

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DOUGLAS B. MURDOCK
and RICHARD B. WEARN, JR.

Appeal No. 2002-2074
Application No. 09/494,965

ON BRIEF

Before COHEN, FRANKFORT and McQUADE, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Douglas B. Murdock et al. originally took this appeal from the final rejection of claims 1 through 4, 6 through 11, 17 through 21, 32 through 37, 54 through 58, 62 and 63. As the examiner has since withdrawn all rejections of claims 2 through 4, 6 through 11, 19, 36, 37 and 56 through 58, the appeal now involves claims 1, 17, 18, 20, 21, 32 through 35, 54, 55, 62 and 63. Claims 2 through 16, 19, 22 through 31, 36, 37 and 56 through 61 stand objected to as depending from rejected base

claims, and claims 38 through 53, the only other claims pending in the application, stand allowed.

THE INVENTION

The invention relates to "a pneumatic device that discharges compressed air behind a projectile to accelerate the projectile down and out of a barrel" (specification, page 1).

Representative claims 1 and 54 read as follows:

1. A device for ejecting a projectile, the device comprising:

(a) a barrel defining an inner space and having a closed end, and an open end through which the projectile is ejected;

(b) a chamber in which a charge of a compressed fluid having a pressure substantially greater than ambient air pressure is developed, said chamber being selectively coupled in fluid communication with the inner space of the barrel, so that the charge of compressed fluid is selectively released into the inner space of the barrel; and

(c) a projectile carrier disposed generally adjacent to the closed end of the barrel when in a firing position, the projectile carrier having a rear surface upon which the compressed fluid acts when the charge of the compressed fluid is selectively released into the inner space of the barrel, the projectile carrier having a cross-sectional size sufficiently close to that of the barrel so as to move freely along the inner space of the barrel, while accelerating a projectile conveyed by the projectile carrier through the inner space when the charge of compressed fluid is selectively released into the barrel behind the projectile carrier, said projectile carrier imparting kinetic energy to the projectile when the projectile carrier is forced from its firing position by the charge of compressed fluid and ejecting the projectile from the barrel.

54. A method for propelling a projectile along a trajectory, the method comprising the steps of:

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(a) providing:

(i) a tubular member for directing the projectile out from an open end of the tubular member;

(ii) a projectile carrier having a cross-sectional size substantially equal to that of the tubular member;

(iii) a projectile having a cross-sectional size less than that of the tubular member; and

(iv) a charge of compressed fluid;

(b) loading the projectile into the tubular member so that the projectile is adjacent to the projectile carrier

(c) positioning the projectile carrier in a firing position within the tubular member; and

(d) rapidly releasing the charge of compressed fluid into the tubular member so that the compressed fluid acts on the projectile carrier and accelerates the projectile carrier and the projectile through the tubular member, said projectile being thus propelled from the tubular member along the trajectory.

THE PRIOR ART

The references relied on by the examiner to support the rejections remaining on appeal are:

Garrett	2,499,379	Mar. 7, 1950
Sweeney et al. (Sweeney)	3,791,303	Feb. 12, 1974
Wood	5,337,726	Aug. 16, 1994
O'Brien	6,202,636	Mar. 20, 2001

THE REJECTIONS

Claims 54 and 55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sweeney.

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Claims 1, 54, 62 and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Garrett in view of Wood.

Claims 1, 17, 18, 20, 21, 33 through 35, 54, 55, 62 and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wood in view of Sweeney.

Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wood in view of Sweeney and O'Brien.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 11 and 14) and to the examiner's final rejection and answer (Paper Nos. 9 and 12) for the respective positions of the appellants and examiner regarding the merits of these rejections.¹

DISCUSSION

I. The 35 U.S.C. § 102(b) rejection of claims 54 and 55 as being anticipated by Sweeney

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). In other words, there must be no

¹ In the final rejection, claim 63 also stood rejected under 35 U.S.C. § 102(b) as being anticipated by Sweeney. The examiner has since withdrawn this rejection.

