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- (73) Patenthaver: **Isiris Solutions GmbH, Luruper Hauptstraße 46, 22547 Hamburg, Tyskland**
- (72) Opfinder: **TROJAN, Michael, Schwenckestrasse 117, 20255 Hamburg, Tyskland**
- (74) Fuldmægtig i Danmark: **Novagraaf Brevets, Bâtiment O2, 2 rue Sarah Bernhardt CS90017, F-92665 Asnières-sur-Seine cedex, Frankrig**
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HOLDER ASSEMBLY FOR MOBILE TERMINAL EQUIPMENT

DescriptionTechnical field

The invention relates to a holder arrangement for mobile devices.

5 Prior art

Mobile devices are portable electronic devices with mobile power supply, such as mobile phones, smartphones, handhelds, PDAs, MDEs, pocket computers or tablet computers. Such devices are suitable and intended for mobile use outside of a permanent stationary location or place, such as making phone calls or

10 navigating while walking or driving or taking photographs or collecting or entering data at any location. In this case, hands-free use of the mobile device is often necessary or desirable - for example for navigation or making phone calls while driving a vehicle. At the same time, such devices require regular recharging of their mobile power supply during mobile use, which is usually an accumulator.

15 Devices for holding a mobile terminal in a vehicle are generally known in the prior art, such as suction cup mounts for attaching a smartphone to the inside of the windshield of a car. Usually via a cable connection to the cigarette lighter or a proprietary connection to the on-board electrical system or electronics, the power supply of the smartphone is ensured either for operation or - if necessary - for simultaneous

20 recharging of the accumulator. Further, docking stations (docking station, cradle) for holding or storing the mobile device at a regular stationary location are generally known in the prior art, which usually comprise a physical receiving or storage device and a power supply device. The general disadvantage of such devices is that they are only intended and designed for a specific purpose, namely either for installation in a

25 motor vehicle or for use at a regular stationary location, such as a desk. Further, such devices are usually designed for use with a specific type of device.

Devices with different dimensions or a different power interface cannot be used with the same suction cup mount or docking station. For the same reason, purchasing a new device also requires purchasing a suitable suction cup mount and/or docking

30 station. For commercial use or industrial productive use of company-owned mobile

devices, for example for mobile data capture by employees, which are intended to remain in the company premises after work, the purchase of various mounting and storage devices with power supplies is necessary, both for mobile use in vehicles and for storage in the company premises. When using different mobile devices, this
5 requires the purchase and provision of different mounting and storage devices. When changing devices, new holding and storage devices must be purchased.

DE 20 2014 010 006 U1 discloses a protective cover and base station for electronic handheld devices. The protective cover and the base station allow the device to be held, stored and recharged only in a specific stationary location or place. Further,
10 both are designed for use with a specific device type, wherein each device type requiring adaptation and remanufacturing of all components. The parallel use of different device types as well as a change of device in a company requires the parallel or new acquisition of all components adapted to the different device types.

From 20 2016 003 776 U1 an operating terminal is known which comprises an
15 operating unit designed as a lockable housing with an interior for accommodating a tablet PC and a docking station which can be connected to the operating unit via a detachable mechanical-physical connection. In one embodiment, the housing is designed to be connectable to a power source via the docking station, in that both the mechanical-physical connection and the interior of the housing
20 have contact means for establishing a connection to a power source. Due to this technical design, the construction disclosed in 20 2016 003 776 U1 enables the use of the docking station with different tablet PC models, as the housing only needs to be adapted to the respective spatial shape of the desired tablet PC. However, the operating terminal disclosed in 20 2016 003 776 U1 only allows the
25 mounting, storage and recharging of tablet PCs at a specific stationary location or place using a docking station. Further, for use with the docking station, it is mandatory to assemble a corresponding housing for each device type.

WO 2014/034998 A1 discloses a back shell for smartphones, which has electrical contact means on its inside and outside for electrically contacting a
30 smartphone inserted in the back shell with an external charger.

US 2004/132343 A1 discloses a holder for mobile devices into which an adapter shell is adjustable and removable.

Disclosure of the invention

The invention is based on the object of creating a system that is structurally
5 simple to manufacture and can be assembled in a modular manner for holding, storing and recharging different mobile devices both during their mobile use and at a stationary location or site. In particular, a universal interface that can be used for different mobile devices, both for their physical holding and storage, as well as their electrical recharging, is to be created.

10 The object is achieved according to the invention by a holder arrangement according to claim 1, advantageous embodiments are described in the subclaims.

The core of the invention is a holder arrangement for mobile devices, which comprises either a housing formed with a main surface and having an interior space designed to receive a mobile device, or an adapter element formed with a main
15 surface and designed to be mechanically and physically connectable to a mobile device, wherein the main surface is formed on its inside and outside with electrical contact means which are designed and arranged in such a way that an electrical connection can be established between a mobile device which can be arranged on or on the inside of the main surface and the contact means formed on the outside,
20 and wherein the main surface has edge regions which are angled away from the outside and on which at least two recesses are formed, each of which is designed to physically receive an engagement means. The main surface is a face of the housing or adapter element on or at which the mobile device can be arranged. The inside refers to the side of the main surface on which or against which the mobile device
25 can be arranged. The outside refers to the side of the main surface facing away from the inside. A depression or recess is any depression, indentation, slot or groove which enables the physical reception of a corresponding engagement means. The at least two depressions or recesses are each designed in such a way that, taking into account the respective mass and the intended purpose of use (e.g.,
30 stationary or mobile), they enable a sufficiently secure physical fixation of a mobile device accommodated by the housing or the adapter element via corresponding

engagement means. This is ensured in the sense of the invention, for example for use as a holder in an automobile, even if the main surface has a single depression on its outer side, which in turn has two slot-shaped depressions in its edge region perpendicular to the engagement axis - i.e., in this case essentially parallel to the main surface - for receiving hooks transverse to the engagement direction. The depressions or recesses are formed on the outside of the main surface. They can be arranged as a depression, recess, indentation, slot or groove in the plane of the main surface itself or at an angle to it. The invention has the advantage of creating a system that is structurally simple to manufacture and can be assembled in a modular manner for holding, storing and recharging different mobile devices, both during their mobile use and at a stationary location or site. The interface enables both the physical holding and storage as well as the electrical recharging of mobile devices and can be used universally with different device types by providing either an appropriately adapted housing or an adapter element. When using different mobile devices in parallel or when changing devices, only the appropriate housing or adapter elements are required, while the design of all other components, including the means of intervention, remains the same or can be reused. The holder arrangement according to the invention further has a particular advantage in that the physical mounting interface on the side of the housing or adapter element (which in turn serve to accommodate the mobile device) merely provides depressions or recesses, each of which is designed to physically accommodate an engagement means. This ensures that, in the event that a lockable physical connection is required, for example when mounting a mobile device in a car, all necessary moving parts can be carried out outside the housing or adapter element. The design of the housing or adapter element - which must be adapted to the intended mobile device - is thus kept as simple as possible. Furthermore, the installation space required for the housing or adapter element - i.e., on the device side - is kept as small as possible, which enables the housing or adapter element to remain permanently on the mobile device while maintaining its mobile handling despite creating the functionality according to the invention.

In a structurally simple version of the adapter element, this is designed with at least two elastically bendable holder arms, which are designed and arranged such that a mechanical-physical connection can be established with a mobile device in that the

holder arms form-fittingly engage around the latter on two opposite edge sides, wherein the mobile device can be arranged at or on the inside of the main surface.

For the structurally simple implementation of a modular holder for the housing or the adapter element (and thus a mobile device), the holder arrangement

5 comprises a holder element which is formed with at least two engagement means, each corresponding to depressions or recesses on the outer side of the main surface, which are designed to produce a detachable positive and/or non-positive connection of the holder element to the outer side of the main surface. The mounting element represents the counterpart to the mounting interface of the
10 housing or adapter element and is designed according to the intended use (e.g., mounting in a vehicle or holding or storage at a stationary location).

For simultaneous use as a charging source, the holder element is formed with contact means which are arranged correspondingly to the contact means formed on the outside of the main surface of the housing or the adapter element and is

15 further formed with a connection device which is designed to establish an electrical connection of the contact means to a power source.

In order to eliminate the need for any additional cable connections, depending on the interface configuration of a mobile device used with the holder arrangement and the desired application, the connection device is additionally designed to

20 establish a data communication connection.

A simple connecting and disconnecting of the housing or adapter element to or from the holder element is ensured by two engagement means on the side of the holder element being designed in a hook-shaped manner and arranged in pairs to interact, wherein one engagement means is rigid and the other engagement means is

25 designed to be either elastically bendable or movable against a spring force for establishing or releasing the connection of the holder element to the main surface, and wherein both engagement means engage in the respective corresponding recesses on the outside of the main surface when the connection exists.

Simple manual operation of connecting and disconnecting the housing or adapter

30 element with or from the holder element is ensured by the engagement means, which is designed to be elastically bendable or movable against a spring force,

being designed with a rigidly connected lever arm and the lever arm being designed with a pressure surface. For this purpose, the pressure surface is designed, for example, as a button that can be operated with a fingertip, which, via the lever arm rigidly connected to it, either bends the engagement means in a shape-elastic manner or moves it against the spring force when pressure is exerted, whereby the engagement or release of the engagement means into or from the corresponding recess is achieved.

