

(19) **DANMARK**

(10) **DK/EP 3622490 T3**



(12) **Oversættelse af  
europæisk patentskrift**

Patent- og  
Varemærkestyrelsen

- 
- (51) Int.Cl.: **G 07 C 9/00 (2020.01)**
- (45) Oversættelsen bekendtgjort den: **2021-10-11**
- (80) Dato for Den Europæiske Patentmyndigheds bekendtgørelse om meddelelse af patentet: **2021-07-07**
- (86) Europæisk ansøgning nr.: **18733156.6**
- (86) Europæisk indleveringsdag: **2018-05-09**
- (87) Den europæiske ansøgnings publiceringsdag: **2020-03-18**
- (86) International ansøgning nr.: **AT2018060090**
- (87) Internationalt publikationsnr.: **WO2018204962**
- (30) Prioritet: **2017-05-12 DE 102017110346**
- (84) Designerede stater: **AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**
- (73) Patenthaver: **KEBA AG, Gewerbepark Urfahr 14 bis 16, A-4041 Linz, Østrig**
- (72) Opfinder: **KIRCHTAG, Harald, Lerchenfellnerstraße 63/26, 1070 Wien, Østrig  
SCHEBA, Franz, Lungitz 116, 4312 Ried/Riedmark, Østrig**
- (74) Fuldmægtig i Danmark: **Patrade A/S, Ceresbyen 75, 8000 Århus C, Danmark**
- (54) Benævnelse: **Fremgangsmåde til drift af en distributionsautomat**
- (56) Fremdragne publikationer:  
**WO-A1-2011/009449**  
**WO-A1-2015/114331**  
**DE-A1-102013 110 385**  
**US-A- 5 416 472**  
**US-B1- 6 185 773**  
**Anonymous: "Electric strike", , 21. März 2016 (2016-03-21), XP055501507, Gefunden im Internet:  
URL:[https://en.wikipedia.org/w/index.php?title=Electric\\_strike&oldid=711268411](https://en.wikipedia.org/w/index.php?title=Electric_strike&oldid=711268411) [gefunden am 2018-08-22]**  
**Jerry Levine: "Electric Strikes: Everything You Should Know | Locksmith Ledger", , 31. Januar 2017 (2017-01-31), XP055501518, Gefunden im Internet: URL:<https://web.archive.org/web/20170131194549/https://www.locksmithledger.com/article/10238119/electric-strikes-everything-you-should-know> [gefunden am 2018-08-22]**  
**Anonymous: "Utility frequency", , 27. April 2017 (2017-04-27), XP055501523, Gefunden im Internet:  
URL:[https://en.wikipedia.org/w/index.php?title=Utility\\_frequency&oldid=777470729#Time\\_error\\_correction\\_\(TEC\)](https://en.wikipedia.org/w/index.php?title=Utility_frequency&oldid=777470729#Time_error_correction_(TEC)) [gefunden am 2018-08-22]**



**Description**

**[0001]** The invention relates to a method for operating a distribution machine, in particular for the distribution, transfer, temporary storing or automated selling of objects, wherein the opened receiving compartment is indicated acoustically for visually impaired persons.

**[0002]** DE 10 2013 110 385 A1 discloses a distribution machine for the distribution, transfer, temporary storing or automated selling of articles. The distribution machine has a compartment arrangement comprising a plurality of receiving compartments. The distribution machine further comprises an electronic operation controller, which operation controller controls the processes of the distribution machine.

**[0003]** The distribution machine, as described in DE 10 2013 110 385 A1, has the disadvantage that the respectively opened receiving compartment is hard to find for blind persons.

**[0004]** Different designs of automatically unlockable locks for the use in locker-like storage systems are known from DE 10 2007 035 218 A1.

**[0005]** A locker system with multiple lockers is known from US 6185773 B1. The lockers each have a speaker that emits a beep signal similar to that of wristwatches. Hence, blind persons can also find an open locker.

**[0006]** The locker system of US 6185773 B1 entails the disadvantage that the speaker system consisting of a plurality of speakers, cabling, an amplifier, a controller and other components is expensive. Particularly high costs arise when, due to current legislation, a distribution machine as described in DE 10 2013 110 385 A1 has to be retrofitted with an acoustic system as described in US 6185773 B1.

