

### **REMARKS/ARGUMENTS**

Upon entry of the present amendment, claims 1-5, 8-14, and 17-20 will be pending in this application. Claims 1, 11, and 20 have been amended, no claims have been canceled, and no claims have been added. No new matter is added. Based on the following remarks, Applicant respectfully requests reconsideration and allowance of the pending claims.

#### **Office Action Summary**

Claims 1-20 are rejected under 35 U.S.C. §101 because the claimed invention is directed to an abstract idea without significantly more.

Claims 1-2, 4-5, 8, 11-12, 14, 17 and 19-20 are rejected under 35 U.S.C. §103 as being unpatentable over Kamon et al. (U.S. Publication No. 2022/0220709) (hereinafter, “*Kamon*”) in view of Hamada et al. (U.S. Publication No. 2021/0292999) (hereinafter, “*Hamada*”).

Claims 3 and 13 are rejected under 35 U.S.C. §103 as being unpatentable over Kamon in view of Hamada and in further view of Kowalchuk (U.S. Publication No. 2014/0196919) (hereinafter, “*Kowalchuk*”).

Claims 9 and 18 are rejected under 35 U.S.C. §103 as being unpatentable over Kamon in view of Hamada and in further view of Hurd et al. (U.S. Publication No. 2020/0326715) (hereinafter, “*Hurd*”).

Claim 10 is rejected under 35 U.S.C. §103 as being unpatentable over Kamon in view of Hamada and in further view of Cohen et al. (U.S. Publication No. 2021/0025143) (hereinafter, “*Cohen*”).

#### **Rejections Under 35 U.S.C. § 101**

Without conceding the correctness of the rejection, and solely in the interest of expediting prosecution, Applicant has amended independent claims 1, 11, and 20 to include additional features that further direct the claim away from ineligible subject matter. As such, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 101.

#### **Rejections Under 35 U.S.C. § 103**

Brief review of *Kamon*

FIG. 1 of *Kamon*, which is reproduced below, shows a “construction machinery 1000 with learning function ... provided with a working part 104, an operating part 103, a manipulating part 101, a work-state detecting part 112, an operation-state detecting part 113, a reaction detecting part 114, a learning data memory 115, a learning module 118, and a hydraulic drive system 105” (*Kamon* at [0079]).

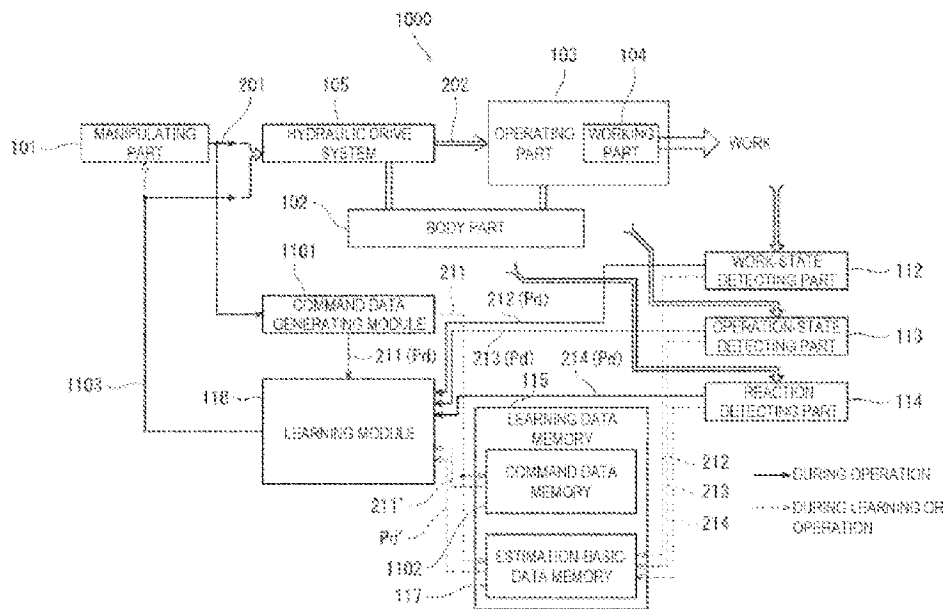


FIG. 1

FIG. 3 of *Kamon*, which is reproduced below, shows a “hydraulic excavator 10 with learning function ... provided with the body part 102 ... provided with a traveling body (carrier) 19” and where a “swiveling body 15 is provided on the body part 102 so as to be swivable about a vertical first rotary axis A1” and “is further provided with a swiveling motor 14 which causes the swiveling body 15 to swivel” (*Id.* at [0114]-[0115]).