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difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. Scripps Clinic & Research Found. v. Genentech Inc., 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

Sweeney discloses "deterrent ammunition" for inflicting non-lethal impact shocks or stings on rioting crowds. The ammunition comprises a projectile/sabot assembly 11 (see Figures 2 and 3) composed of a liquid-filled ball 13 designed to rupture on impact with a target, a cradle 15 formed of low-density material for receiving and holding the ball, and a rigid disc sabot 17 secured to the rear face of the cradle. A layer of rubber cement 21 secures the ball to the cradle during initial handling and loading, but releases the ball from the cradle during flight. Sweeney teaches that the projectile/sabot assembly can be launched with relatively high velocity from a tubular barrel extension 33 mounted on a conventional shotgun 31 under the power of a propellant gas generating cartridge 41, or that "compressed air or other gas may be employed, as in the case of launching from a simple tube arrangement" (column 2, lines 5 through 7).

The examiner's determination (see pages 4 and 5 in the answer) that the method recited in independent claim 54 is anticipated by Sweeney's compressed gas embodiment rests on a

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finding that this embodiment meets, under principles of inherency, the limitations in the claim requiring the steps of providing a charge of compressed fluid and rapidly releasing the charge into the tubular member so that it acts on the projectile carrier (Sweeney's cradle 15 and sabot 17) and accelerates the carrier and the projectile (Sweeney's ball 13) through the tubular member. The appellants counter (see pages 6 and 7 in the main brief and pages 2 and 3 in the reply brief) that the rejection is unsound because Sweeney does not "explicitly" disclose these steps. According to the appellants, "Sweeney's mere mention of a compressed fluid is not equivalent to disclosing how the compressed fluid should actually be used to launch the deterrent ammunition" (reply brief, page 2).

While it is true that Sweeney does not explicitly disclose charge providing and releasing steps as set forth in claim 54, this is not dispositive of the anticipation issue at hand. As indicated above, the law of anticipation allows for the disclosure of these steps under principles of inherency. Under these principles, when a reference is silent about an asserted inherent characteristic, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons

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of ordinary skill. Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). In the present case, the examiner's finding that Sweeney's admittedly brief description of the compressed air or gas embodiment inherently meets the claim limitations at issue is reasonable on its face. Given the role the compressed air or gas plays in the Sweeney method, i.e., launching ammunition with relatively high velocity, it is not apparent, nor have the appellants cogently explained, why a person of ordinary skill in the art would not recognize this use of compressed air or gas as necessarily involving the provision of a charge of such compressed fluid and the rapid release thereof as broadly required by claim 54.

Thus, the appellants' position that the subject matter recited in claim 54 distinguishes over Sweeney is not persuasive. Therefore, we shall sustain the standing 35 U.S.C. § 102(b) rejection of claim 54 as being anticipated by Sweeney.

We also shall sustain the standing 35 U.S.C. § 102(b) rejection of dependent claim 55 as being unpatentable over Sweeney since the appellants have not challenged such with any reasonable specificity, thereby allowing claim 55 to stand or fall with parent claim 54 (see In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987)).

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II. The 35 U.S.C. § 103(a) rejection of claims 1, 54, 62 and 63
as being unpatentable over Garrett in view of Wood

Garrett discloses a grenade launcher comprising a pressure cylinder 3, a grenade barrel 5 coaxial with the pressure cylinder, a piston 9 in the pressure cylinder, a projector plate 10 in the grenade barrel, a piston rod 8 connecting the piston and projector plate, a cartridge 18, and a firing mechanism (see Figure 4) for exploding the cartridge. The expanding gases generated by the explosion flow into the pressure cylinder and act on the piston, piston rod and projector plate to discharge a grenade loaded in the grenade barrel.

As conceded by the examiner (see pages 6 and 7 in the answer), Garrett does not respond to the limitations in independent device claims 1 and 62 requiring a chamber, in which a charge of a compressed fluid is developed, selectively coupled in fluid communication with the inner space of the barrel so that the charge of compressed fluid is selectively released into the inner space of the barrel, or the corresponding limitations in independent method claims 54 and 63 requiring the steps of providing a charge of compressed fluid and rapidly releasing the charge into the tubular member. To overcome this deficiency, the examiner turns to Wood.