**[0007]** WO 2015/114331 A1 discloses a method for operating a distribution

machine for the distribution, transfer, temporary storage or automated sale of items.

**[0008]** It was the object of the present invention to overcome the shortcomings of the prior art and to provide a distribution machine and/or a method for operating a distribution machine, which is accessible for visually impaired persons and has a structure that is as simple as possible.

**[0009]** This object is achieved by a method according to the claims.

**[0010]** According to the invention, a method for operating a distribution machine for the distribution, transfer, temporary storage or automated sale of items is provided. The distribution machine comprises a compartment arrangement with a plurality of receiving compartments, wherein compartment doors and locking devices for locking the receiving compartments are assigned to the receiving compartments, wherein each of the locking devices comprises an actuator, which is activated by means of an energized signal and the locking devices are thus automatically unlockable, so that the compartment doors can each be opened independently of each other, and objects can be placed in the receiving compartments and/or be removed from the receiving compartments by authorized persons, wherein the distribution machine has an electronic operating controller, which operating controller controls the processes of the distribution machine. The method according to the invention comprises the following method steps:

- inputting a command into the operating controller by the user and selecting a receiving compartment to be opened by the user or the operating controller;
- automated unlocking of the compartment door of the selected receiving compartment by applying an energized signal to the actuator of the locking device of the selected receiving compartment, wherein the compartment door of the selected receiving compartment is at least partially opened by means of an opening aid;
- acoustic indication of the position of the unlocked receiving compartment by repeated or, for a limited amount of time, continuous application of the

energized signal to the actuator of the locking device, wherein the acoustic indication of the opened receiving compartment is stopped once a detection element detects that the compartment door of the selected receiving compartment is closed again.

**[0011]** It is advantageous in the method according to the invention that by the acoustic indication of the unlocked receiving compartment, visually impaired users may also be guided to the receiving compartment provided for them. Since the acoustic indication of the unlocked compartment is achieved by means of the actuator of the locking device, it is not absolutely necessary that speakers and other elements necessary for the acoustic indication, such as cabling, audio amplifiers, a separate controller or other elements for generating acoustic signals, are installed in the distribution machine. Hence, the distribution machines may have a structure that is as simple as possible and can be produced cost-effectively for this reason. The method according to the invention is particularly advantageous if common distribution machine, as are known from DE 10 2013 110 385 A1, are already placed at their setup location and an acoustic indication of the respective compartment becomes necessary due to legislative changes. In this regard, a time-consuming and cost-intensive retrofit of the distribution machine can be avoided by reprogramming the operating controller of the distribution machine to carry out the method according to the invention.

**[0012]** A wide variety of media, such as electric current, compressed air, hydraulic fluid or other, can be used as an energized signal to unlock the compartment door or for acoustic indication of the unlocked receiving compartment. Preferably, electric current is used as the signal carrier since it can deliver precise signals. In case of use of electric current as the signal carrier, different types of actuators can be used. For example, it is conceivable that the actuator comprises an electromagnet, which carries out a mechanical movement when current and/or voltage is applied. In another exemplary embodiment, it is also conceivable that, for example, a piezo element is used as the actuator which also carries out a mechanical movement when current and/or voltage is applied.

**[0013]** Moreover, it may be useful if for the acoustic indication of the opened receiving compartment, the energized signal has a frequency between 20 Hz and 20 kHz, in particular between 40 Hz and 6 kHz. Particularly with energized signals in such a frequency range, the generated acoustic signal can also be perceived well by older or hearing-impaired persons. Especially signals in a range of 4 kHz can be perceived loudly and clearly.

**[0014]** Moreover, it may be provided that for the acoustic indication of the opened receiving compartment, the frequency and/or the signal progression of the energized signal is varied over the indication period. The advantage of this is that by this measure, the acoustic signal can be caused to stand out from ambient noise so that it can be easily heard by the user. In particular, it is conceivable that the generated acoustic signal is reproduced in the form of a specific melody. The type of signal curve is determined, for example, not only by the frequency but also by the intensity of the energized signal, such as the current strength or the voltage strength.

