

ECLA**EUROPEAN 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.

E05F1/00**Closers or openers for wings, not otherwise provided for in this subclass**

- E05F1/00B . [N: controlled by automatically acting means (for powered-operated mechanisms [E05F15/20](#))] [C9906]
- E05F1/00B2 . . [N: by thermostats, rain, wind or noise ([E05F1/00B4](#) takes precedence)] [N9906]
- E05F1/00B4 . . [N: by emergency conditions, e.g. fire (operating or controlling mechanisms for physical fire-barriers [A62C2/24](#))] [N9906]
- E05F1/00B6 . . [N: by time control] [N9906]
- E05F1/02 . gravity-actuated, [N: e.g. by use of counterweights] [C9707]
- E05F1/02B . . [N: with rectilinearly-moving counterweights] [N9707]
- E05F1/04 . . for wings which lift during movement, [N: operated by their own weight] [C9707]
- E05F1/04B . . . [N: with cams, helical tracks ([E05F1/06B](#) takes precedence)] [N9707]
- E05F1/04D . . . [N: with rectilinearly-inclined tracks for sliding wings] [N9707]
- E05F1/06 . . . Mechanisms in the shape of hinges or pivots, operated by the weight of the wing
- E05F1/06B [N: with cams or helical tracks] [N9705]
- E05F1/06B2 [N: with complementary, substantially identical and slidingly cooperating cam surfaces ([E05F1/06B6](#) takes precedence)] [N9705]
- E05F1/06B4 [N: Cam-and-wheel arrangements] [N9705]
- E05F1/06B6 [N: Helical grooves, slots, threads or the like] [N9705]
- E05F1/06C [N: with inclined pivot-axes] [N9705]
- E05F1/08 . spring-actuated, [N: e.g. for horizontally sliding wings (counterbalancing sliding or lifting wings [E05D](#); springs per se [F16F](#), e.g. gas-springs [F16F9/00](#))]
- E05F1/10 . . for swinging wings, [N: e.g. counterbalance (spring-assisted actuation of lids or covers of refuse receptacles [B65F1/16D](#))] [C9410]
- E05F1/10B . . . [N: with a coil spring parallel with the pivot axis ([E05F1/12B](#) takes precedence)] [N9708]
- E05F1/10B2 [N: with a canted-coil torsion spring] [N9708]
- E05F1/10B4 [N: with a compression or traction spring] [N1204]
- E05F1/10C . . . [N: with a torsion bar ([E05F1/12C](#) takes precedence)] [N9708]
- E05F1/10D . . . [N: with a coil spring perpendicular to the pivot axis ([E05F1/12D](#) takes precedence)] [N9708]

E05F1/10D2	. . . . [N: with a compression spring] [N9708]
E05F1/10D2B	. . . . . [N: for counterbalancing] [N9708]
E05F1/10D4	. . . . [N: with a traction spring] [N9708]
E05F1/10D4B	. . . . . [N: for counterbalancing] [N9708]
E05F1/10E	. . . [N: with a leaf or similar spring (E05F1/12E takes precedence)] [N9708]
E05F1/10F	. . . [N: with a gas spring (E05F1/12F takes precedence)] [N9708]
E05F1/12	. . . Mechanisms in the shape of hinges or pivots, operated by springs [N: for hinges with two or more pins E05D3/06]
E05F1/12B	. . . . [N: with a coil spring parallel with the pivot axis]
E05F1/12B2	. . . . . [N: with a canted-coil torsion spring] [N9510]
E05F1/12B4	. . . . . [N: with a compression or traction spring] [N9510]
E05F1/12C	. . . . [N: with a torsion bar]
E05F1/12C2	. . . . . [N: specially adapted for vehicles] [N9701]
E05F1/12D	. . . . [N: with a coil spring perpendicular to the pivot axis]
E05F1/12D2	. . . . . [N: with a compression spring] [N9701] [C9708]
E05F1/12D2B	. . . . . . [N: for counterbalancing] [N9708]
E05F1/12D4	. . . . . [N: with a traction spring] [N9708]
E05F1/12D4B	. . . . . . [N: for counterbalancing] [N9708]
E05F1/12E	. . . . [N: with a leaf or similar spring] [N9705]
E05F1/12F	. . . . [N: with a gas spring] [N9705]
E05F1/14	. . . with double-acting springs, e.g. for closing and opening or checking and closing [N: no material]
E05F1/16	. . for sliding wings [N1204]

