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(54) **IMPROVEMENTS IN AND RELATING TO STEAM STATIONS**

(57) Steam station (2) comprising an iron (4) and a base station (6), in which the base station (6) comprises a fluid reservoir (8) and a port (20) for water to be provided in to the fluid reservoir (8); the iron (4) includes a filling funnel (38) through the base station to the filling port (20).

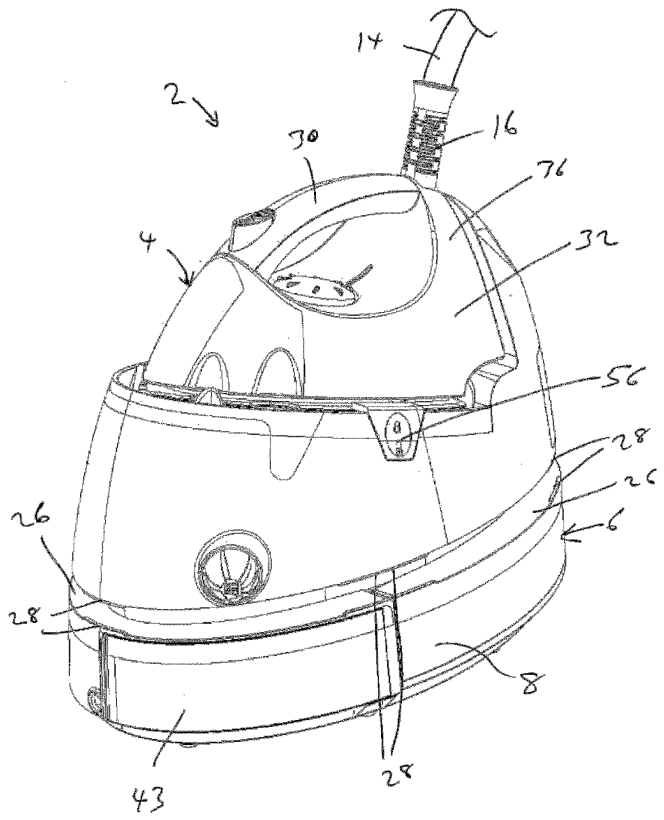

Fig 1

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Description

Field of the Invention

[0001] The present invention relates to steam stations.

Background to the Invention

[0002] Steam stations are appliances for ironing in which the iron is linked via a flexible tube to a water reservoir for producing steam which is provided through the flexible tube to a sole plate of the iron. This has a number of advantages, including that the iron can be lighter than a normal steam iron, the water reservoir can be larger and the steam pressure can be higher.

[0003] Preferred embodiments of the present invention aim to provide an improved steam station.

Summary of the Invention

[0004] According to the present invention in a first aspect, there is provided a steam station comprising an iron and a base station, in which the base station comprises a fluid reservoir and a port for water to be provided in to the fluid reservoir; the iron includes a filling funnel through the base station to the filling port.

[0005] Thus, the water reservoir can be more conveniently filled by pouring water into the funnel of the base station through the port.

[0006] Suitably, an outlet of the filling funnel engages with an inlet of the port.

[0007] Suitably, the filling funnel is located in a rear portion of the base station.

[0008] Suitably, the filling funnel runs from the top of the base station to the reservoir.

[0009] Suitably, the base station comprises an alternative filling option for providing water to the water reservoir.

[0010] Suitably, the alternative filling option comprises a removable water reservoir.

[0011] According to the present invention in a second aspect, there is provided a steam station comprising a base station and an iron, the base station comprising a cradle for receiving the iron in a stowed position, the base station further comprising a locking mechanism for securing the iron in the stowed position on the cradle; wherein the locking mechanism secures the iron around the middle of the iron.

[0012] Suitably, the locking mechanism of the base station engages with the sole plate of the iron.

[0013] Suitably, the iron comprises a forward third, a rear third and a middle third, wherein the locking mechanism secures the iron in the middle third of the iron.

[0014] Suitably, the locking mechanism engages the iron at least partially at the mid-point of the iron.

[0015] Suitably, the locking mechanism comprises a first latch for engaging one side of the iron and a second latch for engaging the other side of the iron.

[0016] Suitably the locking mechanism is operable to lock by a single button.

[0017] Suitably, the locking mechanism is operable to unlock a single button.

[0018] Suitably, the iron comprises a sole-plate protrusion to lock the iron in portion by a latch.

[0019] Suitably, the locking mechanism comprises an arm movable to allow a biased locking part to be moved into a locking position to lock the locking mechanism in a locked configuration.

[0020] Suitably, the arm is biassed away from the locked configuration.

[0021] Suitably, the locking mechanism comprises a rod movable to move a cam to move the locking mechanism to an open configuration.

[0022] Suitably, the base station comprises a rear receiving portion for receiving the rear of the iron. Suitably the rear receiving portion comprises a projection for engagement in a corresponding recess in the rear portion of the iron.

[0023] According to the present invention in a third aspect, there is provided a steam station comprising a base station and an iron; the base station further comprising a recess for receiving the steam cord.

[0024] Suitably, the recess comprises cord securing elements.

[0025] Suitably, the cord securing elements comprise a plurality of spaced protrusions for securing the cords.

[0026] The first, second and third aspects of the invention can be combined together in any combination of the two or three aspects.

Brief Description of the Drawings

[0027] The present invention will now be described by way of example only, with reference to the accompanying drawings; in which:

Figure 1 is a perspective view of a steam station according to the present invention.

Figure 2 is a reverse perspective of the steam station shown in Figure 1.

Figure 3 is a rear view of the steam station shown in Figures 1 and 2.

Figure 4 is a cross sectional elevation of the steam station shown in Figure 1-3 through the line IV-IV in Figure 3.

Figure 5 is a perspective view of the base station of the steam station shown in Figure 1-4.

Figure 6 is a plan view of the base station shown in Figure 5.

Figures 7A and 7B are enlarged perspective views

of the iron securing mechanism.

Figure 8 is an enlarged perspective operational view showing the operation of the locking mechanism of Figures 7 A and 7B.

Figure 9 is an enlarged perspective view of a modification of the locking mechanism shown in Figures 7A, 7B and 8.