**[0015]** Moreover, it can be provided that the energized signal for the acoustic indication is applied intermittently, in particular that the energized signal is applied for between 0.1 seconds and 4 seconds and is subsequently not applied for between 0.1 seconds and 4 seconds. By this measure, the audibility of the generated acoustic signal may also be improved.

**[0016]** According to the invention, it is provided that the acoustic indication of the opened receiving compartment is stopped once a detection element detects that the compartment door of the selected receiving compartment is closed again. By this measure, the period in which the acoustic indication is output may be limited. Hence, in particular, the energized signal is output to the locking device merely as long as necessary.

**[0017]** Additionally, it is also conceivable that a maximum period in which the acoustic signal is output is predetermined by the operating controller. The period

may preferably amount to a maximum of between 1 minute and 10 minutes. By this measure, it can be achieved that when the compartment is not found by a user, the distribution machine does not wear out excessively and/or there is no excessive energy consumption by the distribution machine.

**[0018]** According to an advancement, it is possible that the actuator comprises an electromagnet and the energized signal is an electric current, by means of which the electromagnet is magnetized.

**[0019]** Moreover, it may be useful if the acoustic indication of the open storage compartment is performed when a visual impairment of the user cannot decidedly be ruled out, in particular if a visual impairment is stored for a user recorded in the system or if the user is not recorded in the system. By this measure, it can be achieved that visually impaired users have an acoustic assistance for finding the compartment assigned to them in any case. Users who are logged into the system can be asked during the login process whether they have a visual impairment, and this information can be used to control the distribution machine accordingly. For users who are not logged into the system or for whom no information is stored regarding their vision, it is assumed that they have a visual impairment, and the acoustic signal is emitted. Thus, it may be guaranteed that an acoustic signal is also output for all users having a visual impairment.

**[0020]** Moreover, it may be provided that in the case of the acoustic indication of the unlocked receiving compartment, the frequency or the actuation energy of the energized signal is selected such that the actuator does not entirely open or does not entirely close the locking device, so that the locking device swings about the closed state or the opened state. The advantage of this is that, for the acoustic indication, the actuator is not completely displaced between its open position and its closed position and thus the wear in the locking device is kept as low as possible.

**[0021]** Moreover, it is provided according to the invention that during automated unlocking of the compartment door of the selected receiving compartment, the

compartment door of the selected receiving compartment is at least partially opened by means of an opening aid. This enables the user to sense the automatic distribution machine with their hands and thereby locate the opened compartment. According to a particular embodiment, it is possible that an energized signal is applied to multiple locking devices in a time-delayed manner, such that an acoustic path is formed away from a central user interface and towards the opened receiving compartment. This measure may be particularly necessary in the case of very large distribution machines, namely if the unlocked receiving compartment is located at a great distance from the user interface. In such a constellation, it would be possible that the acoustic signal of the unlocked receiving compartment may hardly or not at all be perceived at the user interface. It is only by means of the acoustic path, that the user can be guided to the corresponding receiving compartment.

**[0022]** According to an advantageous advancement, it can be provided that when forming the acoustic path, an energized signal is first applied to the locking device closest to the user interface, and an energized signal is applied consecutively to the individual locking devices toward the opened receiving compartment, wherein when a further locking device is subjected to the signal, the energized signal is no longer applied to the locking device previously subjected to the energized signal.

**[0023]** When the acoustic path is formed, it may be provided that the locking devices which form the acoustic path are actuated so briefly and/or with an energized signal with so little energy that the associated compartment doors are not completely unlocked. Alternatively, it may be provided that the opening aids of the receiving compartments which form the acoustic path are not activated, such that even in case of complete unlocking of the compartment doors of the receiving compartments of the acoustic path, the compartment doors are not opened.

**[0024]** In particular, it can be advantageous if an energized signal of a different frequency is applied to the locking device of the unlocked receiving compartment than to those locking devices which form the acoustic path. By this measure, it can be achieved that the unlocked receiving compartment can be

easily found. Alternatively or additionally, it may be provided that the energized signal is applied to the locking device of the unlocked receiving compartment longer than to the locking devices forming the acoustic path.

