

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GREGORY J. RAJALA and RICHARD J. MAKOVEC

Appeal No. 1996-2624
Application No. 08/186,352¹

ON BRIEF

Before ABRAMS, FRANKFORT and GONZALES, Administrative Patent Judges

GONZALES, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 and 3 through 22, all the claims remaining in the application.

¹ Application for patent filed January 25, 1994.

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We REVERSE.

The subject matter on appeal is directed to an apparatus (claims 1, 3 through 19, 21 and 22) and method (claim 20) for receiving discrete parts traveling at a first speed and applying the parts to a web traveling at a different speed. An understanding of the invention can be derived from a reading of exemplary claims 1 and 20, a copy of which are reproduced in the opinion, below. The other claims on appeal can be found in the "Appendix" to the brief (Paper No. 10).

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

1974	Bosse	3,835,756	Sep. 17,
27, 1976	Ring	3,952,607	Apr.
1982	Radzins	4,364,787	Dec. 21,
1986	Eschler	4,610,751	Sep. 09,
1988	Katori	4,788,891	Dec. 06,
25, 1992	Ujimoto et al. (Ujimoto)	5,091,039	Feb.
1992	Langford et al. (Langford)	5,105,675	Apr. 21,

The following rejections are before us for review:

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(1) claims 1, 3 through 5, 14 through 16 and 20 through 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Katori;

(2) claims 1, 3 through 6, 14 through 16 and 20 through 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring;

(3) claims 7 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring, as applied to claim 1, and further in view of Langford;

(4) claims 9 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Katori, as applied to claim 1, or Bosse in view of Ring, as applied to claim 1, and further in view of Eschler;

(5) claims 11 through 13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Katori, as applied to claim 1, or Bosse in view of Ring, as applied to claim 1, and further in view of Radzins; and

(6) claims 17 through 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring in

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combination with Langford and Ujimoto.

The full text of the examiner's rejections and the responses to the arguments presented by appellants appear in the Office actions mailed October 4, 1994 (Paper No. 3) and April 12, 1995 (Paper No. 6) and in the answer (Paper No. 11), while the complete statement of appellants' arguments can be found in the brief (Paper No. 10).

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. Upon evaluation of all the evidence before us, it is our conclusion that the evidence adduced by the examiner is insufficient to establish a prima facie case of obviousness with respect to claims 1 and 3 through 22. Accordingly, we will not sustain the examiner's rejections of claims 1 and 3

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through 22 under 35 U.S.C. § 103. Our reasoning for this determination follows.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). Furthermore, the conclusion that the claimed subject matter is obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant

teachings of the references to arrive at the claimed invention.

See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379

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F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied,
389 U.S. 1057 (1968). Our reviewing court has repeatedly
cautioned against employing hindsight by using the appellant's
disclosure as a blueprint to reconstruct the claimed invention
from the isolated teachings of the prior art. See, e.g.,
Grain Processing Corp. v. American Maize-Products Co., 840
F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

Rejection (1)

Independent claim 1 reads:

1. An apparatus for receiving discrete parts travelling at a first speed and applying said parts to a substrate web travelling at a second speed, said apparatus comprising:
 - a) at least one rotatable transferring means for receiving and applying said parts, said transferring means moving along an orbital path that passes through a receiving zone and an application zone when said transferring means rotates;
 - b) driving means for transmitting rotational energy, said driving means including at least one rotatable noncircular drive gear; and
 - c) at least one driven means for accepting said energy from said driving means including at least one rotatable noncircular driven gear, said driven means configured to rotate said transferring means,wherein said transferring means is configured to maintain a substantially constant first surface speed as said parts are received in said receiving

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zone and a substantially constant second surface speed as said parts are applied in said application zone.

Independent method claim 20 recites:

20. A method for receiving discrete parts travelling at a first speed and applying said parts to a substrate web travelling at a second speed, said method comprising the steps of:

a) providing a rotatable transferring means for receiving said discrete parts in a receiving zone and applying said parts to said substrate web in an application zone; and

b) rotating said transferring means at a substantially constant first surface speed which substantially equals said first speed of said discrete part as said discrete parts are received in said receiving zone and a substantially constant second surface speed which substantially equals said second speed of said substrate web as said discrete parts are applied to said substrate web in said application zone wherein said rotating is provided by a drive means which includes at least one rotatable noncircular drive gear and a driven means which includes at least one rotatable noncircular driven gear, said drive gear being configured to engage and rotate said driven gear which rotates said transferring means at a variable speed.

