Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JITSUMI SHINMOTO

Appeal No. 1998-1735
Application No. 08/339,980

ON BRIEF

Before ABRAMS, FRANKFORT, and McQUADE, Administrative Patent Judges.

ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 4-6, which are all of the claims pending in this application, claims 1-3 having been canceled.

We REVERSE.

BACKGROUND

The appellant's invention relates to an apparatus for producing plastic film by extrusion. An understanding of the invention can be derived from a reading of exemplary claim 4, which appears in the appendix to the appellant's Second Amended Brief.

The prior art relied upon by the examiner in rejecting the appealed claims are:

VanErden	4,931,003	Jun. 5, 1990
Lenius et al. (Lenius)	5,124,094	Jun. 23, 1992
Edge	5,179,521	Jan. 12, 1993
Konermann	5,281,375	Jan. 25, 1994

The admitted prior art shown in Figure 3 of the appellant's drawings and described on pages 1-3 of the specification.

Claim 6 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claim 4 stands rejected under 35 U.S.C. § 103 as being unpatentable over the admitted prior art in view of Lenius.

Claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over the admitted prior art in view of Lenius and Konermann.

Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over the admitted prior art in view of Lenius and VanErden or Edge.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 18) for the examiner's complete reasoning in support of the rejections, and to the Second Amended Brief (Paper No. 17) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, the applied prior art references, the respective positions articulated by the appellant and the examiner, and the guidance provided by our reviewing court. As a consequence of our review, we make the determinations which follow.

The Rejection Under 35 U.S.C. § 112

The examiner has rejected claim 6 as being indefinite because the presence of a semi-colon in line 6 and the misspelling of “from” as “form” in line 7 renders the claims “confusing” (Answer, page 4). We regard these items as being inadvertent typographical errors which, although worthy of correction, certainly do not rise to the level of causing the claim to be indefinite. This rejection is not sustained.

The Rejections Under 35 U.S.C. § 103

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

The appellant’s invention is directed to an improvement in plastic molding machines of the type wherein a thermoplastic resin is melted while being transported by a screw conveyor and then is extruded through a die into a forming chamber. Such a machine is shown in Figure 3 of the present application. When the plastic product emerges from the

die it is cooled by a blower as it enters the forming chamber where it is formed into a tube, which gives rise to the establishment of a phase transition point (frost line), that is, the point where the plastic changes from liquid to solid state. According to the appellant, the thickness of the plastic can become non-uniform and its state unstable if the phase transition point moves from its optimal position, such as might be caused by variations in temperature between day and night and summer and winter (specification, page 4). The appellant's invention solves this problem by providing infrared sensors that directly monitor the position of the frost line in the forming chamber. If the frost line strays from the desired position, an adjustment is then made in one of the operating parameters of the apparatus to cause it to move back to the desired position. As manifested in independent claim 4, the invention comprises, inter alia,

> means for monitoring phase transition of said molten plastic into solidified plastic film and adjusting operation of said apparatus to maintain plastic material phase transition occurrence at a preselected position downstream of said die (emphasis added).

According to the examiner, the admitted prior art meets all of the terms of claim 4 except for the means for monitoring the phase transition of the plastic, however, this would have been obvious to one of ordinary skill in the art in view of the teachings of Lenius. We do not agree.

Lenius discloses an apparatus for producing plastic film, and recognizes that for proper operation of the apparatus the frost line must be maintained in position within a predetermined range in the forming chamber in which the blown plastic tube is being formed. In the Lenius system, the width of the plastic tube being formed is monitored by sensors at a point between the extrusion nozzle and the entrance to the forming chamber. According to Lenius, there is a relationship between the width of the tube at this point and the position of the frost line, and the reference teaches controlling the position of the frost line by altering the width of the tube (see Figure 4 and column 6, line 38 et. seq.). It is the examiner's position that the Lenius system "monitors" the point of phase transition (frost line), as required by the claim, since the tube width is indicative of its location (Answer, page 5). The essence of the appellant's argument in rebuttal is that while Lenius causes the frost line to be moved in order to maintain the stability of the forming operation, it does not do so by way of the claimed means for monitoring the phase transition and adjusting the operation of the machine that is the basis of the appellant's invention.

Claim 4 contains a means-plus-function limitation which must be evaluated in the context of the sixth paragraph of 35 U.S.C. § 112. In order to meet a means-plus-function limitation, the prior art must perform the identical function recited in the means limitation, and perform that function using the structure disclosed in the appellant's specification or an equivalent structure. See Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042, 25

USPQ2d 1451, 1454 (Fed. Cir 1993). As to the first requirement, even if one were to consider that the Lenius system accomplishes the same function as the claimed system, it does not do it using the same structure disclosed in the appellant's specification. In this regard, the appellant's means for monitoring and adjusting comprises a sensor that directly views the frost line and a controller that evaluates the position of the frost line reported by the sensor and then, if necessary, adjusts the operation of either the air blower or the motor turning the extrusion screw to cause the frost line to move up or down to the correct location. However, in the Lenius system, the means for monitoring comprises sensors that view the width of the tube prior to entering the shaping chamber, and the means for adjusting is a controller that alters the supply of air that surrounds the tube in the chamber to change the width of the tube at a point within the chamber, which action causes the position of the frost line to move. Clearly, this is not the same structure as that disclosed by the appellant.

While there is no litmus test for an "equivalent" that can be applied with absolute certainty and predictability, there are several indicia that are sufficient to support a conclusion of equivalency or non-equivalency. These include:

> (1) Whether the prior art elements perform the function specified in the claim in substantially the same way, and produce substantially the same results as the corresponding structure disclosed in the specification. Odetics Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1267, 51 USPQ2d 1225, 1229-30 (Fed. Cir. 1999).

> (2) Whether a person of ordinary skill in the art would have recognized the interchangeability of the elements shown in the prior art for the corresponding elements disclosed in the specification. Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1316, 50 USPQ2d 1161, 1165 (Fed. Cir. 1999).
>
> (3) Whether the prior art elements are the structural equivalents of the corresponding elements disclosed in the specification. In re Bond, 910 F.2d 831, 833, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990).
>
> (4) Whether there are insubstantial differences between the prior art elements and the corresponding elements disclosed in the specification. IMS Technology, Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1436, 54 USPQ2d 1129, 1138-39 (Fed. Cir. 2000).

As a result of our review, we have determined that there is nothing in the record which would support answering any of the above questions in the affirmative. This being the case, we conclude that the prior art structure does not qualify as being an equivalent under 35 U.S.C. § 112, sixth paragraph, of the structure disclosed by the appellant in the specification.

Since neither of the requirements set forth in Valmont has been met by Lenius, the applied prior art fails to establish a prima facie case of obviousness with regard to the subject matter recited in claim 4, and we will not sustain the rejection.

Dependent claims 5 and 6 stand rejected on the basis of the references applied against claim 4 taken further in view, respectively, of Konermann and of VanErden or Edge. None of these references overcome the deficiency we have pointed out above with

the references applied against independent claim 4. We therefore will not sustain the rejections of either of these claims.

CONCLUSION

None of the rejections are sustained.

The decision of the examiner is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED

NEAL E. ABRAMS Administrative Patent Judge	)
CHARLES E. FRANKFORT Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
JOHN P. McQUADE Administrative Patent Judge	)

NEA:hh

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