E05F3/00 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 [E05F5/00](#); friction devices in hinges [E05D11/08](#))

E05F3/02	. with pneumatic piston brakes (rotary type E05F3/14)
E05F3/04	. with liquid piston brakes (rotary type E05F3/14)
E05F3/06	. . in which a torsion spring rotates a member around an axis perpendicular to the axis of the piston
E05F3/08	. . in which a torsion spring rotates a member around an axis arranged in the direction of the axis of the piston
E05F3/10	. . with a spring, other than a torsion spring, and a piston, the axes of which are the same or lie in the same direction
E05F3/10B	. . . [N: with rack-and-pinion transmission between driving shaft and piston within the closer housing]
E05F3/10C	. . . [N: with cam-and-slide transmission between driving shaft and piston within the closer housing]
E05F3/10D	. . . [N: with crank-arm transmission between driving shaft and piston within the closer housing]
E05F3/10E	. . . [N: with piston rod protruding from the closer housing; Telescoping closers]
E05F3/12	. . Special devices controlling the circulation of the liquid, e.g. valve arrangement ([N: E05F3/22C takes precedence]; valves per se F16K) [C9707]

- E05F3/14 . with fluid brakes of the rotary type
- E05F3/16 . with friction brakes
- E05F3/18 . with counteracting springs ([double-acting springs E05F1/14](#))
- E05F3/20 . in hinges
- E05F3/22 . Additional arrangements for closers, e.g. for holding the wing in opened or other position
- E05F3/22B . . [N: Mechanical power-locks, e.g. for holding the wing open or for free-moving zones] [N9707]
- E05F3/22B2 . . . [N: electrically operated ([P05F3/22C takes precedence](#))] [N9707] [C1207]
- E05F3/22C . . [N: Hydraulic power-locks, e.g. with electrically operated hydraulic valves] [N9707] [C1207]
- E05F3/22D . . [N: for assisting in opening the wing] [N9707]
- E05F3/22E . . [N: mounted at the bottom of wings, e.g. details related to seals, covers, connections to the wings, embedding in the floor] [N1204]
- E05F3/22E1 . . . [N: with means to adjust the closed position of the wing] [N1204]
- E05F3/22F . . [N: mounted at the top of wings, e.g. details related to closer housings, covers, end caps or rails therefor] [N1204]

- E05F5/00** **Braking devices, e.g. checks; Stops; Buffers; [N: Dovetails with buffering action];**
(construction of pneumatic or liquid braking devices [E05F3/00](#); combined with devices for holding wings open [E05C17/00](#); devices for limiting opening of wings or for holding wings open by a movable member extending between frame and wing [E05C17/04](#))

- E05F5/00A . [N: for sliding wings ([E05D13/04 takes precedence](#))] [N0004]
- E05F5/00B . [N: for hinges having a cup-shaped fixing part, e.g. for attachment to cabinets or furniture] [N0607]

- E05F5/02 . specially for preventing the slamming of [N: swinging] wings [N: during final closing movement, e.g. jamb stops] [C0004]
- E05F5/02A . . [N: specially adapted for vehicles, e.g. for hoods or trunks] [N0004]
- E05F5/02A1 . . . [N: specially adapted for vehicle doors] [N0004]
- E05F5/02B . . [N: with closing action] [N9901]
- E05F5/04 . . hand-operated, [N: e.g. removable]; operated by centrifugal action [N: or by high closing speed] [C9901]

- E05F5/06 . Buffers [N: or stops limiting opening of swinging wings, e.g. floor or wall stops] ([E05F5/02 takes precedence](#)) [C0004]
- E05F5/08 . . with springs
- E05F5/10 . . with piston brakes

- E05F5/12 . specially for preventing the closing of a wing before another wing has been closed

