

# 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.

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| <p><b>1/00 Closers or openers for wings, not otherwise provided for in this subclass</b></p> <p>1/002 . {controlled by automatically acting means (for powered-operated mechanisms <a href="#">E05F 15/70</a>)}</p> <p>1/004 . . {by thermostats, rain, wind or noise (<a href="#">E05F 1/006</a> takes precedence)}</p> <p>1/006 . . {by emergency conditions, e.g. fire (operating or controlling mechanisms for physical fire-barriers <a href="#">A62C 2/24</a>)}</p> <p>1/008 . . {by time control}</p> <p>1/02 . gravity-actuated, {e.g. by use of counterweights}</p> <p>1/025 . . {with rectilinearly-moving counterweights}</p> <p>1/04 . . for wings which lift during movement, {operated by their own weight}</p> <p>1/043 . . . {with cams, helical tracks (<a href="#">E05F 1/061</a> takes precedence)}</p> <p>1/046 . . . {with rectilinearly-inclined tracks for sliding wings}</p> <p>1/06 . . . Mechanisms in the shape of hinges or pivots, operated by the weight of the wing</p> <p>1/061 . . . . {with cams or helical tracks}</p> <p>1/063 . . . . {with complementary, substantially identical and slidingly cooperating cam surfaces (<a href="#">E05F 1/066</a> takes precedence)}</p> <p>1/065 . . . . {Cam-and-wheel arrangements}</p> <p>1/066 . . . . {Helical grooves, slots, threads or the like}</p> <p>1/068 . . . . {with inclined pivot-axes}</p> <p>1/08 . spring-actuated, {e.g. for horizontally sliding wings (counterbalancing sliding or lifting wings <a href="#">E05D</a>; springs <i>per se</i> <a href="#">F16F</a>, e.g. gas-springs <a href="#">F16F 9/00</a>)}</p> <p>1/10 . . for swinging wings, {e.g. counterbalance (spring-assisted actuation of lids or covers of refuse receptacles <a href="#">B65F 1/1623</a>)}</p> <p>1/1008 . . . {with a coil spring parallel with the pivot axis (<a href="#">E05F 1/1207</a> takes precedence)}</p> <p>1/1016 . . . . {with a canted-coil torsion spring}</p> <p>1/1025 . . . . {with a compression or traction spring}</p> <p>1/1033 . . . {with a torsion bar (<a href="#">E05F 1/123</a> takes precedence)}</p> <p>1/1041 . . . {with a coil spring perpendicular to the pivot axis (<a href="#">E05F 1/1246</a> takes precedence)}</p> <p>1/105 . . . . {with a compression spring}</p> <p>1/1058 . . . . {for counterbalancing}</p> <p>1/1066 . . . . {with a traction spring}</p> <p>1/1075 . . . . {for counterbalancing}</p> <p>1/1083 . . . {with a leaf or similar spring (<a href="#">E05F 1/1284</a> takes precedence)}</p> <p>1/1091 . . . {with a gas spring (<a href="#">E05F 1/1292</a> takes precedence)}</p> | <p>1/12 . . . Mechanisms in the shape of hinges or pivots, operated by springs {(for hinges with two or more pins <a href="#">E05D 3/06</a>)}</p> <p>1/1207 . . . . {with a coil spring parallel with the pivot axis}</p> <p>1/1215 . . . . . {with a canted-coil torsion spring}</p> <p>1/1223 . . . . . {with a compression or traction spring}</p> <p>1/123 . . . . {with a torsion bar}</p> <p>1/1238 . . . . . {specially adapted for vehicles}</p> <p>1/1246 . . . . {with a coil spring perpendicular to the pivot axis}</p> <p>1/1253 . . . . . {with a compression spring}</p> <p>1/1261 . . . . . {for counterbalancing}</p> <p>1/1269 . . . . . {with a traction spring}</p> <p>1/1276 . . . . . {for counterbalancing}</p> <p>1/1284 . . . . {with a leaf or similar spring}</p> <p>1/1292 . . . . {with a gas spring}</p> <p>1/14 . . . with double-acting springs, e.g. for closing and opening or checking and closing {no material}</p> <p>1/16 . . for sliding wings</p> <p><b>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 <a href="#">E05F 5/00</a>; friction devices in hinges <a href="#">E05D 11/08</a>)</b></p> <p>3/02 . with pneumatic piston brakes (rotary type <a href="#">E05F 3/14</a>)</p> <p>3/04 . with liquid piston brakes (rotary type <a href="#">E05F 3/14</a>)</p> <p>3/06 . . in which a torsion spring rotates a member around an axis perpendicular to the axis of the piston</p> <p>3/08 . . in which a torsion spring rotates a member around an axis arranged in the direction of the axis of the piston</p> <p>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</p> <p>3/102 . . . {with rack-and-pinion transmission between driving shaft and piston within the closer housing}</p> <p>3/104 . . . {with cam-and-slide transmission between driving shaft and piston within the closer housing}</p> <p>3/106 . . . {with crank-arm transmission between driving shaft and piston within the closer housing}</p> <p>3/108 . . . {with piston rod protruding from the closer housing; Telescoping closers}</p> <p>3/12 . . Special devices controlling the circulation of the liquid, e.g. valve arrangement ({<a href="#">E05F 3/223</a> takes precedence}; valves <i>per se</i> <a href="#">F16K</a>)</p> <p>3/14 . with fluid brakes of the rotary type</p> |
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3/16	• with friction brakes	7/08	• Special means for transmitting movements between vertical and horizontal sliding bars, rods, or cables { <a href="#">E05D 15/5208</a> takes precedence}
