

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 slidingly 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 <i>per se</i> 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 <i>per se</i> 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)	7/00	Miscellaneous accessories for wings (specially adapted for furniture A47B 95/00 ; door-lifters B66F, E04F 21/00 ; knobs or handles E05B)
3/20	• in hinges	7/005	• { Aligning devices for wings }
3/22	• Additional arrangements for closers, e.g. for holding the wing in opened or other position	7/02	• for raising wings before being turned {(before sliding E05D 15/565)}
3/221	• . {Mechanical power-locks, e.g. for holding the wing open or for free-moving zones}	7/04	• Arrangements affording protection against rattling (with buffering action E05F 5/00)
3/222	• . . {electrically operated (E05F 3/223 takes precedence)}	7/06	• Devices for taking the weight of the wing, arranged away from the hinge axis
3/223	• . {Hydraulic power-locks, e.g. with electrically operated hydraulic valves}	7/08	• Special means for transmitting movements between vertical and horizontal sliding bars, rods, or cables {(E05D 15/5208 takes precedence)}
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)	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)
	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.	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)
5/003	• {for sliding wings (E05D 13/04 takes precedence)}	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)
5/006	• {for hinges having a cup-shaped fixing part, e.g. for attachment to cabinets or furniture}	11/04	• . with cords, chains or cables
5/02	• specially for preventing the slamming of {swinging} wings {during final closing movement, e.g. jamb stops}	11/06	• . . in guide-channels
5/022	• . {specially adapted for vehicles, e.g. for hoods or trunks}	11/08	• . with longitudinally-moving bars guided, e.g. by pivoted links, in or on the frame
5/025	• . . {specially adapted for vehicle doors}	11/10	• . . Mechanisms by which a handle moves the bar
5/027	• . {with closing action}	11/12	• . . Mechanisms by which the bar shifts the wing
5/04	• . hand-operated, {e.g. removable}; operated by centrifugal action {or by high closing speed}	11/14	• . . . directly, i.e. without links, shifting the wing, e.g. by rack and gear or pin and slot
2005/043	• . . {operated by centrifugal action at high closing speed}	11/145	• {by pin and slot}
2005/046	• . . {hand operated}	11/16	• . . . shifting the wing by pivotally-connected members {(moving) in a plane perpendicular to the pivot axis of the wing}
5/06	• Buffers {or stops limiting opening of swinging wings, e.g. floor or wall stops} (E05F 5/02 takes precedence)	11/18	• consisting of a lever, e.g. an angle lever, only {no material}
5/08	• . with springs	11/20	• consisting of a lever, e.g. an angle lever, and only one additional link {no material}
5/10	• . with piston brakes	11/22	• consisting of a lever, e.g. an angle lever, and two or more additional links in series {no material}
5/12	• specially for preventing the closing of a wing before another wing has been closed	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)}
- 11/385 . . . {Fixing of window glass to the carrier of the operating mechanism}
- 2011/387 {using arrangements in the window glass, e.g. holes}
- 11/40 . . operated by screw mechanism
- 11/405 . . . {for vehicle windows}
- 11/42 . . operated by rack bars and toothed wheels {or other push-pull mechanisms}
- 11/423 . . . {for vehicle windows}
- 11/426 {Flexible rack-and-pinion arrangements}
- 11/44 . . operated by one or more lifting arms
- 11/445 . . . {for vehicle windows}
- 11/46 . . operated by lazy-tong mechanism
- 11/465 . . . {for vehicle windows}
- 11/48 . . operated by cords or chains {or other flexible elongated pulling elements, e.g. tapes}
- 11/481 . . . {for vehicle windows}
- 11/483 {by cables}
- 11/485 {with cable tensioners}
- 11/486 {with one cable connection to the window glass}
- 11/488 {with two cable connections to the window glass}
- 11/50 . . Crank gear with clutches or retaining brakes, for operating window mechanisms
- 11/505 . . . {for vehicle windows}
- 11/52 . . combined with means for producing an additional movement, e.g. a horizontal or a rotary movement
- 11/525 . . . {for vehicle windows}
- 11/53 . . for sliding windows, e.g. vehicle windows, to be opened or closed by horizontal movement
- 11/535 . . {for vehicle windows}
- 11/54 . . for doors
- 13/00 Mechanisms operated by the movement or weight of a person or vehicle (through power-operated wing-operating mechanisms [E05F 15/00](#))**
- 13/02 . . by devices, e.g. lever arms, affected by the movement of the user
- 13/04 . . by platforms lowered by the weight of the user
- 15/00 Power-operated mechanisms for wings (motor-operated accessories in locks for completing closing or initiating opening of a wing [E05B 17/00](#))**
- 15/40 . . Safety devices, e.g. detection of obstructions or end positions
- 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
- 15/42 . . Detection using safety edges
- 15/43 . . . responsive to disruption of energy beams, e.g. light or sound
- 15/431 {specially adapted for vehicle windows or roofs}
- 2015/432 {with acoustical sensors}
- 2015/433 {using reflection from the obstruction}
- 2015/434 {with optical sensors}
- 2015/435 {by interruption of the beam}
- 2015/436 {the beam being parallel to the wing edge}
- 2015/437 {the beam being perpendicular to the wing edge}
- 15/44 . . . responsive to changes in electrical conductivity
- 15/443 {specially adapted for vehicle windows or roofs}
- 2015/447 {using switches in serial arrangement}
- 15/46 . . . responsive to changes in electrical capacitance
- 15/47 . . . responsive to changes in fluid pressure
- 15/48 . . . by transmission of mechanical forces, e.g. rigid or movable members
- 2015/483 . . . {for detection during opening}
- 2015/487 . . . {Fault detection of safety edges}
- 15/49 . . specially adapted for mechanisms operated by fluid pressure, e.g. detection by monitoring transmitted fluid pressure ([E05F 15/47](#) takes precedence)
- 15/50 . . using fluid-pressure actuators
- 15/51 . . for folding wings
- 15/53 . . for swinging wings
- 15/54 . . . operated by linear actuators acting on a helical track coaxial with the swinging axis
- 15/56 . . for horizontally-sliding wings
- 15/565 . . . {for railway-cars}
- 15/57 . . for vertically-sliding wings
- 15/59 . . . for overhead wings
- 15/60 . . using electrical actuators
- 15/603 . . using rotary electromotors
- 15/605 . . . for folding wings
- 15/608 . . . for revolving wings
- 15/611 . . . for swinging wings
- 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
- 15/616 operated by push-pull mechanisms
- 15/619 using flexible or rigid rack-and-pinion arrangements
- 15/622 using screw-and-nut mechanisms
- 15/624 using friction wheels
- 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.
- 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