- E05F7/00** **Miscellaneous accessories for wings** (specially adapted for furniture [A47B95/00](#); door-lifters [B66F](#), [E04F21/00](#); knobs or handles [E05B](#)) [C9410]

- E05F7/00C . [N: Aligning devices for wings]
- E05F7/02 . for raising wings before being turned [N: before sliding [E05D15/56B](#)]
- E05F7/04 . Arrangements affording protection against rattling (with buffering action [E05F5/00](#))
- E05F7/06 . Devices for taking the weight of the wing, arranged away from the hinge axis
- E05F7/08 . Special means for transmitting movements between vertical and horizontal sliding bars, rods, or cables [N: ([E05D15/52C](#) takes precedence)]

Guide heading: **Operating mechanisms for wings** (for safeguarding bank teller windows [E05G5/00](#); for interconnected louvres [E06B7/086](#); for blinds or roll-type closures [E06B9/00](#))

E05F9/00 **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](#))

E05F11/00 **Man-operated mechanisms for operating wings, including those which also operate the fastening** (connecting mechanisms for a plurality of wings [E05F17/00](#))

- E05F11/02 . for wings in general, e.g. fanlights ([E05F11/36](#) takes precedence; for windows to be lowered vertically [E05F11/38](#); for doors [E05F11/54](#))
- E05F11/04 . . with cords, chains or cables
- E05F11/06 . . . in guide-channels
- E05F11/08 . . with longitudinally-moving bars guided, e.g. by pivoted links, in or on the frame
- E05F11/10 . . . Mechanisms by which a handle moves the bar
- E05F11/12 . . . Mechanisms by which the bar shifts the wing
- E05F11/14 directly, i.e. without links, shifting the wing, e.g. by rack and gear or pin and slot [[C9901](#)]
- E05F11/14B [N: by pin and slot]
- E05F11/16 shifting the wing by pivotally-connected members [N: (moving) in a plane perpendicular to the pivot axis of the wing]
- E05F11/18 consisting of a lever, e.g. an angle lever, only [N: no material]
- E05F11/20 consisting of a lever, e.g. an angle lever, and only one additional link [N: no material]
- E05F11/22 consisting of a lever, e.g. an angle lever, and two or more additional links in series [N: no material]
- E05F11/24 shifting the wing by pivotally-connected members [N: (moving) in a plane parallel to the pivot axis of the wing]
- E05F11/26 consisting of a lever, e.g. an angle lever, only [N: no material]
- E05F11/28 consisting of a lever, e.g. an angle lever, and one or more additional links [N: no material]
- E05F11/30 consisting of links in rhomb-form [N: no material]
- E05F11/32 . . with rotary bars guided in the frame ([E05F11/34](#) takes precedence)
- E05F11/34 . . with screw mechanisms
- E05F11/36 . specially designed for passing through a wall