To improve the handling of the holder arrangement, at least two depressions or recesses are formed on the outside of the main surface and at the same time at least two engagement means of the holder element with magnetic means corresponding thereto, wherein each magnetic means of the main surface is assigned a magnetic means of the holder element with respect to its polarity and positioning and wherein at least two magnetic means of the main surface on the one hand and at least two magnetic means of the holder element on the other hand are each formed with a different polarity from one another. The pairs of magnetic elements assigned to each other provide additional frictional connection between the housing or adapter element and the mounting element. At the same time, due to the different polarity of the at least two magnetic means of the main surface on the one hand and the at least two magnetic means of the holder element on the other hand, it is ensured that the housing or adapter element and the holder element can only be connected to one another in one position, since the pairs of magnetic means repel one another in a possible incorrect position - for example, rotated by 180° with respect to one another in a symmetrical design - instead of attracting one another. Due to the magnetic repulsion, the user also receives haptic feedback relatively early in the event of a possible incorrect positioning.

The use of the holder element as a mobile holder solution in an automobile is ensured by a simple design in that the holder element is designed with a suction cup mount. The suction cup is used to attach the mounting element to the inside of the windshield in the conventional way, for example.

A further improvement to the handling is ensured by the holder element being formed, on the side facing away from the outside of the main surface, with a pistol-like handle which is aligned perpendicularly or at an angle range of from

60° to 120° relative to the main surface. This enables easy coordinated handling of a mobile device inserted into the housing or adapter element like a “gun”. The display side of the mobile device is located on the top side of the overall construction - parallel to the main surface of the housing or the adapter element - which allows the user to easily inspect the display from above when handling it. It is also possible to integrate an additional accumulator or battery into the pistol-like handle to extend the operating time of a mobile device inserted into the housing or adapter element and connected to it.

An extension of the modular application possibilities of the holder arrangement is achieved in a structurally simple manner in that the holder element is designed with a ball head for producing a detachable positive and/or non-positive connection with another element. The ball head is used for form-fitting and/or force-fitting attachment to another external element, this can be, for example, a docking station, a suction cup mount or a tripod, which has a fastening means corresponding to the ball head, for example lockable jaws with gripping surfaces adapted to the shape of the ball head or a lockable ball seat.

A structurally simple to manufacture storage or holding device and optionally also a recharging device for one or more housings or adapter elements (and thus several mobile devices) is provided in a structurally simple embodiment in that the holder arrangement comprises a storage or holding device designed as a wall, table or cabinet holder with one or more storage or holding points, and wherein each storage or holding point is designed as a holder element in one of the embodiments described above.

Further measures that improve the invention are shown below together with the description of preferred embodiments of the invention with reference to the figures. In the figures:

Fig. 1 is a perspective view of an adapter element,

Fig. 2 is a perspective view of a mobile device and the adapter element connected to it according to Fig. 1,

Fig. 3 is a perspective view of a holder element,

Fig. 4 is a perspective view of the adapter element according to Fig. 1 and the holder element according to Fig. 3,

Fig. 5 is a further perspective view of the adapter element according to Fig. 1 and the holder element according to Fig. 3,

5 Fig. 6 is a perspective view of the mobile device and the adapter element connected to it according to Fig. 1 and the holder element connected to the adapter element according to Fig. 3,

Fig. 7 is a perspective view of a housing,

Fig. 8 is a perspective view of the housing according to Fig. 7 and of the
10 holder element connected to the housing according to Fig. 3,

Fig. 9 is a perspective view of a suction cup holder,

Fig. 10 is a perspective view of the housing according to Fig. 7 and a single table holder connected to the housing,

Fig. 11 is a perspective view of the housing according to Fig. 7 and a single
15 wall holder connected to the housing,

Fig. 12 is a perspective view of several housings and a multi-device table holder connected to the housings,

Fig. 13 is a perspective view of several housings and a multi-device wall holder connected to the housings,

20 Fig. 14 is a perspective view of several housings and a multi-device cabinet connected to the housings.

Fig. 15 is a perspective view of a further adapter element,

Fig. 16 is a perspective view of a further holder element,

Fig. 17 is a perspective view of a further housing,

25 Fig. 1 and Fig. 2 show the adapter element 1, which is formed with two elastically bendable holding arms 2 and 2'. The adapter element 1 is formed with the main

surface 3. On the edge side, the main surface 3 is formed on its outer side with two slot-shaped recesses 4 and 4', which are arranged parallel to the plane of the main surface 3. Furthermore, the main surface 3 is additionally formed on its outer side with four depressions 5 to 5'', which are arranged within two further depression areas 6 and 6' arranged centrally within the main surface 3. Finally, the main surface 3 is formed on its outer side with the contact means 7, which is an array of nine female contacts in the form of cylindrical recesses for receiving corresponding male contact pins. Fig. 2 shows the adapter element 1, which is mechanically and physically connected to the mobile device 8. The holding arms 2 and 2' grip the mobile device 8 in a form-fitting manner on two opposite edge sides. Fig. 3 shows the holder element 9. The holder element 9 is formed with two hook-shaped engagement means 10 and 11, which correspond to the slot-shaped recesses 4 and 4'. The two hook-shaped engagement means 10 and 11 of the holder element 9 are arranged in pairs to cooperate in order to act in opposite directions to fix a workpiece in whose corresponding recesses they engage. The hook-shaped engagement means 10 is designed to be elastically bendable and is connected to the lever arm 12. The lever arm 12 is designed at its end as a pressure surface with the button 13. The hook-shaped engagement means 11 is rigid. The establishment or release of a positive connection of the hook-shaped engagement means 10 and 11 with the slot-shaped recesses 4 and 4' is carried out by manually exerting pressure on the button 13 - for example with a fingertip - whereby the lever arm 12 bends backwards and the hook-shaped engagement means 10 connected to it shifts its position upwards and can leave the slot-shaped recess 4 corresponding to it. When the button 13 is released, the lever arm 11 moves forward into its rest position, whereby the hook-shaped engagement means 10 connected to it shifts its position downwards and can engage in the slot-shaped recess 4. Furthermore, the holder element 9 is additionally formed with the engagement means 14 and 14', which are designed as bulges and which correspond to the depression areas 6 and 6'. The direction of engagement of the engagement means 14 and 14' into the corresponding depression areas 6 and 6' defines an engagement axis in the sense of the invention. Opposite this engagement axis, the slot-shaped recesses 4 and 4' are arranged vertically. Finally, the holder element 9 is formed with the contact means 15, which are designed as an array of four male contact pins arranged corresponding to the contact means 7. In addition, the holder element 9 is formed

with the connection device designed as a cable 16, which is designed to establish an electrical connection of the contact means 15 to a power source, for example a cigarette lighter in a motor vehicle. The holder element 9 can, as part of the connection device, also comprise further electrical or electronic components, such as, for example, electronics for regulating/or adjusting an applied supply voltage or current. Further, in addition to the voltage supply, the cable 16 can also be designed to establish a data communication connection, for example with the on-board electronics of an automobile. In this case, the contact means 15 and/or the contact means 7 can comprise further contact pins or female contacts in the form of cylindrical recesses in order to represent the lines required for the desired electrical or electronic connections. Fig. 4 shows the holder element 9 together with the adapter element 1 to be connected. The holder element 9 is formed with the ball head 17 on its rear side - that is, the side facing away from the adapter element 1. The ball head 17 serves for the physical connection with other elements, for example a suction cup holder for the detachable fastening of the holder element 9 to the inside of a windshield. Instead of the ball head 17, the holder element 9 can also be formed directly with a fastening means such as a suction cup holder. On the inside of its main surface 3, the adapter element 1 is formed with the contact means 18, which are designed as an array of several male contact pins. The contact means 18 serve for the electrical and/or electronic connection of the mobile device 8 with the contact means 7 on the outside of the main surface 3. Fig. 5 shows the physical connection of the support element 9 with the adapter element 1 in a rear perspective view. The hook-shaped engagement means 10 engages positively in the recess 4 when the button 13 is released and the lever arm 12 is in its rest position. At the same time, the hook-shaped engagement means 11 engages in the recess 4', which is not shown in Fig. 5 due to perspective reasons. Fig. 6 shows the physical connection of the holder element 9 to the adapter element 1 and of the adapter element 1 to the mobile device 8 in a rear perspective view. The holder arms 2 and 2' positively engage the mobile device 8 on two opposite edges.

Figures 7 and 8 show a further embodiment of the holder arrangement with the housing 19 in a rear perspective view. The housing 19 is formed with the main surface 3'. The housing 19 is designed to accommodate a mobile device. On the edge side, the main surface 3' is formed on its outer side with two slot-shaped

recesses 4" and 4"', which are arranged parallel to the plane of the main surface 3'. Further, the main surface 3' is additionally formed on its outer side with four depressions 5"" to 5''''', which are arranged within two further depression areas 6" and 6"' arranged centrally within the main surface 3'. Finally, the main surface 3' is formed on its outer side with the contact means 7', which is an array of nine female contacts in the form of cylindrical recesses for receiving corresponding male contact pins. On the inside of its main surface 3', the housing 19 is formed with further contact means which serve for the electrical and/or electronic connection of a mobile device accommodated in the housing 19 with the contact means 7' on the outside of the main surface 3'. Fig. 8 shows the housing 18, which is mechanically and physically connected to the support element 9, in a rear perspective view. When the button 13 is released and the lever arm 10 is in its rest position, the hook-shaped engagement means 10 engages positively in the recess 4". At the same time, the hook-shaped engagement means 11 engages in the recess 4"', which is not shown in Fig. 8 due to perspective reasons. At the same time, the contact means 7' are electrically connected to the contact means 15, which is not shown in Fig. 8 due to perspective reasons.

