no leakage of fluid. Due to the relatively low pressure used he had no concern with axial load.

At the Hearing the applicant emphasized that an important feature of his invention is the use of an abrasive material for engaging the conduit. By contrast Smith uses a ductile material. The object in using a roughened surface is to increase the coefficient of friction between the holding surfaces, and thereby assist in maintaining the axial strength of the joint. In our view the composition selected for the roughened area portion would be governed by the material used in the conduit, and consequently we find no basis for patentability on these grounds.

There appears to be no doubt but that the applicant developed a novel combination. The specific question we must decide is whether that development involved such an exercise of the creative faculties of the human mind as to amount to invention worthy of patent protection. It has been authoritatively stated that the art of combining two or more parts into a new combination

whether they be new or old, or partly new and partly old, so as to obtain a new result, or a known result in a better, cheaper, or more expeditious manner, is valid subject matter if there is sufficient evidence of thought, design, ingenuity in the invention, and novelty in the combination.

In a recent and as yet unpublished decision, Omark Industries v Sabre Saw Chain, April 14, 1976, for example, the Federal Court of Canada, in holding an improved saw chain to be patentable said, at p. 18:

The subject invention is simple, but is an improvement which eliminated "hooking" and substantially reduced "kick-back" in the operation of a saw chain; and has enjoyed substantial commercial success. Neither the Cox nor the Merz patents show a safety or guard link (and this is admitted by the defendant) and do not constitute anticipation. On the evidence, the subject matter of the subject patent is an advance in the art and therefore an inventive step.

It is also settled law that the matter of obviousness is to be judged by reference to the "state of the art" in the light of all that was previously known to persons versed in the art (See Almanna Svenska Elektriska A/B v. Burattisland Shipbuilding Co. Ltd. (1952), 69 R.P.C. 63 at 69).

In the Final Action the examiner states that "it would be obvious and mere expected skill of one working in the art to apply the teachings of the Smith patent to any pipe clamping arrangement." Smith however uses two pairs of split rings, aided by a roughened surface, to clamp the duct together. This requires tie bolts to hold the assembly together. Consequently he must use a large number of parts which require considerable time to assemble during pipe installation. On the other hand the applicant's arrangement of a duct bell with a single abrasive surface area to accommodate the joining duct end is much simpler, and can be assembled quickly. In our view this simplification constitutes an exercise of the inventive faculty sufficient to warrant the grant of a patent.

Another component of his invention is seal 20, important in excluding moisture and in providing a tight fit. When all these features are put together we have a coupling easy to assemble, which possesses sufficient strength to resist high axial separation forces, which can be used under water, and which because of its ruggedness has enjoyed undoubted commercial success for use in hostile environments. We are consequently of the opinion that if properly claimed it meets the test of a patentable improvement specified in the Omark Industries decision (supra). For that reason we recommend withdrawal of the rejection of the application as a whole.

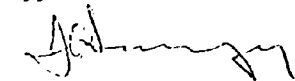
When we turn to the claims, however, we find that neither independent claims 1 or 5 include all the essential features of the invention. Mr. Garrett emphasized the importance of both the "means whereby the coupled duct may withstand high axial separation forces by the mechanical clamping means," and the seal between the ducts. To be allowable all independent claims must include these features, and in our view only the dependent claim 8 includes all the necessary features. We consequently agree with the examiner's rejection of claims 1-7 inclusive.

The Board recommends that the decision of the examiner to refuse the application be withdrawn, and that the refusal of claims 1 to 7 be sustained. If the applicant amends the claims as suggested above, the application should be allowed to proceed.



G. Asher
Chairman
Patent Appeal Board

I concur with the findings of the Patent Appeal Board. The rejection of the application is withdrawn. The applicant must make the amendments required by the Board within six months of the date of this decision, or take any appeal under Section 44 of the Patent Act.



J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec
this 28th day of June, 1976