- E05F11/38 . for sliding windows, e.g. vehicle windows, to be opened or closed by vertical movement
- E05F11/38B . . [N: for vehicle windows ([E05F11/40](#) to [E05F11/52](#) take precedence)]
- E05F11/38B2 . . . [N: Fixing of window glass to the carrier of the operating mechanism] [N9903]
- E05F11/40 . . operated by screw mechanism
- E05F11/40B . . . [N: for vehicle windows]
- E05F11/42 . . operated by rack bars and toothed wheels [N: or other push-pull mechanisms] [C9510]
- E05F11/42B . . . [N: for vehicle windows]
- E05F11/42B2 [N: Flexible rack-and-pinion arrangements] [N9510]
- E05F11/44 . . operated by one or more lifting arms
- E05F11/44B . . . [N: for vehicle windows]
- E05F11/46 . . operated by lazy-tong mechanism
- E05F11/46B . . . [N: for vehicle windows]
- E05F11/48 . . operated by cords or chains [N: or other flexible elongated pulling elements, e.g. tapes] [C9510]
- E05F11/48B . . . [N: for vehicle windows]
- E05F11/48B2 [N: by cables] [N9510]
- E05F11/48B2B [N: with cable tensioners] [N9602]
- E05F11/48B2D [N: with one cable connection to the window glass] [N0208]
- E05F11/48B2F [N: with two cable connections to the window glass] [N0208]
- E05F11/50 . . Crank gear with clutches or retaining brakes, for operating window mechanisms
- E05F11/50B . . . [N: for vehicle windows]
- E05F11/52 . . combined with means for producing an additional movement, e.g. a horizontal or a rotary movement
- E05F11/52B . . . [N: for vehicle windows]
- E05F11/53 . for sliding windows, e.g. vehicle windows, to be opened or closed by horizontal movement
- E05F11/53B . . [N: for vehicle windows]
- E05F11/54 . for doors
- E05F13/00** **Mechanisms operated by the movement or weight of a person or vehicle (through power-operated wing-operating mechanisms [E05F15/00](#))**
- E05F13/02 . by devices, e.g. lever arms, affected by the movement of the user
- E05F13/04 . by platforms lowered by the weight of the user
- E05F15/00** **Power-operated mechanisms for wings [N: (for hatch covers [B63B19/14](#); for elevator doors [B66B13/00](#); motor-operated devices for completing closing or initiating opening of a wing [E05B17/00H2](#); limit switches [H01H3/16](#))] [C9611]**
- E05F15/00B . [N: Safety devices, e.g. safety couplings, detection of obstructions or end position ([E05F15/20](#) takes precedence); anti-dropping devices [E05D13/00B](#); by current overload [H02H7/085B](#)] [C9611]

- E05F15/00B1 . . [N: specially adapted for vehicle windows or roofs ([E05F15/00B2](#) to [E05F15/00B10](#) take precedence)] [N9708]
- E05F15/00B2 . . [N: specially adapted for mass transit vehicles ([E05F15/00B4](#) to [E05F15/00B10](#) take precedence)] [N9611]
- E05F15/00B4 . . [N: Detection by means of monitoring transmitted force or torque ([E05F15/00B6K](#), [E05F15/00B10](#) take precedence); Safety, e.g. slip, couplings] [C9611]
- E05F15/00B6 . . [N: Detection using safety edges] [N9410]
- E05F15/00B6B . . . [N: by disruption of energy beams, e.g. light, sound] [N9410]
- E05F15/00B6B2 [N: specially adapted for vehicle windows or roofs] [N9702]
- E05F15/00B6D [N: by change in electrical conductivity] [N9410]
- E05F15/00B6D2 [N: specially adapted for vehicle windows or roofs] [N9702]
- E05F15/00B6F [N: by change in electrical capacity] [N9410]
- E05F15/00B6H [N: by change in fluid pressure] [N9410]
- E05F15/00B6K [N: by transmission of mechanical forces, e.g. rigid, movable members] [N9410]
- E05F15/00B10 . . [N: specially adapted for pressure medium-operated mechanisms for wings, e.g. detection by means of monitoring transmitted fluid pressure ([E05F15/00B6H](#) takes precedence)] [N9611] [C9702]

- E05F15/02 . with pressure medium
- E05F15/02B . . [N: for folding wings]
- E05F15/04 . . for swinging wings
- E05F15/04B . . . [N: specially adapted for use in vehicles] [N9702]
- E05F15/04B2 [N: for railway-cars or mass transit vehicles] [N9702]
- E05F15/04D [N: operated by linear motors acting on a helical track coaxial with the suringing axis] [N9701]

- E05F15/06 . . for horizontally-sliding wings
- E05F15/06B . . . [N: for railway-cars]
- E05F15/08 . . for vertically-sliding wings
- E05F15/08B . . . [N: for overhead wings]
- E05F15/08C . . . [N: for vehicle windows]