Fig. 9 shows the suction cup holder 20 as a further element of the holder arrangement. The suction cup holder 20 comprises the suction cup 21 and the essentially cylindrical hollow body 22 with the circular opening 23 for receiving the ball head 17. The releasable locking of the ball head 17 in the hollow body 22 is achieved by opening or closing the locking bracket 24. The suction cup holder 20 is attached to a windshield by pressing and turning the triangular disc 25 in the direction of arrow A, whereby the suction cup 21 is pressed in and air is expelled from it. A negative pressure is created between the interior of the suction cup 21 and the windshield. The suction cup holder 20 is released from the windshield by rotating the triangular disc 25 in the direction of arrow B, which releases an opening (not shown) and allows air to enter the suction cup 21 until pressure equalization with the atmosphere is achieved.

Fig. 10 to Fig. 15 show several different designs of storage or holding devices, each designed as a wall, table or cabinet holder, each with one or more storage or holding points. The storage or holding points are each designed as a holder element with at least two engagement means corresponding to the recesses 4 to 4"', and/or the depressions 5 to 5'''' and/or the depression areas 6 to 6"". Since the storage or

holder devices of Fig. 10 to Fig. 15, which are designed as wall, table or cabinet holders, each serve as stationary storage or holding locations, simple, non-locking, positive engagement means corresponding to the engagement means 14 and 14' and/or engagement means corresponding to the depressions 5 to 5'''' are sufficient to produce a sufficiently stable connection with the housings or adapter elements.

Further, the storage or holder points are each formed with contact means corresponding to the contact means 7 and 7' - corresponding to the contact means 15 - and with connection devices which are designed to establish an electrical connection to a power source and a data communication connection. Fig. 10 to Fig. 15 each show embodiments of the storage or holder devices in cooperation with one or more housings substantially corresponding to the housing 19. The storage or holder devices of Fig. 10 to Fig. 15 are, however, also suitable for interaction with one or more adapter elements corresponding to the adapter element 1. Fig. 10 shows the single table holder 26 with the base 27 and the housing 19'. Further comprising the single table holder 26, the data communication connection 28 and the power supply cable 16'. Fig. 11 shows the single wall holder 29 with the housing 19'. Further comprising the single wall holder 29, the data communication port 28' and the power supply cable 16''. Fig. 12 shows the multi-device table holder 30 with the base 27' and the housing 19' as well as further housings corresponding to the housing 19'. Further comprising the multi-device table holder 30, the data communication ports 28'' and 28''' and the power supply cable 16'''. Fig. 13 shows the multi-device wall holder 31 and the housing 19' as well as other housings corresponding to the housing 19'. Further comprising the multi-device wall mount 31, the data communication ports 28'''' and 28''''' and the power supply cable 16''''.

Fig. 14 shows the multi-device cabinet 32 and the housing 19' as well as further housings corresponding to the housing 19'. The multi-device cabinet 32 also includes the 16''''' cable used for the power supply.

Figs. 15 and 16 show the adapter element 1' and the holder element 9'. The adapter element 1' and the holder element 9' are slightly modified versions of the adapter element 1 according to Fig. 1 and the holder element 9 according to Fig. 3. In contrast to the adapter element 1 according to Fig. 1, the adapter element 1' does not have any depressions 5, 5', 5'' and 5'''.

In contrast to the adapter element 1 according to Fig. 1, the adapter element 1' is formed with four magnetic means 33a, 33a', 33a'' and

33a'", the position of which within the depression areas 6" and 6'" is shown schematically in Fig. 15. Furthermore, the polarity of the magnetic means 33a - 33a'" is shown in Figure 15. Otherwise, the adapter element 1' is designed in accordance with the adapter element 1. In contrast to the holder element 9 according to Fig. 3, the holder element 9' is formed with four magnetic means 33b, 33b', 33b" and 33b'", the position of which within the engagement means 14" and 14'" is shown schematically in Fig. 16. Further, the polarity of the magnetic means 33b - 33b'" is shown in Figure 16. Otherwise, the holder element 9' is designed corresponding to the holder element 9. Each of the magnetic means 33a' - 33a'" of the adapter element 1' is assigned one of the magnetic means 33b - 33b'" of the holder element 9' with regard to its polarity and positioning. The mutually associated pairs of magnets 33a/33b, 33a'/33b', 33a"/33b" and 33a'''/33b''' provide a magnetic force connection between the adapter element 1' and the holder element 9'. Here, the magnetic means 33 and 33' on the one side and the magnetic means 33" and 33'" on the other side of the adapter element 1' are designed with different polarity. At the same time, the magnetic means 33b and 33b' on the one side and the magnetic means 33b" and 33b'" on the other side of the holder element 9' are designed with a different polarity.

This ensures that the adapter element 1' and the holder element 9' can only be connected to each other in one position, since the pairs of magnets in a possible incorrect position - rotated by 180° against each other - repel each other instead of attracting each other. Due to the magnetic repulsion in the position rotated by 180°, the user also receives haptic feedback relatively early when attempting to position the device incorrectly.

Fig. 17 shows the 19" housing. The housing 19" is designed in accordance with the housing 19 of Figures 7 and 8 and is provided, among other things, with two slot-shaped recesses, of which only the recess 4" is visible in Figure 17 due to the perspective. The housing is mechanically and physically connected to the 9" mounting element. The hook-shaped engagement means 10' of the holder element 9" engages in the recess 4"". On the opposite longitudinal side of the housing 19", a corresponding further hook-shaped engagement means of the holder element 9" engages - which is not visible in Fig. 17 due to perspective reasons - into a corresponding slot-shaped recess in the housing 19". The engagement of the hook-shaped engagement means 10' in the recess 4"" can be released by applying

pressure to the button 13'. The upper side of the holder element 9" - which is adjacent to the outer side of the main surface of the housing 19" and is not visible in Fig. 17 - is otherwise designed in accordance with the holder element 9 according to Fig. 3. On its side facing away from the outside of the main surface of the housing 19", the holder element 9" is formed with a pistol-like handle 34 which is aligned substantially perpendicular to the main surface of the housing 19". This allows for easy, coordinated handling of a mobile device inserted into the 19" housing like a "gun". The display side of the mobile device is located within the viewing area 35 arranged on the top of the 19" housing, which allows the user to easily inspect the display during handling. The pistol-like handle is further formed with a cover flap 36, under which an additional accumulator is inserted into the handle 34. The additional accumulator serves to extend the operating time of a mobile device inserted into the housing 19", wherein it is connected to the housing 19" via the contact means 15 of the holder element 9 according to Fig. 3.

List of reference signs

	1, 1'	adapter element
	2, 2'	holder arms
	3	main surface
5	4, 4', 4'', 4''', 4''''	recesses
	5, 5', 5'', 5''', 5'''', 5''''', 5''''''	depressions
	6, 6', 6'', 6'''	depression areas
	7, 7'	contact means main surface
	outside	
10	8	mobile device
	9, 9', 9''	holder element
	10, 10', 11, 14, 14', 14'', 14'''	engagement means
	12	lever arm
	13, 13'	button
15	15	contact means holder element
	16, 16', 16'', 16''', 16''''	table
	17	ball head
	18	contact means main surface inside
	19, 19', 19''	housing
20	20	suction cup mount
	21	suction cup
	22	hollow body

	23	opening
	24	locking bracket
	25	triangular disc
	26	single table holder
5	27, 27'	base
	28, 28', 28", 28"', 28''', 28''''	data communication port
	29	single wall holder
	30	multi-device table holder
	31	multi-device wall mount
10	32	multi-device cabinet
	33a, 33a', 33a", 33a"', 33b, 33b', 33b", 33b'''	magnetic means
	34	handle
	35	viewing area
	36	cover flap

PATENTKRAV

1. Holderanordning til mobilenheder, hvilken holderanordning omfatter enten et hus, der er dannet med en grundflade og med et inderrum, som er udformet til at rumme en mobilenhed, eller et adapterelement, der er dannet med en grundflade og er udformet til mekanisk og fysisk at kunne forbindes med en mobilenhed, hvor grundfladen (3) på indersiden og ydersiden er dannet med elektriske kontaktmidler (7, 7', 18), som er udformet og anbragt således, at der kan etableres en elektrisk forbindelse mellem en mobilenhed, der kan anbringes ved eller på indersiden af grundfladen (3), og kontaktmidlerne (7, 7''), der er dannet på ydersiden,
- 10 **kendetegnet ved, at** grundfladen (3) har randområder, som er bøjet væk fra ydersiden, på hvilke der er dannet mindst to fordybninger (4, 4', 4'', 4''', 4'''), som er udformet til fysisk at modtage et indgrebsmiddel (10, 10', 11) parallelt med grundfladens (3) plan, hvor fordybningerne (4, 4', 4'', 4''', 4''') hver især er tilgængelige via en slidsformet åbning, der er anbragt i et plan vinkelret på grundfladen.
- 15 2. Holderanordning ifølge krav 1, der omfatter et adapterelement, **kendetegnet ved, at** adapterelementet (1, 1') er dannet med mindst to elastisk bøjelige holderarme (2, 2'), der er udformet og anbragt således, at der kan etableres en mekanisk-fysisk forbindelse med en mobilenhed ved, at holderarmene (2, 2') formlåst går i indgreb omkring sidstnævnte på to modstående randsider, hvor
- 20 mobilenheden kan anbringes ved eller på indersiden af grundfladen (3).
3. Holderanordning ifølge krav 1 eller 2, **kendetegnet ved, at** holderanordningen omfatter et holderelement (9, 9', 9''), der er dannet med mindst to indgrebsmidler (10, 10', 11), som hver især svarer til fordybningerne (4, 4', 4'', 4''', 4''') på ydersiden af grundfladen (3), og som er udformet til at
- 25 frembringe en udløselig form- og/eller kraftlåst forbindelse for holderelementet (9, 9', 9'') med ydersiden af grundfladen (3).
4. Holderanordning ifølge krav 3, **kendetegnet ved, at** holderelementet (9, 9', 9'') er dannet med kontaktmidler (15), der er anbragt med henblik på at svare til kontaktmidlerne (7, 7''), som er tilvejebragt anbragt på ydersiden af grundfladen (3)
- 30 af huset (19, 19', 19'') eller adapterelementet (1, 1'), og holderelementet (9, 9', 9'')

yderligere er dannet med en forbindelsesindretning, der er udformet til at etablere en elektrisk forbindelse mellem kontaktmidlerne (15) og en strømkilde.