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Wood discloses a pneumatic ball thrower for use in practicing baseball, softball, cricket, tennis, handball, racquetball and other sports. The thrower includes a guide 16 for receiving the ball, a pneumatic ram assembly comprising a cylindrical tube 64 coaxial with the ball guide, and a shuttle rod assembly comprising a piston 92 disposed in the cylindrical tube and a shuttle rod 90 extending from the front of the piston and adapted to be driven into the ball guide to eject the ball therefrom. The thrower receives pressurized gas from a remote reservoir (not shown) via tubing 23 and stores a charge of the pressurized gas in a first plenum 132. Actuation of the thrower releases the charge from the first plenum into the cylindrical tube to accelerate the piston and shuttle rod forwardly and push the ball down the ball guide at a predetermined velocity dependent on the pressure of the charge.

In proposing to combine Garrett and Wood (see pages 6 and 7 in the answer), the examiner concludes that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the explodable cartridge of Garrett with a chamber containing a charge of compressed gas as taught by Wood "as a substitution of equivalent means for launching a projectile" (answer, page 6 and page 7).

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The mere existence of functional and mechanical equivalence, however, does not establish obviousness. Expedients which are functionally equivalent to each other are not necessarily obvious in view of one another. In re Scott, 323 F.2d 1016, 1019, 139 USPQ 297, 299 (CCPA 1963). Although the devices disclosed by Garrett and Wood are both projectile launchers in a general sense, in reality they constitute distinctly different apparatuses serving distinctly different purposes. As pointed out by the appellants (see pages 3 and 4 in the reply brief), the pneumatic propulsion system disclosed by Wood is relatively complex and bulky as compared to the cartridge propulsion system disclosed by Garrett, and seemingly would be ill suited for the battlefield environment in which the Garrett grenade launcher is intended to be used. Considered in this light, the two systems would not appear to be functional or mechanical equivalents; but even if they were, the ostensible unsuitability of a pneumatic system as disclosed by Wood for use in a grenade launcher as disclosed by Garrett would have discouraged the substitution proposed by the examiner. It follows that the only suggestion for combining the two references so as to arrive at the subject matter recited in claims 1, 54, 62 and 63 stems from hindsight knowledge impermissibly derived from the appellants' disclosure.

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Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 1, 54, 62 and 63 as being unpatentable over Garrett in view of Wood.

III. The 35 U.S.C. § 103(a) rejection of claims 1, 17, 18, 20, 21, 33 through 35, 54, 55, 62 and 63 as being unpatentable over Wood in view of Sweeney

Acknowledging that Wood does not respond to the projectile carrier limitations in independent claims 1, 54, 62 and 63, the examiner concludes that it would have been obvious at the time the invention was made to a person having ordinary skill in the art "to add a cradle/sabot assembly as taught by Sweeney having a cross-sectional size substantially equal to the ball guide (16) to the end of the shuttle rod (90) in the thrower of Wood for the purpose of protecting the projectile in the thrower as it is launched from the tubular member (16, 64)" (answer, pages 9, 10, 12 and 14).

In short, this selective combination of features from two distinctly disparate devices, Wood's sports ball thrower and Sweeney's deterrent ammunition launcher, as well as the particular rationale advanced in support of the combination, stem

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from an impermissible hindsight reconstruction of the claimed invention.

Thus, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of independent claims 1, 54, 62 and 63, and dependent claims 17, 18, 20, 21, 33 through 35 and 55, as being unpatentable over Wood in view of Sweeney.

IV. The 35 U.S.C. § 103(a) rejection of claim 32 as being unpatentable over Wood in view of Sweeney and O'Brien

Since O'Brien does not cure the foregoing shortcomings of the Wood and Sweeney combination relative to parent claim 1, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of dependent claim 32 as being unpatentable over Wood in view of Sweeney and O'Brien.

SUMMARY

The decision of the examiner:

a) to reject claims 54 and 55 under 35 U.S.C. § 102(b) as being anticipated by Sweeney is affirmed;

b) to reject claims 1, 54, 62 and 63 35 U.S.C. § 103(a) as being unpatentable over Garrett in view of Wood is reversed;

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c) to reject claims 1, 17, 18, 20, 21, 33 through 35, 54, 55, 62 and 63 under 35 U.S.C. § 103(a) as being unpatentable over Wood in view of Sweeney is reversed; and

d) to reject claim 32 under 35 U.S.C. § 103(a) as being unpatentable over Wood in view of Sweeney and O'Brien is reversed.

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

AFFIRMED-IN-PART

IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHARLES E. FRANKFORT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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