CLAIMS :

1. A sewing machine needle bar changing device, comprising:

a cylindrical needle bar case having longitudinal slide ways, a pivoting section, and a plurality of spaced needle bar holes, on a portion of the needle bar case so as to be circumferentially arrayed, ~~and~~ each of the needle bar holes having ~~being provided~~ on at least one side thereof ~~of its wall with~~ at least one of the longitudinal slide way, which communicates the needle bar hole with an external space;

a cylindrical needle bar case holder being located at one side of the cylindrical needle bar case and having a control guide way formed thereon, ~~and~~ the control guide way having a longitudinal opening, and facing towards each of the longitudinal slide ways;

a plurality of needle bars being received in the needle bar holes in a one-to-one correspondence and each carrying a needle,; the needle bars in the needle bar holes being engaged with the longitudinal slide ways and the control guide way at the same time so as to both prevent the needle bars from rotating in the needle bar hole, and~~;~~ limit axial motion of the needle bars except a first needle bar of the needle bars that is moved to align with the longitudinal opening;

a needle bar guide member being engaged with the first needle bar that is moved to align with the longitudinal opening, the needle bar guide member ~~and~~ being connected to and brought by a crank link on a sewing machine to move upward and downward; and

a driving mechanism connected to the pivoting section for ~~bringing~~ driving the cylindrical needle bar case to display by rotating ~~displace~~ and providing a locating function, so as to change the positions of the needle bar holes relative to the needle bar guide member, so that a selected one needle bar hole of the needle bar holes is selectively rotated ~~moved~~ to a sewing position, at which the needle bar in the selected one needle bar hole is in line with the longitudinal opening and the needle bar guide member;

~~wherein~~ the needle bar in the ~~being~~ selected one needle bar bole that is and rotated ~~moved~~ to the sewing position can be brought by the needle bar guide

member to axially move upward and downward synchronously with the needle bar guide member, while all other needle bars of the needle bars that are not located at the sewing position are restricted by the control guide way from axially moving upward and downward.

2. The sewing machine needle bar changing device as claimed in claim 1, wherein the cylindrical needle bar case holder and the needle bar guide member are located at athe same side of the cylindrical needle bar case

3. The sewing machine needle bar changing device as claimed in claim 2, wherein the needle bars respectively have a first protrusion for engaging with the control guide way, and further wherein the needle bar guide member has a first recess corresponding to the first protrusions, so that the needle bar that is in the selected one needle bar hole and is located at the sewing position can move synchronously with the needle bar guide member through engagement of the first protrusion of the needle bar in the selected one needle bar hole with the first recess.

4. ~~The sewing machine needle bar changing device as claimed in claim 2,~~ A sewing machine needle bar changing device, comprising: a needle bar case having longitudinal slide ways, a plurality of spaced needle bar holes, each of the needle bar holes having on at least one side thereof at least one of the longitudinal slide ways which communicates the needle bar hole with an external space;

a needle bar case holder being located at one side of the needle bar case and having a control guide way formed thereon, the control guide way having a longitudinal opening;

a plurality of needle bars being received in the needle bar holes in a one-to-one correspondence and each carrying a needle, the needle bars in the needle bar holes being engaged with the longitudinal slide ways and the control guide way;

a needle bar guide member being engaged with a needle bar of the needle bars that is moved to align with the longitudinal opening, the needle bar guide member being connected to and brought by a crank link on a sewing machine to move upward and downward; and

a driving mechanism for driving the needle bar case to displace and providing a locating function, so that a selected one needle bar hole of the needle bar holes is selectively moved to a sewing position, at which the needle bar in the selected one needle bar hole is in line with the longitudinal opening and the needle bar guide member;

the needle bar in the selected one needle bar hole that is selected and moved to the sewing position can be brought by the needle bar guide member to axially move upward and downward synchronously with the needle bar guide member, while all other needle bars of the needle bars that are not located at the sewing position are restricted by the control guide way from axially moving upward and downward, wherein the needle bar case holder and the needle bar guide member are located at a same side of the needle bar case, wherein the needle bars respectively have a recess for engaging with the control guide way, and further wherein the needle bar guide member has a protrusion corresponding to the recesses on the needle bars, so that the needle bar that is in the selected one needle bar hole and is located at the sewing position can move synchronously with the needle bar guide member through engagement of the recess of the needle bar that is in the selected one needle bar hole with the protrusion.