3/18	• with counteracting springs ( <a href="#">double-acting springs E05F 1/14</a> )	<b>Operating mechanisms for wings</b> (for safeguarding bank teller windows <a href="#">E05G 5/00</a> ; for interconnected louvres <a href="#">E06B 7/086</a> ; for blinds or roll-type closures <a href="#">E06B 9/00</a> )	
3/20	• in hinges	<b>9/00</b>	<b>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 <a href="#">E05C</a>)</b>
3/22	• Additional arrangements for closers, e.g. for holding the wing in opened or other position	<b>11/00</b>	<b>Man-operated mechanisms for operating wings, including those which also operate the fastening (connecting mechanisms for a plurality of wings <a href="#">E05F 17/00</a>)</b>
3/221	• . {Mechanical power-locks, e.g. for holding the wing open or for free-moving zones}	11/02	• for wings in general, e.g. fanlights ( <a href="#">E05F 11/36</a> takes precedence; for windows to be lowered vertically <a href="#">E05F 11/38</a> ; for doors <a href="#">E05F 11/54</a> )
3/222	• . . {electrically operated ( <a href="#">E05F 3/223</a> takes precedence)}	11/04	• . with cords, chains or cables
3/223	• . {Hydraulic power-locks, e.g. with electrically operated hydraulic valves}	11/06	• . . in guide-channels
3/224	• . {for assisting in opening the wing}	11/08	• . with longitudinally-moving bars guided, e.g. by pivoted links, in or on the frame
3/225	• . {mounted at the bottom of wings, e.g. details related to seals, covers, connections to the wings, embedding in the floor}	11/10	• . . Mechanisms by which a handle moves the bar
3/226	• . . {with means to adjust the closed position of the wing}	11/12	• . . Mechanisms by which the bar shifts the wing
3/227	• . {mounted at the top of wings, e.g. details related to closer housings, covers, end caps or rails therefor}	11/14	• . . . directly, i.e. without links, shifting the wing, e.g. by rack and gear or pin and slot
2003/228	• . {Arrangements where the end of the closer arm is sliding in a track}	11/145	• . . . . {by pin and slot}
<b>5/00</b>	<b>Braking devices, e.g. checks; Stops; Buffers; {Dovetails with buffering action}; (construction of pneumatic or liquid braking devices <a href="#">E05F 3/00</a>; combined with devices for holding wings open <a href="#">E05C 17/00</a>; devices for limiting opening of wings or for holding wings open by a movable member extending between frame and wing <a href="#">E05C 17/04</a>)</b>	11/16	• . . . shifting the wing by pivotally-connected members {(moving) in a plane perpendicular to the pivot axis of the wing}
5/003	• {for sliding wings ( <a href="#">E05D 13/04</a> takes precedence)}	11/18	• . . . . consisting of a lever, e.g. an angle lever, only {no material}
5/006	• {for hinges having a cup-shaped fixing part, e.g. for attachment to cabinets or furniture}	11/20	• . . . . consisting of a lever, e.g. an angle lever, and only one additional link {no material}
5/02	• specially for preventing the slamming of {swinging} wings {during final closing movement, e.g. jamb stops}	11/22	• . . . . consisting of a lever, e.g. an angle lever, and two or more additional links in series {no material}
5/022	• . {specially adapted for vehicles, e.g. for hoods or trunks}	11/24	• . . . . shifting the wing by pivotally-connected members {(moving) in a plane parallel to the pivot axis of the wing}
5/025	• . . {specially adapted for vehicle doors}	11/26	• . . . . consisting of a lever, e.g. an angle lever, only {no material}
5/027	• . {with closing action}	11/28	• . . . . consisting of a lever, e.g. an angle lever, and one or more additional links {no material}
5/04	• . hand-operated, {e.g. removable}; operated by centrifugal action {or by high closing speed}	11/30	• . . . . consisting of links in rhomb-form {no material}
2005/043	• . . {operated by centrifugal action at high closing speed}	11/32	• . with rotary bars guided in the frame ( <a href="#">E05F 11/34</a> takes precedence)
2005/046	• . . {hand operated}	11/34	• . with screw mechanisms
5/06	• Buffers {or stops limiting opening of swinging wings, e.g. floor or wall stops} ( <a href="#">E05F 5/02</a> takes precedence)	11/36	• specially designed for passing through a wall
5/08	• . with springs	11/38	• for sliding windows, e.g. vehicle windows, to be opened or closed by vertical movement
5/10	• . with piston brakes	11/382	• . {for vehicle windows ( <a href="#">E05F 11/40</a> - <a href="#">E05F 11/52</a> take precedence)}
5/12	• specially for preventing the closing of a wing before another wing has been closed	11/385	• . . {Fixing of window glass to the carrier of the operating mechanism}
<b>7/00</b>	<b>Miscellaneous accessories for wings (specially adapted for furniture <a href="#">A47B 95/00</a>; door-lifters <a href="#">B66F, E04F 21/00</a>; knobs or handles <a href="#">E05B</a>)</b>	2011/387	• . . . {using arrangements in the window glass, e.g. holes}
7/005	• {Aligning devices for wings}	11/40	• . operated by screw mechanism
7/02	• for raising wings before being turned {(before sliding <a href="#">E05D 15/565</a> )}	11/405	• . . {for vehicle windows}
7/04	• Arrangements affording protection against rattling (with buffering action <a href="#">E05F 5/00</a> )	11/42	• . operated by rack bars and toothed wheels {or other push-pull mechanisms}
7/06	• Devices for taking the weight of the wing, arranged away from the hinge axis		

- 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