Description of the Preferred Embodiments

[0028] With reference to Figures 1-5 of the accompanying drawings, there is shown a steam station 2 comprising an iron 4 and a base station 6. The base station 6 comprises a reservoir 8 to store water that is converted by a heater 10 to steam. The base station 6 comprises a steam outlet 12 leading to a steam cord 14 extending to a cord connector 16 on the iron 4 by means of which steam can be provided from the reservoir 8 to the iron 4.

[0029] With reference to Figure 5 of the accompanying drawings, it can be seen that the base station 6 comprises a cradle 18 for receiving the iron 4. The iron 4 is shown in the cradle 18 in Figures 1-4 in a stowed position.

[0030] The base station comprises a port 20 providing access to the reservoir 8 for filling the reservoir 8 with water. The port 20 comprises an opening inlet 22 and an outlet 24 into the reservoir 8.

[0031] The base station 6 includes an external channel 26 running round the full circumference of the base station 6. The channel 26 includes a plurality of projections 28. The projections 28 are located at the external edge of the channel 26 with matching projections 28 at the top and bottom thereof. The channel 26 is dimensioned so that the steam cord 14 is a push-fit therein, the flexibility of the cord 14 enabling it to be secured by the projections 28. This provides for convenient stowage of the steam cord 14.

[0032] The iron 4 comprises a handle 30 a body portion 32, a sole plate 34 and a rear portion 36.

[0033] The base station 6 comprises a funnel 38 mounted in the rear portion of the base station 6, the funnel 38 comprising a funnel inlet 40 leading to a funnel outlet 42.

[0034] The iron 4 includes a sole-plate protrusion 41.

[0035] As an alternative filling option, the water reservoir 8 can be detached from the base portion 6 and filled separately.

[0036] Base station 6 includes a pivotable door 43 providing a power cord and power plug (neither shown) storage option.

[0037] The cradle 18 of base station 6 comprises a sole plate receiving portion 44 and a rear receiving portion 46. Sole plate receiving portion 44 is shaped to receive the sole plate of the iron 4. It includes three upstanding heat resistant members and a rim 50 shaped to snugly receive the sole plate therein. The rear receiving portion 46 comprises an iron rear engaging portion 52 projecting therefrom to engage in a corresponding recess in the rear portion of iron 4.

[0038] The base station 6 comprises a locking mechanism 56 for engaging with the iron 4 positively to secure the iron 4 in position in relation to the base station 6. This enables the base station 6 to be carried using the iron handle 30. The locking mechanism 56 of the base station 6 engages a middle portion of the iron 4, in particular the middle of the sole plate 34 of the iron 4.

[0039] As can be seen in Figure 4 of the accompanying drawings, the iron 4 includes a recess 35 above the sole plate 34 providing a gap between sole plate 34 and body portion 32 for the locking mechanism 56 to engage with.

[0040] The locking mechanism 56 is described in more detail in Figures 7a, 7b and 8 of the accompanying drawings. Referring to Figures 7a and 7b of the accompanying drawings, the locking mechanism is shown in more detail.

[0041] The locking mechanism 56 comprises a first latch 60 and a second latch 62. The first latch 60 comprises a locking button 64 connected to a spring biased arm 66 having at its distal end a pawl 68 engaging a cog 70.

[0042] Second latch 62 comprises corresponding features with the pawl engaging the opposite side of cog 70.

[0043] First latch 60 additionally includes a pusher rod 62. Referring to Figure 8 it can be seen that the pusher rod 72 includes a cam surface 74 for inter-engaging with a locking part 76 which includes a locking protrusion 78. First latch 60 further comprises an unlocking button 79.

[0044] The operation of the locking mechanism 56 is illustrated in Figure 8 of the accompanying drawings which is an exploded operational view of the locking mechanism 56.

[0045] Once the iron 4 is located securely on the cradle 18, the iron 4 can be locked in position by pressing one or both of the locking buttons 64. Normally just one of the locking buttons 64 is pressed so the operation will be described from this point of view. Pressing the locking button 64 causes the spring biased arm 66 to be moved linearly causing the pawl to turn cog 70 generating a corresponding movement in the other spring biased arm 66 on the other side of the iron 4. The movement of spring biased arm 66 enables locking part 76 to be moved by spring 100 into locking hole 102 holding the spring biased arms 66 in a locked position. Protrusions 104 of the first and second latches 62, 64 are secured in a gap provided above the soleplate 34, the sole-plate protrustion 41 preventing the locking mechanism protrusion 104 from escaping thus securing the iron 4 in a stowed position.

[0046] To unlock the iron 4, one or both of unlocking buttons 79 is pressed causing rods 72 to move cam surfaces 74 pushing the locking parts 76 out of locking holes 102, enabling the spring bias of spring biased arms 66 to move the latches 60, 62 to an unlocked position in which the iron 4 can be removed from the base station 6.

[0047] Figure 9 is an enlarged illustration of an alternative embodiment for the locking mechanism 56 in which the locking mechanism itself is essentially similar

to that described and shown in relation to Figures 7a, 7b and 8, but with the addition of a spring biased cord capture mechanism 80 also actuated by the locking mechanism 56. The cord capture mechanism includes a depending arm on either side of the locking mechanism (arm 82) with a cord capture puddle 84 configured to descend over the cord securing channel 26 when the locking mechanism is depressed.

[0048] The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

[0049] All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

[0050] Each feature disclosed in this specification (including any accompanying claims, abstract and drawings) may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0051] The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Claims

1. A steam station comprising an iron and a base station, in which the base station comprises a fluid reservoir and a port for water to be provided in to the fluid reservoir; the iron includes a filling funnel through the base station to the filling port.

2. A steam station according to claim 1, wherein an outlet of the filling funnel engages with an inlet of the port; or the filling funnel is located in a rear portion of the base station; or the filling funnel runs from the top of the base station to the reservoir.

3. A steam station according to claim 1 or claim 2, wherein the base station comprises an alternative filling option for providing water to the water reservoir; and optionally the alternative filling option comprises a removable water reservoir.

4. A steam station comprising a base station and an iron, the base station comprising a cradle for receiving the iron in a stowed position, the base station further comprising a locking mechanism for securing the iron in the stowed position on the cradle; wherein the locking mechanism secures the iron around the middle of the iron.