Bosse discloses a bag-making machine for applying handles and reinforcing sheets at intervals along a traveling web of bag-making material (col. 1, lines 3-8). The disclosed machine

includes a transfer drum [18] having suction segments [19, 19']
(col. 4, lines 49-53). A pair of feed rollers [34] and a carrier [5] are operated in sequence with the rotation of the transfer drum [18] to supply adhesive-coated reinforcing sheets [B] and carrying handles [T], respectively, to the suction segments [19, 19'] of the transfer drum. As the drum rotates, it applies the reinforcing sheets [B] and carrying handles [T] to a traveling web [32] of bag-making material (Figures 1 and 2).

In order to increase the pitch [t, Fig. 2] of the handles on the web [32], the transfer drum is non-uniformly rotated between the various transfer stations (col. 5, lines 33-51)². In order to provide the desired non-uniform rotation, Bosse uses a planetary gearing system [33], including planet gears [45, 46] carried by a rocker arm [48], and a cam plate [49]

² By "transfer stations" we mean those locations spaced about the periphery of the transfer drum at which the reinforcing sheets [B] and carrying handles [T] are individually transferred to the transfer drum [18] and at which the reinforcing sheet-carrying handle combinations are transferred to the traveling web [32].

fixed on input shaft [36]. When cam plate [49] rotates, it causes rocker arm [50] to oscillate about fixed pivot [p', Figure 3]. Oscillation of rocker arm [50] is transmitted to rocker arm [48] by a coupling member [51]. Oscillation of rocker arm [48] causes the

output shaft [41], on which the transfer drum is fixed, to be advanced or retarded (depending of the direction of oscillation). See, col. 6, lines 26-56.

In addition, Bosse teaches that the speed of the transfer drum between transfer stations, as well as the pitch [t], may be changed without having to replace the cam plate [49] by adjusting the attachment point of the coupling member [51] along the longitudinal groove [53] in rocker arm [50]. See, col. 7, lines 4-66.

Katori teaches that is was known prior to his invention to use noncircular gears in a planetary gear device "for obtaining an unconstant velocity rotational motion useful for automation and to integrate velocity reduction means and unconstant velocity means together" (col. 1, lines 53-56).

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According to Katori, such prior art devices tended to be large and heavy in order to withstand the pulsating loads caused by the unconstant velocity (col. 2, lines 6-32). In order to solve this problem, Katori supports the planetary shaft 5 (i.e., the shaft supporting the planetary gears 7 and 8) at both ends by means of rotary body 12 and disk-like carrier 4 (col. 3, lines 36-47, and Figures 2 and 3).

It is the examiner's position that

it would have been obvious to one of ordinary skill in the art to have used complementary non-circular gears in the apparatus and method of Bosse to provide the non-uniform driving of the transfer drum as Katori teaches that the use of noncircular gears in planetary gear devices for providing unconstant velocity rotation and velocity reduction is known. [Answer, page 5]

and

that one of ordinary skill in the art would have known how to have shaped the complementary non-circular gears such that the gearing not only accelerates and decelerates the transfer drum but also rotates the drum at the two different constant mean angular speeds as required by Bosse. [Id.]

The appellants acknowledge (brief, page 7) that Bosse's gearing is configured to drive the transfer drum at a first

constant angular speed which corresponds to the feeding speed of the reinforcing sheets and handles and at a second constant angular speed corresponding to the surface speed of the web [32] when the reinforcing sheets and handles are transferred to the web, but that Bosse does so without using noncircular gears as called for in claims 1 and 20. Appellants also acknowledge that Katori discloses a planetary gear device which comprises at least one pair of noncircular gears for converting a constant velocity rotation to a reduced, unconstant rotation. However, appellants argue (brief, pages 8 and 9) that one of ordinary skill in the art would not have been motivated to replace the four-part linkage and cam plate taught by Bosse with the planetary gear system taught by Katori.

