

Table SINV-34

## International patent families granted in other special machines, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	12,938	14,056	12,286	12,077	12,507	13,601	14,815	13,505	14,563	14,681	14,442	14,322	16,106	18,507	21,437	23,118	23,953	25,958	28,968	30,152	29,453	29,051	33,709
North America	na	2,647	2,704	2,503	2,458	2,354	2,510	2,269	1,747	1,821	1,620	1,521	1,568	2,187	2,135	2,170	2,326	2,562	2,686	2,825	2,908	2,847	3,213	3,233
Canada	High	154	190	181	191	186	149	169	146	166	156	157	128	170	149	139	154	193	182	171	202	188	202	192
Mexico	Upper middle	5	5	0	0	6	4	4	2	4	0	1	2	2	6	4	7	5	6	21	30	29	26	9
United States	High	2,489	2,510	2,321	2,267	2,162	2,357	2,097	1,600	1,651	1,464	1,363	1,438	2,015	1,979	2,027	2,165	2,365	2,497	2,633	2,676	2,630	2,984	3,033
Central America and Caribbean	na	1	3	2	3	1	0	2	2	0	1	0	2	0	2	2	1	4	1	0	2	1	3	3
Puerto Rico	High	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South America	na	9	15	25	16	18	25	23	18	19	17	33	59	64	80	75	66	64	73	73	116	166	122	170
Argentina	Upper middle	3	3	7	3	5	5	1	3	0	2	3	2	2	1	5	4	1	3	9	9	6	4	3
Brazil	Upper middle	1	9	17	12	13	17	18	12	17	12	28	55	61	76	65	57	57	65	57	102	151	111	157
Europe	na	4,637	4,369	4,139	3,687	3,937	4,675	5,394	4,283	4,073	3,992	4,461	4,182	4,047	3,818	4,254	4,402	4,347	4,592	4,614	5,345	5,137	4,964	4,666
EU-27 + UK <sup>a</sup>	na	3,051	3,185	3,015	2,725	2,790	2,938	3,159	2,678	2,566	2,428	2,447	2,327	2,515	2,510	2,780	2,776	2,849	2,824	3,307	3,681	3,527	3,343	3,226
United Kingdom	High	224	212	158	170	187	269	239	201	180	133	139	109	141	114	139	133	124	145	163	141	142	139	146
EU-27 <sup>b</sup>	na	2,827	2,973	2,857	2,556	2,602	2,669	2,920	2,477	2,386	2,294	2,308	2,217	2,374	2,396	2,641	2,643	2,725	2,679	3,144	3,540	3,385	3,204	3,080
Austria	High	75	64	75	88	81	100	78	66	87	50	90	83	96	106	116	87	98	160	123	146	148	131	146
Belgium	High	52	37	36	46	36	55	44	43	47	55	39	54	50	51	42	34	43	88	226	106	134	93	95
Denmark	High	25	38	29	33	39	44	45	30	33	40	39	29	39	33	46	51	56	63	55	56	63	72	50
Finland	High	59	42	42	41	61	52	47	58	29	43	30	40	59	51	49	35	42	40	55	53	43	54	51
France	High	501	603	469	452	395	457	450	404	568	491	402	425	407	424	563	549	559	524	580	611	510	504	488
Germany	High	895	859	838	885	1,001	997	996	885	940	892	936	831	844	818	947	1,004	1,084	1,050	1,164	1,104	1,125	1,168	1,209
Hungary	High	4	12	5	15	16	13	8	8	11	3	2	5	9	9	6	8	8	7	10	15	10	11	12
Ireland	High	31	21	13	4	12	15	21	15	6	10	10	12	12	9	21	34	24	20	12	14	13	15	13
Italy	High	388	614	624	305	276	244	530	289	67	71	82	69	131	198	164	78	46	53	82	519	496	375	257
Netherlands	High	303	244	290	263	258	263	231	239	212	243	238	217	244	250	215	250	229	199	270	323	274	250	252
Spain	High	119	126	140	139	98	131	142	167	158	179	161	143	162	150	163	182	168	139	167	149	148	117	123
Sweden	High	150	132	121	105	127	126	151	85	65	66	65	81	96	72	80	64	76	67	79	90	85	96	119
Other Europe	na	1,586	1,184	1,124	962	1,147	1,737	2,235	1,605	1,507	1,564	2,013	1,855	1,532	1,308	1,474	1,626	1,499	1,768	1,306	1,663	1,610	1,620	1,439
Other Europe-2020 <sup>b</sup>	na	1,810	1,396	1,282	1,132	1,335	2,007	2,474	1,806	1,688	1,698	2,152	1,965	1,673	1,422	1,613	1,759	1,622	1,913	1,470	1,805	1,752	1,760	1,586

