CLAIMS

1. A hinge device (10) for a folding door (14), with the folding door (14) including two door panels (12) each having an inner end (24), with the hinge device (10) adapted for connecting the inner ends (24) of the two door panels (12) to allow the two door panels (12) to pivot synchronously upon movement of one of the two door panels (12), with the hinge device (10) comprising:

two installation strips (26), with each of the two installation strips (26) extending in a longitudinal direction and including a first side wall (36), a second side wall (37) spaced from the first side wall (36) in a thickness direction perpendicular to the longitudinal direction, and a connection wall (38) connected between the first and second side walls (36, 37), with each of the first and second side walls (36, 37) including inner and outer ends (40, 42) spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends (42) of the first and second side walls (36, 37) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) in the width direction, with an installation slot (44) defined between the outer ends (42) of the first and second side walls (36, 37) and adapted for receiving the inner end (24) of an associated door panel (12), with each of the two installation strips (26) further including a toothed portion (50) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the first side wall (36) thereof, with the toothed portions (50) of the two installation strips (26) meshed with each other; and

a connection strip (28) extending in the longitudinal direction and including a cover portion (64) and two shaft arms (60) located in the cover portion (64) and spaced from each other, with each of the two shaft arms (60) including an outer end connected to the cover portion (64), with each of the two shaft arms (60) further including an

inner end forming a shaft portion (62), with shaft portion (62) of each of the two shaft arms (60) engaged in the toothed portion (50) of one of the two installation strips (26), with the two installation strips (26) being pivotable relative to the connection strip (28) between a first position and a second position, allowing the two door panels (12) to pivot synchronously upon movement of one of the two door panels (12),

wherein when the two installation strips (26) are in the first position, the door panels (12) are unfolded, and the connection strip (28) is located in the two installation strips (26),

wherein when the two installation strips (26) are in the second position, the door panels (12) are folded, and the cover portion (64) of the connection strip (28) is partially located outside of the two installation strips (26),

characterized by:

with each of the two installation strips (26) further including a shield (52) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the connection wall (38) thereof, with a coupling slot (54) defined by the shield (52) and an inner face of an associated toothed portion (50) and being substantially semi-circular in cross section, with each shaft portion (62) of the connection strip (28) engaged in the coupling slot (54) of one of the two installation strips (26), and

with the coupling slot (54) of each of the two installation strips (26) having a center located between a distal end of the shield (52) and the second side wall (37) of the installation strip (26).

2. A hinge device (10) for a folding door (14), with the folding door (14) including two door panels (12) each having an inner end (24), with the hinge device (10) adapted for connecting the inner ends (24) of the two door panels (12) to allow the two

door panels (12) to pivot synchronously upon movement of one of the two door panels (12), with the hinge device (10) comprising:

two installation strips (26), with each of the two installation strips (26) extending in a longitudinal direction and including a first side wall (36), a second side wall (37) spaced from the first side wall (36) in a thickness direction perpendicular to the longitudinal direction, and a connection wall (38) connected between the first and second side walls (36, 37), with each of the first and second side walls (36, 37) including inner and outer ends (40, 42) spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends (42) of the first and second side walls (36, 37) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) in the width direction, with an installation slot (44) defined between the outer ends (42) of the first and second side walls (36, 37) and adapted for receiving the inner end (24) of an associated door panel (12), with each of the two installation strips (26) further including a toothed portion (50) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the first side wall (36) thereof, with the toothed portions (50) of the two installation strips (26) meshed with each other; and

a connection strip (28) extending in the longitudinal direction and including a cover portion (64) and two shaft arms (60) located in the cover portion (64) and spaced from each other, with each of the two shaft arms (60) including an outer end connected to the cover portion (64), with each of the two shaft arms (60) further including an inner end forming a shaft portion (62), with shaft portion (62) of each of the two shaft arms (60) engaged in the toothed portion (50) of one of the two installation strips (26), with the two installation strips (26) being pivotable relative to the connection strip (28) between a first position and a second position, allowing the two door panels (12) to pivot synchronously upon movement of one of the two door panels (12),

wherein when the two installation strips (26) are in the first position, the door panels (12) are unfolded, and the connection strip (28) is located in the two installation strips (26),

wherein when the two installation strips (26) are in the second position, the door panels (12) are folded, and the cover portion (64) of the connection strip (28) is partially located outside of the two installation strips (26),

characterized by:

with each of the two installation strips (26) further including an extension (46) extending from the inner end (40) of the first side wall (36) thereof toward but spaced from the second side wall (37) thereof, with the extension (46) of each of the two installation strips (26) including a distal end (48), and with the toothed portion (50) and the distal end (48) of the extension (46) of each of the two installation strips (26) spaced from each other and defining an opening (56) therebetween,

wherein when the two installation strips (26) are in the first position, the extensions (46) of the two installation strips (26) abut with each other, and the distal ends (48) of the extensions (46) are located at a middle of the cover portion (64) of the connection strip (28), and

wherein when the two installation strips (26) are in the second position, the cover portion (64) of the connection strip (28) is located between the distal ends (48) of the extensions (46) of the two installation strips (26).