In our opinion, the examiner's position that it would have been obvious to replace the planetary gear system taught by Bosse with the noncircular gear system disclosed in Katori because noncircular gears in planetary gear devices for providing unconstant velocity rotation and velocity reduction were known

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at the time that appellants made their invention is insufficient to establish the necessary motivation. One of the advantages of Bosse's system is the flexibility of changing the transfer drum speed between transfer stations without having to replace the cam plate [49]. Bosse accomplishes this object by adjusting the attachment point of the coupling member [51] along the longitudinal groove [53] in rocker arm [50]. We fail to understand why one of ordinary skill in the art would have been motivated to surrender this advantage in Bosse's gear system simply because noncircular planetary gear systems were known.

Since the examiner's proposed combination of Bosse and Katori would involve a major reconstruction of the Bosse drive system and would appear to destroy certain desirable advantages sought by Bosse, we consider that one of ordinary skill in the art would not have been led by the collective teachings of the applied references to make the modifications of Bosse urged by the examiner. In fact, we view the examiner's position to be based on impermissible hindsight derived from applicants' own disclosure. Accordingly, we will not sustain the standing 35 U.S.C. § 103 rejection of independent claims 1 and 20 based on

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the combined teachings of Bosse and Katori.

Claims 3 through 5, 14 through 16, 21 and 22 are dependent, directly or indirectly, on claim 1 and contain all of the limitations of that claim. Accordingly, the examiner's rejection of claims 3 through 5, 14 through 16, 21 and 22 will likewise not be sustained.

Rejection (2)

Claims 1, 3 through 6, 14 through 16 and 20 through 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring.

Ring discloses a variable speed drive means useful in timing mechanisms having a noncircular driver member [12] and a noncircular driven member [14] wherein both the driver and driven members are capable of rotating past 360° (col. 1, lines 13-37 and col. 2, lines 6-8).

As in the reasoning provided by the examiner to support Rejection (1), the motivation identified by the examiner for replacing the planetary gear system taught by Bosse with the noncircular gear system disclosed in Ring is essentially that Ring's variable speed drive means was known at the time

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appellants made their invention (answer, pages 7 and 8). We cannot support the examiner's position for the reasons identified above with respect to the combination of Bosse and Katori.

Rejections (3) through (5)

Claims 7 through 13 depend directly or indirectly on claim 1. We have carefully considered the patents to Langford, Eschler and Radzins applied by the examiner in the various rejections of dependent claims 7 through 13. None of these references provide the motivation found lacking in our above discussions of the combined teachings of Bosse and Katori and Bosse and Ring. Accordingly, we will not sustain the § 103 rejections of claims 7 through 13.

Rejection (6)

Independent claim 17 and dependent claims 18 and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring in combination with Langford and Ujimoto.

Independent claim 17 is directed to the embodiment

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illustrated in appellants' Figures 3A-5. Claim 17 calls for, inter alia, first, second and third rotatable transferring means; driving means for transmitting rotational energy, said driving means including a rotatable noncircular drive gear; first, second and third driven means for accepting said energy from said driving means, each driven means including at least one rotatable noncircular driven gear.

Ujimoto does teach four independently rotatable rotor elements [26] for applying severed pieces onto a continuous web (col. 3, line 10 et seq.) as described by the examiner (Paper No. 3, page 7). However, Ujimoto fails to provide the necessary motivation for modifying Bosse according to the teachings of Ring. Therefore, the combined teachings of the applied references are not suggestive of the invention set forth in claim 17 through 19.

In summary and for the above reasons, the decision of the examiner:

to reject claims 1, 3 through 5, 14 through 16 and 20 through 22 under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Katori is reversed;

to reject claims 1, 3 through 6, 14 through 16 and 20

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through 22 under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring is reversed;

to reject claims 7 and 8 under 35 U.S.C. § 103 as being unpatentable over Bosse in view of Ring and Langford is reversed;

to reject claims 9 and 10 under 35 U.S.C. § 103 as being unpatentable over either Bosse and Katori or Bosse and Ring in combination with Eschler is reversed;

to reject claims 11 through 13 under 35 U.S.C. § 103 as being unpatentable over either Bosse and Katori or Bosse and Ring in combination with Radzins is reversed; and

to reject claims 17 through 19 under 35 U.S.C. § 103 as being unpatentable over Bosse, Ring, Langford and Ujimoto is reversed.

The decision of the examiner is reversed.

REVERSED

NEAL E. ABRAMS)
Administrative Patent Judge)

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CHARLES E. FRANKFORT)	APPEALS AND
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