

# INDEX OF PATENTS

Part II - Group Subjects of Invention

GROUP 1

THE UNITED STATES

PATENT OFFICE

1966



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# INDEX OF PATENTS

Part II, Index to Subjects of Invention

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## ERRATUM

Duplicate patent numbers appear in some of the cross-reference classification subclass listings, particularly in Class 260. They were detected too late in the publication process to be economically removed. The presence of duplicates in one sub-class should not be considered to indicate that a listing of the patent has been omitted from another subclass in which the patent has been properly classified as a cross-reference.

## NOTES CONCERNING USE OF THE CLASSIFICATION OF PATENTS LISTING AND RELATED REFERENCE PUBLICATIONS

In the index which follows, the subject of invention of each patent issued during 1966 is identified by the class and subclass numbers of the official U.S. Patent Office classification in which the patent was classified at the time of issue. The Index is arranged in numerical order by class numbers, which appear as bold-face entries centered in the columns, and thereunder, in similar order, by subclasses which appear in the numerals in the left hand half of the columns. There are 68,584 patent and reissue patent numbers listed in the Index. A similar listing appears for design patents and plant patents which are separately shown under their respective classifications.

In order to find patent numbers in the Index pertaining to a particular subject, the user must first know the class and subclass in which the Patent Office assigns inventions relating to that subject. In some instances a number of classes and subclasses may be pertinent. The process of finding this information requires the coordinated use of several other Patent Office publications usually found in collections which contain the *Index of Patents*. Each of them is considered below.

*Manual of Classification:* This publication is the source of the needed information as it contains the entire classification schedule showing the number and descriptive title of every class and subclass. It is, also, the key aid in the finding system as it provides a number of features aimed at assisting the user to identify his search problem and to use its content in locating the specific classification representing the subject matter of concern to him. These features include (1) listings of the class titles in alphabetical order; (2) description of the plan of the Manual; (3) discussion of the basis of classification, the scope of the classes, and the schematic arrangement of subclasses; (4) instructions on reading subclass titles and definitions; and, (5) suggestions on procedure for finding pertinent classification.

*Index to Classification:* This publication contains more than 300 pages of subject matter headings showing for each heading the class and subclass to which it pertains. They are arranged in alphabetical order in main heading and subheading categories, the latter being indented under the main headings and sometimes further subdivided. The headings include key words and significant phrases taken from the class and subclass titles, but they are neither limited to this source nor include all of them. Many technical as well as common terms of reference to objects, arts, processes, compositions of matter, etc., not found in the classification schedule are included in the index headings so as to offer a practical and convenient aid to finding patented subject matter.

*Classification Bulletins:* This is a series of numbered publications which supplements the *Manual of Classification* by giving detailed definitions and illustration of the kind of subject matter that can be found in each class and subclass, describing the lines of distinction among them, and containing references to other classes and subclasses having related subject matter. There is a separate Bulletin for each major classification, which is identified in the heading to each class in the Manual.

### Use of Reference Publications

As a first step, the searcher should look in the *Index to Classification* for the term which to him best represents the subject matter of interest. If a match is not

found, he should look for terms of approximately the same meaning, for terms of either broader or narrower scope, or for terms which represent a different approach to the subject (e.g., the essential *function* or the *effect* of use or application of the art or object of concern). This requires that the user interact with the content of the Index, exercising judgment and imagination to consider alternatives or to find in the listed items some aspect of pertinency to his subject.

On finding the identifying numbers of possibly pertinent classes and subclasses in the Index, the user should refer to the *Manual of Classification* and ascertain from among the existing choices, the precise classification identity of his subject interest. Having thus determined the appropriate class and subclass, the searcher is ready to turn to the "Classification of Patents" listings to look for the corresponding numbers in its columns. The patent numbers found listed under the relevant classification provide the information needed to gain access to the patents themselves or to the extracts from them which are printed in the Official Gazette. In the latter connection, the user will find on the last page of this section a table entitled "List of Patent, Design, Plant Patent, and Reissue Numbers Appearing in the Official Gazette for 1966" which will guide him to the issue of the Official Gazette containing any specific patent number. He will find listed elsewhere in this section the 22 libraries which receive all U.S. patents and maintain them for public use in numerical order and the more than 400 depository libraries which receive the Official Gazette.

When the class and subclass which the searcher has determined to represent his interest does not appear in the "Classification of Patents" listing, he may assume that no patents were issued in that classification during the year. The possibility of this being the case is indicated by the fact that patents issued in less than one-third of the total number of subclasses in the classification.

If, after following the above-described procedure in using the *Index to Classification*, the searcher fails to find a pertinent classification, he should turn to the listings which appear at the front of the *Manual of Classification*. He should consider, particularly, the listing of groups of related subjects and the listing of classes arranged in alphabetical order which, in different ways, lay the entire framework of the classification in broad focus before him. He should scan the titles which appear on these sheets and note those which would appear to contain the subject matter sought.

Whichever of these approaches is taken, the searcher is guided to the classification schedules. He should inspect them carefully, proceeding from one major coordinate subclass to another until finding one which seems most nearly pertinent. The minor subclasses therein should then be scanned to find the title which indicates inclusion of the subject matter in question. Where doubt exists as to choice among several subclasses, the user should consult the Classification Bulletin containing the definitions of the class under study.

Further information on the use of the reference publications discussed above, as aids in using numerical files of patents or extracts of patents published in issues of the Official Gazette which may be found in the libraries listed elsewhere in this section, is offered in the illustrated publication *How To Obtain Information From United States Patents*, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, at 20 cents a copy.

Persons interested in a full and detailed treatment of the fundamentals of the U.S. Patent Classification System are referred to the publication titled *Development and Use of Patent Classification Systems*. This comprehensive text provides details and illustrations on the present organization of U.S. Patent Classification Systems, on the bases and techniques used in developing and administering them, and on the use of the systems to extract desired information.

## CLASS TITLES ARRANGED IN CLASS NUMBER ORDER

Class	Title	Class	Title
	Plants	53	Package Making
1	Nailing, Stapling and Clip Clenching	54	Harness
2	Apparel	55	Gas Separation
3	Artificial Body Members	56	Harvesters
4	Baths, Closets, Sinks and Spittoons	57	Textiles, Spinning, Twisting and Twining
5	Beds	58	Horology
6	Bee Culture	59	Chain, Staple and Horseshoe Making
7	Compound Tools	60	Power Plants
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	61	Hydraulic and Earth Engineering
9	Boats, Buoys and Aquatic Devices	62	Refrigeration
10	Bolt, Nail, Nut, Rivet and Screw Making	63	Jewelry
11	Books, Making	64	Machine Elements, Shafting and Flexible Shaft Couplings
12	Boot and Shoe Making	65	Glass Manufacturing
13	Electric Furnaces	66	Textiles, Knitting
14	Bridges	67	Illuminating Burners
15	Brushing, Scrubbing and General Cleaning	68	Textiles, Fluid Treating Apparatus
16	Miscellaneous Hardware	69	Leather Manufactures
17	Butchering	70	Locks
18	Plastics	71	Chemistry, Fertilizers
19	Textiles, Fiber Preparation	72	Metal Deforming
20	Wooden Buildings*	73	Measuring and Testing
21	Preserving, Disinfecting and Sterilizing	74	Machine Elements and Mechanisms
22	Metal Founding	75	Metallurgy
23	Chemistry	76	Metal Tools and Implements, Making
24	Buckles, Buttons, Clasps, Etc.	77	Boring and Drilling
25	Plastic Block and Earthenware Apparatus	78	Metal Forging and Welding
26	Textiles, Cloth Finishing	79	Button Making
27	Undertaking	80	Metal Rolling
28	Textiles, Manufacturing	81	Tools
29	Metal Working	82	Turning
30	Cutlery	83	Cutting
31	Dairy	84	Music
32	Dentistry	85	Driven, Headed and Screw-Threaded Fastenings
33	Geometrical Instruments	86	Ammunition and Explosive-Charge Making
34	Drying and Gas or Vapor Contact With Solids	87	Textiles, Braiding, Netting and Lace Making
35	Education	88	Optics
36	Boots, Shoes and Leggings	89	Ordnance
37	Excavating	90	Gear Cutting, Milling and Planing
38	Textiles, Ironing or Smoothing	91	Motors, Expansible Chamber Type
39	Gates*	92	Expansible Chamber Devices
40	Card, Picture and Sign Exhibiting	93	Paper Manufactures
41	No Class	94	Roads and Pavements
42	Firearms	95	Photography
43	Fishing, Trapping and Vermin Destroying	96	Photographic Chemistry, Processes and Materials
44	Fuel and Igniting Devices	97	No Class
45	No Class	98	Ventilation
46	Amusement Devices, Toys	99	Foods and Beverages
47	Plant Husbandry	100	Presses
48	Gas, Heating and Illuminating	101	Printing
49	Movable or Removable Closures**	102	Ammunition and Explosive Devices
50	Building Structures	103	Pumps
51	Abrading	104	Railways
52	Static Structures, e.g., Buildings	105	Railway Rolling Stock

