

CPC COOPERATIVE PATENT CLASSIFICATION

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.

1/00	Closers or openers for wings, not otherwise provided for in this subclass	1/12	. . . Mechanisms in the shape of hinges or pivots, operated by springs {(for hinges with two or more pins E05D 3/06)}
1/002	. {controlled by automatically acting means (for powered-operated mechanisms E05F 15/70)}	1/1207	. . . . {with a coil spring parallel with the pivot axis}
1/004	. . {by thermostats, rain, wind or noise (E05F 1/006 takes precedence)}	1/1215	. . . . . {with a canted-coil torsion spring}
1/006	. . {by emergency conditions, e.g. fire (operating or controlling mechanisms for physical fire-barriers A62C 2/24)}	1/1223	. . . . . {with a compression or traction spring}
1/008	. . {by time control}	1/123	. . . . . {with a torsion bar}
1/02	. gravity-actuated, {e.g. by use of counterweights}	1/1238	. . . . . {specially adapted for vehicles}
1/025	. . {with rectilinearly-moving counterweights}	1/1246	. . . . . {with a coil spring perpendicular to the pivot axis}
1/04	. . for wings which lift during movement, {operated by their own weight}	1/1253	. . . . . {with a compression spring}
1/043	. . . {with cams, helical tracks (E05F 1/061 takes precedence)}	1/1261	. . . . . {for counterbalancing}
1/046	. . . {with rectilinearly-inclined tracks for sliding wings}	1/1269	. . . . . {with a traction spring}
1/06	. . . Mechanisms in the shape of hinges or pivots, operated by the weight of the wing	1/1276	. . . . . {for counterbalancing}
1/061	. . . . {with cams or helical tracks}	1/1284	. . . . . {with a leaf or similar spring}
1/063	. . . . . {with complementary, substantially identical and slidably cooperating cam surfaces (E05F 1/066 takes precedence)}	1/1292	. . . . . {with a gas spring}
1/065	. . . . . {Cam-and-wheel arrangements}	1/14	. . . with double-acting springs, e.g. for closing and opening or checking and closing {no material}
1/066	. . . . . {Helical grooves, slots, threads or the like}	1/16	. . for sliding wings
1/068	. . . . {with inclined pivot-axes}	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)
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)}	3/02	. with pneumatic piston brakes (rotary type E05F 3/14)
1/10	. . for swinging wings, {e.g. counterbalance (spring-assisted actuation of lids or covers of refuse receptacles B65F 1/1623)}	3/04	. with liquid piston brakes (rotary type E05F 3/14)
1/1008	. . . {with a coil spring parallel with the pivot axis (E05F 1/1207 takes precedence)}	3/06	. . in which a torsion spring rotates a member around an axis perpendicular to the axis of the piston
1/1016	. . . . {with a canted-coil torsion spring}	3/08	. . in which a torsion spring rotates a member around an axis arranged in the direction of the axis of the piston
1/1025	. . . . {with a compression or traction spring}	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
1/1033	. . . {with a torsion bar (E05F 1/123 takes precedence)}	3/102	. . . {with rack-and-pinion transmission between driving shaft and piston within the closer housing}
1/1041	. . . {with a coil spring perpendicular to the pivot axis (E05F 1/1246 takes precedence)}	3/104	. . . {with cam-and-slide transmission between driving shaft and piston within the closer housing}
1/105	. . . . {with a compression spring}	3/106	. . . {with crank-arm transmission between driving shaft and piston within the closer housing}
1/1058	. . . . . {for counterbalancing}	3/108	. . . {with piston rod protruding from the closer housing; Telescoping closers}
1/1066	. . . . {with a traction spring}	3/12	. . Special devices controlling the circulation of the liquid, e.g. valve arrangement ((E05F 3/223 takes precedence); valves per se F16K)
1/1075	. . . . . {for counterbalancing}	3/14	. with fluid brakes of the rotary type
1/1083	. . . {with a leaf or similar spring (E05F 1/1284 takes precedence)}	3/16	. with friction brakes
1/1091	. . . {with a gas spring (E05F 1/1292 takes precedence)}		

