

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. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte XIAOLAN SHEN and T. MICHAEL SHORE

Appeal No. 2004-0170
Application No. 09/288,450

ON BRIEF

Before COHEN, STAAB and MCQUADE, Administrative Patent Judges.
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Xiaolan Shen et al. appeal from the final rejection (Paper No. 24) of claims 1 through 5, 11, 15 and 16. Claims 6 through 10 and 14, the only other claims pending in the application, stand withdrawn from consideration pursuant to 37 CFR § 1.142(b).

THE INVENTION

The subject matter on appeal relates to "flying shears for cropping the front and tail ends of hot rolled steel rods and other like products being delivered from a continuous high speed

rolling mill" (specification, page 2). Representative claim 1 reads as follows:¹

1. A shear for subdividing an elongated product moving longitudinally in a plane, said shear comprising:

leader and follower blades mounted on rotors for rotation about parallel axes located on opposite sides of said plane, said blades being arranged to coact in a radially overlapping relationship at a cutting zone located between said axes and spaced vertically from said plane, the radius of rotation of said leader blade being longer than the radius of rotation of said follower blade;

means for continuously rotating said blades at equal angular velocities, with said leader blade preceding said follower blade in said cutting zone; and

switch means located upstream of said cutting zone, said switch means being operable in a first mode to direct said product along a path in said plane bypassing said cutting zone, and being operable in a second mode in concert with one of said rotors to deflect said product from said path and said plane into said cutting zone for cutting by said blades into leading and trailing segments, said blades being constructed and arranged to further deflect a tail end of said leading segment away from said plane while directing a front end of said trailing segment back to said plane.

THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Obinata	4,202,230	May 13, 1980
Omori et al. (Omori)	4,399,727	Aug. 23, 1983

¹ The terms "said path" in claim 15 (three occurrences, the last of which should apparently be --said plane--) and "said cutting zones" in claim 16 lack a proper antecedent basis. These informalities should be corrected in the event of further prosecution.

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Poloni (Poloni '033) European Patent Document	618,033	Oct. 5, 1994
Poloni (Poloni '291) European Patent Document	655,291	May 31, 1995

THE REJECTIONS

Claims 1, 5 and 11 stand rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter the appellants regard as the invention.

Claims 1 through 5, 11, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Poloni '033 in view of Obinata or Omori.

Claims 1 through 5, 11, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Poloni '291 in view of Obinata or Omori.

Attention is directed to the main and reply briefs (Paper Nos. 26 and 28) and to the answer (Paper No. 27) for the respective positions of the appellants and the examiner regarding the merits of these rejections.

DISCUSSION

I. The 35 U.S.C. § 112, second paragraph, rejection of claims 1, 5 and 11

As indicated above, independent claim 1 recites a shear comprising, inter alia, blades "constructed and arranged to further deflect a tail end of said leading segment away from said plane while directing a front end of said trailing segment back to said plane." Independent claims 5 and 11 contain similar limitations. The examiner views these recitations as rendering claims 1, 5 and 11 indefinite because:

[i]t is not clear how the blades are "constructed" to perform the function of deflecting a tail end of the leading segment...". This appears to be a function of the radius of the blade, which is clearly already set forth. What structure performs this function [answer, page 3].²

The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). In determining whether this standard is met, the definiteness of the language employed in the claims must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the

² Given this rationale, it is unclear why the examiner did not include claims 2 through 4, which depend from claim 1, in the rejection.

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particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. Id. Read in light of the description of the cutting sequence on pages 7 and 8 of the underlying specification and the depiction thereof in Figures 10A through 10D, the construction and arrangement of the blades set forth in claims 1, 5 and 11 to deflect the product segments as specified is reasonably particular and precise, if not exceedingly so. Hence, the examiner's concern that claims 1, 5 and 11 are indefinite is unfounded.

Accordingly, we shall not sustain the standing 35 U.S.C. § 112, second paragraph, rejection of claims 1, 5 and 11.

II. The 35 U.S.C. § 103(a) rejections of claims 1 through 5, 11, 15 and 16

Poloni '033 and Poloni '291, the examiner's primary references, disclose high speed flying shears for cutting the leading and trailing ends of rolled stock (e.g., wires, bars, rods) moving longitudinally through the shears. Each shear includes blades 13 mounted on counter-rotating drums 30, a shearing axis 15 defined by the blades and a laterally movable switch 16 for feeding stock to the blades.

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As pointed out by the appellants, independent claims 1, 5, 11 and 15 recite a shear comprising, in essence,

(a) a cutting zone spaced vertically (or above) the plane of product travel;

(b) [a]n upstream switch operable in concert with one of the blade rotors to deflect the product vertically from the plane of product travel into the cutting zone where it is cut by the leader and follower blades; and

(c) leader and follower blades that are constructed and arranged to direct the front end of the trailing segment of the sheared product back to the plane of product travel [main brief, page 5].

The examiner's conclusions of obviousness rest in part on findings (see pages 8 and 9 in the answer) that the foregoing limitations in claims 1, 5, 11 and 15 are met by both of the Poloni references. These findings, however, are completely lacking in factual support. Neither reference contains any teaching or suggestion that switch 16, which lies and moves in the plane of product movement, is vertically spaced from the cutting zone defined by blades 13. Quite to the contrary, Poloni '033 explicitly teaches that switch 16 is positioned substantially on the same axis as the axis of the rolled stock being fed and that this axis coincides with the shearing axis at the moment of shearing (column 6, lines 24 through 27), and Poloni '291 explicitly teaches that switch 16 lies in a plane containing the shearing axis 15 (see column 4, lines 16 through

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21) and that during the shearing step the axis of the switch 16 coincides with the shearing axis 15 (see column 8, lines 36 through 43).

As these deficiencies in the Poloni references find no cure in the examiner's citation of either Obinata or Omori, we shall not sustain the standing 35 U.S.C. § 103(a) rejections of independent claims 1, 5, 11 and 15, and dependent claims 2 through 4 and 16, as being unpatentable over Poloni '033 in view of Obinata or Omori and as being unpatentable over Poloni '291 in view of Obinata or Omori.

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SUMMARY

The decision of the examiner to reject claims 1 through 5,
11, 15 and 16 is reversed.

REVERSED

IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
)	
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)	
)	BOARD OF PATENT
LAWRENCE J. STAAB)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
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)	
JOHN P. MCQUADE)	
Administrative Patent Judge)	

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