

TABLE S8-36

USPTO patents and patent families granted in transport, by region, country, or economy: 1998–2018

(Number)

Region, country, or economy	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		
	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families			
World	6,281	14,405	6,419	17,059	7,211	13,912	7,863	12,766	7,731	12,926	7,414	14,955	7,057	15,465	6,515	17,704	7,009	17,662	6,357	18,552	6,142	19,188	6,030	18,349	7,791	19,373	7,649	19,728	8,620	22,983	9,892	25,651	11,027	25,612	12,012	25,116	12,112	30,954	13,391	32,862	13,400	32,571	
North America	3,629	3,110	3,555	2,749	4,014	3,047	4,112	2,932	3,901	3,665	3,047	3,808	2,385	3,636	2,277	3,426	2,033	3,665	1,768	3,016	1,565	2,912	1,482	3,749	1,819	3,603	1,555	3,936	1,675	4,410	1,833	4,792	1,976	5,435	2,320	2,834	2,494	6,065	2,834	6,230	3,032		
Canada	160	151	152	137	179	157	188	148	174	131	208	126	213	122	184	116	200	112	170	111	168	112	164	112	186	85	195	99	191	99	231	102	247	108	233	112	274	113	297	126			
Mexico	4	3	1	1	4	3	10	8	4	4	3	2	2	4	2	2	2	2	1	5	4	2	0	6	1	5	2	3	2	9	5	21	12	19	23	55	86	82					
Puerto Rico	1	1	0	0	3	0	1	0	1	0	4	0	1	0	3	0	0	0	1	0	1	0	0	0	0	0	0	0	1	2	1	0	0	2	0	2	0	4	0				
United States	3,465	2,956	3,400	2,611	3,828	2,887	3,913	2,775	3,722	2,505	3,592	2,257	3,419	2,152	3,236	1,915	3,462	1,866	3,114	1,656	2,843	1,449	2,746	1,371	3,557	1,733	3,404	1,454	3,741	1,575	4,167	1,729	4,542	1,869	4,969	2,200	5,179	2,359	5,737	2,667	5,842	2,824	
All others	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Central and South America	10	4	11	5	11	10	16	13	13	11	23	13	14	13	6	8	9	9	7	9	14	4	23	13	29	20	40	12	42	20	30	22	31	21	28	27	37	25	35	32	70		
Argentina	2	0	1	0	1	0	4	2	2	0	3	2	2	1	0	1	1	2	0	3	1	0	3	1	1	1	2	1	1	2	3	1	1	1	1	1	0	3	0	3	2		
Brazil	8	2	4	1	8	7	7	7	9	9	15	8	7	8	4	4	6	3	5	6	3	12	2	22	10	17	39	8	15	25	16	26	16	27	31	22	33	25	70				
All others	0	2	6	5	2	3	5	5	2	1	5	3	5	4	1	3	3	3	1	2	1	3	2	2	3	3	0	3	5	4	2	4	1	6	4	2	4	2	4	2			
Europe	1,232	4,528	1,312	4,257	1,569	4,542	1,896	4,067	1,860	4,193	1,791	4,434	1,576	5,066	1,331	5,128	1,400	5,324	1,239	5,147	1,231	5,147	1,192	5,377	1,610	5,192	1,657	4,333	2,031	5,011	2,451	4,963	2,612	5,306	2,869	5,237	2,668	5,374	2,935	6,233	2,769	6,559	
EU	1,182	3,678	1,265	3,515	1,518	3,901	1,843	3,469	1,804	3,499	1,737	3,536	1,535	3,992	1,296	4,144	1,364	4,291	1,209	4,222	1,204	4,106	1,156	4,227	1,563	4,114	1,603	3,529	1,977	4,042	2,376	4,186	2,778	3,959	2,588	4,422	2,846	5,130	2,690	5,242			
Austria	11	86	19	79	25	84	23	70	25	90	32	79	25	50	30	68	29	82	17	51	13	62	26	60	41	72	36	63	34	83	51	94	38	83	44	99	50	98	48	96	63	129	
