

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASAYUKI SEKI

Appeal No. 1998-2064
Application 08/710,551

HEARD: April 7, 2000

Before FRANKFORT, STAAB and BAHR, Administrative Patent Judges.

STAAB, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 5-10, all the claims currently pending in the application.

Appellant's invention pertains to a rotary driving device for a press machine. With reference to appellant's Figure 2, a tap T for tapping a hole in a workpiece W is provided at a lower end of a rotary driving device 1. In operation, a striker S of a turret punch press strikes a push head member 21 provided at an upper end of the driving device. Through a series of elements provided within the driving device, downward movement of striker S is converted into downward and rotary movement of the tap T. The elements within the driving device that accomplish this conversion include a male thread axle member 29 having male threads, and a cooperating female thread member 33 having female threads. When the striker S strikes the push head member 21, the male thread axle member 29, which is rotatably mounted within the push head member, is driven downwardly relative to the female thread member, which is held against rotation within the driving device. As a result, the male thread axle member rotates as it moves downward.

Appellant's inventive efforts include the provision of a sliding connection 35, 37 between the female thread member 33

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and an upper housing portion 3 of the driving device that allows

axial movement of the female thread member relative to the housing portions of the driving device, in combination with impact absorbing springs 41 between the lower surface of the female thread member and a lower housing portion 5 of the driving device. According to appellant, this arrangement improves the operation of the device by absorbing impact forces that tend to damage the workpiece.

A copy of the appealed claims can be found in an appendix to appellant's brief.

The references of record relied upon by the examiner in support of a rejection under 35 U.S.C. § 103 are:

Markus ¹ (European)	0,305,762	Mar. 8, 1989
Becker (European)	0,394,925	Oct. 31, 1990

¹Our understanding of this German language reference is derived from a translation prepared on behalf of the Patent and Trademark Office. A copy of the translation is attached to this opinion.

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Claims 5-10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Becker in view of Markus.

Reference is made to the brief (Paper No. 11) and to the final rejection and the answer (Paper Nos. 4 and 12, respectively) for the respective positions of appellant and the examiner with respect to this rejection.

Opinion

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the applied prior art references, and to the respective positions set forth by appellant and the examiner. As a consequence of our review, we find that we cannot sustain the examiner's rejection.

There appears to be no dispute that the only difference between the rotary drive device of Becker and claim 5, the sole independent claim on appeal, lies in the particulars of the mounting of the female thread member 74 within the housing members 8, 10. With respect to the mounting of the female thread member within the housing, appellant's claim 5 calls

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for (1) a female thread supported by the upper member of the main body such that it is moveable in the axial direction relative to the upper member of the main body, and (2) a first impact absorbing means interposed between the female thread and the lower member of the main body. Becker discloses at column 6, lines 8-13, that roller nut 74 is fixedly mounted to housing member 8. Becker is silent as to the provision of an impact absorbing means between the

roller nut 74 and either the upper housing member 8 or the lower housing member 10. Thus, it is clear that Becker lacks a female thread "supported in the upper member . . . [and] being moveable in an axial direction" as called for in claim 5, and "first impact absorbing means interposed between a lower surface of the female thread and an upper surface of the lower member" as also called for in claim 5.

Markus pertains to an electromotive servo drive for use as an actuator for a valve or the like in a pipe system

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(translation, page 3, lines 4-6). The drive includes a motor driven worm 9 and a worm wheel 8 in engagement with the worm. Worm wheel 8 includes an internally threaded opening that is in engagement with an externally threaded end of a spindle 10 (translation, page 3, lines 7-12). Presumably, worm 9 rotatably drives worm wheel 8, which in turn causes the spindle 10 to move axially. As shown in Figure 1 of Markus, worm wheel 8 is mounted in a bearing assembly that includes spring washers 4, 5. Markus states the following with respect to this mounting arrangement:

By means of axial sets of springs (4, 5) on both sides of the lower bearing (2), an axial displacement of the worm wheel (8) from a central position may take place in a spring-mounted manner. [Translation, page 3, lines 16-19.]

It is the examiner's position that it would have been obvious "to provide spring means to mount the Becker female nut 74 and housing 8, 10 following the teachings of Markus in order to absorb shock loads to the transmission elements" (final rejection, page 2). With respect to the placement of the impact absorbing means between the lower surface of the

female thread and an upper surface of the lower member, the examiner considers that since the female nut 74 of Becker abuts the lower housing member 10, "the logical place to install such spring means is between the nut and the lower member as required . . ." (final rejection, page 2). The examiner further explains (answer, pages 4-5) that Markus is only relied upon to show that one skilled in the art of mechanical devices is aware that transmission elements can be spring mounted in order to absorb shocks. In addition, the examiner considers (answer, page 5) that one skilled in the art would be apprised of the desirability of reducing shock loads on the transmission elements of Becker by Becker's disclosure at column 6, lines 19-26. The examiner characterizes this portion of Becker's disclosure as teaching that low-friction, high-torque nut 74 is used to minimize the possibility that the threads of the spline shaft 26 might be stripped under the high impact

driving forces generated by the actuating press. Thus, the examiner concludes that the suggestion for making the

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combination comes from the teachings of the references and not from the use of impermissible hindsight.

While we appreciate the points the examiner is attempting to make with respect to what one of ordinary skill in the art would have learned from the teachings of Becker and Markus, we do not believe the ordinarily skilled artisan would have been led to modify the Becker device to arrive at the subject matter of claim 5 in the absence of appellant's disclosure. Conceding for the sake of argument that Markus teaches generally that a female threaded member may be resiliently mounted in order to absorb shocks, it is not clear to us why one of ordinary skill in the art would have applied this general teaching in Becker in the particular way and at the particular location called for in claim 5. This is especially so in that Becker discloses not one but two fixably mounted female threaded members², in that Becker's

²Note the presence of lead nut 92 in addition to internally threaded roller nut 74.

device includes piston and cylinder units 32 in the upper housing which would appear to absorb impact forces, and in that there is no suggestion in either Becker or Markus that the Becker device might be inadequate for its intended purpose. Furthermore, Markus is directed to a valve operator, whereas Becker pertains to a tapping device for a turret-type punch press (column 1, last four lines). The dissimilar purposes and modes of operation of the applied references makes it highly unlikely, in our view, that one of ordinary skill in the art would have combined them in the specific manner proposed by the examiner based on the teachings of the references alone.

Where, as here, the prior art references require a selective combination to render obvious a claimed invention, there must be some reason for the combination other than hindsight gleaned from the invention disclosure, *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985). In the fact situation before us, we are unable to agree with the examiner that one of ordinary skill in the art would have been motivated by the teachings of

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Markus to interpose impact absorbing means between the roller
nut 74 of Becker and lower housing member 10 in order to
arrive at the subject matter of claim 5.

In light of the above, we will not sustain the standing
§ 103 rejection of claims 5-10.

The decision of the examiner is reversed.

REVERSED

CHARLES E. FRANKFORT)	
Administrative Patent Judge)	
)	
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)	BOARD OF PATENT
LAWRENCE J. STAAB)	
Administrative Patent Judge)	APPEALS AND
)	
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