

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E05 LOCKS; KEYS; WINDOW OR DOOR FITTINGS; SAFES

(NOTE omitted)

E05F DEVICES FOR MOVING WINGS INTO OPEN OR CLOSED POSITION; CHECKS FOR WINGS; WING FITTINGS NOT OTHERWISE PROVIDED FOR, CONCERNED WITH THE FUNCTIONING OF THE WING

NOTE

In this subclass, the following terms are used with the meanings indicated:

- "closer" or "opener" includes devices for assisting wing-movement or for wing-counterbalancing.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Closers or openers for wings, not otherwise provided for in this subclass	1/1041	. . . {with a coil spring perpendicular to the pivot axis (E05F 1/1246 takes precedence)}
1/002	. {controlled by automatically acting means (for powered-operated mechanisms E05F 15/70)}	1/105	. . . . {with a compression spring}
1/004	. . {by thermostats, rain, wind or noise (E05F 1/006 takes precedence)}	1/1058	. . . . . {for counterbalancing}
1/006	. . {by emergency conditions, e.g. fire (operating or controlling mechanisms for physical fire-barriers A62C 2/24)}	1/1066	. . . . . {with a traction spring}
1/008	. . {by time control}	1/1075	. . . . . {for counterbalancing}
1/02	. gravity-actuated {, e.g. by use of counterweights}	1/1083	. . . {with a leaf or similar spring (E05F 1/1284 takes precedence)}
1/025	. . {with rectilinearly-moving counterweights}	1/1091	. . . {with a gas spring (E05F 1/1292 takes precedence)}
1/04	. . for wings which lift during movement {, operated by their own weight}	1/12	. . . Mechanisms in the shape of hinges or pivots, operated by springs {(for hinges with two or more pins E05D 3/06)}
1/043	. . . {with cams, helical tracks (E05F 1/061 takes precedence)}	1/1207	. . . . {with a coil spring parallel with the pivot axis}
1/046	. . . {with rectilinearly-inclined tracks for sliding wings}	1/1215	. . . . . {with a canted-coil torsion spring}
1/06	. . . Mechanisms in the shape of hinges or pivots, operated by the weight of the wing	1/1223	. . . . . {with a compression or traction spring}
1/061	. . . . {with cams or helical tracks}	1/123	. . . . . {with a torsion bar}
1/063	. . . . . {with complementary, substantially identical and slidingly cooperating cam surfaces (E05F 1/066 takes precedence)}	1/1238	. . . . . {specially adapted for vehicles}
1/065	. . . . . {Cam-and-wheel arrangements}	1/1246	. . . . . {with a coil spring perpendicular to the pivot axis}
1/066	. . . . . {Helical grooves, slots, threads or the like}	1/1253	. . . . . {with a compression spring}
1/068	. . . . . {with inclined pivot-axes}	1/1261	. . . . . {for counterbalancing}
1/08	. spring-actuated {, e.g. for horizontally sliding wings (counterbalancing sliding or lifting wings E05D ; springs per se F16F , e.g. gas-springs F16F 9/00)}	1/1269	. . . . . {with a traction spring}
1/10	. . for swinging wings {, e.g. counterbalance (spring-assisted actuation of lids or covers of refuse receptacles B65F 1/1623)}	1/1276	. . . . . {for counterbalancing}
1/1008	. . . {with a coil spring parallel with the pivot axis (E05F 1/1207 takes precedence)}	1/1284	. . . . . {with a leaf or similar spring}
1/1016	. . . . {with a canted-coil torsion spring}	1/1292	. . . . . {with a gas spring}
1/1025	. . . . {with a compression or traction spring}	1/14	. . . with double-acting springs, e.g. for closing and opening or checking and closing {no material}
1/1033	. . . {with a torsion bar (E05F 1/123 takes precedence)}	1/16	. . for sliding wings
		3/00	Closers or openers with braking devices, e.g. checks; Construction of pneumatic or liquid braking devices (construction of non-pneumatic or non-liquid braking devices E05F 5/00; friction devices in hinges E05D 11/08)
		3/02	. with pneumatic piston brakes (rotary type E05F 3/14)
		3/04	. with liquid piston brakes (rotary type E05F 3/14)