\*Class abolished during 1966

\*\*Class established during 1966

Class	Title	Class	Title
106	Compositions, Coating or Plastic	163	Needle and Pin Making
107	Bread, Pastry and Confection Making	164	No Class
108	Horizontally Supported Planar Surfaces	165	Heat Exchange
109	Safes, Bank Protection and Related Devices	166	Wells
110	Furnaces	167	Medicines, Poisons and Cosmetics
111	Planting	168	Farriery
112	Sewing	169	Fire-Extinguishers
113	Sheet-Metal Ware, Making	170	Motors, Fluid Current
114	Ships	171	Unearthing Plants or Buried Objects
115	Marine Propulsion	172	Earth Working
116	Signals and Indicators	173	Tool Driving or Impacting
117	Coating: Processes and Miscellaneous Products	174	Electricity, Conductors and Insulators
118	Coating Apparatus	175	Boring or Penetrating the Earth
119	Animal Husbandry	176	Nuclear Reactions and Systems
120	Stationery	177	Weighing Scales
121	No Class	178	Telegraphy
122	Liquid Heaters and Vaporizers	179	Telephony
123	Internal-Combustion Engines	180	Motor Vehicles
124	Mechanical Guns and Projectors	181	Acoustics
125	Stone Working	182	Fire Escapes, Ladders, Scaffolds
126	Stoves and Furnaces	183	No Class
127	Sugar, Starch and Carbohydrates	184	Lubrication
128	Surgery	185	Motors, Spring, Weight and Animal Powered
129	Paper Files and Binders	186	Store Service
130	Threshing	187	Elevators
131	Tobacco	188	Brakes
132	Toilet	189	Metallic Building Structures*
133	Coin Handling	190	Baggage
134	Cleaning and Liquid Contact With Solids	191	Electricity, Transmission to Vehicles
135	Tepts, Canopies, Umbrellas and Canes	192	Clutches and Power-Stop Control
136	Batteries	193	Conveyers, Chutes, Skids, Guides and Ways
137	Fluid Handling	194	Check-Controlled Apparatus
138	Pipes and Tubular Conduits	195	Chemistry, Fermentation
139	Textiles, Weaving	196	Mineral Oils: Apparatus
140	Wireworking	197	Typewriting Machines
141	Fluent Material Handling, With Receiver or Receiver Coacting Means	198	Conveyers, Power-Driven
142	Wood Turning	199	Type Casting
143	Wood Sawing	200	Electricity, Circuit Makers and Breakers
144	Woodworking	201	Distillation: Processes, Thermolytic
145	Woodworking Tools	202	Distillation
146	Vegetable and Meat Cutters and Comminutors	203	Distillation: Processes, Separatory
147	Coopering	204	Chemistry, Electrical and Wave Energy
148	Metal Treatment	205	Metal Drawing
149	Explosive and Thermic Compositions or Charges	206	Special Receptacles and Packages
150	Cloth, Leather and Rubber Receptacles	207	Plastic Metal Working
151	Nut and Bolt Locks	208	Mineral Oils: Processes and Products
152	Resilient Tires and Wheels	209	Classifying, Separating and Assorting Solids
153	Metal Bending	210	Liquid Purification or Separation
154	No Class	211	Supports, Racks
155	No Class	212	Traversing Hoists
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	213	Railway Draft Appliances
157	Wheelwright Machines	214	Material or Article Handling
158	Liquid and Gaseous Fuel Burners	215	Bottles and Jars
159	Concentrating Evaporators	216	No Class
160	Closures, Partitions and Panels, Flexible and Portable	217	Wooden Receptacles
161	Stock Material and Miscellaneous Articles	218	Button, Eyelet and Rivet Setting
162	Paper Making and Fiber Liberation	219	Electric Heating
		220	Metallic Receptacles

\*Class abolished during 1966



Class	Title	Class	Title
221	Article Dispensing	279	Chucks or Sockets
222	Dispensing	280	Land Vehicles
223	Apparel Apparatus	281	Books, Strips and Leaves
224	Package and Article Carriers	282	Manifolding
225	Severing by Tearing or Breaking	283	Printed Matter
226	Advancing Material of Indeterminate-Length	284	No Class
227	Elongated-Member-Driving Apparatus	285	Pipe Joints or Couplings
228	Metal Fusion-Bonding Apparatus	286	No Class
229	Paper Receptacles	287	Rod Joints or Couplings
230	Gas Pumps and Fans	288	No Class
231	Whips and Whip Apparatus	289	Knots and Knot Tying
232	Deposit and Collection Receptacles	290	Prime-Mover Dynamo Plants
233	Centrifugal-Bowl Separators	291	Track Sanders
234	Selective Cutting (e.g., Punching)	292	Closure Fasteners
235	Registers	293	Vehicle Fenders
236	Automatic Temperature and Humidity Regulation	294	Handling, Hand and Hoist-Line Implements
237	Heating Systems	295	Railway Wheels and Axles
238	Railways, Surface Track	296	Land Vehicles, Bodies and Tops
239	Fluid Sprinkling, Spraying and Diffusing	297	Chairs and Seats
240	Illumination	298	Land Vehicles, Dumping
241	Solid Material Comminution or Disintegration	299	Mining or In Situ Disintegration of Hard Materials
242	Winding and Reeling	300	Brush, Broom and Mop Making
243	Pneumatic Dispatch	301	Land Vehicles, Wheels and Axles
244	Aeronautics	302	Conveyers, Fluid Current
245	Wire Fabrics and Structure	303	Fluid-Pressure Brake and Analogous Systems
246	Railway Switches and Signals	304	No Class
247	No Class	305	Wheel Substitutes for Land Vehicles
248	Supports	306	Tool-Handle Fastenings
249	Static Molds	307	Electrical Transmission or Interconnection Systems
250	Radiant Energy	308	Machine Elements, Bearings and Guides
251	Valves and Valve Actuation	309	No Class
252	Compositions	310	Electrical Generator or Motor Structure
253	Motors, Fluid	311	No Class
254	Pushing and Pulling Implements	312	Supports, Cabinet Structures
255	No Class	313	Electric Lamp and Discharge Devices
256	Fences	314	Electric Lamp and Discharge Devices, Consumable Electrodes
257	No Class	315	Electric Lamp and Discharge Devices, Systems
258	Railway Mail Delivery	316	Electric Lamp and Discharge Devices, Manufacture and Repair
259	Agitating	317	Electricity
260	Chemistry, Carbon Compounds	318	Electricity, Motive Power Systems
261	Gas and Liquid Contact Apparatus	319	No Class
262	No Class	320	Electricity, Battery and Condenser Charging and Discharging
263	Heating	321	Electricity, Conversion Systems
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	322	Electricity, Single Generator Systems
265	No Class	323	Electricity, Voltage Magnitude and Phase Control Systems
266	Metallurgical Apparatus	324	Electricity, Measuring and Testing
267	Spring Devices	325	Modulated Carrier Wave Communication Systems
268	Closure-Operators*	326	No Class
269	Work Holders	327	No Class
270	Sheet-Material Associating or Folding	328	Miscellaneous Electron Space Discharge Device Systems
271	Sheet Feeding or Delivering	329	Demodulators and Detectors
272	Amusement and Exercising Devices	330	Amplifiers
273	Amusement Devices, Games	331	Oscillators
274	Sound Recording and Reproducing		
275	Scattering-Unloaders		
276	Type Setting		
277	Joint Packing		
278	Land Vehicles, Animal Draft Appliances		

\*Class abolished during 1966



Class	Title	Class	Title
332	Modulators	342	No Class
333	Wave Transmission Lines and Networks	343	Communications, Radio Wave
334	Tuners	344	No Class
335	Electricity, Magnetically Operated Switches, Magnets and Electromagnets**	345	No Class
336	Inductor Devices	346	Recorders
337	No Class		Designs
338	Electrical Resistors		Industrial Arts
339	Electrical Connectors		Household, Personal and Fine Arts
340	Communications, Electrical	350	Optics, Systems and Elements**
341	No Class	351	Optics, Eye Examining, Vision Testing and Correcting
		352	Optics, Motion Pictures

