

Major Patents

■ Patents registered in 2020

Registration Number	Title	Inventor(s)
Europe - 02458223	AXIAL-FLOW FAN WITH DOUBLE IMPELLERS	Honami Osawa, Katsumichi Ishihara, Toshiyuki Nakamura, Takashi Kaise, Yoshihiko Aizawa, Seiji Nishimura
Europe - 02173022	BRUSHLESS MOTOR STATOR	Izumi Onozawa, Masashi Miyazawa
Europe - 02355309	ELECTRIC FAN	Naruhiko Kudo, Tomoaki Ikeda, Haruhisa Maruyama
Europe - 02685625	MOTOR CONTROLLER	Takahisa Toda
Europe - 02814167	FAN MOTOR CONTROL UNIT	Yo Muramatsu, Takahisa Toda, Kenta Nishimaki
Europe - 02811627	FAN MOTOR, INLINE TYPE FAN MOTOR AND ASSEMBLY METHOD OF THE SAME	Katsumichi Ishihara, Masashi Nomura, Tomoko Hayashi
China - ZL201410443400.X	THREE-PHASE ELECTROMAGNETIC MOTOR	Toshihito Miyashita, Manabu Horiuchi
Korea - 102073801	STATOR, METHOD FOR MANUFACTURING STATOR, AND MOTOR	Toshihito Miyashita, Masashi Suzuki, Manabu Horiuchi, Masaki Musha
U.S. - 10666108	STATOR, METHOD FOR MANUFACTURING STATOR, AND MOTOR	Toshihito Miyashita, Masashi Suzuki, Manabu Horiuchi, Masaki Musha
Taiwan - I687028	MOTOR STRUCTURE	Toshihito Miyashita, Manabu Horiuchi
Europe - 02996230	STEPPER MOTOR	Yasushi Yoda, Koji Nakatake, Masaaki Ohashi
Hong Kong - HK1216945	STEPPER MOTOR	Yasushi Yoda, Koji Nakatake, Masaaki Ohashi
Taiwan - I682610	STEPPER MOTOR	Yasushi Yoda, Koji Nakatake, Masaaki Ohashi
China - ZL201510772342.X	MOTOR CONTROL APPARATUS	Yuji Ide, Masahisa Koyama, Shintaro Koichi
Taiwan - I691159	MOTOR CONTROL APPARATUS	Yuji Ide, Masahisa Koyama, Shintaro Koichi
China - ZL201511023274.3	FAN CASING AND FAN APPARATUS	Naoya Inada, Honami Osawa
Taiwan - I712357	FAN CASING AND FAN APPARATUS	Naoya Inada, Honami Osawa
Taiwan - I688325	MOTOR CONTROL DEVICE	Yuji Ide, Takao Oshimori, Hiroaki Koike
China - ZL201610079626.5	MOTOR CONTROL APPARATUS	Yuji Ide, Michio Kitahara, Toshio Hiraide
Taiwan - I703809	MOTOR CONTROL APPARATUS	Yuji Ide, Michio Kitahara, Toshio Hiraide
Taiwan - I696808	MEASUREMENT DEVICE	Katsumichi Ishihara, Takahisa Toda, Yo Muramatsu
Taiwan - I683196	MOTOR CONTROL APPARATUS	Yuji Ide, Michio Kitahara, Toshio Hiraide
China - ZL201610087797.2	MOTOR CONTROL DEVICE	Yuji Ide, Daigo Kuraishi, Akihiko Takahashi, Toshio Hiraide
Taiwan - I705657	MOTOR CONTROL DEVICE	Yuji Ide, Daigo Kuraishi, Akihiko Takahashi, Toshio Hiraide
Taiwan - I703270	IMPELLER AND FAN DEVICE	Jiro Watanabe, Masashi Miyazawa, Akira Nakayama
U.S. - 10781819	IMPELLER AND FAN DEVICE	Jiro Watanabe, Masashi Miyazawa, Akira Nakayama
China - ZL201610232262.X	BIDIRECTIONAL AXIAL FAN DEVICE	Satoshi Fujimaki, Toshiya Nishizawa, Takashi Kawashima
Taiwan - I699484	BIDIRECTIONAL AXIAL FAN DEVICE	Satoshi Fujimaki, Toshiya Nishizawa, Takashi Kawashima
China - ZL201610329511.7	SENSOR FOR MOTOR	Takayoshi Seki
China - ZL201610649891.2	LINEAR MOTOR	Yasushi Misawa, Hiroyuki Sato, Akihiko Takahashi, Satoshi Sugita