**[0025]** In a further alternative, it may be provided that an energized signal of a larger energy density is applied to the locking device of the unlocked receiving compartment than to those locking devices which form the acoustic path.

**[0026]** For the purpose of better understanding of the invention, it will be elucidated in more detail by means of the figures below.

**[0027]** These show in a respectively very simplified schematic representation:

- Fig. 1 an embodiment of a distribution machine in a perspective view;
- Fig. 2 receiving compartments of the distribution machine in the opened and closed state;
- Fig. 3 a perspective representation of an exemplary embodiment of a locking device;
- Fig. 4 a flowchart of a possible operating mode of the distribution machine.

**[0028]** First of all, it is to be noted that in the different embodiments described, equal parts are provided with equal reference numbers and/or equal component designations, where the disclosures contained in the entire description may be analogously transferred to equal parts with equal reference numbers and/or equal component designations. Moreover, the specifications of location, such as at the top, at the bottom, at the side, chosen in the description refer to the directly described and depicted figure and in case of a change of position, these specifications of location are to be analogously transferred to the new position.

**[0029]** Fig. 1 shows a possible embodiment variant of a distribution machine 1. Such a distribution machine 1 may, for example, be provided for the distribution, transfer, temporary storing or selling of objects, such as mail pieces or goods. For receiving and temporary storing of these objects, the distribution machine 1

comprises a plurality of receiving compartments 2 of different geometric dimensions, in particular with different constructional compartment heights 3. These receiving compartments 2 are parts of a compartment arrangement 4, wherein compartment doors 5 are assigned to the receiving compartments 2.

**[0030]** Moreover, in the exemplary embodiment shown in Fig. 1, at least one locking device 6 is assigned to each receiving compartment 2, with the respective receiving compartment 2 being lockable by means of said locking device 6. In this regard, in a known manner, locking of the compartment door 2 can be achieved by cooperation of a locking element 7 associated with the locking device 6 with a barrier element 8 fixedly connected to the compartment door 5, as is illustrated in Fig. 2.

**[0031]** For automated access to a receiving compartment 2 according to Fig. 1, its locking device 6 is designed to be electronically controllable, in particular the locking device 6 can be unlocked in an automated manner by means of an energized signal. In this regard, the compartment doors 5 may each be unlocked and opened independently of one another, such that objects can be deposited in receiving compartments 2 and/or can be removed from the receiving compartments 2 by authorized persons depending on usage and/or access rights to the receiving compartments 2 or to the objects located in a receiving compartment 2.

**[0032]** In this regard, the actual opening process of a compartment door 5 may be at least partially automated by electric drive means. Alternatively, in a variant not claimed, purely manual opening of a compartment door 5 by an authorized person or user registered at the machine after a successful unlocking operation can be implemented.

**[0033]** In the exemplary embodiment shown in Figs. 1 and 2, the compartment doors 5 of the receiving compartments 2 do not have door handles or the like. In compartment doors 5 designed like this, an opening operation may be supported by suitable opening aids 9, as is shown in Fig. 2. For example, in a locking device

6 or in a receiving compartment 2, a tappet element 10 driven by a prestressed spring means can be formed, which tappet element 10 causes a compartment door 5 to spring open a gap after a performed unlocking process and the compartment door 5 can then be opened.

**[0034]** After a receiving compartment 2 has been accessed, a relocking of a compartment door 5 can be performed in different ways depending on the type of locking device 6 associated with the receiving compartment 2. Hence, for example, a locking operation can be carried out in a purely manual manner by actively pushing shut the compartment door 5 of a receiving compartment 2. A further possibility is an automated closing and locking of a compartment door 5 by means of corresponding electrical drive elements and drive mechanisms. Combinations of manual and automated, electrical and/or electronic processes are also possible in a correspondingly equipped locking device 6. Such closing operations may, for example, require manual pushing shut of a compartment door 5, however, the actual locking operation may be designed so as to be controllable electrically and/or electronically.