3. The hinge device according to claim 2, characterized by:

with each of the two installation strips (26) further including a shield (52) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the connection wall (38) thereof, with a coupling slot (54) defined by the shield (52) and an inner face of an associated toothed portion (50) and being substantially semi-circular in cross section, with each of the shaft portions (62) of the

connection strip (28) engaged in the coupling slot (54) of one of the two installation strips (26).

4. A hinge device (10) for a folding door (14), with the folding door (14) including two door panels (12) each having an inner end (24), with the hinge device (10) adapted for connecting the inner ends (24) of the two door panels (12) to allow the two door panels (12) to pivot synchronously upon movement of one of the two door panels (12), with the hinge device (10) comprising:

two installation strips (26), with each of the two installation strips (26) extending in a longitudinal direction and including a first side wall (36), a second side wall (37) spaced from the first side wall (36) in a thickness direction perpendicular to the longitudinal direction, and a connection wall (38) connected between the first and second side walls (36, 37), with each of the first and second side walls (36, 37) including inner and outer ends (40, 42) spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends (42) of the first and second side walls (36, 37) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) in the width direction, with an installation slot (44) defined between the outer ends (42) of the first and second side walls (36, 37) and adapted for receiving the inner end (24) of an associated door panel (12), with each of the two installation strips (26) further including a toothed portion (50) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the first side wall (36) thereof, with the toothed portions (50) of the two installation strips (26) meshed with each other; and

a connection strip (28) extending in the longitudinal direction and including a cover portion (64) and two shaft arms (60) located in the cover portion (64) and spaced from each other, with each of the two shaft arms (60) including an outer end connected to the cover portion (64), with each of the two shaft arms (60) further including an

inner end forming a shaft portion (62), with shaft portion (62) of each of the two shaft arms (60) engaged in the toothed portion (50) of one of the two installation strips (26), with the two installation strips (26) being pivotable relative to the connection strip (28) between a first position and a second position, allowing the two door panels (12) to pivot synchronously upon movement of one of the two door panels (12),

wherein when the two installation strips (26) are in the first position, the door panels (12) are unfolded, and the connection strip (28) is located in the two installation strips (26),

wherein when the two installation strips (26) are in the second position, the door panels (12) are folded, and the cover portion (64) of the connection strip (28) is partially located outside of the two installation strips (26),

with each of the two installation strips (26) further including a shield (52) extending from the inner end (40) of the second side wall (37) thereof toward but spaced from the connection wall (38) thereof, with a coupling slot (54) defined by the shield (52) and an inner face of an associated toothed portion (50) and being substantially semi-circular in cross section, with each shaft portion (62) of the connection strip (28) engaged in the coupling slot (54) of one of the two installation strips (26),

characterized by:

with a spacing between centers of the shaft portions (62) of the connection strip (28) being slightly smaller than a spacing between centers of the toothed portions (50) of the two installation strips (26), and with each shaft portion (62) having an outer diameter smaller than an inner diameter of the coupling slot 54 of an associated one of the two installation strips (26).

5. The hinge device according to claim 4, characterized by:

with each of the two installation strips (26) further including an extension (46) extending from the inner end (40) of the first side wall (36) thereof toward but spaced from the second side wall (37) thereof, with the extension (46) of each of the two installation strips (26) including a distal end (48), with the toothed portion (50) and the distal end (48) of the extension (46) of each of the two installation strips (26) spaced from each other and defining an opening (56) therebetween, with the cover portion (64) including two arc-shaped sections (69), with each of the two arc-shaped sections (69) connected to the outer end of a corresponding shaft arm (60) and having a center located in one of the shaft portions (62) or one of the coupling slots (54), and with the two arc-shaped sections (69) connected with each other to form a recessed portion (66),

wherein when the two installation strips (26) are in the first position, the distal ends (48) of the extensions (46) of the two installation strips (26) are received in the recessed portion (66) of the cover portion (64) of the connection strip (28), and

