Claims

1. A gripper (1) for a picking device with horizontal storage surfaces for storage of drug packages, comprising:
a tray table (10) extending in a first horizontal direction and a second horizontal direction orthogonal to the first horizontal direction, having an end portion (70) with an arcuate front (71) extending in the second horizontal direction, said end portion (70) forming the loading and unloading front, said tray table (10) and said end portion (70) defining an upper support surface,
a transport device (20a, 20b) arranged above the tray table (10) and movable in the first horizontal direction for moving drug packages from a horizontal storage surface onto the tray table (10),
characterized in that the gripper (1) comprises a plurality of sensors coupled to a control device (4) arranged in the end portion (70) below the support surface for determining the presence of a drug package, wherein the sensors are arranged at a distance from one another in the second horizontal direction and wherein in the second horizontal direction outer sensors (73a) are arranged at a distance in the first horizontal direction from at least one sensor (73b) arranged further inside in the second horizontal direction, such that the arrangement of the sensors is oriented towards the front (71) extending in an arcuate manner.

2. The gripper (1) for a picking device having horizontal storage surfaces for storing drug packages according to claim 1, characterized in that the sensors (73, 73a, 73b) are at a distance one another in the first horizontal direction such that the sensors substantially are at the same distance from the arcuate front (71).

3. The gripper (1) for a picking device having horizontal storage surfaces for the storage of drug packages according to claim 1 or 2, characterized in that the transport device comprises two elongated clamping jaws (20a, 20b) extending in the first horizontal direction arranged above the tray table (10), with clamping surfaces (21a, 21b) facing

each other, wherein at least one of the clamping jaws is additionally movable at least in sections in the second horizontal direction.

4. The gripper (1) for a picking device with horizontal storage surfaces for the storage of drug packages according to any one of claims 1-3, characterized in that the sensors (73, 73a, 73b) are arranged mirror-symmetrically with respect to a central axis (MA) of the tray table (10) extending in the first horizontal direction.

5. The gripper (1) for a picking device with horizontal storage surfaces for storing drug packages according to one of claims 1-4, characterized in that the end portion is formed as a sensor assembly (72) which is detachable from the tray table (10).

6. The gripper (1) for a picking device with horizontal storage surfaces for storage of drug packages according to one of claims 1-5, characterized in that the arcuate front (71) of the end portion (70) is circularly curved, wherein the center of the corresponding circle is located in a vertical rotary axis (VA) of the tray table (10).

7. The gripper (1) for a picking device with horizontal storage surfaces for storing piece goods according to one of claims 3-6, characterized in that the gripper further comprises:
a jaw guide assembly (30) with
a frame structure (31, 32, 33a, 33b),
at least a first and a second guide (35, 36) extending in parallel and in the first horizontal direction spaced from each other in the second horizontal direction transverse to the first horizontal direction, and
at least four jaw carriages (40a, 40b, 41a, 41b) coupled to the guides (35, 36) and driven in the second horizontal direction, wherein two first jaw carriages (40a, 40b) are assigned to the first guide (35) and two second jaw carriages (41a, 41b) are assigned to the second guide (36) and wherein at least two jaw carriages (40a, 41a; 40b, 41b) spaced apart in the first horizontal direction are coupled to a clamping jaw (20a, 20b), and
a drive unit (60, 61a, 61b, 62a, 62b) coupled to the jaw guide assembly for driving the jaw guide assembly (30) in the first horizontal direction.

8. A method of verifying a movement of drug packages (6, 6') onto a tray table (10) of a gripper (1) according to any one of claims 1-7, wherein
a) the transport device is moved in the first horizontal direction to a storage location (80) of at least one drug package (6, 6') and the at least one drug package is gripped,
b) the transport device is moved from the storage location (80) in the first horizontal direction to the tray table (10),
c) after moving the transport device in the first horizontal direction by means of the sensors (73, 73a, 73b) in the end portion (70), it is checked whether a drug package (6') is present in the detection area of the sensors, and
d) if this check is positive, a signal is provided indicating a first erroneous removal attempt.

9. The method for verifying a movement of drug packages (6, 6') onto a tray table (10) of a gripper (1) according to claim 8, wherein the transport device comprises two elongated, clamping jaws (20a, 20b) extending in the first horizontal direction and arranged above the tray table (10) with mutually facing clamping surfaces (21a, 21b),
characterized in that, in the case of a positive check according to step d), the clamping jaws (20a, 20b) are opened in the second horizontal direction and moved again in the first horizontal direction to the storage location (80),
a drug package arranged in the end section (70) is gripped by the clamping jaws (20a, 20b),
the method steps b) and c) are carried out, and
if this check is positive, a signal is provided which indicates a second incorrect removal attempt.

10. The method for verifying a movement of drug packages (6, 6') onto a tray table (10) of a gripper (1) according to one of claims 8 or 9,
characterized in that, when moving the at least one drug package (6) towards the tray table, the width of a drug package (6) is determined by means of the sensors (73, 73a, 73b) arranged in the tray table,

the determined width is compared with a desired width known to the control device (4), and
when a limit deviation between the determined width and desired width of a drug package is exceeded, a corresponding signal is provided.

11. The method for verifying a movement of drug packages (6, 6') onto a tray table (10) of a gripper (1) according to claim 10,
characterized in that after providing a signal indicative of an exceeding of a limit deviation, the gripper (1) is moved towards an unloading station and the drug packages present are transferred to the unloading station.

12. Use of a sensor assembly (72) according to claim 5 with
an front (71) extending in an arcuate manner in the second horizontal direction and
a plurality of sensors (73, 73a, 73b) arranged under the surface of the sensor assembly for determining the presence of a drug package, wherein the sensors are arranged at a distance from one another in the second horizontal direction
and wherein in the second horizontal direction outer sensors are arranged at a distance in the first horizontal direction, orthogonal to the second horizontal direction, from at least one sensor (73b) arranged further inside in the second horizontal direction, such that the arrangement of the sensors is oriented towards the front extending in an arcuate manner,
an interface for connecting the sensor assembly to a control device
for verifying a movement of drug packages (6, 6') onto a tray table (10) of a gripper (1) of a picking device for drugs.