**[0035]** In order to at least partially automate the operating sequences of the distribution machine 1 and its intended functions, an electronic operating controller 11 is assigned to the distribution machine or is structurally integrated into the distribution machine 1 as is illustrated in Fig. 1. Such an electronic operating controller 11 comprises at least one computing unit in the form of a programmable, software-controlled processor or microcontroller for the purpose of controlling, monitoring or regulating the functions or processes of the distribution machine 1.

**[0036]** Furthermore, it may be provided that the distribution machine 1 comprises, in addition to the operational controller 11, at least one further control device in the form of a safety controller. This safety controller can be designed to be structurally independent on and/or in the distribution machine 1 and be coupled to the operating controller 11 for data transmission. For the sake of simplicity, reference is made merely to the operating controller 11 in the present documents,

while the commands may also entirely or partially be carried out by the safety controller. In other words, the term operating controller 11 refers to any controller of the distribution machine 1.

**[0037]** The operating controller 11 shown in Fig. 1 comprises a user-side interface, in particular a user interface 12, which is designed for man-machine communication. In this regard, said user interface 12, as is shown in Fig. 1, may be structurally integrated in the distribution machine 1; however, may alternatively also be designed so as to be structurally independent. Likewise, a mobile display/input device is conceivable which may be connected to the operating controller 11 for example via a radio interface.

**[0038]** In the exemplary embodiment shown in Fig. 1, the user interface 12 has corresponding input aid 13 and output aid 14, via which an influence of the operating functions and processes of the distribution machine 1 can be performed and/or via which status information of the distribution machine 1 can be seen. In this regard, such input aids 13 and output aids 14 may be designed in the form of switches, keyboards, displays or other means known according to the prior art. Of course, other combined input and output aids, for example in the form of a touch-sensitive touchscreen, are also possible. Furthermore, the distribution machine 1 may comprise receipt scanners, barcode scanners, receipt printers, and the like, which can be controlled and/or read by the operating controller 11.

**[0039]** The user interface 12 of the operating controller 11 may further comprise identification and/or authorization verification means 15. Such electronic authorization verification means 15 may be formed, as is known per se, for example by card readers for identification cards or credit and other payment cards. Alternatively or additionally, input/output means may be formed for manual input of an authorization, for example in the form of user names and/or PIN codes. Finally, authorization verification for use of the distribution machine 1 can also be performed via the capture of barcode sections, biometric features, such as fingerprint or voice recognition, and/or by mechanical keys or transponders. Combinations of such authorization verification means 15 are also applicable.

**[0040]** After a positive result of the verification of the access authorization to a receiving compartment 2, the operating controller 11 of the distribution machine 1 may be provided to generate an unlocking command, which unlocking command is a requirement for unlocking a locking device 6 and for subsequent opening of the compartment door 5 of the receiving compartment 2.

**[0041]** Depending on the use profile of the distribution machine 1 and/or depending on the size and arrangement of the receiving compartments 2 of the machine 1, different types of locking devices 6 may be assigned to the receiving compartments 2. Preferably, either automatically unlockable and lockable locking devices 6, or automatically unlockable and manually lockable locking devices 6 are used. In this regard, manually lockable locking devices 6 are used preferably for small receiving compartments 2 and receiving compartments 2 which are positioned at a great height within the compartment arrangement 4.

**[0042]** For reasons of manipulation security, receiving compartments 2 with a particularly large compartment height 3 may have two or more than two locking devices 6.

**[0043]** As can be seen from Fig. 2, at least individual locking devices 6 of the distribution machine 1 may comprise detection elements 16 for detecting whether a compartment door 5 of a receiving compartment 2 is present in an open or closed state. Such detection elements 16 may, for example, be designed as sensors in the form of light barriers or distance measuring devices. Alternatively or additionally, a design of such detection elements 16 can also be provided in the form of switching elements which can be actuated by corresponding transmission elements 17 in the course of closing a compartment door 5. Of course, such detection elements 16 and/or transmission elements 17 may also be assigned to the compartment door 5 and/or the receiving compartment 2. Preferably, these detection elements 16 are line-connected to the operating controller 11 and/or designed for transmission of the status information of the compartment door 5 to the operating controller 11 via an interface. Such a measure is particularly useful

for locking devices 6 which can be controlled merely for the unlocking operation, i.e. In locking devices 6 which can be locked mechanically by mere pushing shut of the assigned compartment door 5. In such cases, the operating controller 11 can check the status information about the closing status of the compartment door 5 transmitted by the detection element 16 via the interface with regard to plausibility and personal safety and, optionally, initiate countermeasures.