5. Holderanordning ifølge krav 4, **kendetegnet ved, at** forbindelsesindretningen desuden er udformet til at etablere en datakommunikationsforbindelse.

5 6. Holderanordning ifølge et hvilket som helst af kravene 3 til 5, **kendetegnet ved, at** to indgrebsmidler (10, 10', 11, 14, 14', 14'', 14''') er udformet krogformet og anbragt med henblik på at interagere i par, hvor det ene indgrebsmiddel (10, 10', 11, 14, 14', 14'', 14''') er udformet til at være stift, og det andet indgrebsmiddel (10, 10', 11, 14, 14', 14'', 14''') er udformet til at være enten
10 elastisk bøjeligt eller bevægeligt mod en fjederkraft med henblik på at etablere eller udløse holderelementets (9, 9', 9'') forbindelse med grundfladen (3), og hvor begge indgrebsmidler (10, 10', 11, 14, 14', 14'', 14''') går i indgreb i de respektive tilsvarende fordybninger (4, 4', 4'', 4''', 4''') på ydersiden af grundfladen (3), når forbindelsen er etableret.

15 7. Holderanordning ifølge krav 6, **kendetegnet ved, at** indgrebsmidlet (10, 10', 11, 14, 14', 14'', 14'''), der er udformet til at være elastisk bøjeligt eller bevægeligt mod en fjederkraft, er dannet med en stift forbundet vægtstangsarm (12), og vægtstangsarmen (12) er dannet med en trykflade.

8. Holderanordning ifølge et hvilket som helst af kravene 3 til 7,
20 **kendetegnet ved, at** der er dannet mindst to forsænkninger (5, 5', 5'', 5''', 5''', 5''', 5''', 5''', 5''', 6, 6', 6'', 6''') eller fordybninger (4, 4', 4'', 4''', 4''') på ydersiden af grundfladen (3) og samtidigt mindst to indgrebsmidler (10, 10', 11, 14, 14', 14'', 14''') af holderelementet (9, 9', 9''), som svarer dertil, med magnetmidler (33a, 33a', 33a'', 33a''', 33b, 33b', 33b'', 33b'''), hvor hvert magnetmiddel (33a, 33a',
25 33a'', 33a''', 33b, 33b', 33b'', 33b''') af grundfladen (3), i forhold til polariteten og positioneringen, er tildelt et magnetmiddel (33a, 33a', 33a'', 33a''', 33b, 33b', 33b'', 33b''') af holderelementet (9, 9', 9''), og hvor mindst to magnetmidler (33a, 33a', 33a'', 33a''', 33b, 33b', 33b'', 33b''') af grundfladen (3) på den ene side og mindst to magnetmidler (33a, 33a', 33a'', 33a''', 33b, 33b', 33b'', 33b''') af holderelementet (9,
30 9', 9'') på den anden side hver især er dannet med en forskellig polaritet.

9. Holderanordning ifølge et hvilket som helst af kravene 3 til 8, **kendetegnet ved, at** holderelementet (9, 9', 9'') er dannet med en sugekopholder (20).

10. Holderanordning ifølge et hvilket som helst af kravene 3 til 8, **kendetegnet ved, at** holderelementet, på den side, der vender væk fra ydersiden af grundfladen (3), er dannet med et pistollignende greb (34), som er justeret vinkelret eller i et vinkelområde på fra 60° til 120° i forhold til grundfladen (3).

11. Holderanordning ifølge et hvilket som helst af kravene 3 til 8, **kendetegnet ved, at** holderelementet (9, 9', 9'') er dannet med et kuglehoved (17) til frembringelse af en udløselig form- og/eller kraftlåst forbindelse med et andet element.

12. Holderanordning ifølge et hvilket som helst af kravene 3 til 8, **kendetegnet ved, at** holderanordningen omfatter en opbevarings- eller holderindretning, der er udformet som en væg-, bord- eller skabsholder med ét eller flere opbevarings- eller fastholdelsespunkter, og hvor hvert opbevarings- eller fastholdelsespunkt er dannet som et holderelement (9, 9', 9'') ifølge et hvilket som helst af kravene 3 til 8.

