

The
United
States
of
America



**The Director of the United States
Patent and Trademark Office**

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Joseph Matal

Performing the Functions and Duties of the

Under Secretary of Commerce for Intellectual Property and

Director of the United States Patent and Trademark Office



US009881169B2

(12) **United States Patent**
Becker

(10) **Patent No.:** **US 9,881,169 B2**
(45) **Date of Patent:** **Jan. 30, 2018**

(54) **MALWARE-PROOF DATA PROCESSING SYSTEM**

(71) Applicant: **Friedhelm Becker**, Waddewarden (DE)

(72) Inventor: **Friedhelm Becker**, Waddewarden (DE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 193 days.

(21) Appl. No.: **14/783,303**

(22) PCT Filed: **Mar. 27, 2014**

(86) PCT No.: **PCT/EP2014/056190**

§ 371 (c)(1),
(2) Date: **Oct. 8, 2015**

(87) PCT Pub. No.: **WO2014/166753**

PCT Pub. Date: **Oct. 16, 2014**

(65) **Prior Publication Data**

US 2016/0070916 A1 Mar. 10, 2016

(30) **Foreign Application Priority Data**

Apr. 9, 2013 (DE) 10 2013 005 971

(51) **Int. Cl.**

G06F 12/14 (2006.01)
G06F 21/62 (2013.01)

(Continued)

(52) **U.S. Cl.**

CPC **G06F 21/62** (2013.01); **G06F 12/1483** (2013.01); **G06F 13/122** (2013.01);
(Continued)

(58) **Field of Classification Search**

CPC G06F 21/56; G06F 21/62; G06F 12/1483;
G06F 13/122; G06F 21/57; G06F
2221/034; G06F 2212/1052

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,112,263 A 8/2000 Futral
7,000,092 B2 2/2006 Gehman et al.

(Continued)

FOREIGN PATENT DOCUMENTS

DE 19950255 A1 6/2000
EP 2428910 A2 3/2012

OTHER PUBLICATIONS

International Preliminary Report on Patentability dated Oct. 13, 2015 in International Application No. PCT/EP2014/056190.

(Continued)

Primary Examiner — Jasmine Song

(74) *Attorney, Agent, or Firm* — Panitch Schwarze
Belisario & Nadel LLP

(57) **ABSTRACT**

A data processing system may have a strict separation of processor tasks and data categories, wherein processor tasks are separated into software loading and initialization (loading processor) and data processing (main processor) and data categories are separated into address data, instructions, internal function data, target data of the main processor and target data of the loading processor. In this way, protection is provided against malware, irrespective of the transmission medium and of the type of malware, and also against future malware and without performance losses in the computer system.

16 Claims, 7 Drawing Sheets