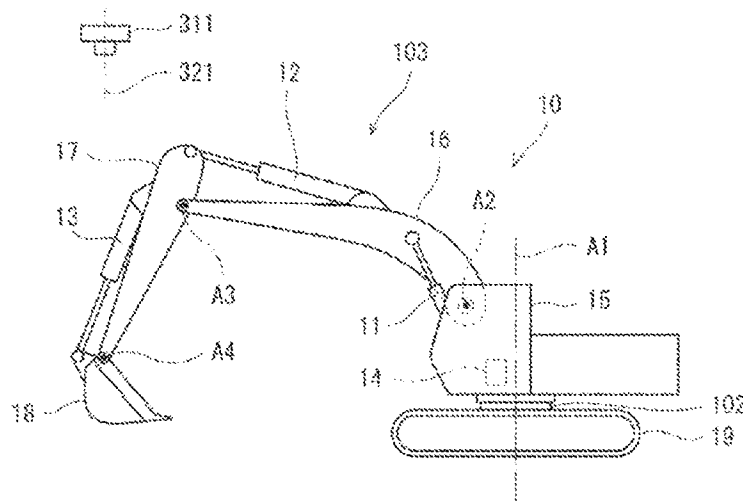


FIG. 3

*Kamon* further describes that “[t]he swiveling body 15 or the body part 102 of the hydraulic excavator 10 is provided with a gyroscope 314” that “detects ... vibration (including an excitation force, acceleration, and angular acceleration) of the swiveling body 15 or the body part 102, ... and vibration data as the reaction data 214.” (*Id.* at [0114]-[0115]). *Kamon* further describes that “when the bucket 18 acts on the ground (digs the ground, rakes the earth, etc.), the operator determines, by sensing the reaction, whether or not the intended work (action) is performed ... [t]hen, the operator determines the next manipulation instantly considering these” (*Id.* at [0181]).

#### Brief review of *Hamada*

As best understood, *Hamada* describes a “work analysis system” in which “[b]y recognizing the parameters output by [a] work analysis device ... a user can evaluate an operator or analyze the work” (*Hamada* at [0018]-[0022]).

FIG. 7 of *Hamada*, which is reproduced below, shows a “learning process of the work analysis device” that includes “receiv[e] a time series of state data of the work machine 100 (step S1) ... stor[e] the time series of the received state data in the state data storage unit 331 in association with an ID of the work machine 100 (step S2) ... receiv[e] a moving image captured by the imaging device 127 of the work machine 100 ... (step S3) ... receiv[e] a plurality of pieces of label data from the labeling device 200 (step S5) ... stor[e] the plurality of pieces of

label data in the label data storage unit 333 in association with the ID of the work machine 100 (step S6) ... us[e] a plurality of time series of the state data ... and the plurality of pieces of the label data ... as training data to learn a unit work prediction model (step S7) ... us[e] a plurality of time series of the state data ... and the plurality of pieces of the label data of the element work ... as training data to learn an element work prediction model (step S9)” (*Id.* at [0112]-[0116]).