5. A steam station according to claim 4, wherein the locking mechanism of the base station engages with the sole plate of the iron; or the iron comprises a forward third, a rear third and a middle third, wherein the locking mechanism secures the iron in the middle third of the iron; or the locking mechanism engages the iron at least partially at the mid-point of the iron; or the locking mechanism comprises a first latch for engaging one side of the iron and a second latch for engaging the other side of the iron; or the locking mechanism is operable to lock by a single button; or the locking mechanism is operable to unlock a single button.

6. A steam station according to claim 4 or claim 5, wherein the iron comprises a sole-plate protrusion to lock the iron in portion by a latch.

7. A steam station according to claim 4, wherein the locking mechanism comprises an arm movable to allow a biased locking part to be moved into a locking position to lock the locking mechanism in a locked configuration.

8. A steam station according to claim 7, wherein the arm is biassed away from the locked configuration.

9. A steam station according to claim 4, wherein the locking mechanism comprises a rod movable to move a cam to move the locking mechanism to an open configuration.

10. A steam station according to any one of claims 4-9, wherein the base station comprises a rear receiving portion for receiving the rear of the iron.

11. A steam station according to claim 10, wherein the rear receiving portion comprises a projection for engagement in a corresponding recess in the rear portion of the iron.

12. A steam station comprising a base station and an iron; the base station further comprising a recess for receiving the steam cord.

13. A steam station according to claim 12, wherein the recess comprises cord securing elements.

14. A steam station according to claim 12 or claim 13, wherein the cord securing elements comprise a plurality of spaced protrusions for securing the cords.