## CLASS TITLES ARRANGED IN ALPHABETICAL ORDER

Class	Title	Class	Title
51	Abrading	79	Button Making
181	Acoustics	40	Card, Picture and Sign Exhibiting
156	Adhesive Bonding and Miscellaneous Chemical Manufacture	233	Centrifugal-Bowl Separators
226	Advancing Material of Indeterminate-Length	59	Chain, Staple and Horseshoe Making
244	Aeronautics	297	Chairs and Seats
259	Agitating	194	Check-Controlled Apparatus
86	Ammunition and Explosive-Charge Making	23	Chemistry
102	Ammunition and Explosive Devices	260	Chemistry, Carbon Compounds
330	Amplifiers	204	Chemistry, Electrical and Wave Energy
272	Amusement and Exercising Devices	195	Chemistry, Fermentation
273	Amusement Devices, Games	71	Chemistry, Fertilizers
46	Amusement Devices, Toys	279	Chucks or Sockets
119	Animal Husbandry	209	Classifying, Separating and Assorting Solids
2	Apparel	134	Cleaning and Liquid Contact With Solids
223	Apparel Apparatus	292	Closure Fasteners
221	Article Dispensing	268	Closure-Operators*
3	Artificial Body Members	160	Closures, Partitions and Panels, Flexible and Portable
236	Automatic Temperature and Humidity Regulation	150	Cloth, Leather and Rubber Receptacles
190	Baggage	192	Clutches and Power-Stop Control
4	Baths, Closets, Sinks and Spitoons	118	Coating Apparatus
136	Batteries	117	Coating: Processes and Miscellaneous Products
5	Beds	133	Coin Handling
6	Bee Culture	340	Communications, Electrical
8	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers	343	Communications, Radio Wave
9	Boats, Buoys and Aquatic Devices	252	Compositions
10	Bolt, Nail, Nut, Rivet and Screw Making	106	Compositions, Coating or Plastic
11	Books, Making	7	Compound Tools
281	Books, Strips and Leaves	159	Concentrating Evaporators
12	Boot and Shoe Making	193	Conveyers, Chutes, Skids, Guides and Ways
36	Boots, Shoes and Leggings	302	Conveyers, Fluid Current
77	Boring and Drilling	198	Conveyers, Power-Driven
175	Boring or Penetrating the Earth	147	Coopering
215	Bottles and Jars	30	Cutlery
188	Brakes	83	Cutting
107	Bread, Pastry and Confection Making	31	Dairy
14	Bridges	329	Demodulators and Detectors
300	Brush, Broom and Mop Making	32	Dentistry
15	Brushing, Scrubbing and General Cleaning	232	Deposit and Collection Receptacles
24	Buckles, Buttons, Clasps, Etc.	222	Dispensing
50	Building Structures	202	Distillation
17	Butchering	201	Distillation: Processes, Thermolytic
218	Button, Eyelet and Rivet Setting	203	Distillation: Processes, Separatory
		85	Driven, Headed and Screw-Threaded Fastenings

\*Class abolished during 1966

\*\*Class established during 1966

Class	Title	Class	Title
34	Drying and Gas or Vapor Contact With Solids	165	Heat Exchange
172	Earth Working	263	Heating
35	Education	237	Heating Systems
13	Electric Furnaces	108	Horizontally Supported Planar Surfaces
219	Electric Heating	58	Horology
313	Electric Lamp and Discharge Devices	61	Hydraulic and Earth Engineering
314	Electric Lamp and Discharge Devices, Consumable Electrodes	67	Illuminating Burners
316	Electric Lamp and Discharge Devices, Manufacture and Repair	240	Illumination
315	Electric Lamp and Discharge Devices, Systems	336	Inductor Devices
339	Electrical Connectors	123	Internal-Combustion Engines
310	Electrical Generator or Motor Structure	63	Jewelry
338	Electrical Resistors	277	Joint Packing
307	Electrical Transmission or Interconnection Systems	289	Knots and Knot Tying
317	Electricity	280	Land Vehicles
320	Electricity, Battery and Condenser Charging and Discharging	278	Land Vehicles, Animal Draft Appliances
200	Electricity, Circuit Makers and Breakers	296	Land Vehicles, Bodies and Tops
174	Electricity, Conductors and Insulators	298	Land Vehicles, Dumping
321	Electricity, Conversion Systems	301	Land Vehicles, Wheels and Axles
335	Electricity, Magnetically Operated Switches, Magnets and Electromagnets**	69	Leather Manufactures
324	Electricity, Measuring and Testing	158	Liquid and Gaseous Fuel Burners
318	Electricity, Motive Power Systems	122	Liquid Heaters and Vaporizers
322	Electricity, Single Generator Systems	210	Liquid Purification or Separation
191	Electricity, Transmission to Vehicles	70	Locks
323	Electricity, Voltage Magnitude and Phase Control Systems	184	Lubrication
187	Elevators	74	Machine Elements and Mechanisms
227	Elongated-Member-Driving Apparatus	308	Machine Elements, Bearings and Guides
37	Excavating	64	Machine Elements, Shafting and Flexible Shaft Couplings
92	Expansible Chamber Devices	282	Manifolding
149	Explosive and Thermic Compositions or Charges	115	Marine Propulsion
168	Farriery	214	Material or Article Handling
256	Fences	73	Measuring and Testing
182	Fire Escapes, Ladders, Scaffolds	124	Mechanical Guns and Projectors
169	Fire-Extinguishers	167	Medicines, Poisons and Cosmetics
42	Firearms	153	Metal Bending
43	Fishing, Trapping and Vermin Destroying	72	Metal Deforming
141	Fluent Material Handling, With Receiver or Receiver Coacting Means	205	Metal Drawing
137	Fluid Handling	78	Metal Forging and Welding
303	Fluid-Pressure Brake and Analogous Systems	22	Metal Founding
239	Fluid Sprinkling, Spraying and Diffusing	228	Metal Fusion-Bonding Apparatus
99	Foods and Beverages	80	Metal Rolling
44	Fuel and Igniting Devices	76	Metal Tools and Implements, Making
110	Furnaces	148	Metal Treatment
261	Gas and Liquid Contact Apparatus	29	Metal Working
48	Gas, Heating and Illuminating	189	Metallic Building Structures*
230	Gas Pumps and Fans	220	Metallic Receptacles
55	Gas Separation	266	Metallurgical Apparatus
39	Gates*	75	Metallurgy
90	Gear Cutting, Milling and Planing	196	Mineral Oils: Apparatus
33	Geometrical Instruments	208	Mineral Oils: Processes and Products
65	Glass Manufacturing	299	Mining or In Situ Disintegration of Hard Materials
294	Handling, Hand and Hoist-Line Implements	328	Miscellaneous Electron Space Discharge Device Systems
54	Harness	16	Miscellaneous Hardware
56	Harvesters	325	Modulated Carrier Wave Communication Systems
		332	Modulators
		180	Motor Vehicles
		91	Motors, Expansible Chamber Type
		253	Motors, Fluid