- 3/18 . with counteracting springs ([double-acting springs E05F 1/14](#))
 - 3/20 . in hinges
 - 3/22 . Additional arrangements for closers, e.g. for holding the wing in opened or other position
 - 3/221 . . {Mechanical power-locks, e.g. for holding the wing open or for free-moving zones}
 - 3/222 . . . {electrically operated ([E05F 3/223 takes precedence](#))}
 - 3/223 . . {Hydraulic power-locks, e.g. with electrically operated hydraulic valves}
 - 3/224 . . {for assisting in opening the wing}
 - 3/225 . . {mounted at the bottom of wings, e.g. details related to seals, covers, connections to the wings, embedding in the floor}
 - 3/226 . . . {with means to adjust the closed position of the wing}
 - 3/227 . . {mounted at the top of wings, e.g. details related to closer housings, covers, end caps or rails therefor}
 - 2003/228 . . {Arrangements where the end of the closer arm is sliding in a track}
- 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](#))
- WARNING**
- Group [E05F 5/00](#) is impacted by reclassification into groups [A47B 88/473](#) and [A47B 88/477](#).
Groups [E05F 5/00](#), [A47B 88/473](#), and [A47B 88/477](#) should be considered in order to perform a complete search.
- 5/003 . {for sliding wings ([E05D 13/04 takes precedence](#))}
 - 5/006 . {for hinges having a cup-shaped fixing part, e.g. for attachment to cabinets or furniture}
 - 5/02 . specially for preventing the slamming of {swinging} wings {during final closing movement, e.g. jamb stops}
 - 5/022 . . {specially adapted for vehicles, e.g. for hoods or trunks}
 - 5/025 . . . {specially adapted for vehicle doors}
 - 5/027 . . {with closing action}
 - 5/04 . . hand-operated, {e.g. removable}; operated by centrifugal action {or by high closing speed}
 - 2005/043 . . . {operated by centrifugal action at high closing speed}
 - 2005/046 . . . {hand operated}
 - 5/06 . Buffers {or stops limiting opening of swinging wings, e.g. floor or wall stops} ([E05F 5/02 takes precedence](#))
 - 5/08 . . with springs
 - 5/10 . . with piston brakes
 - 5/12 . specially for preventing the closing of a wing before another wing has been closed

- 7/00 Miscellaneous accessories for wings** (specially adapted for furniture [A47B 95/00](#); door-lifters [B66F, E04F 21/00](#); knobs or handles [E05B](#))
- 7/005 . {Aligning devices for wings}
- 7/02 . for raising wings before being turned {(before sliding [E05D 15/565](#))}
- 7/04 . Arrangements affording protection against rattling (with buffering action [E05F 5/00](#))
- 7/06 . Devices for taking the weight of the wing, arranged away from the hinge axis
- 7/08 . Special means for transmitting movements between vertical and horizontal sliding bars, rods, or cables {([E05D 15/5208 takes precedence](#))}

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](#))

- 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](#))**
- 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](#))**
- 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](#))
- 11/04 . . with cords, chains or cables
- 11/06 . . . in guide-channels
- 11/08 . . with longitudinally-moving bars guided, e.g. by pivoted links, in or on the frame
- 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}
- 11/20 consisting of a lever, e.g. an angle lever, and only one additional link {no material}
- 11/22 consisting of a lever, e.g. an angle lever, and two or more additional links in series {no material}
- 11/24 shifting the wing by pivotally-connected members {(moving) in a plane parallel to the pivot axis of the wing}
- 11/26 consisting of a lever, e.g. an angle lever, only {no material}
- 11/28 consisting of a lever, e.g. an angle lever, and one or more additional links {no material}
- 11/30 consisting of links in rhomb-form {no material}
- 11/32 . . with rotary bars guided in the frame ([E05F 11/34 takes precedence](#))
- 11/34 . . with screw mechanisms
- 11/36 . specially designed for passing through a wall
- 11/38 . for sliding windows, e.g. vehicle windows, to be opened or closed by vertical movement