3/06	. . in which a torsion spring rotates a member around an axis perpendicular to the axis of the piston	5/006	. {for hinges having a cup-shaped fixing part, e.g. for attachment to cabinets or furniture}
3/08	. . in which a torsion spring rotates a member around an axis arranged in the direction of the axis of the piston	5/02	. specially for preventing the slamming of {swinging} wings {during final closing movement, e.g. jamb stops}
3/10	. . with a spring, other than a torsion spring, and a piston, the axes of which are the same or lie in the same direction	5/022	. . {specially adapted for vehicles, e.g. for hoods or trunks}
3/102	. . . {with rack-and-pinion transmission between driving shaft and piston within the closer housing}	5/025	. . . {specially adapted for vehicle doors}
3/104	. . . {with cam-and-slide transmission between driving shaft and piston within the closer housing}	5/027	. . {with closing action}
3/106	. . . {with crank-arm transmission between driving shaft and piston within the closer housing}	5/04	. . hand-operated {, e.g. removable}; operated by centrifugal action {or by high closing speed}
3/108	. . . {with piston rod protruding from the closer housing; Telescoping closers}	2005/043	. . . {operated by centrifugal action at high closing speed}
3/12	. . Special devices controlling the circulation of the liquid, e.g. valve arrangement ({E05F 3/223 takes precedence}; valves per se F16K)	2005/046	. . . {hand operated}
3/14	. with fluid brakes of the rotary type	5/06	. Buffers {or stops limiting opening of swinging wings, e.g. floor or wall stops} (E05F 5/02 takes precedence)
3/16	. with friction brakes	5/08	. . with springs
3/18	. with counteracting springs (double-acting springs E05F 1/14)	5/10	. . with piston brakes
3/20	. in hinges	5/12	. specially for preventing the closing of a wing before another wing has been closed
3/22	. Additional arrangements for closers, e.g. for holding the wing in opened or other position	7/00	Miscellaneous accessories for wings (specially adapted for furniture A47B 95/00 ; door-lifters B66F, E04F 21/00 ; knobs or handles E05B)
3/221	. . {Mechanical power-locks, e.g. for holding the wing open or for free-moving zones}	7/005	. {Aligning devices for wings}
3/222	. . . {electrically operated (E05F 3/223 takes precedence)}	7/02	. for raising wings before being turned {(before sliding E05D 15/565)}
3/223	. . {Hydraulic power-locks, e.g. with electrically operated hydraulic valves}	7/04	. Arrangements affording protection against rattling (with buffering action E05F 5/00)
3/224	. . {for assisting in opening the wing}	7/06	. Devices for taking the weight of the wing, arranged away from the hinge axis
3/225	. . {mounted at the bottom of wings, e.g. details related to seals, covers, connections to the wings, embedding in the floor}	7/08	. Special means for transmitting movements between vertical and horizontal sliding bars, rods, or cables ({ E05D 15/5208 takes precedence })
3/226	. . . {with means to adjust the closed position of the wing}	Operating mechanisms for wings (for safeguarding bank teller windows E05G 5/00 ; for interconnected louvres E06B 7/086 ; for blinds or roll-type closures E06B 9/00)	
3/227	. . {mounted at the top of wings, e.g. details related to closer housings, covers, end caps or rails therefor}	9/00	Means for operating wings by hand rods not guided in or on the frame, including those which also operate the fastening (bolts or fastening devices for wings E05C)
2003/228	. . {Arrangements where the end of the closer arm is sliding in a track}	11/00	Man-operated mechanisms for operating wings, including those which also operate the fastening (connecting mechanisms for a plurality of wings E05F 17/00)
5/00	Braking devices, e.g. checks; Stops; Buffers (construction of pneumatic or liquid braking devices E05F 3/00 ; braking devices, buffers or end stops on drawers for tables, cabinets or like furniture A47B 88/473 ; combined with devices for holding wings open E05C 17/00 ; devices for limiting opening of wings or for holding wings open by a movable member extending between frame and wing E05C 17/04)	11/02	. for wings in general, e.g. fanlights (E05F 11/36 takes precedence ; for windows to be lowered vertically E05F 11/38 ; for doors E05F 11/54)
	WARNING	11/04	. . with cords, chains or cables
	Group E05F 5/00 is impacted by reclassification into groups A47B 88/473 and A47B 88/477 .	11/06	. . . in guide-channels
	Groups E05F 5/00 , A47B 88/473 , and A47B 88/477 should be considered in order to perform a complete search.	11/08	. . with longitudinally-moving bars guided, e.g. by pivoted links, in or on the frame
5/003	. {for sliding wings (E05D 13/04 takes precedence)}	11/10	. . . Mechanisms by which a handle moves the bar
		11/12	. . . Mechanisms by which the bar shifts the wing
		11/14	. . . . directly, i.e. without links, shifting the wing, e.g. by rack and gear or pin and slot
		11/145	. . . . . {by pin and slot}
		11/16	. . . . shifting the wing by pivotally-connected members {(moving) in a plane perpendicular to the pivot axis of the wing}