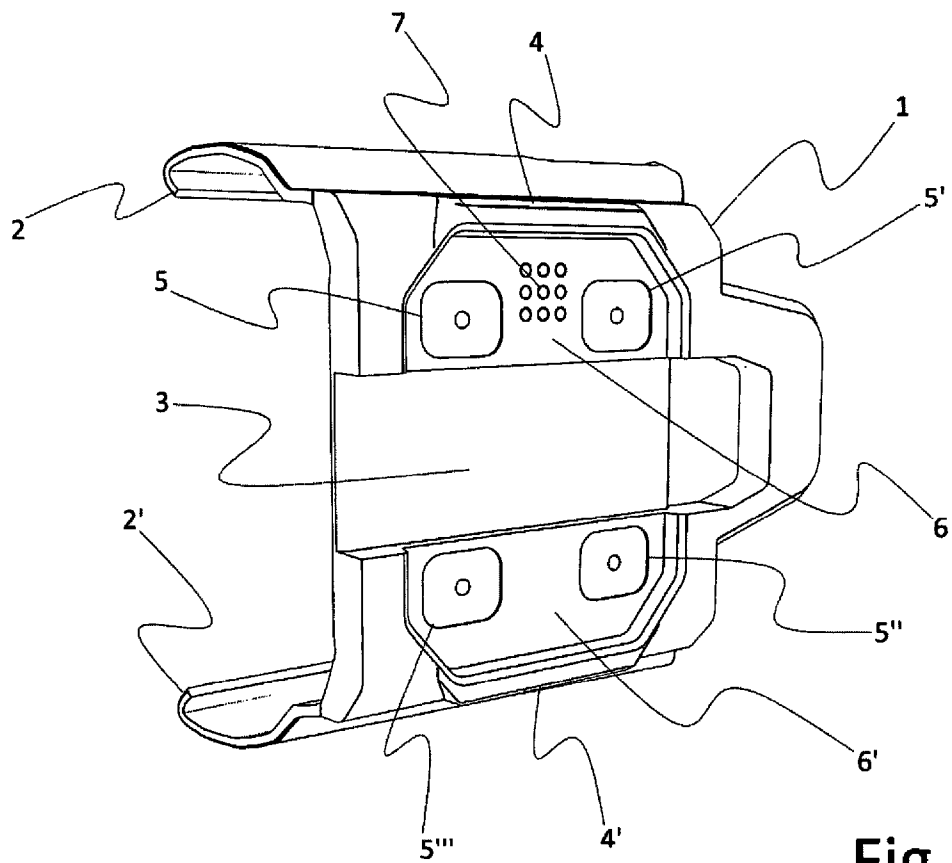


Fig. 1

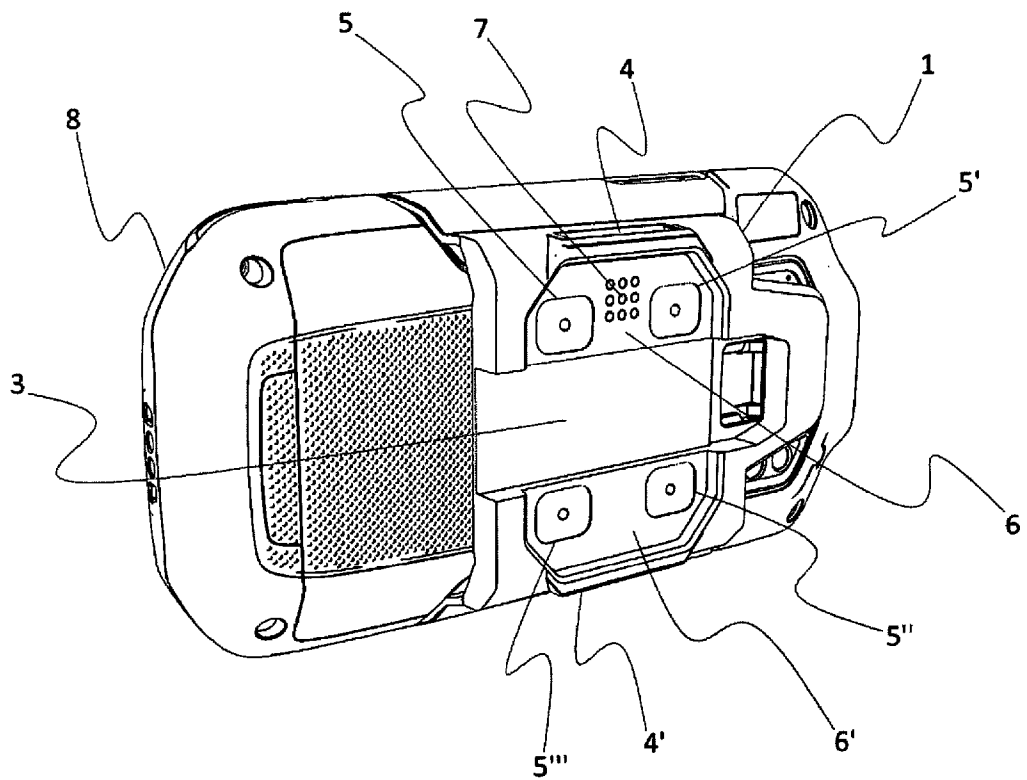


Fig. 2

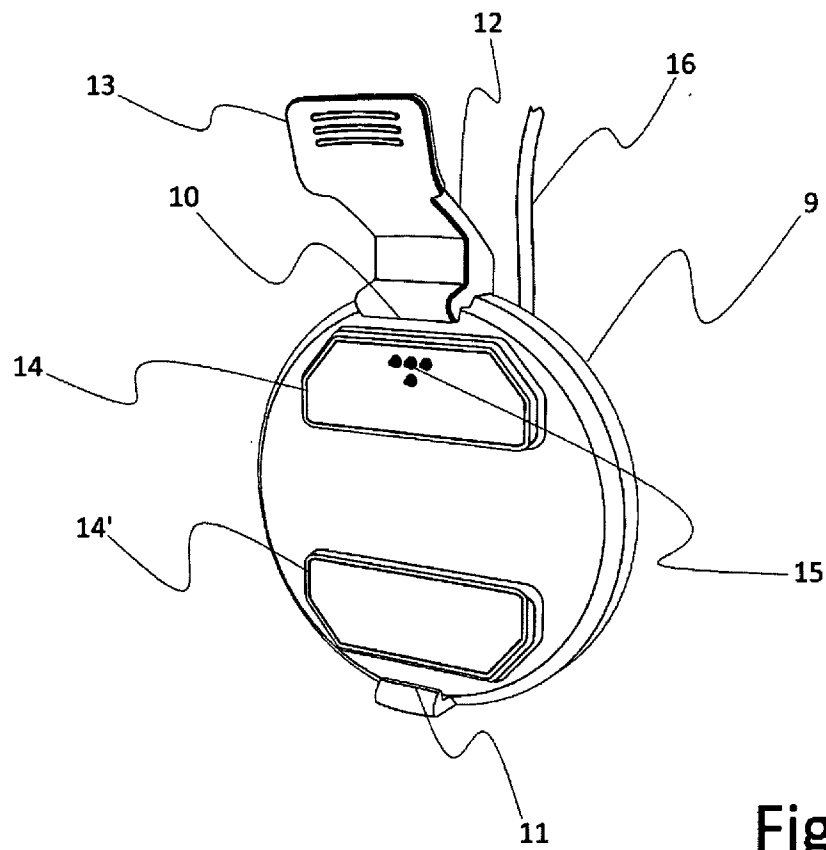


Fig. 3

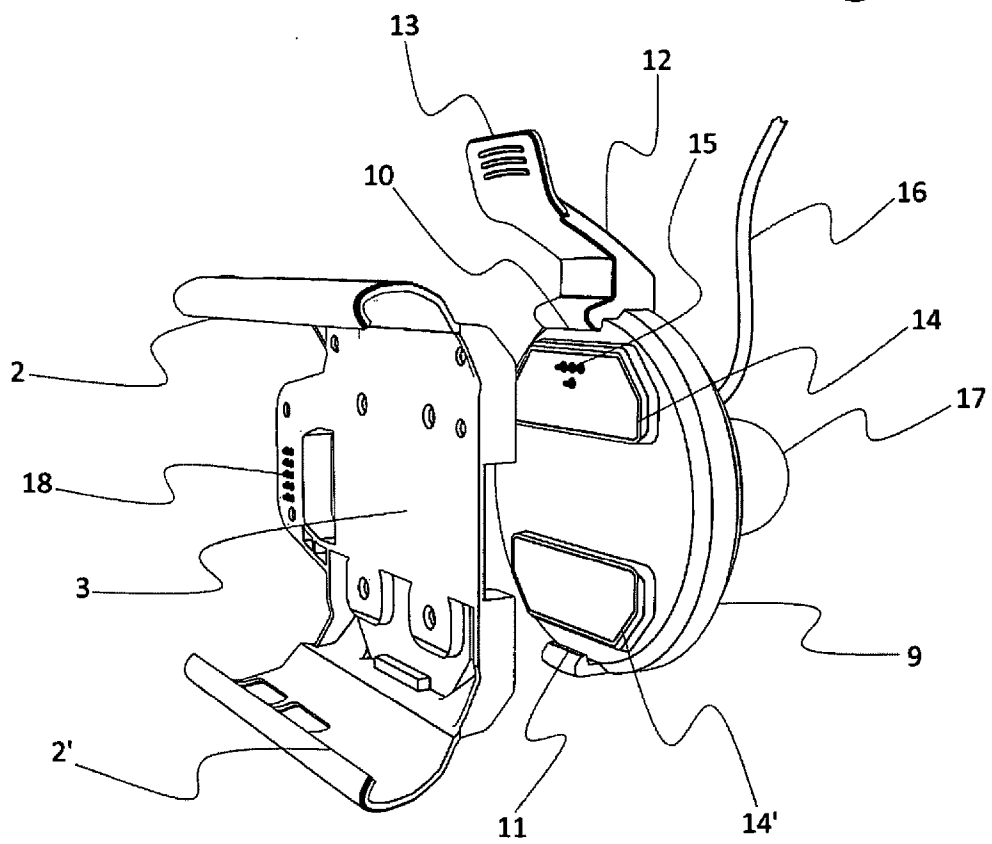


Fig. 4