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Belarus	Upper middle	12	6	6	4	6	10	17	7	17	10	15	11	16	12	15	9	5	6	15	18	15	15	14
Moldova	Lower middle	27	19	19	12	12	25	19	19	19	18	21	24	32	26	20	19	18	18	22	17	14	5	9
Norway	High	39	35	42	44	40	33	25	37	30	21	33	20	34	36	33	23	31	32	36	38	68	73	58
Russia	Upper middle	1,366	1,016	956	782	933	1,427	1,557	1,358	1,269	1,181	1,624	1,565	1,198	1,029	1,198	1,332	1,182	1,490	1,052	1,404	1,288	1,376	1,224
Switzerland	High	92	85	74	84	89	67	64	60	79	71	68	62	73	67	66	62	70	67	69	86	100	88	99
Ukraine	Lower middle	47	16	20	30	64	172	546	119	91	256	243	168	165	129	127	162	180	140	88	76	104	41	7
Asia	na	5,337	6,606	5,244	5,573	5,874	5,946	6,735	7,108	8,369	8,803	8,159	8,302	9,578	12,258	14,706	16,092	16,756	18,402	21,201	21,553	21,090	20,528	25,383
China	Upper middle	76	95	205	228	221	350	560	592	762	965	1,264	1,796	2,484	3,940	4,937	6,038	6,839	10,835	13,217	13,301	12,724	12,028	16,679
India	Lower middle	2	1	2	4	2	3	8	6	6	7	6	4	5	8	12	14	16	16	19	24	26	26	37
Japan	High	4,655	5,418	4,305	4,508	4,469	4,532	4,807	4,615	4,881	5,143	4,768	4,689	5,048	5,702	6,245	5,925	5,678	4,526	4,623	4,129	3,994	4,112	4,278
Malaysia	Upper middle	3	1	1	1	1	2	3	4	11	15	5	5	8	25	19	20	23	16	12	22	24	9	14
Singapore	High	3	3	4	5	9	11	12	6	4	4	5	6	8	4	8	8	13	8	9	8	9	11	9
South Korea	High	443	942	552	596	977	815	1,088	1,632	2,362	2,325	1,902	1,521	1,752	2,265	3,143	3,672	3,811	2,582	2,899	3,499	3,811	3,789	3,943
Taiwan	High	148	139	170	224	188	228	250	245	338	336	206	272	271	309	336	408	365	406	409	558	482	534	406
Middle East	na	28	26	41	47	44	58	34	35	44	36	52	25	26	41	58	50	51	65	64	74	66	73	92
Israel	High	26	21	22	28	34	37	27	22	28	18	33	18	19	22	34	33	36	45	35	49	50	54	73
Africa	na	62	82	46	52	46	65	51	50	39	45	73	41	55	25	43	29	39	8	22	19	11	18	11
South Africa	Upper middle	56	67	36	41	35	48	38	46	30	38	64	40	47	14	29	21	29	6	11	10	9	11	9
Australia and Oceania	na	158	164	195	235	227	318	301	210	183	166	136	141	145	145	124	147	127	126	161	131	133	127	144
Australia	High	145	147	178	218	214	298	286	189	168	148	119	127	120	119	92	112	97	95	116	96	113	98	126
New Zealand	High	13	17	17	16	14	20	15	21	15	17	17	15	25	26	32	34	30	31	45	35	20	29	18
Unclassified	na	58	88	92	4	6	4	6	50	14	1	6	2	2	2	4	6	2	4	8	4	2	4	7

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

<sup>a</sup> The United Kingdom was a part of the EU for data purposes from 1973 to 2019.

<sup>b</sup> Beginning in 2020, the United Kingdom was no longer a member of the EU.

**Note(s):**

International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. China includes Hong Kong. Data were extracted in June 2021. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

**Source(s):**

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.

*Science and Engineering Indicators*