5. The sewing machine needle bar changing device as claimed in claim 1, wherein the cylindrical needle bar case holder and the needle bar guide member are located at two opposite sides of the cylindrical needle bar case.

6. The sewing machine needle bar changing device as claimed in claim 5, wherein the needle bars respectively have a first protrusion and a second protrusion formed thereon, further wherein ~~and~~ the needle bar guide member has a first recess corresponding to the first protrusions; further wherein the second protrusions are~~being~~ engaged with the control guide way; and further wherein the first protrusion on the needle bar that is in the selected one needle bar hole and that is located at the sewing position being engaged with the first recess for the needle bar that is in the selected one needle bar hole to move synchronously with the needle bar guide member.

7. The sewing machine needle bar changing device as claimed in claim 1, wherein the control guide way is one selected from the group consisting of a groove formed on a wall surface of the cylindrical needle bar case holder and a rabbet formed on a wall surface of the cylindrical needle bar case holder, and each of

the needle bars correspondingly has one protrusion formed thereon corresponding one of ~~to~~ the groove and~~or~~ the rabbet.

8. ~~The sewing machine needle bar changing device as claimed in claim 1,~~ A sewing machine needle bar changing device, comprising:

a needle bar case having longitudinal slide ways, a plurality of spaced needle bar holes, each of the needle bar holes having on at least one side thereof at least one of the longitudinal slide ways which communicates the needle bar hole with an external space;

a needle bar case holder being located at one side of the needle bar case and having a control guide way formed thereon, the control guide way having a longitudinal opening;

a plurality of needle bars being received in the needle bar holes in a one-to-one correspondence and each carrying a needle, the needle bars in the needle bar holes being engaged with the longitudinal slide ways and the control guide way;

a needle bar guide member being engaged with a needle bar of the needle bars that is moved to align with the longitudinal opening, the needle bar guide member being connected to and brought by a crank link on a sewing machine to move upward and downward; and

a driving mechanism for driving the needle bar case to displace and providing a locating function, so that a selected one needle bar hole of the needle bar holes is selectively moved to a sewing position, at which the needle bar in the selected one needle bar hole is in line with the longitudinal opening and the needle bar guide member the needle bar in the selected one needle bar hole that is selected and moved to the sewing position can be brought by the needle bar guide member to axially move upward and downward synchronously with the needle bar guide member, while all other needle bars of the needle bars that are not located at the sewing position are restricted by the control guide way from axially moving upward and downward, wherein the control guide way is an annular flange formed on around a wall surface of the needle bar case holder, and each of the needle bars has one selected from the group consisting of a recess corresponding to the annular flange and a stopper for pressing against a top of the annular flange.

9. ~~The sewing machine needle bar changing device as claimed in claim 1, wherein the needle bar holes on the needle bar case are circumferentially arrayed, and the needle bar case is driven by the driving mechanism to display by rotating, so as to change the positions of the needle bar holes relative to the needle bar guide member.~~

10. ~~The sewing machine needle bar changing device as claimed in claim 1, wherein the needle bar holes on the needle bar case are linearly arrayed, and the needle bar case is driven by the driving mechanism to displace by moving linearly, so as to change the positions of the needle bar holes relative to the needle bar guide member.~~

11. ~~The sewing machine needle bar changing device as claimed in claim 1, wherein the needle bar holes on the needle bar case are curvilinearly arrayed, and the needle bar case is driven by the driving mechanism to displace by swaying from side to side, so as to change the positions of the needle bar holes relative to the needle bar guide member.~~