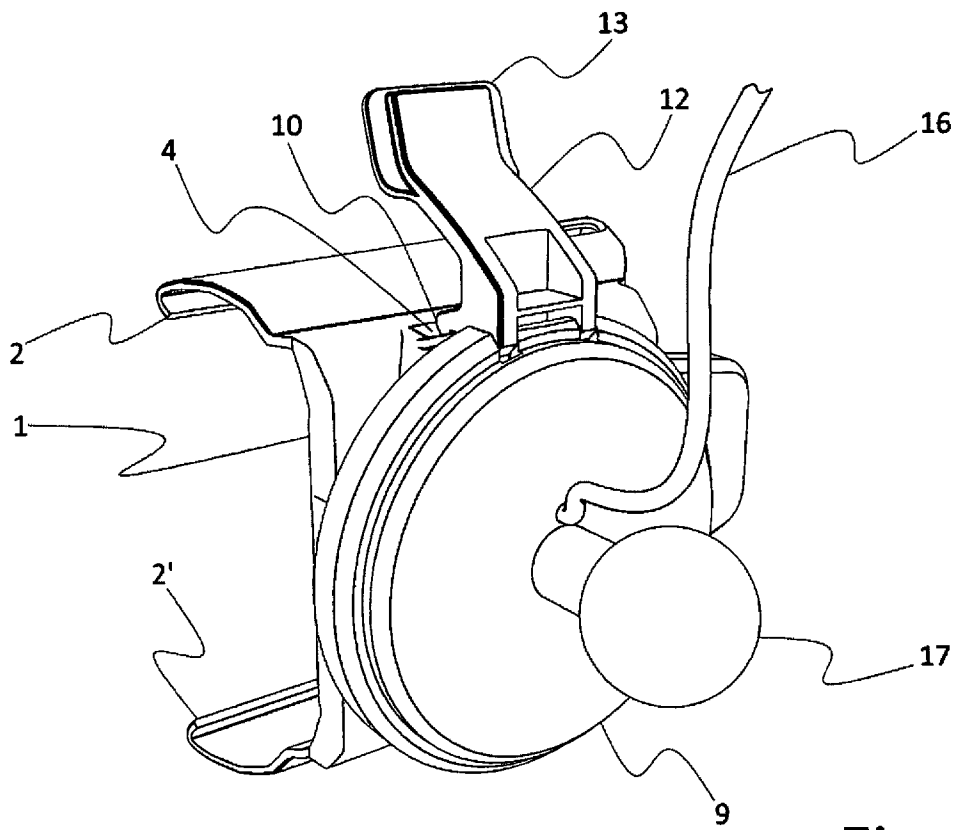


Fig. 5

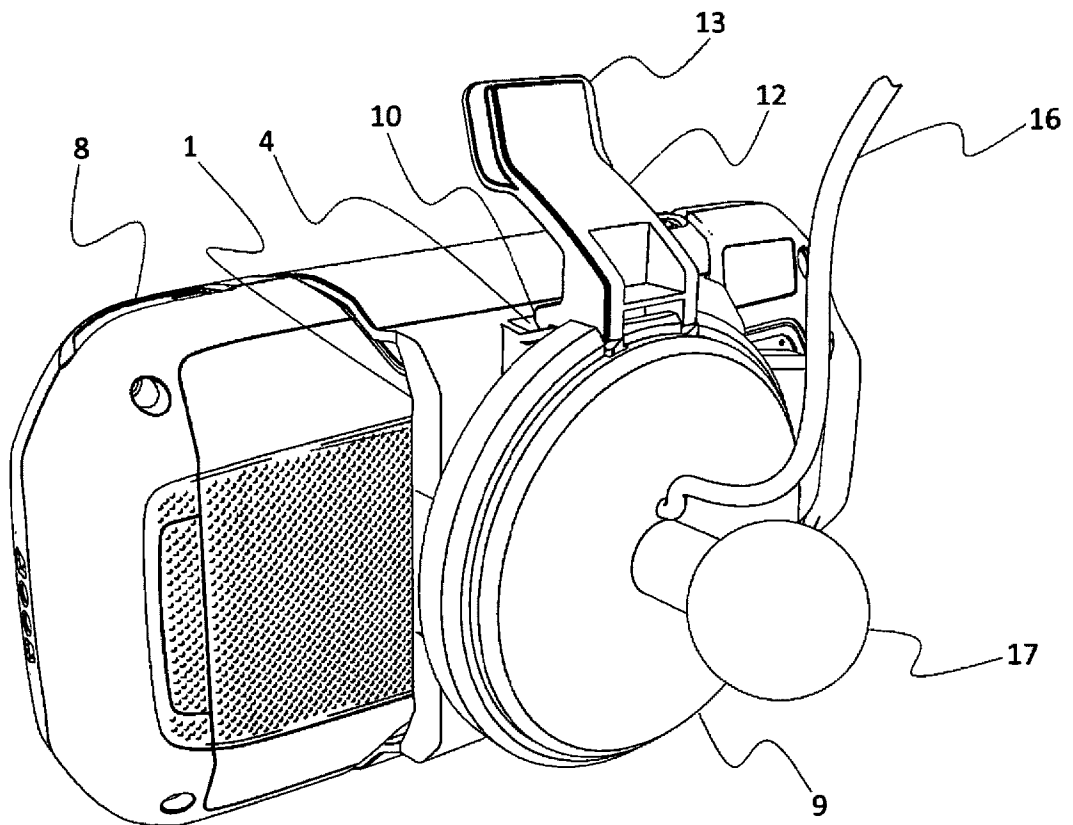


Fig. 6

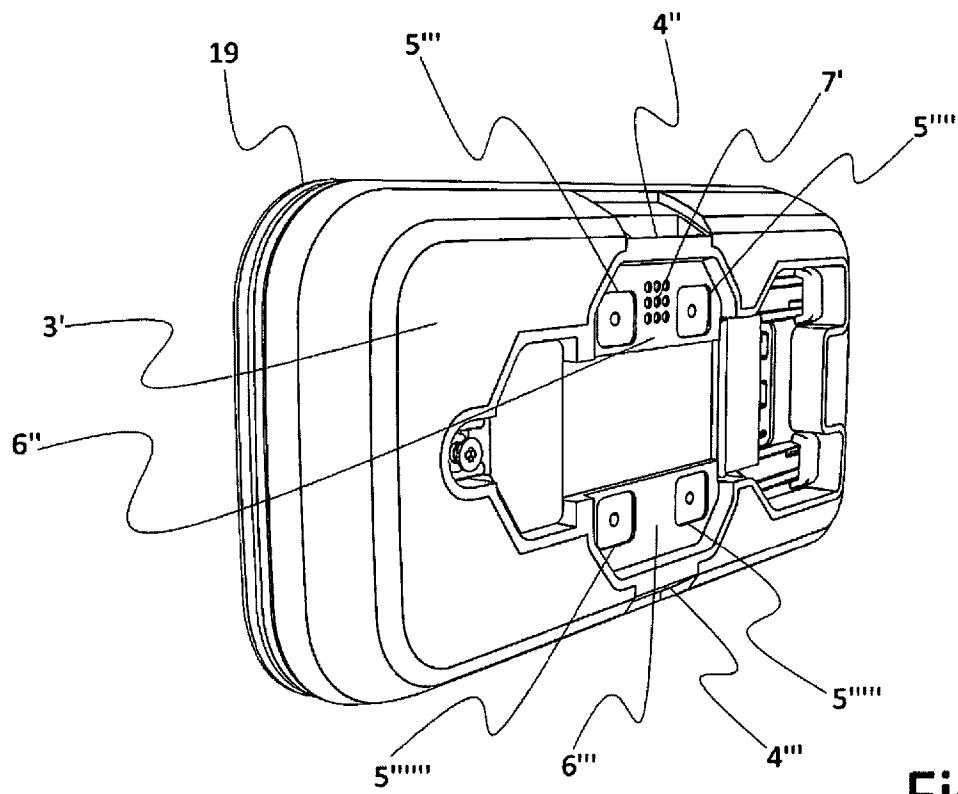


Fig. 7

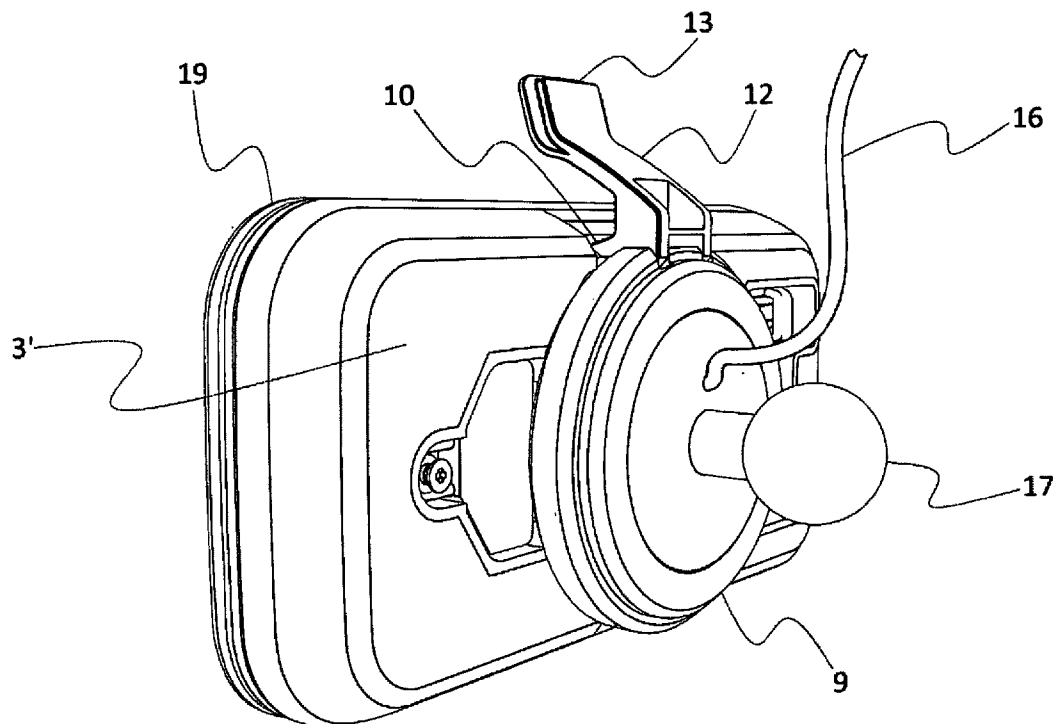


Fig. 8

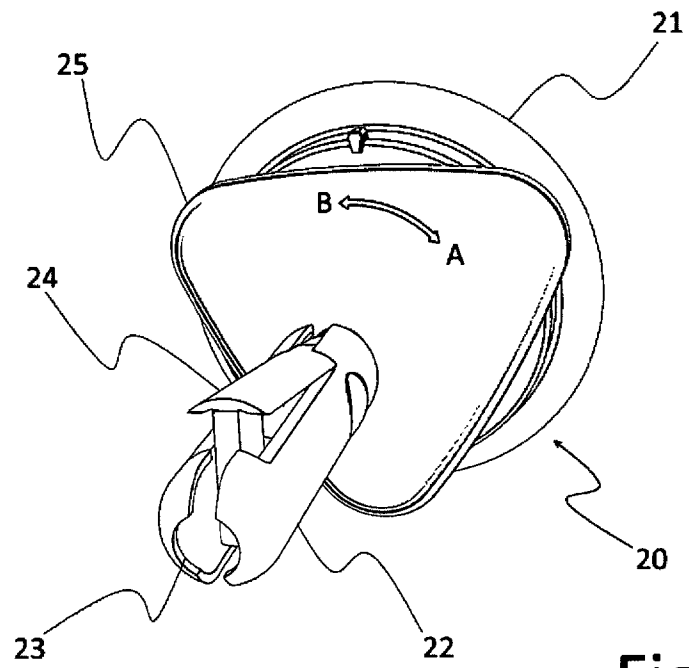