with the cover portion (64) having substantially C-shaped cross sections, with the cover portion (64) including two ends (67) protruding beyond the two shaft arms (60), with each of the two ends (67) of the cover portion (64) having a distal end, with the two shaft arms (60) located between the two ends (67) of the cover portion (64), with centers of the shaft portions (62) located intermediate the two shaft arms (60) and the distal ends of the two ends (67) of the cover portion (64) in a direction perpendicular to the two shaft arms (60), with a length of each of the two ends (67) of the cover portion (64) beyond an associated one of the two shaft arms (60) corresponding to the shield (52) of an associated installation strip (26) when the two installation strips (26) are in the second position in which the two door panels (12) are folded.

6. The hinge device according to claim 4, characterized by:

with the coupling slot (54) of each of the two installation strips (26) having a center located between a distal end of the shield (52) and the second side wall (37) of the installation strip (26).

7. The hinge device according to claim 4, characterized by:

with each of the two installation strips (26) including an upper section (30), a lower section (32), and an intermediate section (34) between the upper and lower sections (30, 32), with the toothed portion (50) of each of the two installation strips (26) including a plurality of teeth (51) formed on an outer face thereof, with a number of the plurality of teeth (51) of the toothed portion (50) at the intermediate section (34) of each of the two installation strips (26) being less than a number of the plurality of teeth (51) of the toothed portion (50) at each of the upper and lower sections (30, 32).

8. The hinge device according to claim 2, characterized by:

with each of the two installation strips (26) including first and second installation strip members (26a, 26b), with the first installation strip member (26a) including the second side wall (37) and the connection wall (38), with the second installation strip member (26b) including the first side wall (36), with the first installation strip member (26a) including two first hook portions (80), with the second installation strip member (26b) including two second hook portions (82) respectively engaged with the first hook portions (80) of the first installation strip member (26a).

9. The hinge device according to claim 2, characterized by:

with the outer ends (42) of the first and second side walls (36, 37) of each of the two installation strips (26) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) to form two extension ears (84), with the installation slot (44) of each of the two installation strips (26) defined between the two extending ears (84), with a coupling strip (86) mounted in the installation slot (44) and including a coupling slot (87), with the

coupling slot (87) adapted to receive the inner end (24) of an associated door panel (12).

10. The hinge device according to claim 2, characterized by:

with the connection wall (38) of each of the two installation strips (26) including a hole (47), with a screw (45) adapted to extend through the hole (47) to fix each of the two installation strips (26) to the inner end (24) of an associated door panel (12).

11. The hinge device according to claim 1, characterized by:

with each of the two installation strips (26) including an upper section (30), a lower section (32), and an intermediate section (34) between the upper and lower sections (30, 32), with the toothed portion (50) of each of the two installation strips (26) including a plurality of teeth (51) formed on an outer face thereof, with a number of the plurality of teeth (51) of the toothed portion (50) at the intermediate section (34) of each of the two installation strips (26) being less than a number of the plurality of teeth (51) of the toothed portion (50) at each of the upper and lower sections (30, 32).

12. The hinge device according to claim 4, characterized by:

with each of the two installation strips (26) including an upper section (30), a lower section (32), and an intermediate section (34) between the upper and lower sections (30, 32), with the toothed portion (50) of each of the two installation strips (26) including a plurality of teeth (51) formed on an outer face thereof, with a number of the plurality of teeth (51) of the toothed portion (50) at the intermediate section (34) of each of the two installation strips (26) being less than a number of the plurality of teeth (51) of the toothed portion (50) at each of the upper and lower sections (30, 32).

13. The hinge device according to claim 1, characterized by:

with each of the two installation strips (26) including first and second installation strip members (26a, 26b), with the first installation strip member (26a)

including the second side wall (37) and the connection wall (38), with the second installation strip member (26b) including the first side wall (36), with the first installation strip member (26a) including two first hook portions (80), with the second installation strip member (26b) including two second hook portions (82) respectively engaged with the first hook portions (80) of the first installation strip member (26a).

14. The hinge device according to claim 4, characterized by:

with each of the two installation strips (26) including first and second installation strip members (26a, 26b), with the first installation strip member (26a) including the second side wall (37) and the connection wall (38), with the second installation strip member (26b) including the first side wall (36), with the first installation strip member (26a) including two first hook portions (80), with the second installation strip member (26b) including two second hook portions (82) respectively engaged with the first hook portions (80) of the first installation strip member (26a).

