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(71) 申请人: 第四维科技有限公司 (DESIWE TECHNOLOGY PTE. LTD.) [SG/SG]; 新加坡安顺路 10 号凯联大厦#33-04A, Singapore 079903 (SG)。

(72) 发明人: 孙文中 (SUN, Wenzhong); 中国香港特别行政区九龙观塘道 348 号宏利广场 6 楼, Hong Kong (CN)。刘兴永 (LIU, Xingyong); 中国香港特别行政区九龙观塘道 348 号宏利广场 6 楼, Hong Kong (CN)。

(74) 代理人: 深圳市君之泉知识产权代理有限公司 (SHENZHEN J & Q INTELLECTUAL PROPERTY CO., LTD.); 中国广东省深圳市福田区深南大道 6015 号本元大厦, Guangdong 518000 (CN)。

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(54) **Title:** CASE HEAT DISSIPATION DEVICE HAVING HEAT PIPES AND COOLING FINS, AND CASE

(54) 发明名称: 一种带热管散热片的机箱散热装置及其机箱

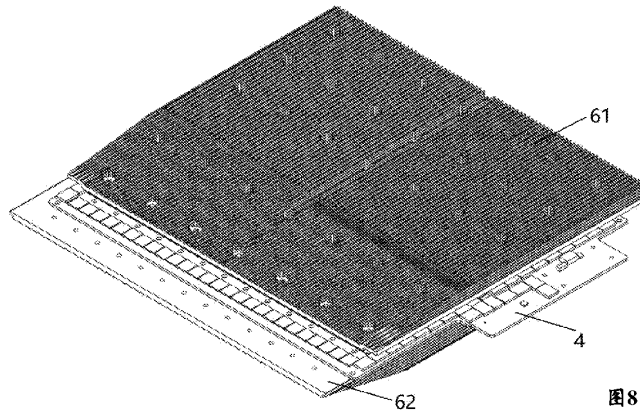


图 8

(57) **Abstract:** A case heat dissipation device having heat pipes (8) and cooling fins (7), and a case. The case heat dissipation device comprises at least one radiator (6) arranged on each circuit board (4) in the up-down direction, and comprise top and bottom radiators (6); each radiator (6) comprises a plurality of rows of cooling fins (7); a vertical angle is formed between the cooling fins (7) and the circuit board (4); the top and bottom radiators (6) sandwich the circuit board (4) therebetween and the three are locked into a whole by means of screws; the heat of a computing power unit (3) is transferred to the cooling fins (7) and is taken away by flowing air; the radiator (6) is correspondingly arranged on each column of chips (5) of the computing power unit (3); heat pipes (8) are embedded in the radiator (6); the positions between the chips (5) and the heat pipes (8) are filled with thermally conductive silicone grease to ensure sufficient connection; the heat pipes (8) and the radiator (6) are connected by means of welding; the heat pipes (8) are evenly embedded into the cooling fins (7) in rows; the cooling fins (7) and the heat pipes (8) are made of different materials; the cross section of each heat pipe (8) is convex; the heat pipes (8) embedded in the top and the bottom radiators (6) are arranged in a crisscross pattern. The heat dissipation capacity of the whole machine can be improved, and the problem of nonuniform temperature distribution of the whole machine can be solved.

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NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚
(AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR,
HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO,
PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN,
TD, TG)。

本国际公布：
— 包括国际检索报告(条约第21条(3))。

(57) 摘要：一种带热管（8）散热片（7）的机箱散热装置及其机箱，其中机箱散热装置包括在每片线路板（4）上下放置有至少一个散热器（6），分为顶部、底部散热器（6），每个散热器（6）包含多排散热片（7），散热片（7）与线路板（4）成垂直角度，顶部和底部散热器（6）将线路板（4）夹在中间用螺丝锁成一个整体，算力单元（3）的热量传递到散热片（7）上并被流动的空气带走；散热器（6）对应放置于算力单元（3）的每一列芯片（5）上，在散热器（6）中嵌入热管（8），芯片（5）与热管（8）之间用导热硅脂填充保证连接充分，热管（8）和散热器（6）之间采用焊接方式连接；热管（8）成排地均匀嵌入到散热片（7）中；散热片（7）与热管（8）采用不同材质制成；热管（8）横截面为凸型；嵌入顶部和底部散热器（6）的热管（8）成交叉状排列。能提高整机的散热能力解决整机温度分布不均问题。