**[0044]** Fig. 3 shows an exemplary embodiment of a locking device 6 with the side and/or cover part removed in a perspective view. The detailed description of the locking device 6 and/or further embodiments of the locking device 6 can be found in DE 10 2007 035 218 A1.

**[0045]** The locking device 6 is connected to a control device which can effect an automated and/or remote-controlled unlocking of the locking element 7 if an access authorization to the corresponding receiving compartment 2 is present.

**[0046]** As can be seen from Fig. 3, it can be provided that the locking device 6 comprises a housing 19, which serves for receiving the locking element 7 and the actuator 18. The locking element 7 may be designed in the form of a lever, which is mounted on a rotary joint 20. In particular, the locking element 7 may comprise a first lever arm 21 and a second lever arm 22. The first lever arm 21 may be coupled to the actuator 18 and the second lever arm 22 may cooperate with the barrier element 8.

**[0047]** In the exemplary embodiment according to Fig. 3, the actuator 18 is designed in the form of an electromagnetic adjustment member. However, in further exemplary embodiments, it may also be provided that the actuator 18 is, for example, designed in the form of a pneumatic cylinder or a hydraulic cylinder and/or has another drive energy.

**[0048]** Fig. 4 shows a flowchart of the process for depositing objects in receiving compartments 2 and/or for removing objects from the receiving compartments 2.

**[0049]** In a first method step A, the user enters a command into the electronic operating controller 11 of the distribution machine 1. When removing objects from the distribution machine 1, the command input serves either for a user being able to identify themselves to pick up an object stored for them, or for the user, for example, selecting a compartment or an object which they would like to remove in a targeted manner. When storing objects, the input of a command into the electronic operating controller serves for the user selecting a receiving compartment 2 in a targeted manner and/or for a receiving compartment 2 being assigned to the user.

**[0050]** In other words, when inputting the command into the operating controller 11, either a receiving compartment 2, which is to be opened for the user, is selected by the operating controller 11 in an automated manner, or the user can select a particular receiving compartment 2, which is to be opened for them, in a targeted manner.

**[0051]** For inputting the command into the operating controller 11, a wide range of means can be used, as they are already described in DE 10 2013 110 385 A1. For example, it is conceivable that the command input is performed by means of the user interface 12. In further exemplary embodiments, it is for example also conceivable that the command input into the operating controller 11 is performed by means of a remote control device, such as an app on a smartphone.

**[0052]** When inputting a command into the operating controller 11, it is conceivable that the user is asked whether they have a visual impairment. Furthermore, it is also conceivable that the data regarding a possible visual impairment of the user is stored in their user profile.

**[0053]** In yet another embodiment, it is also conceivable that such data, like a visual impairment of the user, is not retrieved at all and thus is not known to the operating controller 11.

**[0054]** In a query B performed within the operating controller, it is now queried whether the user has a visual impairment. Only in the case that it is known that the user has no visual impairment, the receiving compartment 2 is opened according to variant 1 shown in Fig. 4, without an acoustic indication of the unlocked receiving compartment 2 being performed. The further removal process and/or insertion process is performed as it is described in DE 10 2013 110 385 A1.

**[0055]** However, if in query B, the operating controller 11 determines that the user has a visual impairment and/or if no data regarding the vision of the user exists, the method is performed according to variant 2 in query B.

**[0056]** In a method step C, the compartment door 5 of the selected receiving compartment 2 is unlocked by actuating the locking device 6 by means of the energized signal. In this regard, the compartment door 5 is opened at least partially or completely, by means of the opening aid 9, so that it is available for a user to remove and/or insert an object.

**[0057]** In a further method step D, the unlocked receiving compartment 2 is acoustically indicated to the user by application of the energized signal to the actuator 18 of the locking device 6. The indication is performed in that the actuator 18 and thus the locking device 6 is caused to oscillate and thus a sound is emitted.