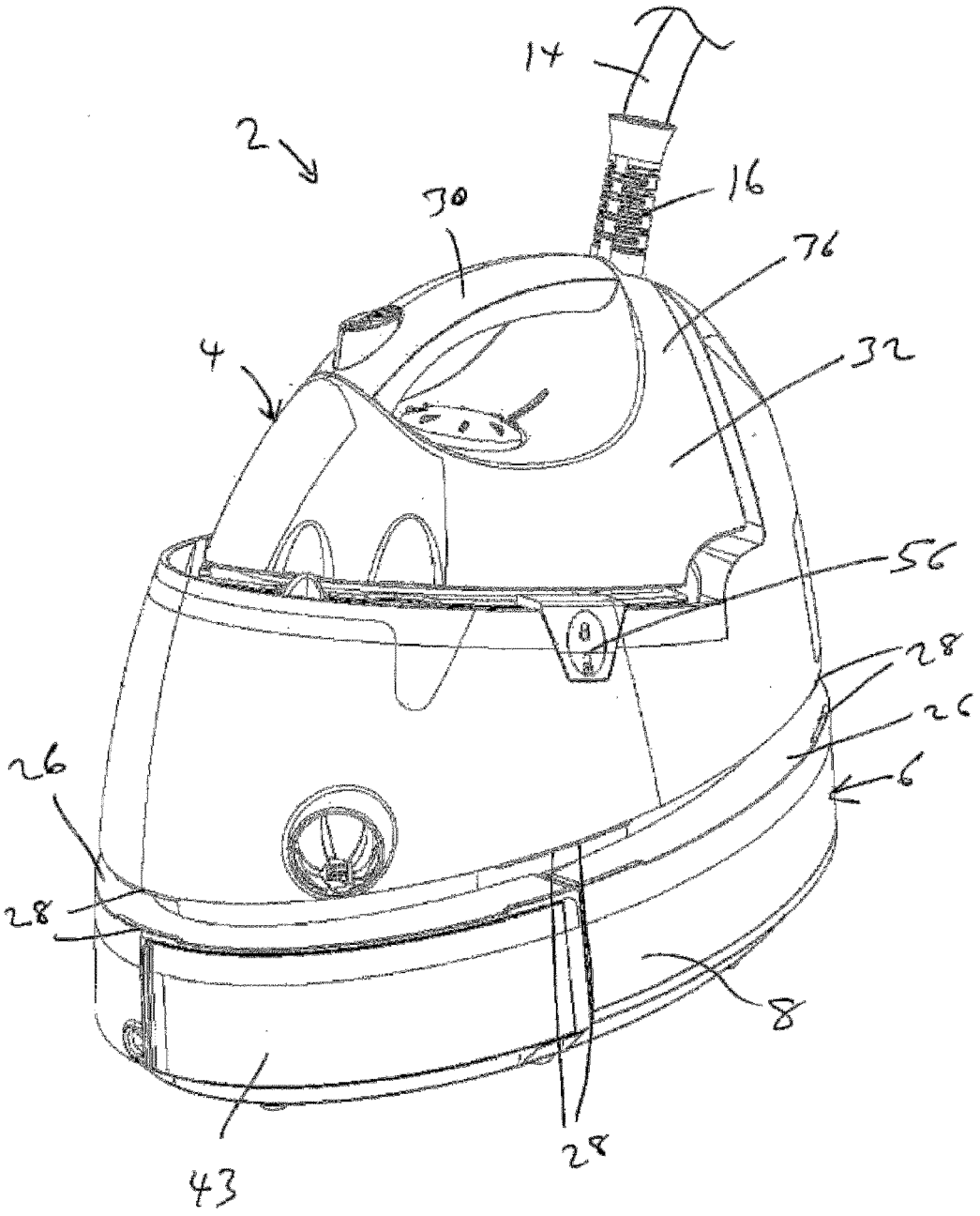

Fig 1

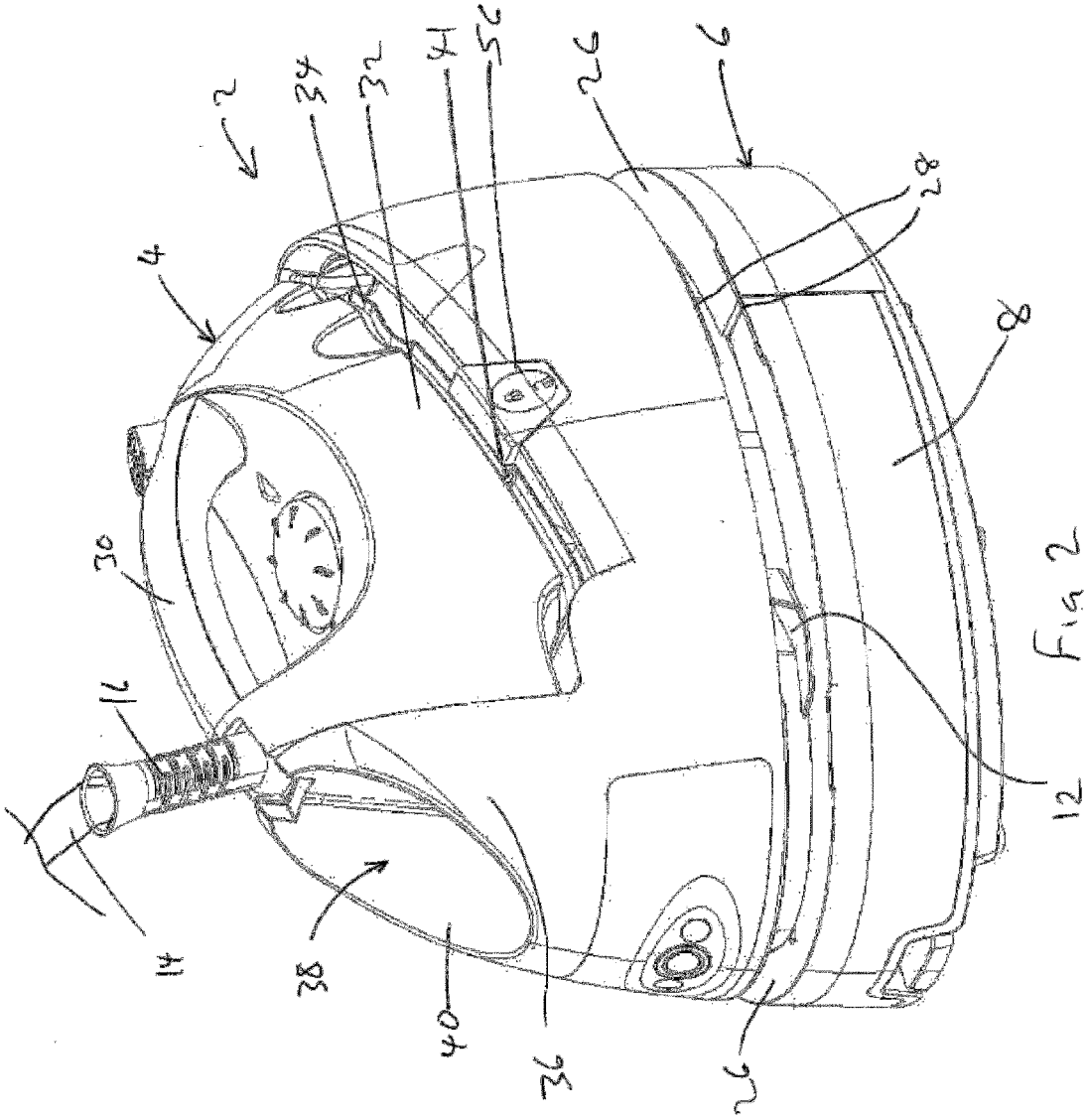

Fig 2

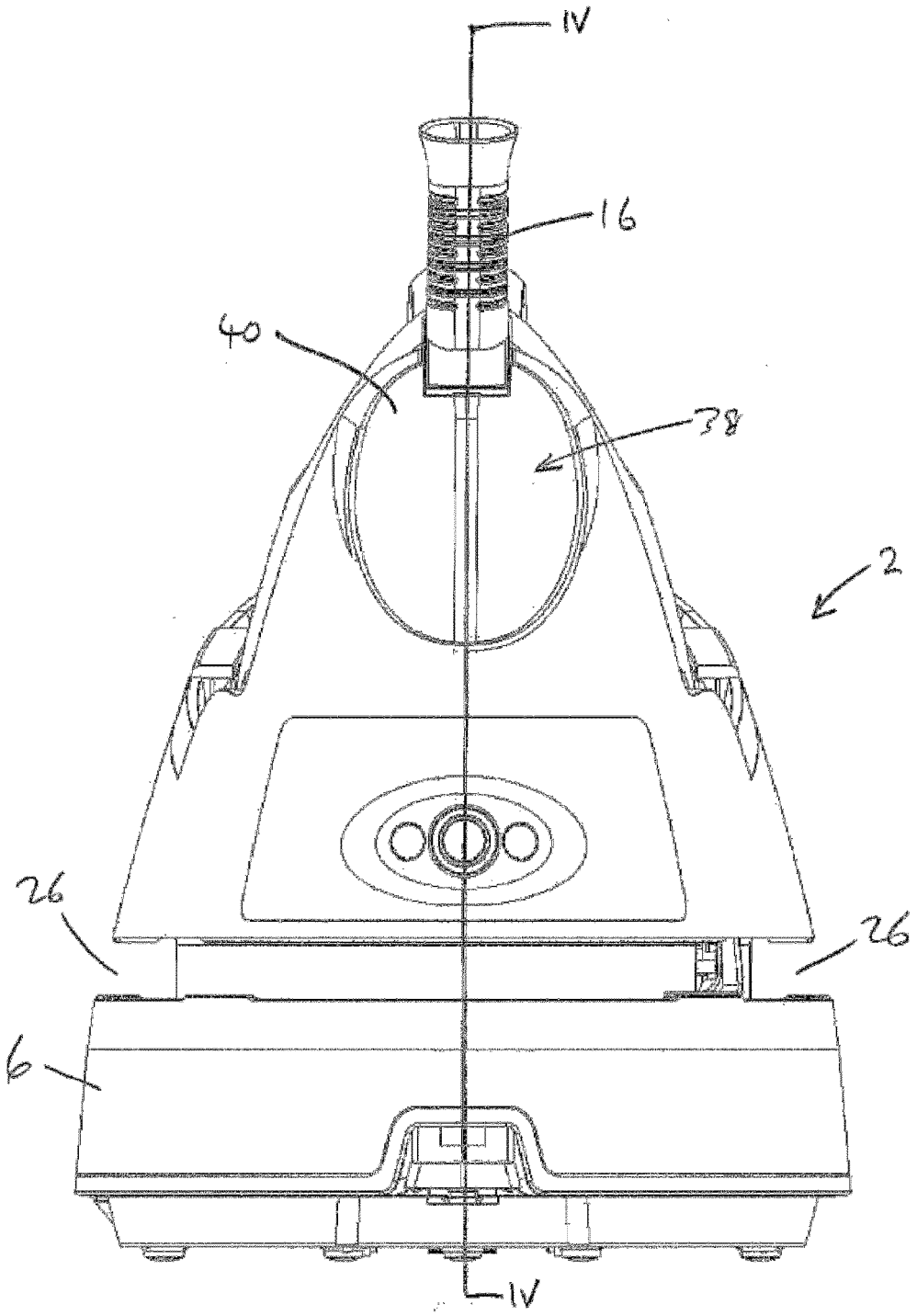

Fig 3

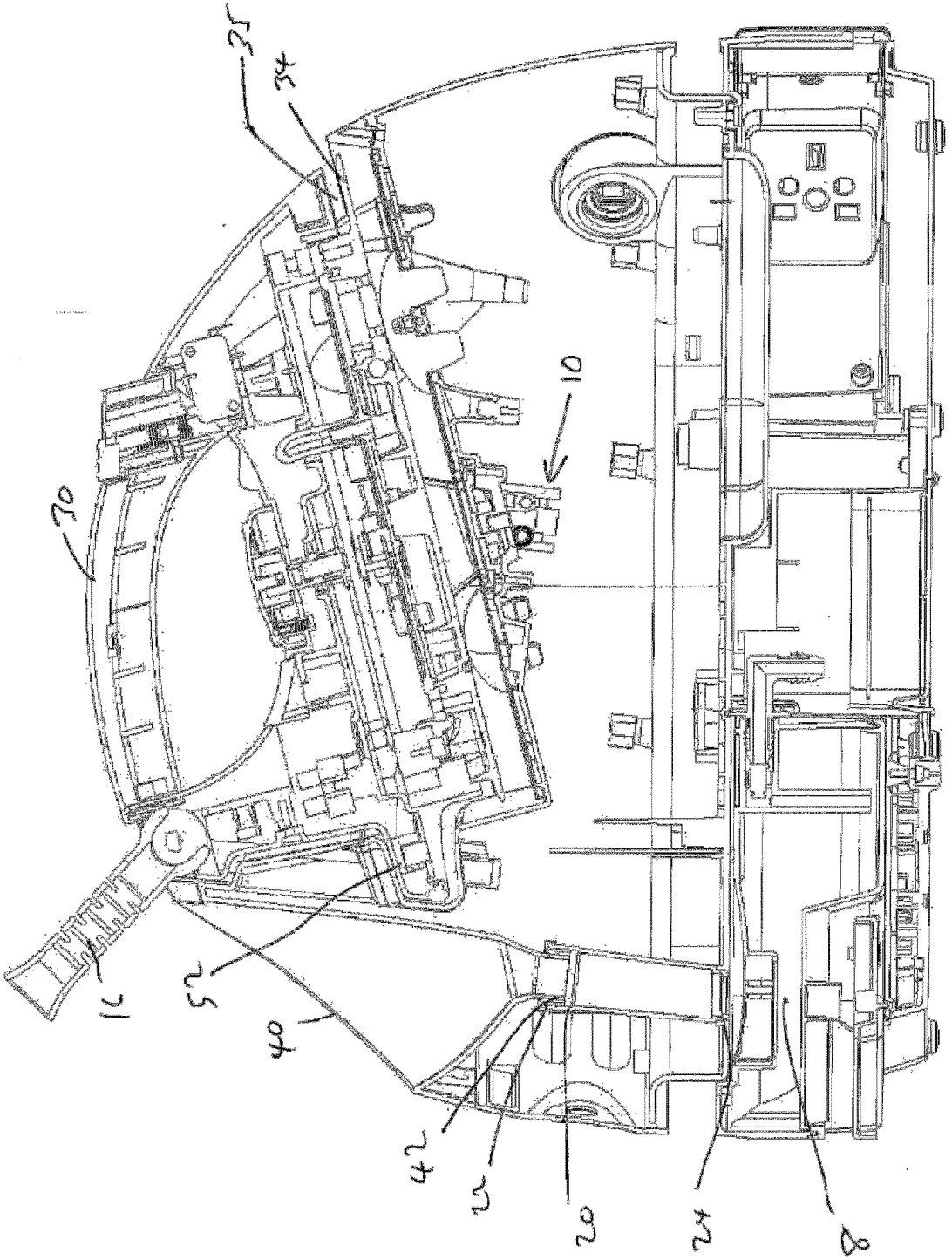