\*Class abolished during 1966

\*\*Class established during 1966

Class	Title	Class	Title
170	Motors, Fluid Current	225	Severing by Tearing or Breaking
185	Motors, Spring, Weight and Animal Powered	112	Sewing
49	Movable or Removable Closures**	271	Sheet Feeding or Delivering
84	Music	270	Sheet-Material Associating or Folding
1	Nailing, Stapling and Clip Clenching	113	Sheet-Metal Ware, Making
163	Needle and Pin Making	114	Ships
176	Nuclear Reactions and Systems	116	Signals and Indicators
151	Nut and Bolt Locks	241	Solid Material Comminution or Disintegration
88	Optics	274	Sound Recording and Reproducing
351	Optics, Eye Examining, Vision Testing and Correcting	206	Special Receptacles and Packages
352	Optics, Motion Pictures	267	Spring Devices
350	Optics, Systems and Elements**	249	Static Molds
89	Ordnance	52	Static Structures, e.g., Buildings
331	Oscillators	120	Stationery
224	Package and Article Carriers	161	Stock Material and Miscellaneous Articles
53	Package Making	125	Stone Working
129	Paper Files and Binders	186	Store Service
162	Paper Making and Fiber Liberation	126	Stoves and Furnaces
93	Paper Manufactures	127	Sugar, Starch and Carbohydrates
229	Paper Receptacles	248	Supports
96	Photographic Chemistry, Processes and Materials	312	Supports, Cabinet Structures
95	Photography	211	Supports, Racks
285	Pipe Joints or Couplings	128	Surgery
138	Pipes and Tubular Conduits	178	Telegraphy
47	Plant Husbandry	179	Telephony
111	Planting	135	Tents, Canopies, Umbrellas and Canes
	Plants	87	Textiles, Braiding, Netting and Lace Making
25	Plastic Block and Earthenware Apparatus	26	Textiles, Cloth Finishing
264	Plastic and Non-Metallic Article Shaping or Treating: Processes	19	Textiles, Fiber Preparation
207	Plastic Metal Working	68	Textiles, Fluid Treating Apparatus
18	Plastics	38	Textiles, Ironing or Smoothing
243	Pneumatic Dispatch	66	Textiles, Knitting
60	Power Plants	28	Textiles, Manufacturing
21	Preserving, Disinfecting and Sterilizing	57	Textiles, Spinning, Twisting and Twining
100	Presses	139	Textiles, Weaving
290	Prime-Mover Dynamo Plants	130	Threshing
283	Printed Matter	131	Tobacco
101	Printing	132	Toilet
103	Pumps	173	Tool Driving or Impacting
254	Pushing and Pulling Implements	306	Tool-Handle Fastenings
250	Radiant Energy	81	Tools
213	Railway Draft Appliances	291	Track Sanders
258	Railway Mail Delivery	212	Traversing Hoists
105	Railway Rolling Stock	334	Tuners
246	Railway Switches and Signals	82	Turning
295	Railway Wheels and Axles	199	Type Casting
104	Railways	276	Type Setting
238	Railways, Surface Track	197	Typewriting Machines
346	Recorders	27	Undertaking
62	Refrigeration	171	Unearthing Plants or Buried Objects
235	Registers	251	Valves and Valve Actuation
152	Resilient Tires and Wheels	146	Vegetable and Meat Cutters and Comminutors
94	Roads and Pavements	293	Vehicle Fenders
287	Rod Joints or Couplings	98	Ventilation
109	Safes, Bank Protection and Related Devices	333	Wave Transmission Lines and Networks
275	Scattering-Unloaders	177	Weighing Scales
234	Selective Cutting (e.g., Punching)	166	Wells
		305	Wheel Substitutes for Land Vehicles
		157	Wheelwright Machines

\*\*Class established during 1966

<b>Class</b>	<b>Title</b>
231	Whips and Whip Apparatus
242	Winding and Reeling
245	Wire Fabrics and Structure
140	Wireworking
143	Wood Sawing
142	Wood Turning
20	Wooden Buildings*
217	Wooden Receptacles
144	Woodworking
145	Woodworking Tools
269	Work Holders

\*Class abolished during 1966

<b>Class</b>	<b>Title</b>
<b>Classes Established During 1966</b>	
49	Movable or Removable Closures (4/66)
335	Electricity, Magnetically Operated Switches, Magnets and Electromagnets (8/66)
350	Optics, Systems and Elements (11/66)
<b>Classes Abolished During 1966</b>	
20	Wooden Buildings (4/66)
39	Gates (4/66)
189	Metallic Building Structures (4/66)
268	Closure-Operators (4/66)



1966

## CLASSIFICATION OF PATENTS

## ORIGINAL CLASSIFICATION

<b>Class 2</b>	79 : 3,280,403	224 : 3,235,883	112 : 3,252,166	296 : 3,277,500	82 : 3,252,169	337 : 3,290,704
2 : 3,233,248	87 : 3,243,823	3,246,341	3,263,241	299 : 3,251,072	3,252,189	338 : 3,234,569
3,241,153	90 : 3,290,694	3,287,739	3,274,618	3,261,030	3,258,788	3,243,828
3,243,822	91 : 3,286,276	3,246,342	3,289,214	251 : 3,284,810	3,264,659	3,261,035
3,245,086	93 : 3,231,899	3,248,739	3,235,884	252 : 3,235,887	3,271,796	3,276,046
3,248,738	3,293,661	3,266,057	3,245,090	3,238,538	3,287,895	3,283,344
3,257,666	98 : 3,271,779	3,268,914	3,271,784	3,251,073	3,289,219	3,287,747
3,284,805	102 : 3,280,404	232 : 3,262,127	3,271,785	3,252,168	86 : 3,259,122	339 : 3,267,496
3,292,179	107 : 3,280,405	234 : 3,278,945	3,268,916	3,263,244	3,261,031	3,274,623
1 : 3,242,499	113 : 3,281,863	236 : 3,271,782	3,274,619	3,268,919	89 : 3,234,568	343 : 3,284,818
1 : 3,246,337	114 : 3,229,305	3,271,783	3,292,185	3,271,793	91 : 3,249,952	344 : 3,226,737
1 : 3,255,459	3,230,546	238 : 3,243,824	3,230,550	3,273,173	92 : 3,231,905	3,242,509
1 : 3,284,806	3,259,913	239 : 3,259,915	3,263,242	3,278,950	93 : 3,241,158	3,262,134
1 : 3,286,274	3,276,036	3,266,058	3,276,042	3,281,867	97 : 3,235,889	3,268,922
5 : 3,292,181	115 : 3,286,277	242 : 3,238,537	3,248,741	3,286,280	3,248,743	345 : 3,242,510
3 : 3,230,544	116 : 3,286,278	243 : 3,226,732	3,274,620	254 : 3,263,245	98 : 3,235,890	3,254,349
3,237,201	3,289,213	3,256,528	3,293,664	263 : 3,226,733	99 : 3,233,254	3,254,351
3,239,842	118 : 3,277,496	3,262,128	3,289,215	3,281,868	108 : 3,261,032	3,261,036
3,241,154	119 : 3,280,547	3,268,915	3,292,186	287 : 3,274,622	109 : 3,235,891	3,274,624