15. The hinge device according to claim 1, characterized by:

with the outer ends (42) of the first and second side walls (36, 37) of each of the two installation strips (26) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) to form two extension ears (84), with the installation slot (44) of each of the two installation strips (26) defined between the two extending ears (84), with a coupling strip (86) mounted in the installation slot (44) and including a coupling slot (87), with the coupling slot (87) adapted to receive the inner end (24) of an associated door panel (12).

16. The hinge device according to claim 4, characterized by:

with the outer ends (42) of the first and second side walls (36, 37) of each of the two installation strips (26) respectively protruding from the connection walls (38) and away from the inner ends (40) of the first and second side walls (36, 37) to form

two extension ears (84), with the installation slot (44) of each of the two installation strips (26) defined between the two extending ears (84), with a coupling strip (86) mounted in the installation slot (44) and including a coupling slot (87), with the coupling slot (87) adapted to receive the inner end (24) of an associated door panel (12).

17. The hinge device according to claim 1, characterized by:

with the connection wall (38) of each of the two installation strips (26) including a hole (47), with a screw (45) adapted to extend through the hole (47) to fix each of the two installation strips (26) to the inner end (24) of an associated door panel (12).

18. The hinge device according to claim 4, characterized by:

with the connection wall (38) of each of the two installation strips (26) including a hole (47), with a screw (45) adapted to extend through the hole (47) to fix each of the two installation strips (26) to the inner end (24) of an associated door panel (12).

Claims

1. A hinge device for a folding door, with the folding door including two door panels each having an inner end, with the hinge device adapted for connecting the inner ends of the two door panels to allow the two door panels to pivot synchronously upon movement of one of the two door panels, with the hinge device comprising:

two installation strips, with each of the two installation strips extending in a longitudinal direction and including a first side wall, a second side wall spaced from the first side wall in a thickness direction perpendicular to the longitudinal direction, and a connection wall connected between the first and second side walls, with each of the first and second side walls including inner and outer ends spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends of the first and second side walls respectively protruding from the connection walls and away from the inner ends of the first and second side walls in the width direction, with an installation slot defined between the outer ends of the first and second side walls and adapted for receiving the inner end of an associated door panel, with each of the two installation strips further including a toothed portion extending from the inner end of the second side wall thereof toward but spaced from the first side wall thereof, with the toothed portions of the two installation strips meshed with each other; and

a connection strip extending in the longitudinal direction and including a cover portion and two shaft arms located in the cover portion and spaced from each other, with each of the two shaft arms including an outer end connected to the cover portion, with each of the two shaft arms further including an inner end forming a shaft portion, with shaft portion of each of the two shaft arms engaged in the toothed portion of one of the two installation strips, with the two installation strips being pivotable relative to the connection strip between a first position and a second position, allowing the two door panels to pivot synchronously upon movement of one of the two door panels;

wherein when the two installation strips are in the first position, the door panels are unfolded, and the connection strip is located in the two installation strips, and

wherein when the two installation strips are in the second position, the door panels are folded, and the cover portion of the connection strip is partially located outside of the two installation strips,

with each of the two installation strips further including a shield extending from the inner end of the second side wall thereof toward but spaced from the connection wall thereof, with a coupling slot defined by the shield and an inner face of an associated toothed portion

and being substantially semi-circular in cross section, with each shaft portion of the connection strip engaged in the coupling slot of one of the two installation strips, and

with-the coupling slot of each of the two installation strips having a center located between a distal end of the shield and the second side wall of the installation strip.

2. The hinge device according to claim 1, with each of the two installation strips including an upper section, a lower section, and an intermediate section between the upper and lower sections, with the toothed portion of each of the two installation strips including a plurality of teeth formed on an outer face thereof, with a number of the plurality of teeth of the toothed portion at the intermediate section of each of the two installation strips being less than a number of the plurality of teeth of the toothed portion at each of the upper and lower sections.

3. The hinge device according to claim 1, with each of the two installation strips including first and second installation strip members, with the first installation strip member including the second side wall and the connection wall, with the second installation strip member including the first side wall, with the first installation strip member including two first hook portions, with the second installation strip member including two second hook portions respectively engaged with the first hook portions of the first installation strip member.

4. The hinge device according to claim 1, with the outer ends of the first and second side walls of each of the two installation strips respectively protruding from the connection walls and away from the inner ends of the first and second side walls to form two extension ears, with the installation slot of each of the two installation strips defined between the two extending ears, with a coupling strip mounted in the installation slot and including a coupling slot, with the coupling slot adapted to receive the inner end of an associated door panel.