- E05F15/10 . with rotary electromotors [N: (detection of end position by striking, safety couplings [E05F15/00B4](#))] [C9611]
- E05F15/10B . . [N: for folding wings]
- E05F15/10D . . [N: for revolving wings] [N9804]
- E05F15/12 . . for swinging wings
- E05F15/12B . . . [N: operated by meshing gear wheels, one of which being mounted at the wing pivot axis; the motor acting directly on the wing pivot axis] [N9603]
- E05F15/12D . . . [N: operated by push-pull mechanisms] [N9603] [C9701]
- E05F15/12D1 [N: by flexible or rigid rack-and-pinion arrangements] [N9603]
- E05F15/12D3 [N: by screw-nut mechanisms] [N9603]
- E05F15/12D5 [N: by friction wheels] [N9701]
- E05F15/12F . . . [N: operated by flexible elongated pulling elements, e.g. belts, chains] [N9603]
- E05F15/12H . . . [N: operated by swinging arms] [N9603]
- E05F15/14 . . for horizontally-sliding wings

- E05F15/14B . . . [N: for railway-cars]
- E05F15/14D . . . [N: operated by push-pull mechanisms, e.g. friction wheels, flexible or rigid rack-and-pinion arrangements ([E05F15/14B](#), [E05F15/14H](#), [E05F15/14J](#) take precedence)] [N9410]
- E05F15/14D2 [N: allowing or involving an additional movement of the wing] [N9410]
- E05F15/14F [N: operated by flexible elongated pulling elements, e.g. belts, chains ([E05F15/14B](#) takes precedence)] [N9410]
- E05F15/14F2 [N: allowing or involving an additional movement] [N9410]
- E05F15/14H [N: operated by swinging arms ([E05F15/14B](#) takes precedence)] [N9410]
- E05F15/14J [N: operated by screw mechanisms ([E05F15/14B](#) takes precedence)] [N9410]
- E05F15/16 . . for vertically-sliding wings
- E05F15/16B . . . [N: for overhead wings]
- E05F15/16B1 [N: operated by flexible or rigid rack-and-pinion arrangements] [N9502]
- E05F15/16B3 [N: operated by screw mechanisms] [N9502]
- E05F15/16B5 [N: operated by friction wheels] [N9502]
- E05F15/16B7 [N: operated by swinging lever arms] [N9502]
- E05F15/16B9 [N: operated by flexible elongated pulling elements, e.g. belts ([E05F15/16B1](#) takes precedence)] [N9502]
- E05F15/16B9B [N: by chains] [N9502]
- E05F15/16B9D [N: by cables or ropes] [N9502]
- E05F15/16C . . . [N: for vehicle windows]
- E05F15/16C1 [N: enabling manual drive, e.g. in case of power failure] [N9701]
- E05F15/16C3 [N: Control circuits therefor] [N9705]
- E05F15/16C5 [N: Specially adapted motor units, e.g. geared motors] [N9705]
- E05F15/18 . . with other electrical means, e.g. solenoids [N: or linear motors] [C9410]
- E05F15/20 . . controlled by automatically-acting means, e.g. by photocells, by electric waves, by thermostats, by rain, by fire, [N: by remote or time control] [C9410]
- E05F15/20B . . . [N: by thermostats, rain, wind or noise ([E05F15/20C](#) takes precedence)] [C9410]
- E05F15/20C . . . [N: by emergency conditions, e.g. fire (operating or controlling mechanisms for physical fire-barriers [A62C2/24](#); locks actuating in response to heat [E05B65/10F](#))] [N9410] [C9906]
- E05F15/20D . . . [N: by detection of movement or presence of persons or objects] [N9410]
- E05F15/20D1 [N: with photocells] [N9410]
- E05F15/20D3 [N: by the weight or other physical contact of a person or object] [N9410]
- E05F15/20D5 [N: reacting to a device carried by a person or object, e.g. a magnet or reflector ([E05F15/20E](#) takes precedence)] [N9410]
- E05F15/20E . . . [N: by remote wireless control] [N9410]
- E05F15/20E1 [N: with light beams] [N9410]
- E05F15/20F . . . [N: by time control] [N9410]
- E05F17/00** . . **Special devices for shifting a plurality of wings operated simultaneously (for simultaneously moving a plurality of interconnected ventilating lamellae [E06B7/086](#))**
- E05F17/00B . . [N: of prison cell doors]

E05F17/00C . [N: for wings which lie one behind the other when closed]

E05F17/00D . [N: for wings which abut when closed]