Claims:

1. An in-mold shutter for embedding in an injection mold, the in-mold shutter comprising: a shutter actuator that is configured to selectively engage a first mold shoe of the injection mold with a platen of a mold clamping assembly to hold the first mold shoe in an extended position, along a mold-stroke axis, during a step of molding a first molded article in the injection mold~~that is operable to selectively engage, in use, a first mold shoe of a first mold half of an injection mold to a platen of a mold clamping assembly~~.

2. An in-mold shutter that is operable to selectively engage, in use, a first mold shoe of a first mold half of an injection mold to one of a moving platen and a stationary platen of a mold clamping assembly.

~~2~~3. The in-mold shutter of claim ~~1~~ 2 for embedding in the injection mold, wherein the in-mold shutter ~~comprising~~comprises:
a shutter member that is associated, in use, with one of ~~the~~ a platen of the mold clamping assembly and the first mold shoe of the injection mold; and
a link member that is associated with a remaining one of the platen and the first mold shoe;
the shutter member and the link member being selectively engageable to hold the first mold shoe in an extended position, along a mold-stroke axis, during a step of molding a first molded article in the injection mold.

~~3~~ 4. The in-mold shutter of claim ~~2~~3, further comprising:
a shutter actuator with which to selectively engage the shutter member with the link member.

~~4~~5. The in-mold shutter of claim ~~2~~3, wherein:
the shutter member and the link member are configured to cooperate such that: (i) when the shutter member is positioned in an open position, relative to the link member, the shutter member is disengaged from the link member, whereby the first mold shoe may be moved, in use, along the mold-stroke axis; and (ii) when the shutter member is positioned in a shut position, the shutter member is engaged with the link member, whereby the first mold shoe is engaged with the platen.

~~5~~6. The in-mold shutter of claim ~~4~~5, wherein:

the shutter member defines a first clearance aperture that is configured to accommodate the link member being arranged therein, in use, with the shutter member being positioned in the open position and with a movement of the first mold shoe, along the mold-stroke axis, towards a retracted position.

~~6~~7. The in-mold shutter of claim ~~5~~6, wherein:
the first clearance aperture is structured to extend through the shutter member;
a support base defines a second clearance aperture that is aligned, in use, with the first clearance aperture, with positioning of the shutter member into the open position; and
the second clearance aperture is configured to accommodate the link member being arranged therein, in use, with the shutter member being positioned in the open position and with the movement of the first mold shoe, along the mold-stroke axis, towards the retracted position.

~~7~~8. The in-mold shutter of claim ~~3~~4, wherein:
the link member pivotally connects the first mold shoe with the shutter member, whereby the first mold shoe is movable, in use, along the mold-stroke axis, between the extended position and a retracted position with movement of the shutter member, by the shutter actuator, between a shut position and an open position, respectively; and
wherein with the first mold shoe having been positioned into the extended position, the link member is oriented to engage the first mold shoe with the platen in a manner that holds the first mold shoe in the extended position during molding of the first molded article.

9. The in-mold shutter of claim 4, wherein:
the link member has an elongate body that is oriented to be substantially parallel to the mold-stroke axis with movement of the shutter member into the shut position.

~~8~~10. The in-mold shutter of claim ~~3~~4, wherein:
the link member includes a first wedge and a second wedge, wherein the first wedge is associated with the shutter member and the second wedge is associated with the first mold shoe;
the first wedge and the second wedge are configured to define a wedging interface therebetween that is operable to translate movement of the shutter member into the movement of the first mold shoe along the mold-stroke axis, whereby with positioning of the shutter member into a shut position the first mold shoe is positioned into the extended position; and

wherein with the first mold shoe positioned in the extended position, the first wedge and the second wedge of the link member are cooperable to engage the first mold shoe with the platen in a manner that holds the first mold shoe in the extended position during molding of the first molded article.