3,242,500	129 : 3,255,459	3,273,167	3,271,786	288 : 3,281,869	3,255,465	3,274,625
3,245,087	131 : 3,293,662	244 : 3,283,339	3,281,864	289 : 3,271,792	3,261,033	3,283,345
3,253,281	132 : 3,257,207	247 : 3,284,808	3,290,697	292 : 3,268,920	113 : 3,278,953	3,287,748
3,263,235	141 : 3,274,615	250 : 3,246,343	3,228,037		118 : 3,266,062	3,289,224
3,268,911	143 : 3,283,337	3,276,040	3,229,939	<b>Class 5</b>	119 : 3,255,466	3,293,670
3,273,162	146 : 3,264,654	253 : 3,242,502	3,231,902	2 : 3,235,888	121 : 3,255,467	347 : 3,237,216
3,273,163	3,271,780	254 : 3,245,089	3,233,251	9 : 3,246,347	149 : 3,237,213	3,258,791
3,274,612	3,276,037	258 : 3,276,041	3,235,885	13 : 3,239,851	186 : 3,237,214	3,266,064
3,280,402	149 : 3,261,025	265 : 3,263,238	3,241,157	3,239,852	220 : 3,289,220	348 : 3,242,511
3,286,275	150 : 3,263,237	270 : 3,262,129	3,242,503	3,256,532	239 : 3,289,221	3,247,530
3,289,212	3,264,655	301 : 3,256,529	3,256,532	3,258,786	246 : 3,242,505	3,271,797
3,290,693	152 : 3,235,880	3,262,130	3,264,656	3,281,870	247 : 3,286,281	3,286,285
3,292,180	153 : 3,237,208	3,274,617	3,268,917	3,281,871	248 : 3,252,170	349 : 3,276,047
6 : 3,237,202	3,267,489	314 : 3,256,530	3,271,787	3,284,812	260 : 3,270,354	3,281,871
3,239,843	3,284,807	323 : 3,259,916	3,271,788	3,292,188	263 : 3,267,495	3,255,469
3,262,125	157 : 3,247,522	3,267,490	3,273,179	3,274,621	279 : 3,287,745	3,255,470
3,293,659	159 : 3,255,461	3,290,696	3,273,181	3,276,043	282 : 3,251,074	3,256,535
8 : 3,231,896	3,262,126	<b>Class 3</b>	3,274,621	3,276,043	285 : 3,230,555	3,261,037
3,238,535	3,278,944	1 : 3,257,668	3,276,043	3,277,498	286 : 3,243,826	3,276,048
3,239,844	161 : 3,228,035	3,229,306	3,277,498	3,278,949	296 : 3,226,736	3,287,749
3,251,065	3,229,306	3,255,462	3,278,949	3,280,408	36 : 3,242,504	353 : 3,230,558
3,257,667	3,255,462	3,258,782	3,280,408	3,287,740	37 : 3,258,787	3,242,512
3,276,034	3,259,914	4 : 3,255,464	3,289,216	3,289,216	41 : 3,278,951	3,251,077
3,278,943	3,261,026	12,3 : 3,278,946	3,293,665	3,293,665	47 : 3,234,567	3,251,078
9 : 3,241,155	3,274,616	3 : 3,273,169	3,246,345	3,246,345	51 : 3,246,346	3,262,136
3,259,908	3,283,338	7 : 3,258,784	3,257,669	3,257,669	53 : 3,248,742	3,262,137
3,263,236	162 : 3,229,307	17 : 3,262,131	3,293,666	3,293,666	57 : 3,247,523	3,262,138
3,267,487	164 : 3,267,486	36 : 3,278,947	3,246,346	3,246,346	60 : 3,266,061	3,263,247
3,274,613	166 : 3,235,881	3,293,663	3,251,071	3,251,071	61 : 3,226,734	3,280,440
3,283,336	3,246,339	<b>Class 4</b>	3,271,790	3,271,790	62 : 3,231,904	354 : 3,233,253
3,293,660	169 : 3,251,067	1 : 3,239,845	3,287,741	3,287,741	57 : 3,247,523	3,273,178
3,273,164	3,273,165	2 : 3,230,549	3,233,252	3,233,252	60 : 3,266,061	3,273,179
10 : 3,237,203	171 : 3,229,308	4 : 3,239,846	3,264,657	3,264,657	61 : 3,226,734	3,255,468
3,273,164	172 : 3,276,038	7 : 3,247,524	3,228,038	3,228,038	62 : 3,231,904	3,255,469
12 : 3,226,729	173 : 3,292,182	3,256,531	3,252,167	3,252,167	57 : 3,247,523	3,255,469
3,266,056	174 : 3,235,882	10 : 3,259,917	3,258,785	3,258,785	66 : 3,230,553	3,284,817
3,271,778	3,237,209	15 : 3,234,565	3,268,918	3,268,918	66 : 3,230,553	3,284,817
13 : 3,237,204	3,261,027	18 : 3,259,918	3,271,791	3,271,791	66 : 3,230,553	3,284,817
3,276,035	181 : 3,280,406	19 : 3,239,847	3,280,409	3,280,409	66 : 3,230,553	3,284,817
14 : 3,229,303	3,245,088	34 : 3,237,211	3,289,217	3,289,217	66 : 3,230,553	3,284,817
3,231,897	183 : 3,276,039	41 : 3,270,351	3,292,187	3,292,187	66 : 3,230,553	3,284,817
3,233,289	185 : 3,273,166	47 : 3,280,407	3,299,910	3,299,910	66 : 3,230,553	3,284,817
3,235,250	190 : 3,255,463	57 : 3,239,848	3,231,903	3,231,903	66 : 3,230,553	3,284,817
3,267,488	196 : 3,242,501	3,263,240	3,235,886	3,235,886	66 : 3,230,553	3,284,817
3,274,614	197 : 3,247,523	3,277,497	3,267,492	3,267,492	66 : 3,230,553	3,284,817
15 : 3,237,205	198 : 3,249,948	58 : 3,267,491	3,287,742	3,287,742	66 : 3,230,553	3,284,817
18 : 3,247,520	3,268,913	67 : 3,234,566	3,270,352	3,270,352	66 : 3,230,553	3,284,817
21 : 3,228,033	200 : 3,292,183	3,278,948	3,273,172	3,273,172	66 : 3,230,553	3,284,817
3,229,304	201 : 3,246,340	68 : 3,259,919	3,263,243	3,263,243	66 : 3,230,553	3,284,817
3,246,338	202 : 3,271,781	72 : 3,273,170	3,281,865	3,281,865	66 : 3,230,553	3,284,817
22 : 3,288,912	206 : 3,287,737	75 : 3,262,132	3,289,218	3,289,218	66 : 3,230,553	3,284,817
24 : 3,258,779	207 : 3,231,900	77 : 3,228,036	3,291,866	3,291,866	66 : 3,230,553	3,284,817
3,259,910	209 : 3,249,949	78 : 3,251,068	3,299,911	3,299,911	66 : 3,230,553	3,284,817
46 : 3,251,066	3,261,028	79 : 3,247,525	3,266,060	3,266,060	66 : 3,230,553	3,284,817
48 : 3,231,898	1 : 3,237,210	109 : 3,248,740	3,277,499	3,277,499	66 : 3,230,553	3,284,817
49 : 3,286,279	7 : 3,287,738	110 : 3,231,901	3,287,743	3,287,743	66 : 3,230,553	3,284,817
56 : 3,259,911	211 : 3,253,282	3,251,069	3,290,698	3,290,698	66 : 3,230,553	3,284,817
68 : 3,247,521	216 : 3,226,730	3,259,920	3,299,920	3,299,920	66 : 3,230,553	3,284,817
3,255,460	221 : 3,258,783	3,262,134	3,299,921	3,299,921	66 : 3,230,553	3,284,817
3,279,912	224 : 3,292,184	3,246,344	3,299,922	3,299,922	66 : 3,230,553	3,284,817
69,5 : 3,228,034	3,230,548	3,249,950	3,299,923	3,299,923	66 : 3,230,553	3,284,817
74 : 3,230,545			3,299,924	3,299,924	66 : 3,230,553	3,284,817
3,237,206			3,299,925	3,299,925	66 : 3,230,553	3,284,817
3,258,780			3,299,926	3,299,926	66 : 3,230,553	3,284,817
3,261,024			3,299,927	3,299,927	66 : 3,230,553	3,284,817
75 : 3,241,156			3,299,928	3,299,928	66 : 3,230,553	3,284,817