Registration Number	Title	Inventor(s)
Korea - 102178178	LINEAR MOTOR	Yasushi Misawa, Hiroyuki Sato, Akihiko Takahashi, Satoshi Sugita
China - ZL201610649582.5	AXIAL BLOWER AND SERIES-TYPE AXIAL BLOWER	Toshiyuki Nakamura, Shuji Miyazawa
Europe - 03133292	AXIAL BLOWER AND SERIES-TYPE AXIAL BLOWER	Toshiyuki Nakamura, Shuji Miyazawa
Taiwan - I702340	AXIAL BLOWER AND SERIES-TYPE AXIAL BLOWER	Toshiyuki Nakamura, Shuji Miyazawa
Japan - 06745661	MOTOR CONTROL APPARATUS	Yuji Ide, Michio Kitahara, Toshio Hiraide
Japan - 06653542	MOTOR CONTROL APPARATUS	Yuji Ide, Michio Kitahara, Toshio Hiraide
China - ZL201610676324.6	MEASUREMENT DEVICE	Masahiro Koike, Tomoaki Ikeda, Takahisa Toda, Yo Muramatsu, Katsumichi Ishihara, Hikaru Urushimoto
China - ZL201611177833.0	MOTOR	Manabu Horiuchi, Toshihito Miyashita
Korea - 102192221	MOTOR	Manabu Horiuchi, Toshihito Miyashita
U.S. - 10848019	MOTOR	Manabu Horiuchi, Mai Shimizu, Jun Kitajima
Japan - 06764670	POWER CONVERTER	Kazuya Nishizawa, Takuya Ozawa
Japan - 06680648	MOTOR CONTROL APPARATUS	Yuji Ide, Toshio Hiraide, Keigo Kikuchi
Japan - 06734752	AUTOMATIC ENCODER DETERMINING DEVICE	Ryuichi Yanagisawa, Masao Mizuguchi
China - ZL201710785510.8	REVERSIBLE FLOW FAN	Yoshihisa Yamazaki
Europe - 03301305	REVERSIBLE FLOW FAN	Yoshihisa Yamazaki
U.S. - 10662973	REVERSIBLE FLOW FAN	Yoshihisa Yamazaki
Europe - 03301306	BLAST FAN	Yoshihisa Yamazaki, Satoshi Fujimaki, Takashi Kawashima, Soma Araki
Japan - 06802022	BLAST FAN	Yoshihisa Yamazaki, Satoshi Fujimaki, Takashi Kawashima, Soma Araki
U.S. - 10837345	BLAST FAN	Yoshihisa Yamazaki, Satoshi Fujimaki, Takashi Kawashima, Soma Araki
U.S. - 10712041	COOLING FAN AUTOMATIC CONTROL SYSTEM AND COOLING FAN AUTOMATIC CONTROL DEVICE	Naoki Murakami, Masashi Murakami
Japan - 06766024	ORDER MANAGEMENT SYSTEM, ORDER MANAGEMENT APPARATUS AND ORDER MANAGEMENT PROGRAM	Shigejiro Miyata, Keigo Kikuchi
Japan - 06676133	ARMATURE MOLDED STRUCTURE	Manabu Horiuchi, Hiroki Sagara, Jun Kitajima, Mai Shimizu, Takashi Matsushita
Japan - 06694500	BOBBIN STRUCTURE OF ARMATURE	Manabu Horiuchi, Hiroki Sagara, Jun Kitajima, Mai Shimizu, Takashi Matsushita
Japan - 06764921	ARMATURE STRUCTURE OF THREE-PHASE MOTOR	Manabu Horiuchi, Hiroki Sagara, Mai Shimizu, Jun Kitajima
Japan - 06643519	MOTOR CONTROL APPARATUS AND INSULATION RESISTANCE	Yuji Ide, Keigo Kikuchi, Toshio Hiraide, Masakazu Sakai