

SEARCH HISTORY

Application Number	PCT/US 18/48785
Search Conducted By	FSM
Search Approved By	FSM

CPC/IPC Classifications Searched	CPC - A61N 1/36, A61N 1/3601, A61N 1/3611, A61N 1/36128, A61N 1/36167, A61N 1/36135, A61N 1/3601, A61N 1/02, A61N 1/04, A61N 1/05, A61N 1/08, A61N 1/205, A61N 1/3702 IPC(8) - A61N 1/36 (2018.01)
Date Conducted	24 October 2018 (24.10.2018)

Documentation Searched	CPC - A61N 1/36, A61N 1/3601, A61N 1/3611, A61N 1/36128, A61N 1/36167, A61N 1/36135, A61N 1/3601, A61N 1/02, A61N 1/04, A61N 1/05, A61N 1/08, A61N 1/205, A61N 1/3702 IPC(8) - A61N 1/36 (2018.01) (keyword delimited)
Search Terms Used	direct methanol fuel cell concentration offset compensation factor difference set point threshold anode cathode outlet temperature discharge expelled
Date Conducted	24 October 2018 (24.10.2018)

Electronic Database Searched	PatBase
Files Searched	Full-text: AU BE BR CA CH CN DE DK EP ES FI FR GB IN JP KR SE TH TW US WO Bibliographic: (Europe) AT BA BE BG CH CS CY CZ DD DK EE ES FI GE GR HR HU IE IS IT LT LU LV MC MD MT NL NO PL PT RO RS SE SI SK SM TR UA YU (Asia) EA GC HK ID IL IN KZ MN MY PH RU SG SU TH TJ TW UZ VN (North America) CA CR CU DO GT HN MX NI PA SV TT (South America) AR BR CL CO EC PE UY (Australasia) AU NZ (Africa) AP DZ EG KE MA MW OA ZA ZM ZW
Date Conducted	24 October 2018 (24.10.2018)

Search Logic:

Search 1:	PA=("MAYO_FO_UNDATATION_FOR_MEDICAL_EDUCATION_AND_RESEARCH" OR "MAYO_FOU" OR "MAYO_FOUND" OR "MAYO_FOUND_FOR_EDUCATION_AND_RES" OR "MAYO_FOUND_FOR_MED_EDUCATION_AND_RES" OR
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	"MAYO_FOUND_FOR_MEDICAL_EDUCATI" OR "MAYO_FOUND_FOR_MEDICAL_EDUCATION_AND_RES" OR "MAYO_FOUNDATION") (Results 1323)
Search 2:	INV=("BERRY_BRENT" OR "DANIEL_ERIK" OR "DANIEL_ERIK_S" OR "DANIEL_ERIKSSON" OR "KUCEWICZ_MICHAEL_T" OR "MANTILLA_CARLOS") (Results 19)
Search 3:	1 and breathing (Results 77)
Search 4:	2 and breathing (Results 0)
Search 5:	1 and TAC=breathing (Results 8)
Search 6:	(electromyog* or electroneurog*) and throat (Results 595)
Search 7:	6 and (stimulat* w6 diaphragm) (Results 53)
Search 8:	((electromyog* or electroneurog*) w6 (throat or laryngeal or cricoarytenoid)) (Results 49)
Search 9:	8 and (diaphragm or phrenic) (Results 11)
Search 10:	((sensor or sensing or detect#) w4 (throat or laryngeal or cricoarytenoid)) and (stimulat* w4 (diaphragm or phrenic)) (Results 8)
Search 11:	PN=(US5125406, US8195297, US20100016749) (Results 3)
Search 12:	ctb 11 or ctf 11 (Results 162)
Search 13:	((sensor or sensing or detect#) w4 (throat or laryngeal or cricoarytenoid)) (Results 991)
Search 14:	((sensor or sensing or detect#) w6 (throat or laryngeal or cricoarytenoid)) (Results 1614)
Search 15:	14 and (stimulat* w8 (diaphragm or phrenic)) (Results 19)
Search 16:	12 and ((sensor or sensing or detect#) w6 (throat or laryngeal or cricoarytenoid)) (Results 16)
Search 17:	12 and (stimulat* w8 (diaphragm or phrenic)) (Results 31)
Search 18:	16 and (stimulat* w8 (diaphragm or phrenic)) (Results 5)
Search 19:	14 and contraction (Results 151)
Search 20:	14 and ((intent* or onset*) w4 (breath* or inhalat*)) (Results 5)
Search 21:	IC=(A61N1/36) (Results 19616)
Search 22:	CPC=(A61N1/36, A61N1/3601, A61N1/3611, A61N1/36128, A61N1/36167, A61N1/36135, A61N1/3601, A61N1/02, A61N1/04, A61N1/05, A61N1/08, A61N1/205, A61N1/3702) (Results 7790)
Search 23:	21, 22 (Results 24082)
Search 24:	23 and (stimulat* w8 (diaphragm or phrenic)) (Results 549)
Search 25:	23 and ((sensor or sensing or detect#) w6 (throat or laryngeal or cricoarytenoid)) (Results 74)
Search 26:	23 and ((sensor or sensing or detect#) w6 (muscle)) (Results 1003)
Search 27:	23 and ((sensor or sensing or detect#) w4 (contract*)) (Results 758)
Search 28:	23 and ((sensor or sensing or detect#) w4 (breath)) (Results 90)
Search 29:	25 and (stimulat* w8 (diaphragm or phrenic)) (Results 15)
Search 30:	26 and (stimulat* w8 (diaphragm or phrenic)) (Results 98)
Search 31:	27 and (stimulat* w8 (diaphragm or phrenic)) (Results 70)

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Search 32:	28 and (stimulat* w8 (diaphragm or phrenic)) (Results 32)
Search 33:	29, 30, 31, 32 (Results 150)
Search 34:	33 and ((throat or neck) w4 (muscle* or nerve*)) (Results 27)

Electronic Database Searched	Google
Files Searched	Google Patents
Date Conducted	24 October 2018 (24.10.2018)
Search Logic:	
stimulating diaphragm based on throat muscle contraction 6450 results	
stimulating diaphragm based on throat muscle contraction AND (electromyography OR electroneurogram) 1790 results	
stimulating diaphragm based on "throat muscle" contraction AND (electromyography OR electroneurogram) 6 results	
stimulating diaphragm sensing "throat muscles" contraction AND (electromyography OR electroneurogram) 62 results	

Electronic Database Searched	FreePatentsOnline
Files Searched	USPat, USPgPub, EPO, JPO, WIPO, DE; word stemming on
Date Conducted	24 October 2018 (24.10.2018)
Search Logic:	
("abdominal stimulation"~4 or "diaphragm simulation"~4 or "phrenic stimulation"~4) and ("sensing neck muscle"~4 or "sensing onset"~4 or "sensing intent"~4 or "sensing throat nerve"~4 or "sensing throat muscle"~4) 67 results	

Electronic Database Searched	Google
Files Searched	Scholar
Date Conducted	24 October 2018 (24.10.2018)
Search Logic:	
stimulating diaphragm based on throat muscle contraction 18800 results	
stimulating diaphragm based on throat muscle contraction AND (electromyography OR electroneurogram) 8310 results	

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stimulating diaphragm based on "throat muscle" contraction AND (electromyography OR electroneurogram) 12 results

stimulating diaphragm based on "throat muscles" contraction AND (electromyography OR electroneurogram) 58 results

stimulating diaphragm sensing "throat muscles" contraction AND (electromyography OR electroneurogram) 43 results