<b>Class 7</b> —Con.	116 : 3,261,658	8 : 3,293,676	140 : 3,245,099	145 : 3,256,544	4 : 3,226,749	104.14 : 3,267,504
14.1 : 3,293,674	3,268,291	11 : 3,268,925	141 : 3,246,351	3,292,190	3,277,506	16 : 3,286,293
55 : 3,242,513	3,269,796	12 : 3,268,926	152 : 3,226,743	3,292,191	3,280,415	16 : 3,292,198
<b>Class 8</b>	3,281,204	14 : 3,228,044	3,248,747	3,239,861	3,233,264	3 : 3,242,518
2 : 3,233,962	3,291,560	26 : 3,252,171	3,251,080	3,247,538	3,237,229	3 : 3,246,354
1 : 3,232,691	2 : 3,233,962	39 : 3,284,822	3,258,797	3,262,142	3,238,550	3 : 3,268,937
4 : 3,236,582	2 : 3,235,323	304 : 3,268,927	155 : 3,226,744	3,274,628	3,238,551	3 : 3,270,362
3,249,393	3 : 3,237,511	307 : 3,258,794	3,259,930	3,276,056	3,241,167	3 : 3,283,353
3,254,934	3 : 3,232,697	308 : 3,231,910	158 : 3,255,474	3,276,057	3,249,957	3 : 3,293,681
3,275,400	3 : 3,239,303	3,257,673	<b>Class 11</b>	3,281,876	3,251,084	105 : 3,229,316
3,288,009	3 : 3,243,252	3,261,040	1 : 3,261,044	3,276,058	3,263,255	3,243,831
10 : 3,272,585	3 : 3,246,946	3,263,248	2 : 3,237,223	<b>Class 13</b>	3,268,934	3,264,668
12 : 3,273,954	3 : 3,252,751	3,286,287	3,238,551	1 : Re. 25,958	3,268,935	3,273,191
14 : 3,227,510	3 : 3,254,940	309 : 3,239,857	2 : 3,237,223	3,286,012	3,271,802	5 : 3,290,712
15 : 3,253,875	3 : 3,258,305	3,256,540	3,277,505	6 : 3,227,797	3,271,803	110 : 3,230,562
17 : 3,276,253	3 : 3,260,565	310 : 3,239,312	3,258,798	3,230,291	3,274,630	3,258,805
3,279,879	3 : 3,268,292	3,231,911	3,280,413	3,235,646	3,276,060	111 : 3,254,356
18 : 3,232,692	3 : 3,276,838	3,237,222	<b>Class 12</b>	3,274,324	3,278,962	116 : 3,289,233
21 : 3,288,551	3 : 3,285,690	3,239,858	1 : 3,231,914	3,283,055	3,281,877	118 : 3,226,751
25 : 3,294,474	4 : 3,254,941	3,254,352	3,231,914	3,239,592	3,284,828	3,241,171
3,294,475	4 : 3,265,463	3,255,472	3,241,163	3,239,593	3,292,192	3,246,356
26 : 3,232,693	4 : 3,269,797	3,258,795	3,246,352	3,253,076	3,233,265	3,254,357
3,253,876	4 : 3,287,083	3,261,041	3,286,288	3,255,290	3,241,168	3,257,679
3,264,052	3,280,031	3,276,050	3,289,230	3,272,905	3,252,175	3,268,938
3,272,586	3,268,293	3,271,101	3,293,677	3,293,346	3,261,047	3,233,269
34 : 3,233,960	3,271,101	3,284,823	10.1 : 3,241,164	3,233,030	3,270,360	3,253,290
3,241,905	3,288,554	3,284,824	1 : 3,251,081	13 : 3,255,291	3,273,189	3,271,804
3,244,473	6 : 3,279,882	3,287,754	5 : 3,228,046	3,277,229	3,274,631	3,287,756
3,249,394	6 : 3,282,639	3,289,231	5 : 3,233,957	14 : 3,240,856	3,278,963	3,229,317
3,255,459	6 : 3,292,992	3,293,682	16 : 3,247,538	3,249,674	3,281,878	3,262,144
3,273,955	3,243,253	3,236,745	11.3 : 3,273,183	22 : 3,227,798	3,284,829	3,239,505
37 : 3,278,254	3,266,865	3,246,350	12 : 3,226,746	24 : 3,234,316	3,292,193	3,263,258
39 : 3,232,694	3,280,640	3,248,574	3,226,746	25 : 3,249,675	3,293,682	3,263,258
3,235,322	3,285,691	3,242,514	3,258,799	3,263,015	3,293,683	3,263,258
3,240,551	3,238,745	3,246,666	3,266,072	3,275,735	3,293,684	3,263,258
3,240,552	3,236,587	3,247,531	3,271,799	3,249,676	3,293,685	3,263,258
3,265,460	3,239,304	3,248,746	3,261,042	3,251,921	3,293,686	3,263,258
3,279,880	3,276,839	3,261,042	3,266,070	3,235,647	3,293,687	3,263,258
41 : 3,246,945	3,291,561	3,230,032	3,232,693	3,238,288	3,293,688	3,263,258
3,282,638	3,231,324	3,231,324	3,238,288	3,243,493	3,293,689	3,263,258
42 : 3,281,201	3,238,011	3,238,011	3,243,493	3,250,842	3,293,690	3,263,258
43 : 3,239,302	3,291,562	3,291,562	3,250,842	3,257,492	3,293,691	3,263,258
44 : 3,266,863	3,298,552	3,298,552	3,257,492	3,260,783	3,293,692	3,263,258
54 : 3,271,100	3,298,552	3,298,552	3,260,783	3,265,801	3,293,693	3,263,258
2 : 3,251,556	3,298,552	3,298,552	3,265,801	3,268,648	3,293,694	3,263,258
2 : 3,256,054	3,298,552	3,298,552	3,268,648	3,271,517	3,293,695	3,263,258
2 : 3,275,401	3,298,552	3,298,552	3,271,517	3,274,118	3,293,696	3,263,258
55 : 3,230,029	3,298,552	3,298,552	3,274,118	3,277,507	3,293,697	3,263,258
3,232,695	3,298,552	3,298,552	3,277,507	3,281,518	3,293,698	3,263,258
3,236,583	3,298,552	3,298,552	3,281,518	<b>Class 14</b>	3,293,699	3,263,258
3,241,906	3,298,552	3,298,552	3,284,827	1 : 3,239,862	3,293,700	3,263,258
3,252,749	3,298,552	3,298,552	3,288,551	18 : 3,230,560	3,293,701	3,263,258
3,253,877	3,298,552	3,298,552	3,291,561	85 : 3,263,251	3,293,702	3,263,258
3,253,878	3,298,552	3,298,552	3,293,682	87 : 3,235,893	3,293,703	3,263,258
3,254,936	3,298,552	3,298,552	3,295,477	88 : 3,226,748	3,293,704	3,263,258
3,273,956	3,298,552	3,298,552	3,297,504	90 : 3,257,675	3,293,705	3,263,258
57 : 3,233,961	3,298,552	3,298,552	3,284,825	92 : 3,255,477	3,293,706	3,263,258
68 : 3,256,055	3,298,552	3,298,552	3,288,551	114.6 : 3,229,314	3,293,707	3,263,258
74 : 3,290,111	3,298,552	3,298,552	3,291,562	6 : 3,276,853	3,293,708	3,263,258
84 : 3,265,461	3,298,552	3,298,552	3,293,683	115.8 : 3,236,544	3,293,709	3,263,258
85 : 3,294,477	3,298,552	3,298,552	3,295,477	50.5 : 3,241,165	3,293,710	3,263,258
86 : 3,241,907	3,298,552	3,298,552	3,297,504	52 : 3,255,475	3,293,711	3,263,258
94.12 : 3,294,479	3,298,552	3,298,552	3,299,928	53.5 : 3,251,082	3,293,712	3,263,258
21 : 3,261,655	3,298,552	3,298,552	3,301,517	54.1 : 3,254,354	3,293,713	3,263,258
21 : 3,261,656	3,298,552	3,298,552	3,303,254	3,254,354	3,293,714	3,263,258
21 : 3,261,657	3,298,552	3,298,552	3,305,477	3,254,354	3,293,715	3,263,258
21 : 3,266,864	3,298,552	3,298,552	3,307,678	3,254,354	3,293,716	3,263,258
21 : 3,291,558	3,298,552	3,298,552	3,309,928	3,254,354	3,293,717	3,263,258
22 : 3,291,557	3,298,552	3,298,552	3,311,165	3,254,354	3,293,718	3,263,258
24 : 3,232,696	3,298,552	3,298,552	3,313,416	3,254,354	3,293,719	3,263,258
24 : 3,279,881	3,298,552	3,298,552	3,315,667	3,254,354	3,293,720	3,263,258
26 : 3,253,879	3,298,552	3,298,552	3,317,918	3,254,354	3,293,721	3,263,258
26 : 3,254,937	3,298,552	3,298,552	3,320,169	3,254,354	3,293,722	3,263,258
27 : 3,254,938	3,298,552	3,298,552	3,322,420	3,254,354	3,293,723	3,263,258
33 : 3,251,642	3,298,552	3,298,552	3,324,671	3,254,354	3,293,724	3,263,258
33 : 3,294,478	3,298,552	3,298,552	3,326,922	3,254,354	3,293,725	3,263,258
100 : 3,240,553	3,298,552	3,298,552	3,329,173	3,254,354	3,293,726	3,263,258
3,245,751	3,298,552	3,298,552	3,331,424	3,254,354	3,293,727	3,263,258
107 : 3,250,587	3,298,552	3,298,552	3,333,675	3,254,354	3,293,728	3,263,258
108 : 3,291,559	3,298,552	3,298,552	3,335,926	3,254,354	3,293,729	3,263,258
109 : 3,265,462	3,298,552	3,298,552	3,338,177	3,254,354	3,293,730	3,263,258
111.5 : 3,228,744	3,298,552	3,298,552	3,340,428	3,254,354	3,293,731	3,263,258
5 : 3,253,879	3,298,552	3,298,552	3,342,679	3,254,354	3,293,732	3,263,258
5 : 3,276,855	3,298,552	3,298,552	3,344,930	3,254,354	3,293,733	3,263,258
5 : 3,281,203	3,298,552	3,298,552	3,347,181	3,254,354	3,293,734	3,263,258
5 : 3,284,156	3,298,552	3,298,552	3,349,432	3,254,354	3,293,735	3,263,258
5 : 3,287,082	3,298,552	3,298,552	3,351,683	3,254,354	3,293,736	3,263,258
6 : 3,238,010	3,298,552	3,298,552	3,353,934	3,254,354	3,293,737	3,263,258
6 : 3,275,402	3,298,552	3,298,552	3,356,185	3,254,354	3,293,738	3,263,258
6 : 3,288,553	3,298,552	3,298,552	3,358,436	3,254,354	3,293,739	3,263,258
7 : 3,264,054	3,298,552	3,298,552	3,360,687	3,254,354	3,293,740	3,263,258
7 : 3,272,587	3,298,552	3,298,552	3,362,938	3,254,354	3,293,741	3,263,258
7 : 3,292,991	3,298,552	3,298,552	3,365,189	3,254,354	3,293,742	3,263,258
116 : 3,236,584	3,298,552	3,298,552	3,367,440	3,254,354	3,293,743	3,263,258
3,252,750	3,298,552	3,298,552	3,369,691	3,254,354	3,293,744	3,263,258
3,254,939	3,298,552	3,298,552	3,371,942	3,254,354	3,293,745	3,263,258
3,259,452	3,298,552	3,298,552	3,374,193	3,254,354	3,293,746	3,263,258



