forward and the backward directions of the motor **25** is output at an output axis **25***b* via a decelerator part **25***a*. A drive pulley **26** is fixed to the output axis **25***b* as an integrated part. A rotation shaft **27** (**FIG. 9**) is supported for free axial rotations at the left end portions of the front and back side surfaces **2***c*, **2***d* of the case body **2**. First and second driven pulleys **28**, **29** are fixed to the rotation shaft **27** at the front and the back end portions as integrated parts. Further, a spindle **30** (**FIG. 8**) is axially received by a right-hand portion of the front side surface **2***c* of the case body **2** at a location which is coaxial with the output axis **25***b*, and a third driven pulley **31** is axially disposed to freely rotate on the spindle **30**.

[**0053**] A drive belt **32** runs between the drive pulley **26** and the second driven pulley **29**, and a driven belt **33** runs between the first driven pulley **28** and the third driven pulley **30**. The front and the back end portions of the first cradle **20** are fixed to and integrated with the drive belt **32** and the driven belt **33**, respectively, via retainer members **34** (**FIG. 6**).

[**0054**] Rotational drive in the forward and the backward directions of the motor **25** is transmitted to the drive pulley **26** from the output axis **25***b*, moving the drive belt **32** in the left/right direction, and further transmitted from the second driven pulley **29** to the first driven pulley **28** via the rotation shaft **27**, moving the driven belt **33** in the left/right direction, and as the drive belt **32** and the driven belt **33** move in the left/right direction, the first cradle **20** moves in the left/right direction.

[**0055**] While the front and the back horizontal guide members **21**, **21***a*, elongated in the left/right direction, are fixed to the front and the back ends of the first cradle **20** as described above, a second cradle **35** (**FIGS. 2 and 3**) is fixed to the front and the back horizontal guide members **21**, **21***a*. In short, the first and the second cradles **20**, **35** are linked as one integrated unit via the front and the back horizontal guide members **21**, **21***a*, and hence, as the first cradle **20** described above moves in the left/right direction, the second cradle **35** also moves in the left/right direction.

[**0056**] A linear plate **36** elongated in the left/right direction is attached as one integrated unit to the second cradle **35**. The linear plate **36** has 64 comb-like grooves **36***a*, which correspond to the horizontal arrangement of the tactile pins **10**, lined up in the horizontal direction of the linear plate **36**. On the other hand, the bottom surface **2***d* of the case body **2** seats first through fourth photosensors **37-40** (**FIG. 2**) which have light emitting elements and light receiving elements for detection of the location of the linear plate **36**.

[**0057**] As the first to fourth photosensors **37-40** detect the location of the linear plate **36**, the location of the movable unit **5** which moves in the left/right direction together with the linear plate **36** is detected. In other words, when the first photosensor **37** detects the right-most position of the linear plate **36**, it detects the movable unit **5** has come to the stop position. When the second photosensor **38** detects the right-most position of the linear plate **36**, a right-hand side reverse position is detected at which the movement of the movable unit **5** is reversed from the rightward movement to the leftward movement. The third photosensor **39** detects the locations of the comb-like grooves **36***a* of the linear plate **36**, thereby sensing the timing to turn the solenoids **4** on, namely, the timing at which the actuation pins **16** are to move the tactile pins **10** upward. The fourth photosensor **40** is set so as to detect the left-most position of the linear plate **36**, to thereby detect a left-hand side reverse position at which the movement of the movable unit **5** is reversed from the leftward movement to the rightward movement.

[**0058**] The second cradle **35** is mounted to the control part **8**, and the control part **8** is formed using a general-purpose control unit, such as a PLC. Based on an output signal from the host computer PC, detection signals from the first to the fourth photosensors **37-40**, etc., the control part **8** outputs control commands to the motor **25**, the solenoids **4**, etc., thereby controlling the motor **25** to drive forward or backward or to stop, the solenoids **4** to turn on or off, etc.

[**0059**] With respect to the vertical movement mechanism **7** which moves the movable unit **5** in the vertical direction (front/back direction), the eight solenoids **4** and the actuation pins **16** are attached to and supported by the support frame **18** in the movable unit **5** as described above, and when the support frame **18** moves vertically relative to the first cradle **20**, the movable unit **5** moves in the vertical direction.

[**0060**] That is, a guide member **41** (**FIG. 4**), elongated in the front/back direction, is fixed to the main frame part **18***a* of the support frame **18**. Meanwhile, the first cradle **20** seats a vertical rail **42** elongating in the front/back direction, and the guide member **41** is engaged with the vertical rail **42** via a bearing **43** such that the guide member **41** can move freely in the front/back direction (vertical direction).

[**0061**] A rack **44**, elongated in the front/back direction, is fixed to the bottom side **18***d* of the support frame **18**. Ratchet gear teeth **44***c* (**FIG. 10**) are formed in front and back gear portions **44***a*, **44***b* of the rack **44**. In addition, a spring (not shown) which urges the rack **44** toward the front is linked to the rack **44**.

[**0062**] A third cradle **45** (**FIGS. 3, 4**, and **10**) is fixedly attached below the second cradle **35** with a gap therebetween. The third cradle **45** and the first cradle **20** are linked as one integrated unit via the front and the back horizontal guide members **21**, **21***a* and the second cradle **35**. Hence, when the first cradle **20**, described above, moves in the left/right direction, the third cradle **45** also moves in the left/right direction as one integrated unit.

[**0063**] A swing plate **46** is axially supported, via a pin axis **47** for free pivoting, by the third cradle **45**. The swing plate **46** axially supports, via a pin axis **49**, a front ratchet arm **48** for free pivoting. A fixed plate **50** is fixed to the third cradle **45**. The fixed plate **50** axially supports, via a pin axis **52**, a back ratchet arm **51** for free pivoting. Backstop parts **48***a*, **51***a*, which can freely fit with and leave ratchet gear teeth **44***c* of the front and the back gear portions **44***a*, **44***b* of the rack **44**, are formed at the top ends of the front ratchet arm **48** and the back ratchet arm **51**. The front ratchet arm **48** and the back ratchet arm **51** are always urged by the urging force of springs **53**, **54** in the direction in which the backstop parts **48***a*, **51***a* engage with the ratchet gear teeth **44***c* (the counter-clockwise direction in **FIGS. 10 and 11**). When the backstop parts **48***a*, **51***a* are fit with the ratchet gear teeth **44***c*, the rack **44** can move toward the back but not toward the front, thereby realizing the one-way clutch mechanism of the invention. Stoppers **55**, **56** are provided for the front ratchet arm **48** and the back ratchet arm **51**.

[**0064**] Further, the swing plate **46** is set such that it swings between a non-swing position at which it becomes approxi-