FIG. 7

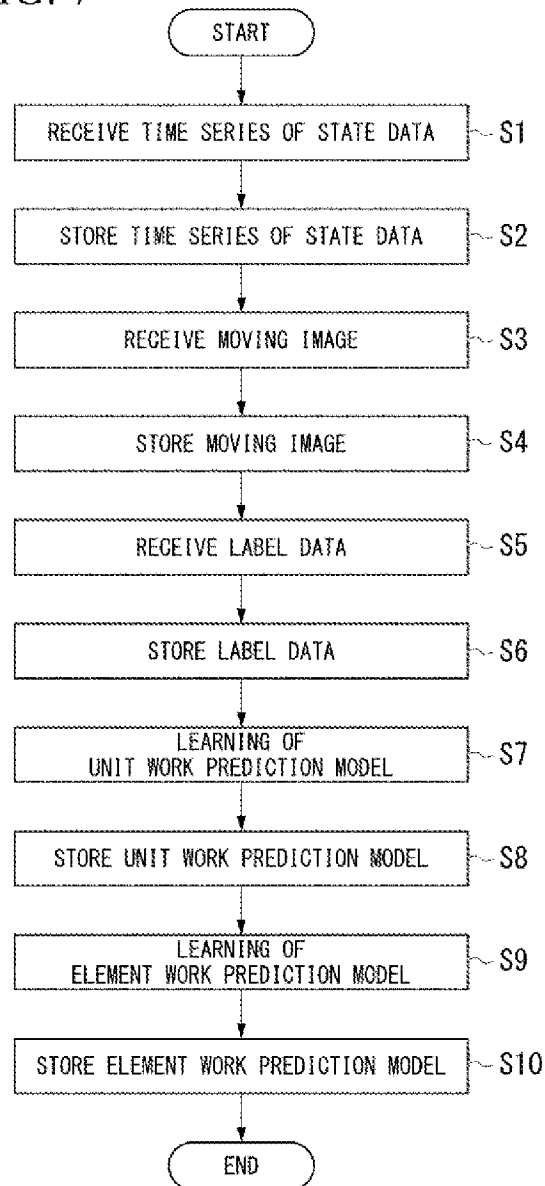
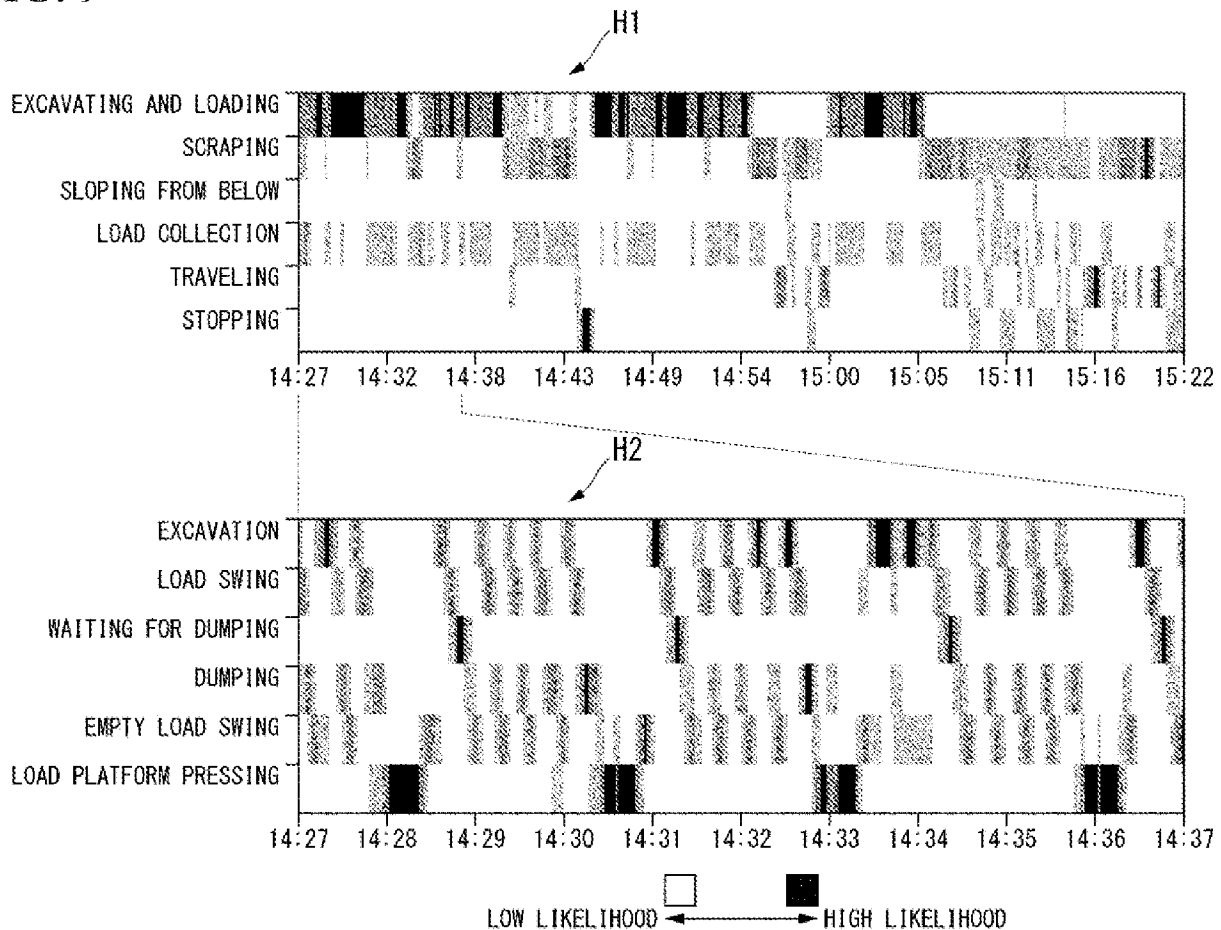


FIG. 9 of *Hamada*, which is reproduced below, shows “heat maps representing a likelihood time series related to unit works and a likelihood time series related to element works”

where “heat map H1 ... represents the likelihood time series related to the unit works” and “map H2 ... represents the likelihood time series related to the element works” (*Id.* at [0121]-[0122]). *Hamada* further describes that “a work state in which a plurality of unit works or a plurality of element works are performed in combination or a work state in which a classification of a work seamlessly moves to a classification of a different work is represented as a state in which likelihood of a plurality of classifications of works is high at the same time” (*Id.* at [0122]).

FIG. 9



Amendment

Without conceding the correctness of the rejections, and solely in the interest of expediting prosecution, Applicant has amended claim 1 (and similarly claims 11 and 20) to recite the following features:



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