11/382	. . {for vehicle windows (E05F 11/40 - E05F 11/52 take precedence)}	2015/437	. . . . . {the beam being perpendicular to the wing edge}
11/385	. . . {Fixing of window glass to the carrier of the operating mechanism}	15/44	. . . responsive to changes in electrical conductivity
2011/387	. . . . {using arrangements in the window glass, e.g. holes}	15/443	. . . . {specially adapted for vehicle windows or roofs}
11/40	. . operated by screw mechanism	2015/447	. . . . {using switches in serial arrangement}
11/405	. . . {for vehicle windows}	15/46	. . . responsive to changes in electrical capacitance
11/42	. . operated by rack bars and toothed wheels {or other push-pull mechanisms}	15/47	. . . responsive to changes in fluid pressure
11/423	. . . {for vehicle windows}	15/48	. . . by transmission of mechanical forces, e.g. rigid or movable members
11/426	. . . . {Flexible rack-and-pinion arrangements}	2015/483	. . . {for detection during opening}
11/44	. . operated by one or more lifting arms	2015/487	. . . {Fault detection of safety edges}
11/445	. . . {for vehicle windows}	15/49	. . specially adapted for mechanisms operated by fluid pressure, e.g. detection by monitoring transmitted fluid pressure (E05F 15/47 takes precedence)
11/46	. . operated by lazy-tong mechanism	15/50	. . using fluid-pressure actuators
11/465	. . . {for vehicle windows}	15/51	. . for folding wings
11/48	. . operated by cords or chains {or other flexible elongated pulling elements, e.g. tapes}	15/53	. . for swinging wings
11/481	. . . {for vehicle windows}	15/54	. . . operated by linear actuators acting on a helical track coaxial with the swinging axis
11/483	. . . . {by cables}	15/56	. . for horizontally-sliding wings
11/485	. . . . . {with cable tensioners}	15/565	. . . {for railway-cars}
11/486	. . . . . {with one cable connection to the window glass}	15/57	. . for vertically-sliding wings
11/488	. . . . . {with two cable connections to the window glass}	15/59	. . . for overhead wings
11/50	. . Crank gear with clutches or retaining brakes, for operating window mechanisms	15/60	. . using electrical actuators
11/505	. . . {for vehicle windows}	15/603	. . using rotary electromotors
11/52	. . combined with means for producing an additional movement, e.g. a horizontal or a rotary movement	15/605	. . . for folding wings
11/525	. . . {for vehicle windows}	15/608	. . . for revolving wings
11/53	. . for sliding windows, e.g. vehicle windows, to be opened or closed by horizontal movement	15/611	. . . for swinging wings
11/535	. . {for vehicle windows}	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
11/54	. . for doors	15/616	. . . . operated by push-pull mechanisms
13/00	Mechanisms operated by the movement or weight of a person or vehicle (through power-operated wing-operating mechanisms E05F 15/00)	15/619	. . . . . using flexible or rigid rack-and-pinion arrangements
13/02	. . by devices, e.g. lever arms, affected by the movement of the user	15/622	. . . . . using screw-and-nut mechanisms
13/04	. . by platforms lowered by the weight of the user	15/624	. . . . . using friction wheels
15/00	Power-operated mechanisms for wings (motor-operated accessories in locks for completing closing or initiating opening of a wing E05B 17/00)	15/627	. . . . . operated by flexible elongated pulling elements, e.g. belts, chains or cables (using flexible elongated push-pull mechanisms E05F 15/619)
15/40	. . Safety devices, e.g. detection of obstructions or end positions	15/63	. . . . . operated by swinging arms
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	2015/631	. . . . . {the end of the arm sliding in a track; Slider arms therefor}
15/42	. . Detection using safety edges	15/632	. . . for horizontally-sliding wings
15/43	. . . responsive to disruption of energy beams, e.g. light or sound		WARNING
15/431	. . . . {specially adapted for vehicle windows or roofs}		Group E05F 15/632 is incomplete pending reclassification of documents from group E05F 15/652 .
2015/432	. . . . . {with acoustical sensors}		Groups E05F 15/652 and E05F 15/632 should be considered in order to perform a complete search.
2015/433	. . . . . {using reflection from the obstruction}	15/635	. . . . . operated by push-pull mechanisms, e.g. flexible or rigid rack-and-pinion arrangements (E05F 15/652 takes precedence)
2015/434	. . . . . {with optical sensors}	15/638	. . . . . allowing or involving a secondary movement of the wing, e.g. rotational or transversal
2015/435	. . . . . {by interruption of the beam}		
2015/436	. . . . . {the beam being parallel to the wing edge}		

- 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.
- 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)
- 2015/763 {using acoustical sensors}
- 2015/765 {using optical sensors (using photoelectric cells [E05F 15/74](#))}
- 2015/767 {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](#))**
- 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}
- 2017/005 {for sliding wings}
- 2017/007 {with means for interlocking the wings}
- 2017/008 {for swinging wings}

2700/00 Operating mechanisms for sliding windows

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