Belgium	17	22	14	15	17	16	19	17	19	20	30	10	20	7	21	19	17	31	15	28	13	19	17	25	20	26	24	32	21	42	16	41	23	44	17	54	32	59	34	37	56		
Denmark	7	14	7	4	11	9	13	10	13	13	11	13	6	13	3	13	5	8	5	18	3	13	7	15	10	10	10	12	9	20	12	20	9	21	24	19	22	17	20	20			
Finland	14	36	10	27	14	18	11	25	14	51	12	48	13	39	10	45	18	20	11	17	7	24	7	17	9	22	31	12	24	16	40	16	39	16	57	17	36	27	46	17	38		
France	194	1,010	208	960	239	994	239	933	260	867	260	1,013	254	910	206	808	211	1,366	209	1,348	197	1,451	176	1,943	260	1,653	289	1,324	387	1,628	452	1,548	533	1,549	466	1,724	548	1,763	526	1,830			
Germany	680	1,377	750	1,162	888	1,429	1,147	1,394	1,084	1,403	1,029	1,460	893	1,536	694	2,031	737	1,991	653	1,930	668	1,651	637	1,361	874	1,419	852	1,044	1,020	1,253	1,260	1,324	1,279	1,563	1,465	1,333	1,304	1,500	1,426	1,668	1,300	1,724	
Hungary	2	6	1	2	1	4	4	7	3	9	0	8	3	6	1	10	3	10	1	11	1	11	2	8	3	10	3	12	5	7	10	4	13	6	10	11	6	11	5	13			
Ireland	2	5	4	4	4	5	5	4	4	5	3	3	2	1	6	2	3	0	4	6	1	4	2	0	5	4	3	5	4	5	3	5	4	7	4	10	3	10	4				
Italy	60	401	59	526	69	612	82	250	78	244	96	173	85	554	80	288	100	52	74	75	82	90	73	89	81	157	100	193	64	155	63	129	64	155	63	171	48	145	65	159	437	166	366
Netherlands	15	147	15	159	27	195	29	174	47	167	30	139	24	177	36	164	23	141	25	149	28	158	30	134	25	151	29	154	38	142	48	155	58	129	54	112	61	128	60	149	58	98	
Spain	20	102	14	106	15	94	14	110	24	59	17	103	12	101	21	148	29	119	34	190	20	149	22	122	38	32	177	45	170	46	208	47	238	47	161	45	193	49	169	44	192		
Sweden	49	172	57	178	56	153	68	124	83	175	82	171	72	198	46	198	57	158	47	122	69	161	53	136	72	179	93	144	96	176	93	144	144	127	130	119	150	119	163	126	226	112	243
United Kingdom	106	142	105	141	139	139	180	191	137	222	120	171	112	204	121	174	116	161	96	111	78	120	87	118	114	107	118	174	169	174	165	177	204	151	225	209	249	176	261	239	283	277	
All others	6	159	3	152	14	150	8	160	11	179	16	144	15	142	19	174	15	153	19	172	19	196	15	196	14	179	23	181	28	193	23	182	28	193	31	185	41	276	45	267	48	251	
Other Europe	49	850	47	741	51	640	53	598	56	694	54	899	41	1,074	35	984	36	1,033	29	925	26	1,041	36	1,149	47	1,078	54	804	54	969	88	1,121	88	1,103	80	951	89	1,103	79	1,318			
Former Soviet Union	2	18	0	12	1	21	1	23	2	39	1	85	1	234	0	100	0	47	0	97	0	124	0	100	1	106	0	87	0	66	1	86	1	86	3	87	1	86	0	63			
Norway	15	48	22	31	20	37	21	47	22	46	16	39	15	26	19	39	12	40	9	29	5	25	17	28	19	21	33	21	16	31	25	40	23	73	26	49	23	41	24	42			
Russia	6	755	6	661	3	553	1	492	3	568	5	739	5	780	0	809	3	900	2	753	4	844	2	962	1	903	4	634	4	812	4	946	9	1,076	4	764	6	958	7	1,165			
Switzerland	23	25	16	34	25	28	29	35	24	38	27	29	18	33	12	32	18	42	16	41	14	39	15	48	23																		