Fig. 9

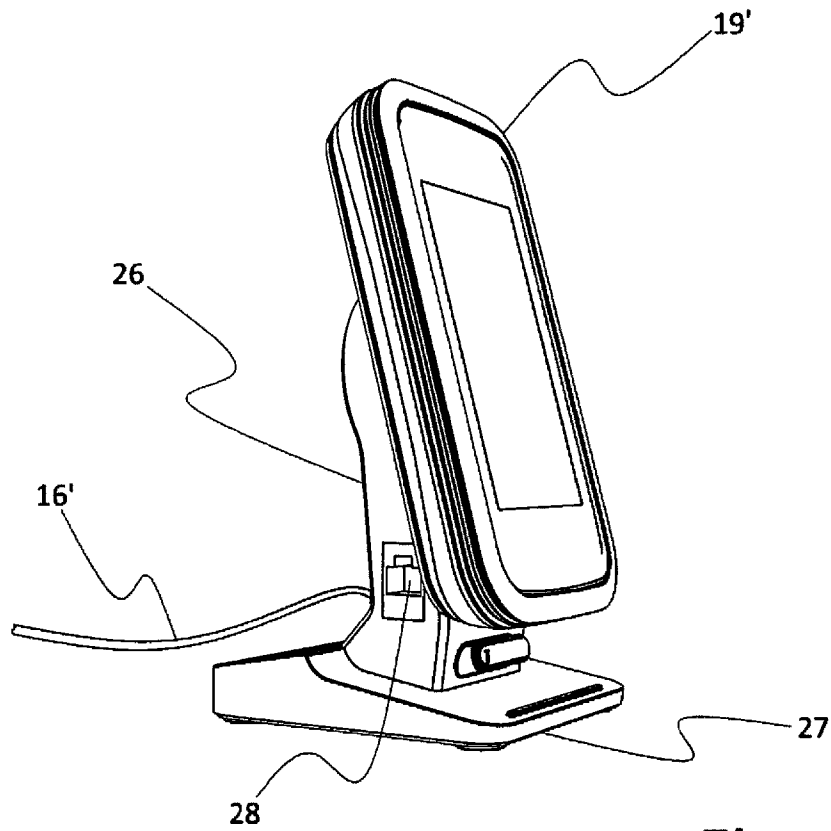


Fig. 10

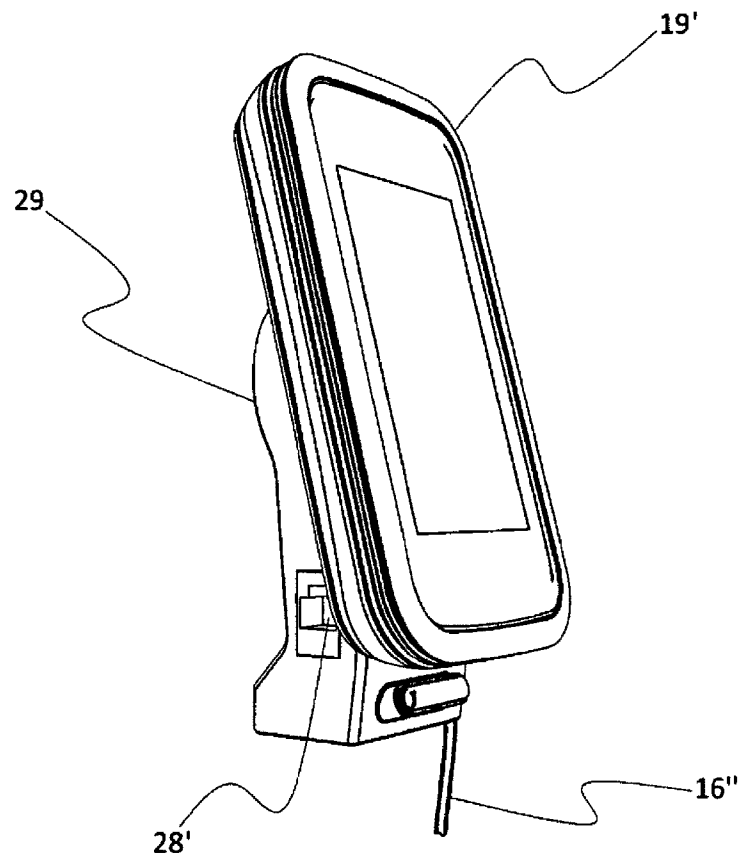


Fig. 11

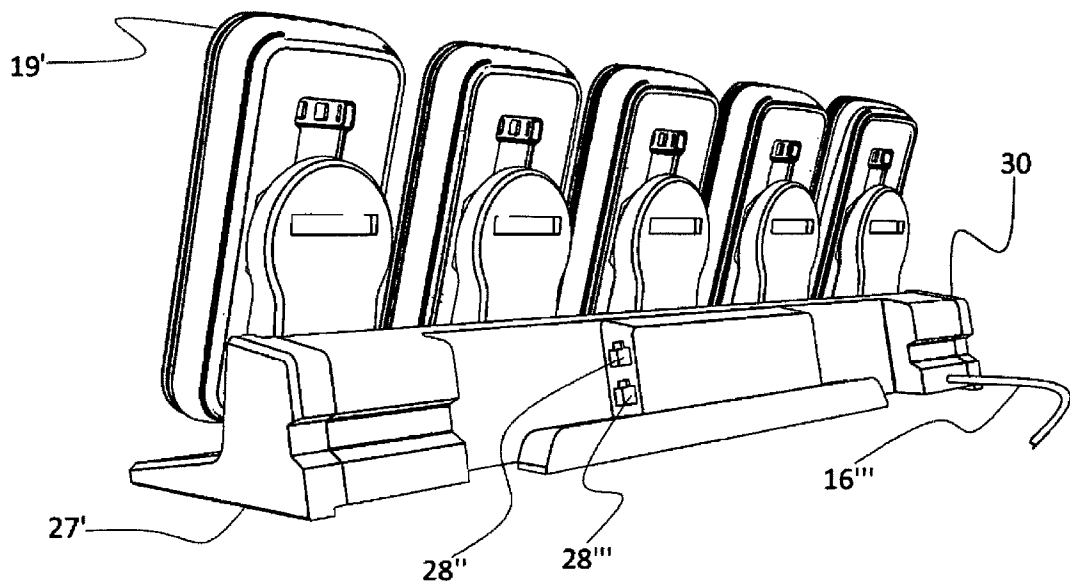


Fig. 12

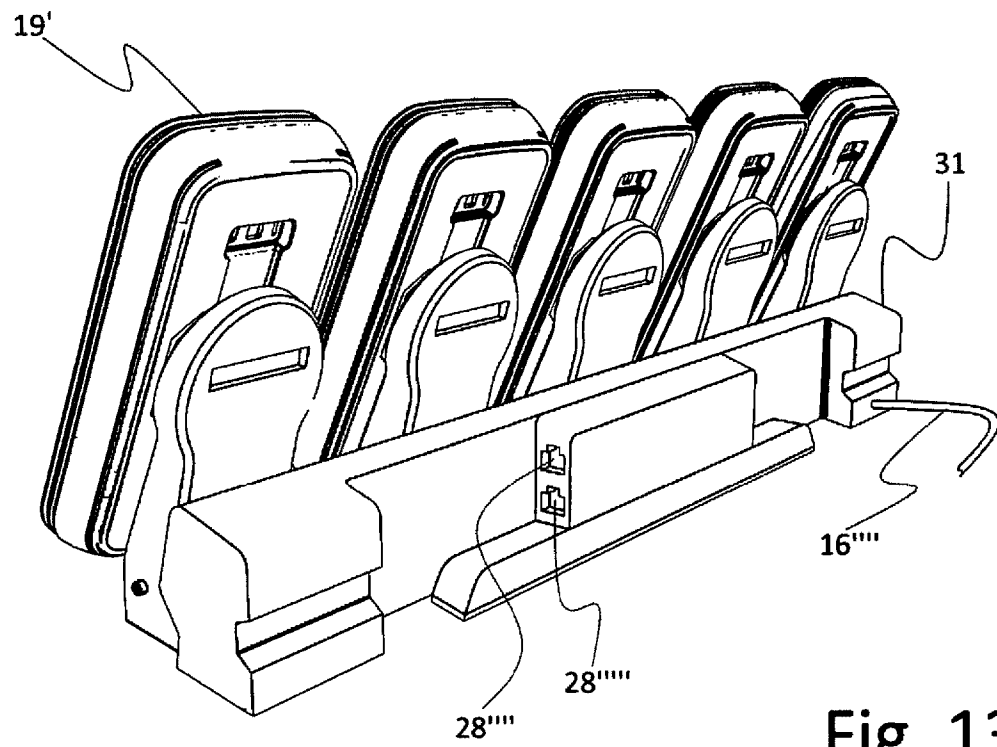