11/18	. . . . . consisting of a lever, e.g. an angle lever, only {no material}	13/04	. . . . . by platforms lowered by the weight of the user
11/20	. . . . . consisting of a lever, e.g. an angle lever, and only one additional link {no material}	15/00	Power-operated mechanisms for wings (motor-operated accessories in locks for completing closing or initiating opening of a wing E05B 17/00)
11/22	. . . . . consisting of a lever, e.g. an angle lever, and two or more additional links in series {no material}	15/40	. . . . . Safety devices, e.g. detection of obstructions or end positions
11/24	. . . . . shifting the wing by pivotally-connected members {(moving) in a plane parallel to the pivot axis of the wing}	15/41	. . . . . Detection by monitoring transmitted force or torque (E05F 15/48 takes precedence); Safety couplings with activation dependent upon torque or force, e.g. slip couplings
11/26	. . . . . consisting of a lever, e.g. an angle lever, only {no material}	15/42	. . . . . Detection using safety edges
11/28	. . . . . consisting of a lever, e.g. an angle lever, and one or more additional links {no material}	15/43	. . . . . responsive to disruption of energy beams, e.g. light or sound
11/30	. . . . . consisting of links in rhomb-form {no material}	15/431	. . . . . {specially adapted for vehicle windows or roofs}
11/32	. . . . . with rotary bars guided in the frame (E05F 11/34 takes precedence)	2015/432	. . . . . {with acoustical sensors}
11/34	. . . . . with screw mechanisms	2015/433	. . . . . {using reflection from the obstruction}
11/36	. . . . . specially designed for passing through a wall	2015/434	. . . . . {with optical sensors}
11/38	. . . . . for sliding windows, e.g. vehicle windows, to be opened or closed by vertical movement	2015/435	. . . . . {by interruption of the beam}
11/382	. . . . . {for vehicle windows (E05F 11/40 - E05F 11/52 take precedence)}	2015/436	. . . . . {the beam being parallel to the wing edge}
11/385	. . . . . {Fixing of window glass to the carrier of the operating mechanism}	2015/437	. . . . . {the beam being perpendicular to the wing edge}
2011/387	. . . . . {using arrangements in the window glass, e.g. holes}	15/44	. . . . . responsive to changes in electrical conductivity
11/40	. . . . . operated by screw mechanism	15/443	. . . . . {specially adapted for vehicle windows or roofs}
11/405	. . . . . {for vehicle windows}	2015/447	. . . . . {using switches in serial arrangement}
11/42	. . . . . operated by rack bars and toothed wheels {or other push-pull mechanisms}	15/46	. . . . . responsive to changes in electrical capacitance
11/423	. . . . . {for vehicle windows}	15/47	. . . . . responsive to changes in fluid pressure
11/426	. . . . . {Flexible rack-and-pinion arrangements}	15/48	. . . . . by transmission of mechanical forces, e.g. rigid or movable members
11/44	. . . . . operated by one or more lifting arms	2015/483	. . . . . {for detection during opening}
11/445	. . . . . {for vehicle windows}	2015/487	. . . . . {Fault detection of safety edges}
11/46	. . . . . operated by lazy-tongs mechanism	15/49	. . . . . specially adapted for mechanisms operated by fluid pressure, e.g. detection by monitoring transmitted fluid pressure (E05F 15/47 takes precedence)
11/465	. . . . . {for vehicle windows}	15/50	. . . . . using fluid-pressure actuators
11/48	. . . . . operated by cords or chains {or other flexible elongated pulling elements, e.g. tapes}	15/51	. . . . . for folding wings
11/481	. . . . . {for vehicle windows}	15/53	. . . . . for swinging wings
11/483	. . . . . {by cables}	15/54	. . . . . operated by linear actuators acting on a helical track coaxial with the swinging axis
11/485	. . . . . {with cable tensioners}	15/56	. . . . . for horizontally-sliding wings
11/486	. . . . . {with one cable connection to the window glass}	15/565	. . . . . {for railway-cars}
11/488	. . . . . {with two cable connections to the window glass}	15/57	. . . . . for vertically-sliding wings
11/50	. . . . . Crank gear with clutches or retaining brakes, for operating window mechanisms	15/59	. . . . . for overhead wings
11/505	. . . . . {for vehicle windows}	15/60	. . . . . using electrical actuators
11/52	. . . . . combined with means for producing an additional movement, e.g. a horizontal or a rotary movement	15/603	. . . . . using rotary electromotors
11/525	. . . . . {for vehicle windows}	15/605	. . . . . for folding wings
11/53	. . . . . for sliding windows, e.g. vehicle windows, to be opened or closed by horizontal movement	15/608	. . . . . for revolving wings
11/535	. . . . . {for vehicle windows}	15/611	. . . . . for swinging wings
11/54	. . . . . for doors	15/614	. . . . . operated by meshing gear wheels, one of which being mounted at the wing pivot axis; operated by a motor acting directly on the wing pivot axis
13/00	Mechanisms operated by the movement or weight of a person or vehicle (through power-operated wing-operating mechanisms E05F 15/00)	15/616	. . . . . operated by push-pull mechanisms
13/02 by devices, e.g. lever arms, affected by the movement of the user	15/619 using flexible or rigid rack-and-pinion arrangements
		15/622 using screw-and-nut mechanisms
		15/624 using friction wheels