Fig 4

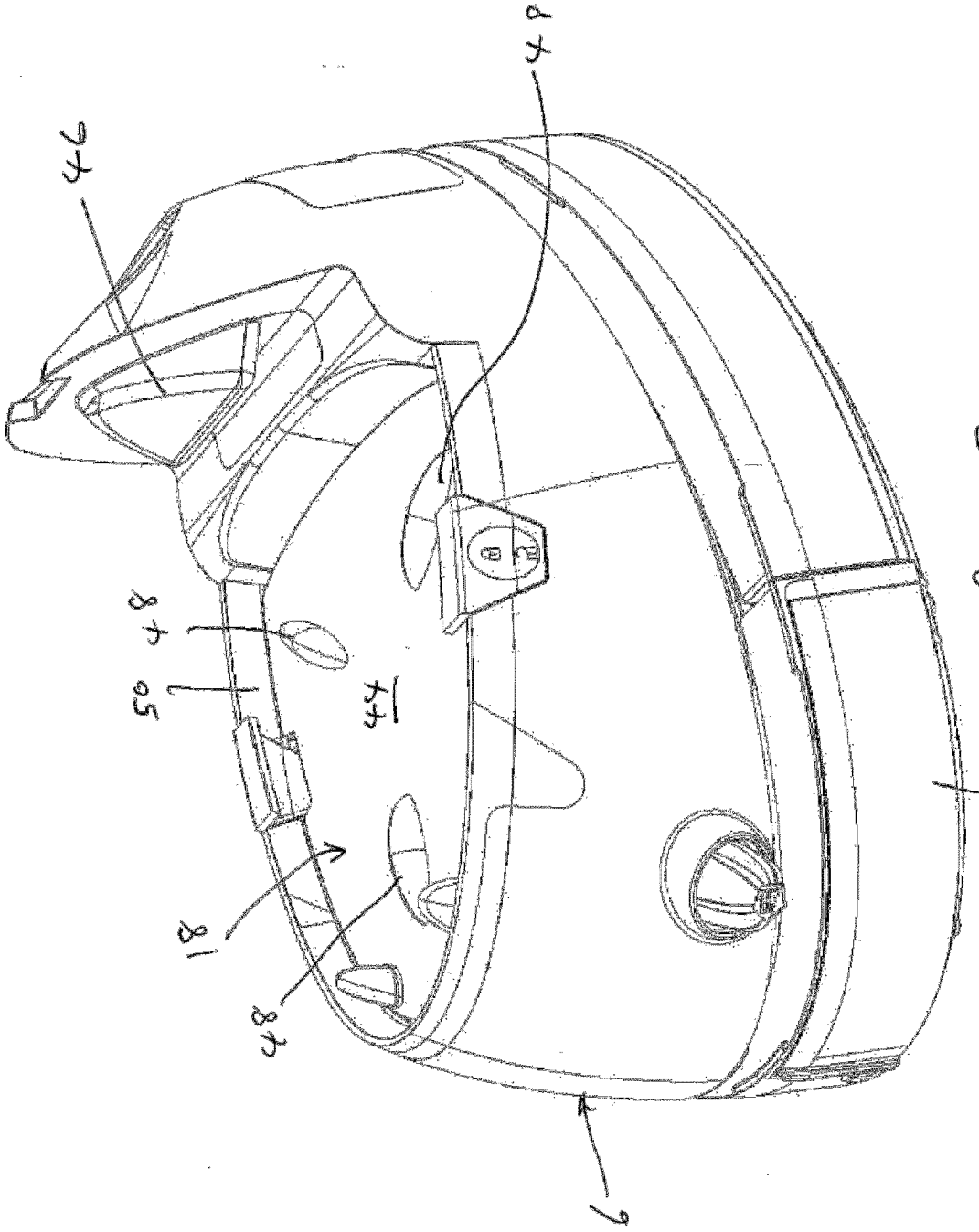

Figure 5

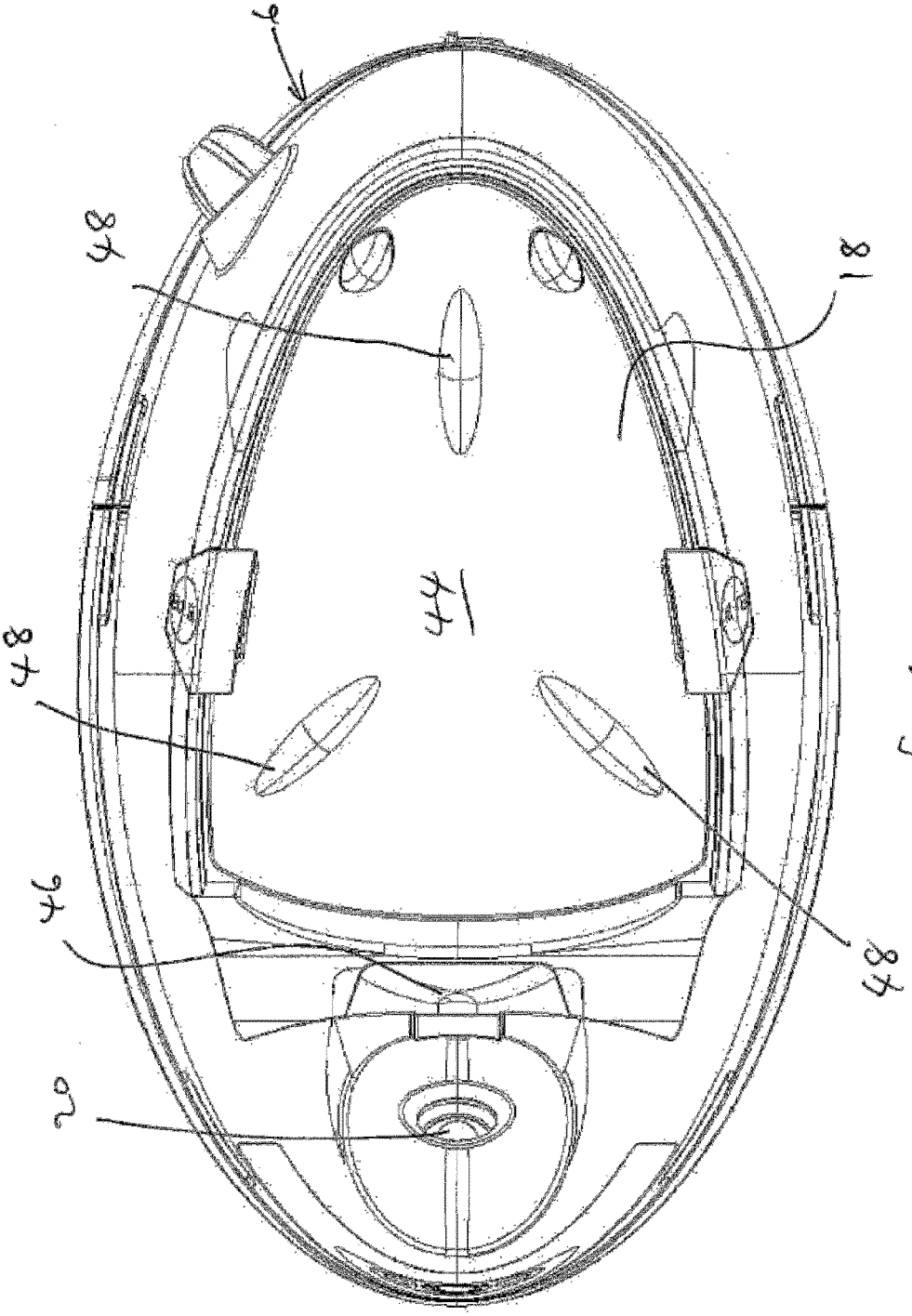

Fig 6

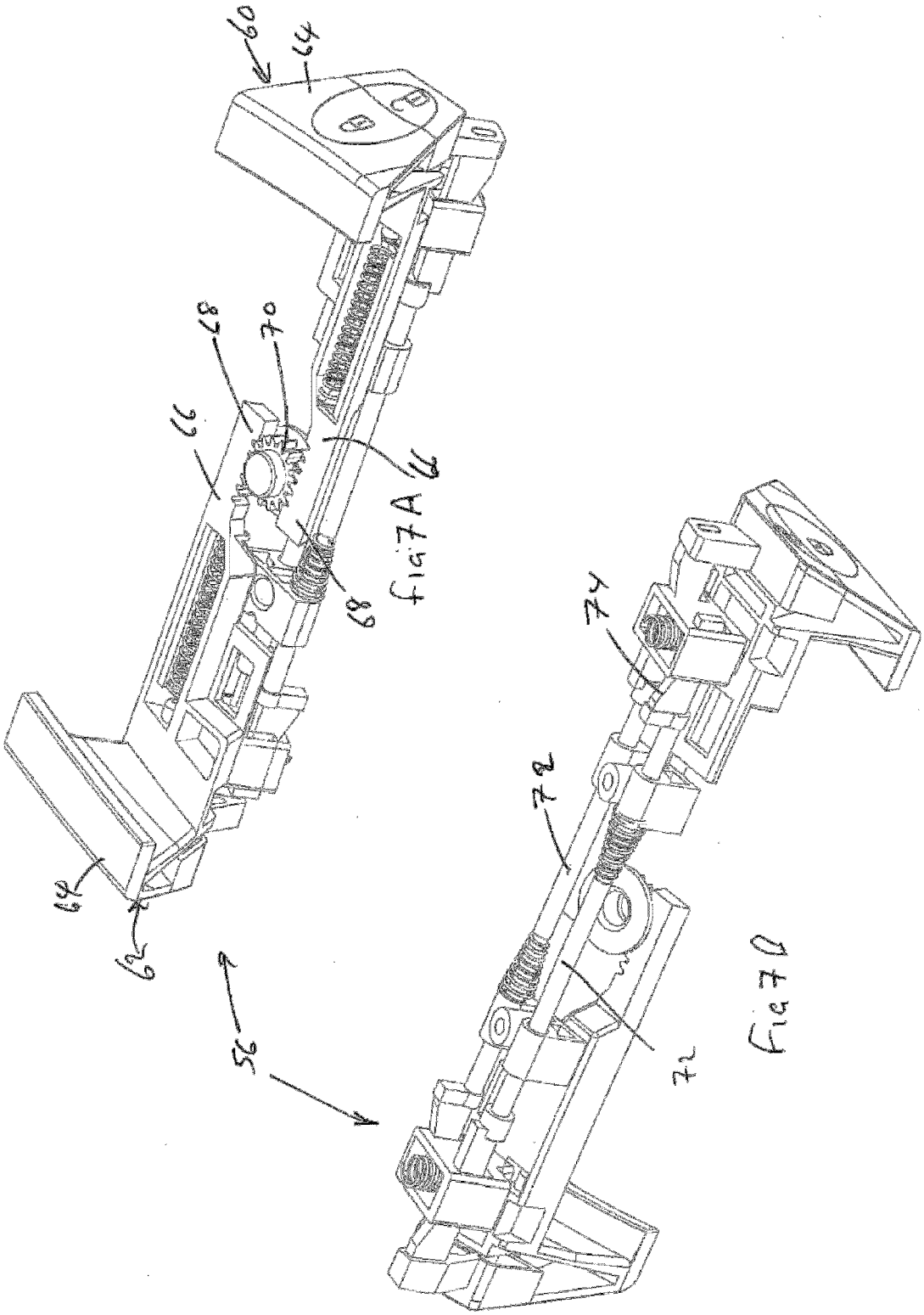

Fig 7A

Fig 7B