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China	2	18	6	34	7	64	11	70	14	87	6	141	11	166	17	183	15	257	13	459	29	775	32	973	28	1,251	46	1,731	64	2,504	111	2,850	112	2,520	137	5,969	156	9,098	216	10,022	287	10,256
India	0	0	1	1	0	0	2	0	0	1	0	0	4	0	4	2	3	1	8	6	3	1	6	2	10	5	6	4	19	10	27	11	29	13	55	18	32	25	32	57	35	
Japan	1,092	4,134	1,248	5,052	1,280	4,292	1,458	4,419	1,545	4,403	1,423	4,743	1,458	5,026	1,402	5,365	1,530	5,293	1,459	6,958	1,531	7,708	1,551	7,995	1,953	8,158	1,876	8,711	2,031	9,432	2,258	9,878	2,720	9,408	2,856	6,456	2,791	8,293	2,987	8,112	2,959	7,555
Malaysia	0	0	3	0	3	1	0	1	0	1	0	1	1	4	1	2	1	5	0	13	0	1	0	6	2	2	10	2	4	7	3	8	3	8	1	5	4	9	3	8	8	
Singapore	1	1	1	0	3	2	3	3	6	1	2	2	3	2	2	0	1	0	6	2	4	2	2	1	5	2	9	1	4	2	5	0	8	4	8	2	10	3	14	5	5	4
South Korea	76	2,289	56	4,601	50	1,547	70	869	96	1,218	73	2,850	72	2,371	95	4,290	121	4,154	100	3,648	110	3,456	125	2,012	165	2,381	194	2,848	218	3,679	288	5,444	411	5,807	529	4,476	636	4,851	724	4,811	693	4,451
Taiwan	171	195	164	199	205	236	234	272	235	260	216	281	219	271	163	344	196	465	160	425	142	408	145	358	166	398	145	370	219	470	209	492	191	385	196	452	208	622	204	639	208	481
All others	3	4	0	1	1	1	2	1	5	3	2	1	2	2	3	4	3	1	1	3	4	6	4	7	7	6	3	7	1	3	2	4	5	3	6	6	4	5	6	8	7	
Middle East	16	10	19	10	15	27	13	13	10	14	16	15	9	7	12	13	7	8	19	15	7	11	14	7	19	8	33	12	28	16	42	16	52	18	51	26	60	25	63	29	66	20
Israel	12	5	15	6	11	6	12	3	8	6	14	6	8	4	12	3	5	2	14	3	4	1	13	6	18	2	26	4	24	8	3	33	6	39	7	51	14	46	14	55	13	
All others	4	6	4	4	4	22	1	10	2	9	2	9	1	3	0	10	2	7	5	11	3	10	2	1	1	6	6	8	4	8	15	13	19	12	12	19	9	11	17	15	10	7
Africa	7	32	8	24	9	25	4	22	2	26	4	28	5	22	5	21	8	17	3	16	8	22	4	13	6	21	3	13	2	22	6	16	3	16	6	4	7	12	4	14	13	
South Africa	7	21	8	18	9	14	4	14	2	16	3	14	5	11	5	18	8	13	3	10	8	19	4	13	5	12	3	5	7	7	5	9	3	7	0	7	3	10	3	9	4	
All others	0	10	0	6	0	11	0	8	0	11	1	14	0	12	0	3	0	3	0	7	0	3	0	0	1	9	0	9	0	15	1	10	1	8	1	3	1	4	2	1	5	8
Australia and Oceania	39	37	34	33	44	38	42	81	43	55	50	59	48	81	47	85	50	96	54	83	47	67	40	90	56	95	52	94	63	104	71	115	66	114	73	117	80	90	69	77		
Australia	37	36	28	31	35	37	36	81	39	54	44	58	38	79	37	84	40	93	81	39	67	35	90	56	95	52	94	63	104	71	115	66	114	73	117	80	90	69	77			
New Zealand	3	0	6	2	8	1	6	0	5	1	7	1	10	2	10	1	10	3	4	2	8	0	6	0	7	3	7	3	8	3	13	7	16	3	18	3	15	24	3	19	3	
All others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unclassified	1	43	1	92	2	81	0	3	0	12	0	1	0	157	1	225	1	48	0	1	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EU = European Union; USPTO = U.S. Patent and Trademark Office.

Note(s)

USPTO patents are allocated according to patent inventorship information. USPTO patents 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. However, because PatentsView only provides the original IPC codes as they appeared on patents and not the IPC reformed codes, current Cooperative Patent Classification codes on patents were converted back to the most recent IPC classification to prepare these statistics. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. 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. (2012) is used to fill in missing information on priority patents using information in successive filings within the patent families (see technical documentation for details). Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. 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 the year for which its output is accounted. The EU includes 28 member countries. China includes Hong Kong.

Source(s)

Science-Metrix; PATSTAT, accessed April 2019; PatentsView, USPTO, accessed June 2019.