5. The hinge device according to claim 1, with the connection wall of each of the two installation strips including a hole, with a screw adapted to extend through the hole to fix each of the two installation strips to the inner end of an associated door panel.

6. A hinge device for a folding door, with the folding door including two door panels each having an inner end, with the hinge device adapted for connecting the inner ends of the two door panels to allow the two door panels to pivot synchronously upon movement of one of the two door panels, with the hinge device comprising:

two installation strips, with each of the two installation strips extending in a longitudinal direction and including a first side wall, a second side wall spaced from the first side wall in a thickness direction perpendicular to the longitudinal direction, and a connection

wall connected between the first and second side walls, with each of the first and second side walls including inner and outer ends spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends of the first and second side walls respectively protruding from the connection walls and away from the inner ends of the first and second side walls in the width direction, with an installation slot defined between the outer ends of the first and second side walls and adapted for receiving the inner end of an associated door panel, with each of the two installation strips further including a toothed portion extending from the inner end of the second side wall thereof toward but spaced from the first side wall thereof, with the toothed portions of the two installation strips meshed with each other; and

a connection strip extending in the longitudinal direction and including a cover portion and two shaft arms located in the cover portion and spaced from each other, with each of the two shaft arms including an outer end connected to the cover portion, with each of the two shaft arms further including an inner end forming a shaft portion, with shaft portion of each of the two shaft arms engaged in the toothed portion of one of the two installation strips, with the two installation strips being pivotable relative to the connection strip between a first position and a second position, allowing the two door panels to pivot synchronously upon movement of one of the two door panels,

wherein when the two installation strips are in the first position, the door panels are unfolded, and the connection strip is located in the two installation strips,

wherein when the two installation strips are in the second position, the door panels are folded, and the cover portion of the connection strip is partially located outside of the two installation strips,

with each of the two installation strips further including an extension extending from the inner end of the first side wall thereof toward but spaced from the second side wall thereof, with the extension of each of the two installation strips including a distal end, and with the toothed portion and the distal end of the extension of each of the two installation strips spaced from each other and defining an opening therebetween,

wherein when the two installation strips are in the first position, the extensions of the two installation strips abut with each other, and the distal ends of the extensions are located at a middle of the cover portion of the connection strip, and

wherein when the two installation strips are in the second position, the cover portion of the connection strip is located between the distal ends of the extensions of the two installation strips.

7. The hinge device according to claim 6, with each of the two installation strips further including a shield extending from the inner end of the second side wall thereof toward but spaced from the connection wall thereof, with a coupling slot defined by the shield and an inner face of an associated toothed portion and being substantially semi-circular in cross section, with each of the shaft portions of the connection strip engaged in the coupling slot of one of the two installation strips.

8. The hinge device according to claim 6, with each of the two installation strips including first and second installation strip members, with the first installation strip member including the second side wall and the connection wall, with the second installation strip member including the first side wall, with the first installation strip member including two first hook portions, with the second installation strip member including two second hook portions respectively engaged with the first hook portions of the first installation strip member.

9. The hinge device according to claim 6, with the outer ends of the first and second side walls of each of the two installation strips respectively protruding from the connection walls and away from the inner ends of the first and second side walls to form two extension ears, with the installation slot of each of the two installation strips defined between the two extending ears, with a coupling strip mounted in the installation slot and including a coupling slot, with the coupling slot adapted to receive the inner end of an associated door panel.

10. The hinge device according to claim 6, with the connection wall of each of the two installation strips including a hole, with a screw adapted to extend through the hole to fix each of the two installation strips to the inner end of an associated door panel.

11. The hinge device according to claim 6, with each of the two installation strips including an upper section, a lower section, and an intermediate section between the upper and lower sections, with the toothed portion of each of the two installation strips including a plurality of teeth formed on an outer face thereof, with a number of the plurality of teeth of the toothed portion at the intermediate section of each of the two installation strips being less than a number of the plurality of teeth of the toothed portion at each of the upper and lower sections.