244 : 3.242.519	402 : 3.254.360	66 : 3.292.203	5 : 3.233.279	1 : 3.276.071	8 : 3.266.087	14 : 3.241.185
3.259.933	406 : 3.280.419	67 : 3.267.513	7 : 3.270.368	3.277.519	3.271.817	3.241.186
3.262.145	410 : 3.284.837	72 : 3.287.757	3.271.814	3.277.521	3.272.531	3.242.531
3.274.635	3.286.295	78 : 3.246.363	3.280.720	3.283.362	3.273.200	3.246.366
3.281.884	412 : 3.258.810	82 : 3.273.196	8 : 3.237.240	3.284.847	3.256.563	3.256.563
246 : 3.239.868	420 : 3.281.886	84 : 3.287.758	3.248.751	3.289.246	3.276.073	3.266.092
250.01 : 3.228.056	422 : 3.286.296	85 : 3.230.576	9 : 3.230.576	3.290.723	3.277.526	3.266.093
.02 : 3.264.669	503 : 3.230.570	503 : 3.243.836	3.231.930	3.229.329	3.280.424	3.270.371
.04 : 3.230.564	504 : 3.264.675	86 : 3.274.638	3.239.877	3.230.581	3.280.425	3.277.531
.04 : 3.234.579	505 : 3.284.838	87 : 3.287.759	3.229.327	3.233.284	3.289.249	3.280.429
.04 : 3.238.555	506 : 3.229.321	.4 : 3.262.148	3.233.280	3.237.241	3.292.210	3.280.430
.06 : 3.249.959	3.230.571	.4 : 3.286.299	3.234.586	3.239.878	3.293.696	3.281.896
.11 : 3.268.940	3.280.420	.6 : 3.261.052	3.243.839	3.241.180	3.226.765	3.281.897
.13 : 3.246.358	3.283.357	.6 : 3.293.685	3.261.054	3.242.180	3.228.062	3.284.852
.14 : 3.226.755	3.293.683	90 : 3.276.068	3.277.514	3.245.110	3.242.530	3.292.213
.17 : 3.242.520	510 : 3.278.973	93 : 3.248.749	3.284.846	3.252.180	3.245.114	3.245.117
.19 : 3.226.756	3.278.974	94 : 3.273.197	.1 : 3.234.587	3.253.300	3.266.088	3.263.272
.19 : 3.290.715	511 : 3.241.174	97 : 3.278.980	.1 : 3.234.588	3.254.365	3.266.089	3.231.935
.23 : 3.247.540	512 : 3.230.572	97 : 3.281.888	.1 : 3.235.904	3.254.366	3.276.074	3.234.598
.24 : 3.289.237	520 : 3.241.175	105 : 3.234.582	.1 : 3.273.198	3.264.682	3.277.527	3.239.886
.25 : 3.278.968	3.280.421	3.237.238	.1 : 3.277.515	3.267.515	3.246.365	3.241.187
.27 : 3.264.670	521.5 : 3.230.573	3.289.243	.2 : 3.253.296	3.268.949	3.226.766	3.242.532
.30 : 3.264.671	522 : 3.239.871	3.243.837	.3 : 3.277.516	3.273.199	3.228.063	3.242.533
.32 : 3.254.358	3.274.637	3.266.081	12 : 3.271.815	3.277.521	3.228.064	3.245.118
.34 : 3.247.541	526 : 3.271.809	3.263.267	21 : 3.229.328	3.277.522	3.228.065	3.245.119
.35 : 3.263.261	531 : 3.226.760	3.229.322	3.231.931	3.277.523	3.230.582	3.245.120
.35 : 3.292.200	532 : 3.289.240	3.255.483	3.235.905	3.281.892	3.234.597	3.249.966
.42 : 3.233.273	533 : 3.246.360	3.280.422	3.274.639	3.286.302	3.238.563	3.255.490
.42 : 3.234.578	539 : 3.271.810	122 : 3.234.583	23 : 3.270.369	3.290.724	3.239.881	3.259.941
.42 : 3.263.262	541 : 3.268.943	126 : Re.26.019	25 : 3.234.589	3.290.725	3.239.882	3.261.057
256.5 : 3.271.808	3.284.839	3.248.750	3.283.360	3.292.208	3.239.883	3.264.687
.52 : 3.235.898	543 : 3.226.761	3.261.053	.32 : 3.230.575	.4 : 3.264.683	3.241.182	3.266.094
.52 : 3.239.869	3.276.067	3.229.323	3.241.178	.5 : 3.281.893	3.241.183	3.266.095
257 : 3.284.834	549 : 3.239.870	3.243.838	3.245.106	.6 : 3.266.085	3.241.184	3.266.096
.6 : 3.264.672	550 : 3.278.975	3.252.179	3.256.557	.6 : 3.293.695	3.243.848	3.268.951
.7 : 3.278.969	552 : 3.228.057	3.254.363	3.268.948	.7 : 3.274.642	3.245.116	3.276.077
258 : 3.286.294	3.231.923	3.256.552	3.287.761	3.5 : 3.248.754	3.245.115	3.278.989
260 : 3.284.835	3.256.549	3.263.268	3.290.721	.5 : 3.267.516	3.283.365	3.283.365
261 : 3.276.064	555 : 3.241.176	3.264.678	3.292.207	.4 : 3.226.764	3.248.755	.5 : 3.241.188
3.280.418	3.256.550	3.278.981	3.293.688	3.233.285	3.252.181	.5 : 3.257.688
267 : 3.278.970	3.286.297	3.284.842	33 : 3.264.679	3.234.594	3.252.182	17 : 3.237.246
302 : 3.234.580	558 : 3.226.762	3.290.718	34 : 3.228.059	3.237.242	3.254.367	3.241.189
304 : 3.226.757	3.235.900	.1 : 3.234.584	3.228.060	3.242.527	3.254.368	3.241.190
3.258.808	3.246.361	130 : 3.284.843	35 : 3.253.297	3.246.364	3.255.484	3.255.491
3.278.971	559 : 3.270.366	138 : 3.286.300	38 : 3.283.361	3.256.559	3.255.489	3.267.520
306 : 3.252.177	561 : 3.267.512	140 : 3.235.902	39 : 3.238.559	3.257.685	3.256.560	3.278.990
3.267.508	563 : 3.230.574	3.239.874	41 : 3.253.298	3.258.812	3.256.561	3.286.304
3.270.364	3.231.924	3.271.811	42 : 3.231.932	3.262.150	3.256.562	18 : 3.277.532
3.274.636	3.233.275	3.231.927	43 : 3.264.680	3.262.151	3.259.940	19 : 3.226.767
3.289.238	3.278.976	145 : 3.237.239	3.242.524	3.266.086	3.262.156	3.228.066
3.264.673	3.290.717	147 : 3.262.149	3.290.722	3.271.816	3.262.154	3.231.936
3.278.972	567 : 3.278.977	149 : 3.283.359	44 : 3.245.107	3.274.643	3.262.155	3.231.937
3.292.201	568 : 3.255.481	151 : 3.251.088	.1 : 3.243.841	3.276.072	3.262.156	3.238.565
3.254.359	569 : 3.256.551	3.251.089	.1 : 3.247.543	3.281.894	3.264.685	3.238.566
311 : 3.261.050	3.264.676	3.251.090	.1 : 3.249.963	3.281.895	3.264.686	3.239.887
312 : 3.237.236	3.266.079	153 : 3.292.204	.1 : 3.263.270	3.284.849	3.266.090	3.243.850
3.245.103	3.281.887	154 : 3.289.244	.1 : 3.289.245	3.293.693	3.267.518	3.248.756
3.268.941	571 : 3.259.935	158 : 3.268.946	.2 : 3.233.281	3.235.907	3.267.519	3.256.564
3.276.065	572 : 3.242.522	166 : 3.231.928	45 : 3.228.061	3.235.908	3.267.520	3.256.565
313 : 3.230.567	573 : 3.263.263	3.276.069	3.230.580	3.237.243	3.271.819	3.256.566
3.284.836	575 : 3.263.264	167 : 3.235.903	3.233.282	3.237.244	3.271.820	3.257.689
314 : 3.267.509	578 : 3.237.237	168 : 3.233.277	3.233.283	3.239.879	3.271.821	3.258.813
317 : 3.230.568	592 : 3.263.265	169 : 3.263.269	3.234.591	3.239.880	3.271.822	3.258.814
319 : 3.266.078	595 : 3.289.241	171 : 3.226.763	3.234.592	3.243.846	3.273.201	3.259.942
320 : 3.273.193	605 : 3.231.925	3.231.929	3.234.593	3.243.847	3.273.202	3.262.157
3.277.511	3.293.684	3.242.523	3.238.560	3.245.111	3.274.645	3.267.521
3.289.239	3.284.844	3.284.844	3.238.561	3.247.545	3.274.646	3.267.522
321 : 3.258.809	3.287.760	178 : 3.287.760	3.241.179	3.249.964	3.276.075	3.267.523
3.262.146	3.286.553	180 : 3.254.364	3.242.525	3.251.092	3.276.076	3.268.952
3.246.359	3.255.484	184 : 3.228.058	3.243.842	3.257.686	3.277.528	3.273.203
3.253.294	3.261.051	190 : 3.256.554	3.245.108	3.257.687	3.277.529	3.280.428
3.257.680	3.243.835	197 : 3.233.278	3.248.752	3.261.055	3.278.987	3.286.305
3.273.194	2 : 3.264.677	3.276.069	3.253.299	3.262.152	3.278.988	3.287.765
325 : 3.270.365	7 : 3.245.104	3.271.812	3.255.485	3.264.684	3.278.989	3.290.728
327 : 3.226.758	8 : 3.234.581	3.278.982	3.257.684	3.267.517	3.280.426	Re.26.045
3.283.355	16 : 3.254.361	3.286.301	3.264.681	3.277.524	3.283.364	3.276.079
328 : 3.226.759	18 : 3.235.901	3.293.686	3.274.640	3.278.984	3.284.848	3.277.533
3.241.173	3.239.872	3.270.367	3.276.070	3.278.985	3.284.850	3.284.853
3.242.173	19 : 3.270.367	3.283.358	3.277.517	3.280.423	3.287.763	3.293.691
3.264.674	20 : 3.283.358	3.278.983	3.277.518	3.283.363	3.287.764	21 : 3.280.431
3.289.239	22 : 3.231.926	3.281.891	3.281.891	3.286.303	3.292.212	24 : 3.256.567
331 : 3.257.681	31 : 3.277.513	3.281.892	3.281.891	3.287.762	3.292.212	3.278.991
339 : 3.231.922	35 : 3.238.558	3.281.893	3.281.891	3.289.247	3.293.689	26 : 3.233.287
3.238.557	37 : 3.249.960	3.281.894	3.281.891	3.289.248	3.293.690	3.237.247
3.253.295	42 : 3.254.362	3.281.895	3.281.891	3.292.209	3.293.691	3.263.273
3.277.512	43 : 3.230.575	3.281.896	3.281.891	3.292.210	3.293.692	3.263.274
340 : 3.233.274	44 : 3.263.266	3.281.897	3.281.891	3.292.211	3.293.693	3.263.275
3.242.521	48.5 : 3.284.840	3.281.898	3.281.891	3.292.212	3.293.694	3.293.692
3.243.834	49 : 3.252.178	3.281.899	3.281.891	3.292.213	3.293.695	3.252.183
344 : 3.230.569	3.259.936	3.281.900	3.281.891	3.292.214	3.293.696	3.252.184
3.267.510	51 : 3.246.362	3.281.901	3.281.891	3.292.215	3.293.697	3.252.185
3.273.195	3.268.944	3.281.902	3.281.891	3.292.216	3.293.698	3.252.186
346 : 3.268.942	52 : 3.266.080	3.281.903	3.281.891	3.292.217	3.293.699	3.252.187
347 : 3.257.682	3.268.945	3.281.904	3.281.891	3.292.218	3.293.700	3.252.188
348 : 3.229.320	55 : 3.241.177	3.281.905	3.281.891	3.292.219	3.293.701	3.252.189
352 : 3.276.066	62 : 3.255.482	3.281.906	3.281.891	3.292.220	3.293.702	3.252.190
353 : 3.267.511	66 : 3.249.961	3.281.907	3.281.891	3.292.221	3.293.703	3.252.191
3.290.716	3.278.979	3.281.908	3.281.891	3.292.222	3.293.704	3.252.192
354 : 3.262.147	3.289.242	3.281.909	3.281.891	3.292.223	3.293.705	3.252.193
365 : 3.235.899				3.292.224	3.293.706	3.252.194
373 : 3.259.934				3.292.225	3.293.707	3.252.195
.393 : 3.281.885				3.292.226	3.293.708	3.252.196
400 : 3.283.356				3.292.227	3.293.709	3.252.197