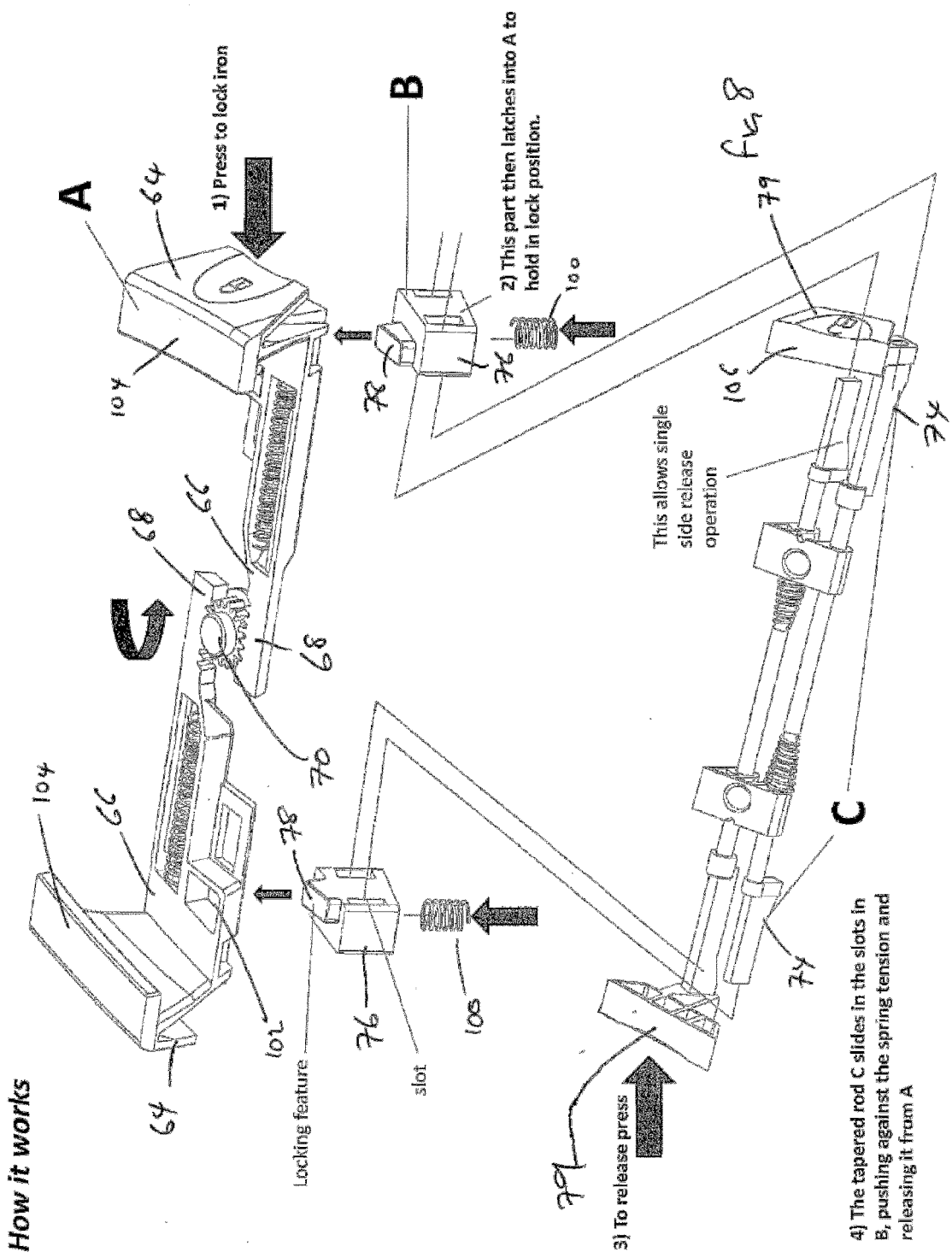
How it works
A
B
C
1) Press to lock iron
2) This part then latches into A to hold in lock position.
3) To release press
4) The tapered rod C slides in the slots in