12. A hinge device for a folding door, with the folding door including two door panels each having an inner end, with the hinge device adapted for connecting the inner ends of the two door panels to allow the two door panels to pivot synchronously upon movement of one of the two door panels, with the hinge device comprising:

two installation strips, with each of the two installation strips extending in a longitudinal direction and including a first side wall, a second side wall spaced from the first side wall in a thickness direction perpendicular to the longitudinal direction, and a connection wall connected between the first and second side walls, with each of the first and second side walls including inner and outer ends spaced from each other in a width direction perpendicular to the longitudinal and thickness directions, with the outer ends of the first and second side walls respectively protruding from the connection walls and away from the inner ends of the first and second side walls in the width direction, with an installation slot defined between the outer ends of the first and second side walls and adapted for receiving the inner end of an associated door panel, with each of the two installation strips further including a toothed portion extending from the inner end of the second side wall thereof toward but spaced from the first side wall thereof, with the toothed portions of the two installation strips meshed with each other; and

a connection strip extending in the longitudinal direction and including a cover portion and two shaft arms located in the cover portion and spaced from each other, with each of the two shaft arms including an outer end connected to the cover portion, with each of the two shaft arms further including an inner end forming a shaft portion, with shaft portion of each of the two shaft arms engaged in the toothed portion of one of the two installation strips, with the two installation strips being pivotable relative to the connection strip between a first position and a second position, allowing the two door panels to pivot synchronously upon movement of one of the two door panels,

wherein when the two installation strips are in the first position, the door panels are unfolded, and the connection strip is located in the two installation strips,

wherein when the two installation strips are in the second position, the door panels are folded, and the cover portion of the connection strip is partially located outside of the two installation strips,

with each of the two installation strips further including a shield extending from the inner end of the second side wall thereof toward but spaced from the connection wall thereof, with a coupling slot defined by the shield and an inner face of an associated toothed portion and being substantially semi-circular in cross section, with each shaft portion of the connection strip engaged in the coupling slot of one of the two installation strips,

with a spacing between centers of the shaft portions of the connection strip being slightly smaller than a spacing between centers of the toothed portions of the two installation

strips, and with each shaft portion having an outer diameter smaller than an inner diameter of the coupling slot of an associated one of the two installation strips.

13. The hinge device according to claim 12, with each of the two installation strips further including an extension extending from the inner end of the first side wall thereof toward but spaced from the second side wall thereof, with the extension of each of the two installation strips including a distal end, with the toothed portion and the distal end of the extension of each of the two installation strips spaced from each other and defining an opening therebetween, with the cover portion including two arc-shaped sections, with each of the two arc-shaped sections connected to the outer end of a corresponding shaft arm and having a center located in one of the shaft portions or one of the coupling slots, and with the two arc-shaped sections connected with each other to form a recessed portion,

wherein when the two installation strips are in the first position, the distal ends of the extensions of the two installation strips are received in the recessed portion of the cover portion of the connection strip, and

with the cover portion having substantially C-shaped cross sections, with the cover portion including two ends protruding beyond the two shaft arms, with each of the two ends of the cover portion having a distal end, with the two shaft arms located between the two ends of the cover portion, with centers of the shaft portions located intermediate the two shaft arms and the distal ends of the two ends of the cover portion in a direction perpendicular to the two shaft arms, with a length of each of the two ends of the cover portion beyond an associated one of the two shaft arms corresponding to the shield of an associated installation strip when the two installation strips are in the second position in which the two door panels are folded.

14. The hinge device according to claim 12, with the coupling slot of each of the two installation strips having a center located between a distal end of the shield and the second side wall of the installation strip.

15. The hinge device according to claim 12, with each of the two installation strips including an upper section, a lower section, and an intermediate section between the upper and lower sections, with the toothed portion of each of the two installation strips including a plurality of teeth formed on an outer face thereof, with a number of the plurality of teeth of the toothed portion at the intermediate section of each of the two installation strips being less than a number of the plurality of teeth of the toothed portion at each of the upper and lower sections.

16. The hinge device according to claim 12, with each of the two installation strips including first and second installation strip members, with the first installation strip member

including the second side wall and the connection wall, with the second installation strip member including the first side wall, with the first installation strip member including two first hook portions, with the second installation strip member including two second hook portions respectively engaged with the first hook portions of the first installation strip member.

17. The hinge device according to claim 12, with the outer ends of the first and second side walls of each of the two installation strips respectively protruding from the connection walls and away from the inner ends of the first and second side walls to form two extension ears, with the installation slot of each of the two installation strips defined between the two extending ears, with a coupling strip mounted in the installation slot and including a coupling slot, with the coupling slot adapted to receive the inner end of an associated door panel.

18. The hinge device according to claim 12, with the connection wall of each of the two installation strips including a hole, with a screw adapted to extend through the hole to fix each of the two installation strips to the inner end of an associated door panel.