Class 10 - Con.	106 : 3,283,366	2.7 : 3,233,963	57.2 : 3,278,999	162 : 3,254,379	14 : 3,227,513	87 : 3,233,966
30 : 3,253,303	108 : 3,284,599	7 : 3,235,324	2 : 3,283,368	164 : 3,257,693	3,228,747	3,241,913
3,254,370	112 : 3,284,690	7 : 3,257,159	2 : 3,263,270	3,263,286	3,230,035	3,244,477
3,254,371	119 : 3,290,729	7 : 3,257,160	2 : 3,286,309	168 : 3,258,816	3,231,327	3,250,592
3,256,568	129 : 3,290,730	7 : 3,272,588	2 : 3,286,310	174 : 3,287,772	3,232,698	3,253,885
3,259,943	144 : 3,294,600	7 : 3,288,555	2 : 3,287,770	192 : 3,246,374	3,232,699	3,261,663
3,259,944	145 : 3,254,374	7 : 3,284,157	2 : 3,289,257	3,254,380	3,238,012	3,261,664
3,262,158	3,284,586	53 : 3,261,659	2 : 3,290,734	3,263,287	3,238,013	3,271,105
3,263,276	3,289,254	54 : 3,264,055	2 : 3,292,215	3,266,107	3,244,474	3,278,258
3,263,277	3,293,699	56 : 3,246,947	2 : 3,292,217	3,284,862	3,245,753	3,294,483
3,263,278	3,255,494	58 : 3,257,161	2 : 3,293,704	3,288,174	3,245,754	3,294,484
3,264,688	3,263,280	60.5 : 3,276,841	3 : 3,258,815	3,229,338	3,248,168	3,298,015
3,266,097	3,251,097	61 : 3,231,325	3 : 3,268,959	3,249,397	3,249,397	3,241,914
3,267,524	150 : 3,230,584	5 : 3,241,908	3 : 3,281,903	3,241,199	3,249,398	3,245,756
3,270,372	3,235,912	5 : 3,257,162	3 : 3,284,859	3,251,643	3,251,643	3,257,166
3,278,992	3,246,370	5 : 3,258,306	3 : 3,290,735	3,247,556	3,252,752	3,259,456
3,281,898	3,255,495	5 : 3,273,957	4 : 3,228,072	3,249,971	3,252,753	3,272,599
3,281,899	156.3 : 3,235,913	61 : 3,233,964	4 : 3,261,059	3,259,947	3,253,884	3,278,259
3,281,900	3 : 3,252,186	3 : 3,285,692	4 : 3,279,000	3,262,165	3,254,944	3,282,641
3,284,854	3 : 3,268,954	3 : 3,285,693	58 : 3,233,292	3,266,108	3,256,056	3,280,558
3,287,766	4 : 3,239,889	74 : 3,230,033	3,234,603	3,273,211	3,227,514	3,268,289
3,287,767	4 : 3,256,569	3,235,325	3,239,895	3,274,651	3,227,515	3,268,290
3,292,214	159 : 3,233,290	3,239,305	3,250,048	3,274,652	3,227,516	3,272,593
3,293,693	3,241,196	3,254,942	3,253,306	3,275,500	3,228,748	3,278,260
3,297,525	3,242,534	3,249,480	3,255,498	3,263,288	3,228,749	3,250,593
3,297,526	3,246,371	83 : 3,292,993	3,262,163	3,277,541	3,230,036	3,294,485
3,297,527	3,249,968	84 : 3,248,167	3,273,209	3,277,542	3,235,326	3,241,915
3,298,993	3,271,826	85 : 3,253,965	3,283,369	3,234,607	3,235,327	3,282,642
3,281,901	160 : 3,263,281	87 : 3,258,588	3,290,736	3,239,897	3,238,014	3,254,948
3,247,549	161 : 3,255,496	92 : 3,271,103	3,267,530	3,241,200	3,239,307	3,249,399
3,262,159	3,277,537	93 : 3,278,256	3,267,531	3,249,972	3,239,308	3,288,561
3,230,583	3,284,857	94 : 3,253,882	3,267,532	3,254,374	3,241,909	3,245,757
3,237,248	200 : 3,287,768	3,254,943	3,263,289	3,259,948	3,243,254	3,239,038
3,246,369	202 : 3,239,890	3,291,563	3,280,434	3,270,382	3,243,255	3,232,703
3,247,550	204 : 3,293,700	98 : 3,272,589	3,284,860	3,292,220	3,243,256	3,285,695
3,254,372	231 : 3,290,731	105 : 3,261,660	3,290,737	3,237,253	3,243,257	3,227,519
3,270,373	240 : 3,243,853	110 :				