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| 15/627 | | operated by flexible elongated pulling elements, e.g. belts, chains or cables (using flexible elongated push-pull mechanisms E05F 15/619) |
| 15/63 | | operated by swinging arms |
| 2015/631 | | {the end of the arm sliding in a track; Slider arms therefor} |
| 15/632 | . . . | for horizontally-sliding wings |

WARNING

Group [E05F 15/632](#) is incomplete pending reclassification of documents from group [E05F 15/652](#).

Groups [E05F 15/652](#) and [E05F 15/632](#) should be considered in order to perform a complete search.

- 15/635 operated by push-pull mechanisms,
e.g. flexible or rigid rack-and-pinion
arrangements ([E05F 15/652 takes
precedence](#))
- 15/638 allowing or involving a secondary
movement of the wing, e.g. rotational or
transversal
- 15/641 operated by friction wheels

WARNING

Group [E05F 15/641](#) is incomplete pending reclassification of documents from group [E05F 15/635](#).

Groups [E05F 15/635](#) and [E05F 15/641](#) should be considered in order to perform a complete search.

- 15/643 operated by flexible elongated pulling elements, e.g. belts, chains or cables ([by flexible elongated push-pull mechanisms E05F 15/635](#))
- 15/646 allowing or involving a secondary movement of the wing, e.g. rotational or transversal
- 15/649 operated by swinging arms
- 15/652 operated by screw-and-nut mechanisms
- 15/655 specially adapted for vehicle wings

WARNING

Groups [E05F 15/655](#) - [E05F 15/662](#) are incomplete pending reclassification of documents from group [E05F 15/632](#).

Group [E05F 15/632](#) and the appropriate group in [E05F 15/655](#) - [E05F 15/662](#) should be considered in order to perform a complete search.

- 15/657 enabling manual drive, e.g. in case of
power failure
15/659 Control circuits therefor
15/662 Motor units therefor, e.g. geared motors
15/665 . . . for vertically-sliding wings

- 15/668 for overhead wings

WARNING

Group [E05F 15/668](#) is incomplete pending reclassification of documents from group [E05F 15/673](#).

Groups [E05F 15/673](#) and [E05F 15/668](#) should be considered in order to perform a complete search.

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| 15/67 | | operated by flexible or rigid rack-and-pinion arrangements |
| 15/673 | | operated by screw-and-nut mechanisms |
| 15/676 | | operated by friction wheels |
| 15/678 | | operated by swinging lever arms |
| 15/681 | | operated by flexible elongated pulling elements, e.g. belts |
| 15/684 | | by chains |
| 15/686 | | by cables or ropes |
| 15/689 | | specially adapted for vehicle windows |
| 15/692 | | enabling manual drive, e.g. in case of power failure |
| 15/695 | | Control circuits therefor |
| 15/697 | | Motor units therefor, e.g. geared motors |
| 15/70 | . . | with automatic actuation |
| 15/71 | . . | responsive to temperature changes, rain, wind or noise |
| 15/72 | . . | responsive to emergency conditions, e.g. fire |
| 15/73 | . . | responsive to movement or presence of persons or objects |
| 15/74 | . . . | using photoelectric cells |
| 15/75 | . . . | responsive to the weight or other physical contact of a person or object |
| 15/76 | . . . | responsive to devices carried by persons or objects, e.g. magnets or reflectors (E05F 15/77 takes precedence) |
| 015/763 | . . . | {using acoustical sensors} |
| 015/765 | . . . | {using optical sensors (using photoelectric cells E05F 15/74)} |
| 015/767 | . . . | {using cameras} |
| 15/77 | . . | using wireless control |
| 15/78 | . . . | using light beams |
| 15/79 | . . | using time control |

17/00 Special devices for shifting a plurality of wings operated simultaneously (for simultaneously moving a plurality of interconnected ventilating lamellae E06B 7/086)

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| 17/001 | • {of prison cell doors} |
| 17/002 | • {for wings which lie one behind the other when closed} |
| 17/004 | • {for wings which abut when closed} |
| 017/005 | • {for sliding wings} |
| 017/007 | • • {with means for interlocking the wings} |
| 017/008 | • {for swinging wings} |

2700/00 **Operating mechanisms for sliding windows**

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| 2700/02 | • Devices for moving and locking sliding windows |
| 2700/04 | • Devices for blocking sliding windows in general |