Fig. 13

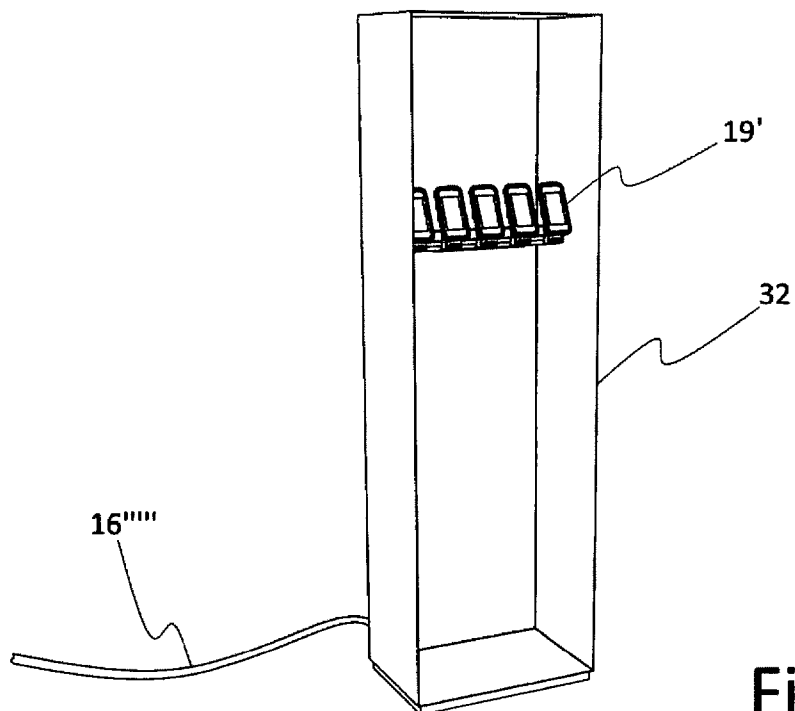


Fig. 14

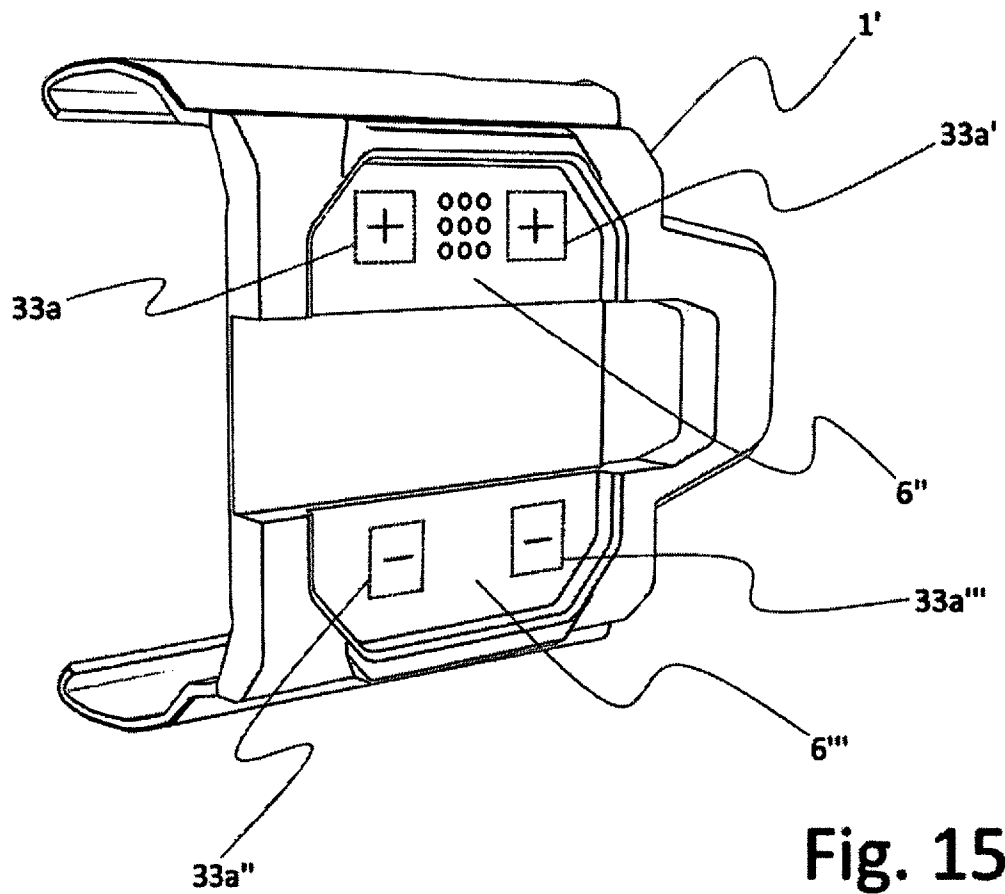


Fig. 15

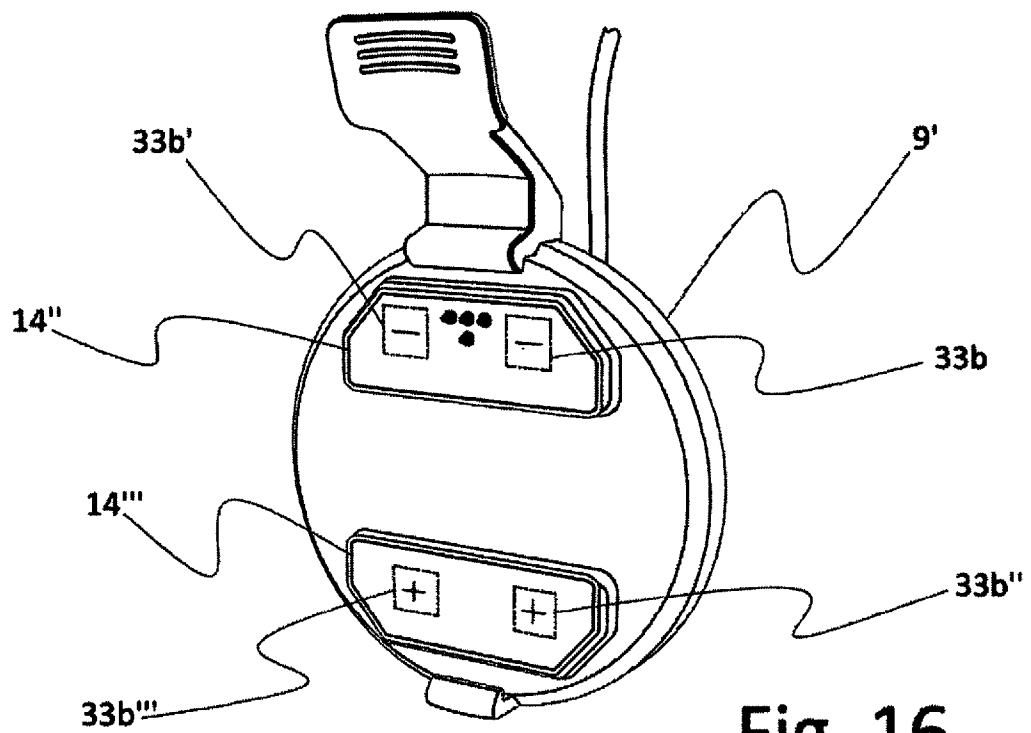


Fig. 16

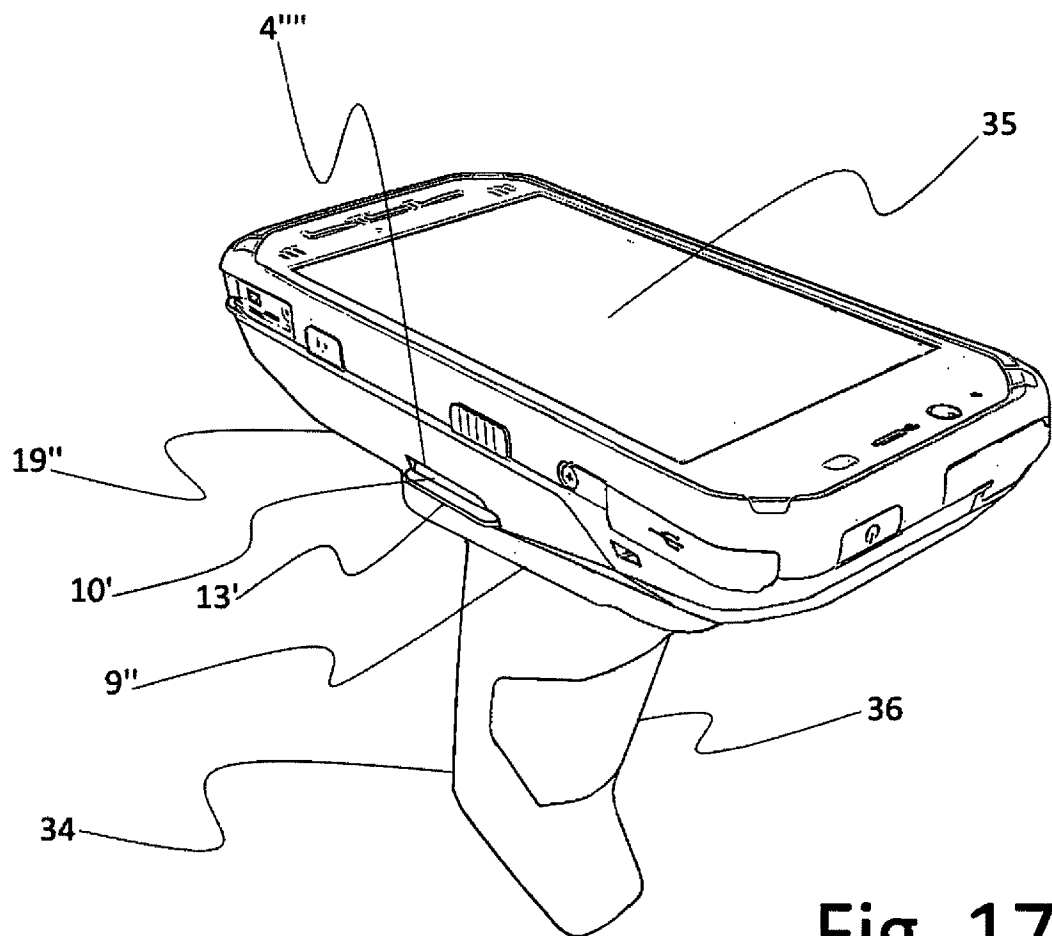


Fig. 17