~~9~~11. The in-~~-~~mold shutter of claim ~~3~~4, wherein:

the link member includes a first key and a second key, wherein the first key is associated with the shutter member and the second key is associated with the first mold shoe;

wherein with the shutter member positioned in a shut position, the first key and the second key of the link member are cooperable, across a supporting interface that is defined therebetween, to engage the first mold shoe with the platen in a manner that holds the first mold shoe in the extended position during molding of the first molded article; and

wherein with the shutter member positioned in an open position, the first key on the shutter member is recessable within a first keyway that is defined in the first mold shoe and the second key on the first mold shoe is recessable within a second keyway that is defined in the shutter member, whereby the first mold shoe is movable along the mold-stroke axis.

12. The in-mold shutter of claim 11, wherein:

the shutter member includes an array of first keys, included in which is the first key, and an array of second keyways, included in which is the second keyway; and

the first mold shoe includes an array of second keys, included in which is the second key, and an array of first keyways, included in which is the first keyway;

wherein with the first mold shoe positioned in the extended position and the shutter member positioned in the shut position, the array of first keys and the array of second keys are cooperable to engage the first mold shoe with the platen in the manner that holds the first mold shoe in the extended position during molding of the first molded article; and

wherein with the shutter member positioned in the open position, the array of first keys are recessable within the array of first keyways and the array of second keys are recessable within the array of second keyways, whereby the first mold shoe is movable along the mold-stroke axis.

~~10~~13. The in-mold shutter of any one of claims ~~4~~5, ~~7~~ 8 or ~~8~~ 10 further comprising:

a support base, wherein the shutter member is slidably coupled to the support base.

~~11~~14. The in-mold shutter of claim ~~10~~13, further comprising:

an ejector box with which to couple a molded article transfer device to the support base;
the ejector box defines a space within which the first mold shoe may be moved, in use, along the mold-stroke axis.

15. The in-mold shutter of claim 4, wherein:
the injection mold includes a first mold stack with which to define a molding cavity to mold, in use, the first molded article, a first stack portion of the first mold stack is connected to the first mold shoe.

16. The in-mold shutter of claim 15, wherein:
the link member is aligned with the first stack portion.

17. The in-mold shutter of claim 15, wherein:
the injection mold includes a plurality of mold stacks, included in which is the first mold stack.

18. An in-mold shutter that is operable between a shut position wherein a first mold shoe of a first mold half is held in an extended position relative to one of a moving platen and a stationary platen of a mold clamping assembly, and an open position wherein the first mold shoe is disengaged from the one of the moving platen and the stationary platen for movement relative thereto.

~~12. A molding process executable on a controller associated with an injection molding system having an injection mold arranged therein, the steps of the molding process being embodied in instructions retained in a controller-usable memory of the controller, the instructions for directing the controller to execute a molding process, comprising:~~
~~closing a first mold stack of an injection mold to define a molding cavity therein; shuttering an in-mold shutter to engage a first mold shoe of the injection mold with one of a moving platen and a stationary platen of the injection molding system; molding a first molded article within the molding cavity; un-shuttering the in-mold shutter to disengage the first mold shoe from the one of the moving platen and the stationary platen; and~~

~~selectively positioning the first mold shoe, along a mold- stroke axis.~~

~~13. The molding process of claim 12, wherein:~~
~~a first stack portion and a second stack portion of the first mold stack are repositioned relative to each other substantially without requiring relative movement between the moving platen and the stationary platen.~~

~~14. The molding process of claim 12, wherein:~~
~~the in-mold shutter includes a shutter member and a link member, wherein one of the shutter member and the link member is associated with the one of the moving platen and the stationary platen, and a remaining one of the shutter member and the link member is associated with the first mold shoe;~~
~~the shuttering the in-mold shutter includes selectively positioning the shutter member into an open position, wherein the shutter member is disengaged from the link member;~~
~~the un-shuttering the in-mold shutter includes selectively positioning the shutter member into an shut position, wherein the shutter member is engaged with the link member.~~