

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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DYNACRAFT BSC, INC.,  
Petitioner,

v.

MATTEL, INC.,  
Patent Owner.

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Case IPR2018-00039  
Patent 7,950,978 B2

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Before BARRY L. GROSSMAN, MITCHELL G. WEATHERLY, and  
JAMES A. WORTH, *Administrative Patent Judges*.

WEATHERLY, *Administrative Patent Judge*.

DECISION

Instituting *Inter Partes* Review  
35 U.S.C. § 314, 37 C.F.R. §§ 42.4, 42.108

I. INTRODUCTION

A. BACKGROUND

Dynacraft BSC, Inc. (“Petitioner”) filed a petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–3, 5, 6, 8–10, 12–14, 21, and 24 (the “challenged claims”) of U.S. Patent No. 7,950,978 B2 (Ex. 1001, “the ‘978 patent”). 35 U.S.C. § 311. Mattel, Inc. (“Patent Owner”) timely filed a

Preliminary Response. Paper 6 (“Prelim. Resp.”). Institution of an *inter partes* review is authorized by statute when “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); 37 C.F.R. § 42.108. Based on our review of the record, we conclude that Petitioner is reasonably likely to prevail with respect to at least one of the challenged claims.

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 103 based on the following grounds (Pet. 20–63):

References	Basis	Claims challenged
U.S. Patent No. 5,859,509 (Ex. 1003, “Bienz”) and U.S. Patent No. 4,634,941 (Ex. 1004, “Klimo”)	§ 103	1–3, 5, 8–10, 12–14, 21, and 24
Bienz, Klimo, and U.S. Patent No. 5,994,853 (Ex. 1005, “Ribbe”)	§ 103	6

Generally, Patent Owner contends that the Petition should be denied in its entirety. For the reasons described below, we institute an *inter partes* review of all challenged claims on all grounds alleged above.

#### B. RELATED PROCEEDINGS

The parties identified as a related proceeding the co-pending district court proceeding of *Fisher-Price, Inc. v. Dynacraft BSC, Inc.*, 4:17-cv-3745-PJH (N.D. Cal.). Pet. 1; Paper 4, 1. Patent Owner further identified three

petitions filed in IPR2018-00038,<sup>1</sup> -00040, and -00042 as matters that may affect this proceeding. Paper 4, 1.

### C. THE '978 PATENT

The '978 patent is directed to “toy vehicles that may be ridden by people, and more specifically . . . to a system, apparatus, and method for softening the initiation of motion of the toy vehicle.” Ex. 1001, 1:18–21. Patent Owner refers to such a vehicle as a “battery-operated ride-on” (“BPRO”). Prelim. Resp. 3. When the rider depresses foot pedal switch 210, a forward signal 222a or reverse signal 222b is generated depending upon the position of forward/reverse switch 215. *Id.* at 5:1–9, Fig. 3. Signals 222a, 222b are routed to conditioning unit 505 of soft-start control circuit 305, which is “operable to receive the forward and reverse signals 222a and 222b, which may be *analog or digital*, and condition the signals for input to the controller 510.” *Id.* at 5:37–40 (emphasis added), Fig. 5. The inventors sought to overcome certain problems associated with conventional control systems, such as “(i) excessive acceleration, (ii) jerk, (iii) safety (e.g. controlling and flipping the vehicle at startup), and (iv) wearing of the mechanical components of the drive train for the toy vehicle.” Ex. 1001, 2:4–10. Thus, the vehicle claimed in the '978 patent includes a “soft-start control circuit . . . integrated into the conventional control system[.]” *Id.* at 2:56–57. The '978 patent explains:

The soft-start control circuit is operable to reduce excessive acceleration generated by the conventional control systems due to switching battery voltage directly to motor(s) of the toy

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<sup>1</sup> The '978 patent is a continuation of the application that issued as U.S. Patent No. 7,222,684, which includes claims that are the subject of IPR2018-00038.

vehicles. A soft-start circuit may utilize a processor for receiving signals from the conventional control system and applying a transition signal such that the motor(s) are not excessively accelerated. The transition signal is variable such that full power is not substantially instantaneously applied to the motor. In other words, the transition signal causes the motor to be ramped from no power to full power.

*Id.* at 4:1–11. The transition signal may be a “pulse width modulation signal” (“PWM”) that will “linearly” or “non-linearly” ramp the output signal to the motor up or down. *Id.* at Abstract, 4:14–18, Figs. 7, 8a, 8b. The duty cycle of the pulse width modulation signal may range from about 20 to 100 percent, in which the motors deliver full power when the duty cycle is 100 percent. *Id.* at 5:24–29.

Claims 1, 14, and 21 are the independent claims among the challenged claims, and are directed to a “toy vehicle operable by a person.” *Id.* at 9:51–10:17 (claim 1), 11:1–28 (claim 14), 12:7–33 (claim 21). Claims 2, 3, 5, 6, 8–10, 12, and 13 depend directly or indirectly from claim 1, *id.* at 10:19–67, and claim 24 depends directly from claim 21, *id.* at 12:55–61. Claim 1, which is representative of the claimed toy vehicle, recites:

1. A toy vehicle operable by a person, the toy vehicle comprising:
  - a battery operable to provide power to electrical components of the toy vehicle;
  - a motor operating as a drive mechanism of the toy vehicle in response to a switch controlled by a person;
  - a throttle switch operable to be controlled by a person in physical contact with the toy vehicle, the throttle switch electrically coupled between the battery and the motor, and operable to provide power to the motor using a throttle signal; and

a circuit having a first terminal and a second terminal, the first terminal being coupled to the battery and the second terminal being coupled to the motor, the circuit being operable to:

detect a change in the throttle signal from a first level to a second level or from the second level to the first level,

the throttle signal operable to induce motion via the motor, wherein the first level corresponds to the throttle signal produced when the person engages the throttle switch, and

wherein the second level corresponds to the throttle signal produced when the person disengages the throttle switch;

generate a transition signal based on the change in the throttle signal from the throttle switch, the transition signal comprising

at least one signal level intermediate to a third signal level corresponding to the first level and a fourth signal level corresponding to the second level,

wherein a transition from the third signal level to the at least one intermediate signal level to the fourth signal level occurs over a significantly longer time period than a time period for the change in the throttle signal from the first level to the second level, and

apply the transition signal to affect operation of the motor.

*Id.* at 9:51–10:17 (with line breaks added for clarity).

## II. ANALYSIS

### A. CLAIM INTERPRETATION

“A claim in an unexpired patent that will not expire before a final written decision is issued shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131,

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