B, pushing against the spring tension and releasing it from A
This allows single side release operation
Locking feature
slot
64
66
68
70
72
74
76
78
79
100
102
104
105
108

Fig 8

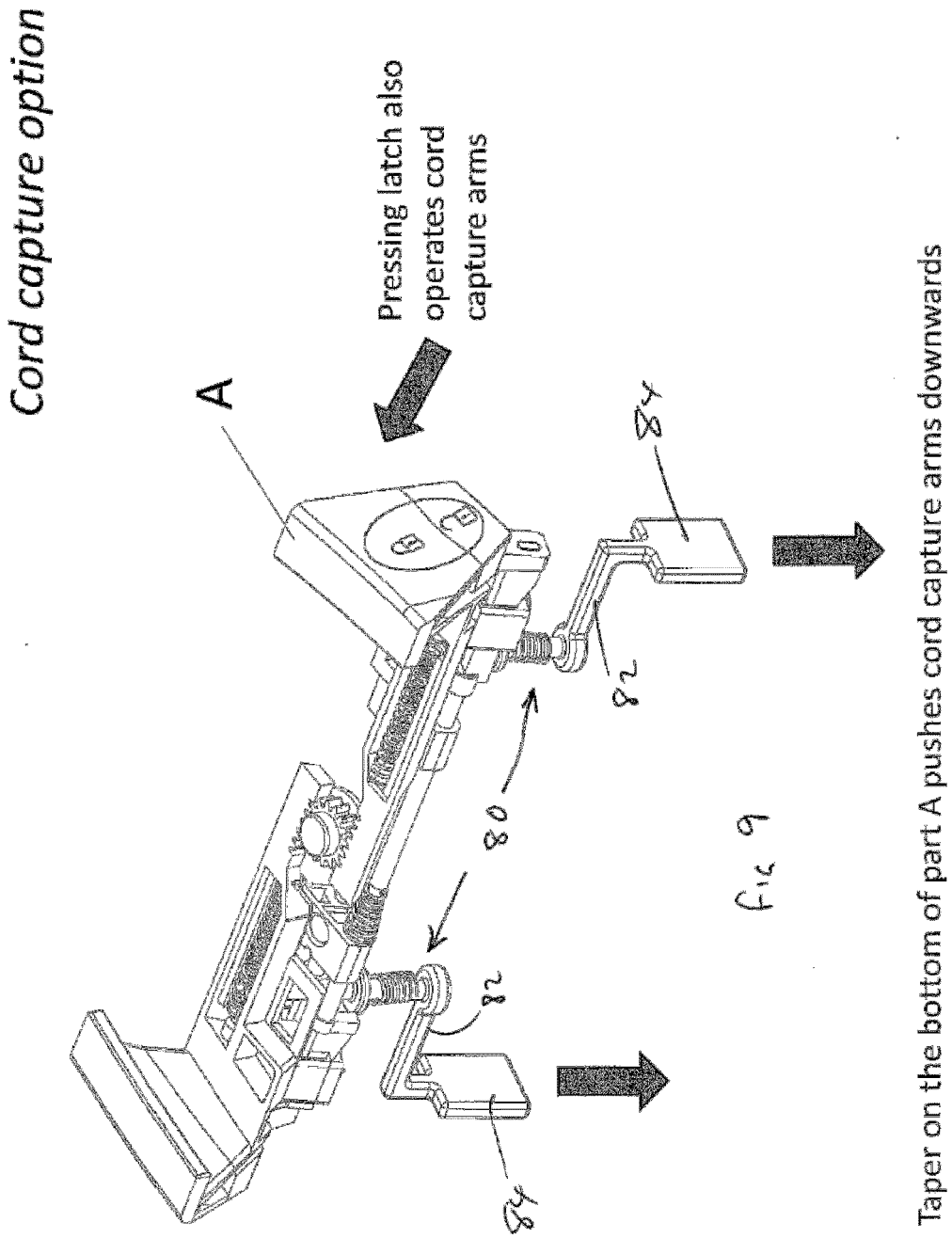
Cord capture option
A
Pressing latch also operates cord capture arms
84
82
80
82
84
Taper on the bottom of part A pushes cord capture arms downwards

Fig 9