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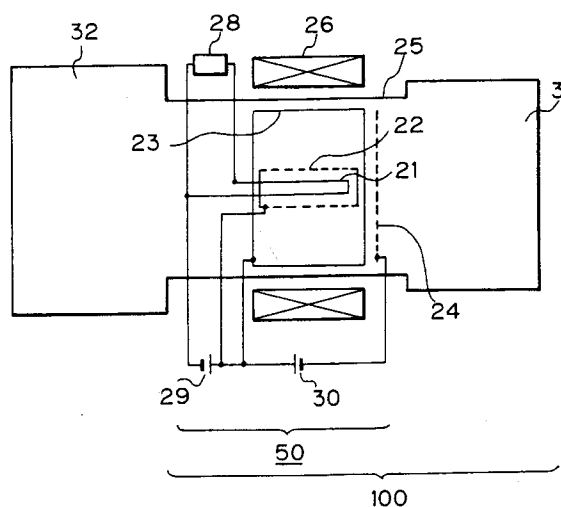
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01.07.92 Bulletin 92/27(71) Applicant: **EBARA CORPORATION**
11-1, Haneda Asahi-cho**Ohta-ku Tokyo(JP)**(72) Inventor: **Nagai, Kazutoshi**
12-22, Sekimachi-Minami 4-chome,
Nerima-ku
Tokyo(JP)(74) Representative: **Geyer, Ulrich F., Dr.**
Dipl.-Phys.
WAGNER & GEYER Patentanwälte
Gewuerzmuehlstrasse 5 Postfach 246
W-8000 München 22(DE)(54) **Ion pump and vacuum pumping unit using the same.**

(57) An exhaust apparatus (50) and a vacuum pumping unit (100) using the exhaust apparatus are disclosed. The exhaust apparatus (50) comprises a thermionic emission source (21), an electron accelerating grid (22) surrounding the thermionic emission source, an outer electrode (23) surrounding the electron accelerating grid, an ion accelerating grid (24) intersecting an axis of the outer electrode and installed apart from the outer electrode, a vessel (25) containing the thermionic emission source, the electron accelerating grid, the outer electrode, and the ion accelerating grid therein, a magnet (26) disposed outside of the vessel and generating a magnetic field almost parallel to the axis of the outer electrode, a power supply (29) for heating the thermionic emission source, a first DC power supply for applying a voltage between the electron accelerating grid, the outer electrode (23) and the thermionic emission source (21), a second DC power supply for applying a voltage between the outer electrode and the ion accelerating grid so as to get the outer electrode positive. The vacuum pumping unit (100) is constituted by interposing the exhaust (50) apparatus between a vacuum vessel to be evacuated and an auxiliary vacuum pump. By this, gas molecules in the vacuum vessel (25) are ionized by electron bombardment and accelerated toward the auxiliary vacu-

um pump (31) to be exhausted.

Fig. 1



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EUROPEAN SEARCH REPORT

Application Number

EP 91 11 3057

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-2 578 009 (E G LINDER) 1951	1, 3, 5-8, 10, 12-14, 16, 18-21, 23, 25, 26	H01J41/14
Y	* the whole document *	2, 4, 9, 11, 15, 17, 22, 24	
Y	--- DE-C-596 017 (GESELLSCHAFT FÜR LINDE' S EISMASCHINEN) 25 April 1934 * page 1, right column, last paragraph - page 2, right column, line 20; figure 2 *	2, 4, 9, 11, 15, 17, 22, 24	
A	--- GB-A-684 710 (ASSOCIATED ELECTRICAL INDUSTRIES) 24 December 1952 * page 2, line 110 - page 3, line 17; figure 2 *	1, 8, 14, 21	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			H01J
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 APRIL 1992	Examiner HULNE S. L.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			