**[0058]** In a second embodiment variant, after unlocking the compartment door 5 according to method step C, the acoustic indication of the unlocked receiving compartment 2 may be performed by the energized signal, after opening of the compartment door 5, again being applied to the actuator 18 in method step D.

**[0059]** In a second embodiment variant, after unlocking the compartment door 5 according to method step C, the acoustic indication of the unlocked receiving compartment 2 may be performed by the energized signal, after opening of the

compartment door 5, being continuously applied to the actuator 18. Method steps C and D may thus smoothly merge.

**[0060]** Method step D may help the user in finding the position of the unlocked receiving compartment 2.

**[0061]** The acoustic indication of the unlocked receiving compartment 2 is performed until the compartment door 5 of the unlocked receiving compartments 2 is closed again.

**[0062]** Further possibly required method steps may be carried out according to method step E as were already described in DE 10 2013 110 385 A1. The exemplary embodiments show possible embodiment variants, and it should be noted in this respect that the invention is not restricted to these particular illustrated embodiment variants of it, but that rather also various combinations of the individual embodiment variants are possible and that this possibility of variation owing to the technical teaching provided by the present invention lies within the ability of the person skilled in the art in this technical field.

**[0063]** The scope of protection is determined by the claims. Nevertheless, the description and drawings are to be used for construing the claims.

**[0064]** All indications regarding ranges of values in the present description are to be understood such that these also comprise random and all partial ranges from it, for example, the indication 1 to 10 is to be understood such that it comprises all partial ranges based on the lower limit 1 and the upper limit 10, i.e. all partial ranges start with a lower limit of 1 or larger and end with an upper limit of 10 or less, for example 1 through 1.7, or 3.2 through 8.1, or 5.5 through 10.

**[0065]** Finally, as a matter of form, it should be noted that for ease of understanding of the structure, elements are partially not depicted to scale and/or are enlarged and/or are reduced in size.

**List of reference numbers****[0066]**

- 1 Distribution machine
- 2 Receiving compartment
- 3 Compartment height
- 4 Compartment arrangement
- 5 Compartment door
- 6 Locking device
- 7 Locking element
- 8 Barrier element
- 9 Opening aid
- 10 Tappet element
- 11 Operating controller
- 12 User interface
- 13 Input aid
- 14 Output aid
- 15 Authorization verification means
- 16 Detection element
- 17 Transmission element
- 18 Actuator
- 19 Housing
- 20 Rotary joint
- 21 First lever arm
- 22 Second lever arm

**PATENTKRAV**

1. Fremgangsmåde til drivning af en distributionsautomat (dispensermaskine) (1) til fordeling, udlevering, midlertidig opbevaring eller automatiseret salg af genstande, hvorved distributionsautomaten (1) omfatter et rumarrangement (4) med en flerhed af modtagerum (2), hvorved modtagerummene (2) har tilknyttet rumdøre (5) og låseanordninger (6) til spærring af modtagerummene (2), hvorved de respektive låseanordninger (6) omfatter en aktuator (18), som aktiveres ved hjælp af et energisignal, og låseanordningerne (6) derved automatisk kan oplåses, således at de respektive rumdøre (5) uafhængigt af hinanden kan spærres og åbnes, og genstande kan anbringes i modtagerummene (2) og/eller fjernes fra modtagerummene (2) af autoriserede personer, hvorved distributionsautomaten (1) omfatter en elektronisk driftsstyring (11), hvilken driftsstyring (11) styrer processerne i distributionsautomaten (1), hvorved følgende fremgangsmådetrin udføres:

- indgivelse af en kommando til driftsstyringen (11) fra brugeren og udvælgelse af et modtagerum (2), som skal åbnes af brugeren eller driftsstyringen (11);
- automatiseret oplåsning af rumdøren (5) i det udvalgte modtagerum (2) ved påvirkning af aktuatoren (18) for det udvalgte modtagerums (2) låseanordning (6) med et energisignal, hvorved rumdøren (5) i det udvalgte modtagerum (2) mindst delvist åbnes ved hjælp af et åbne-hjælpe middel (9);
- akustisk indikering af det oplåste modtagerums (2) position,

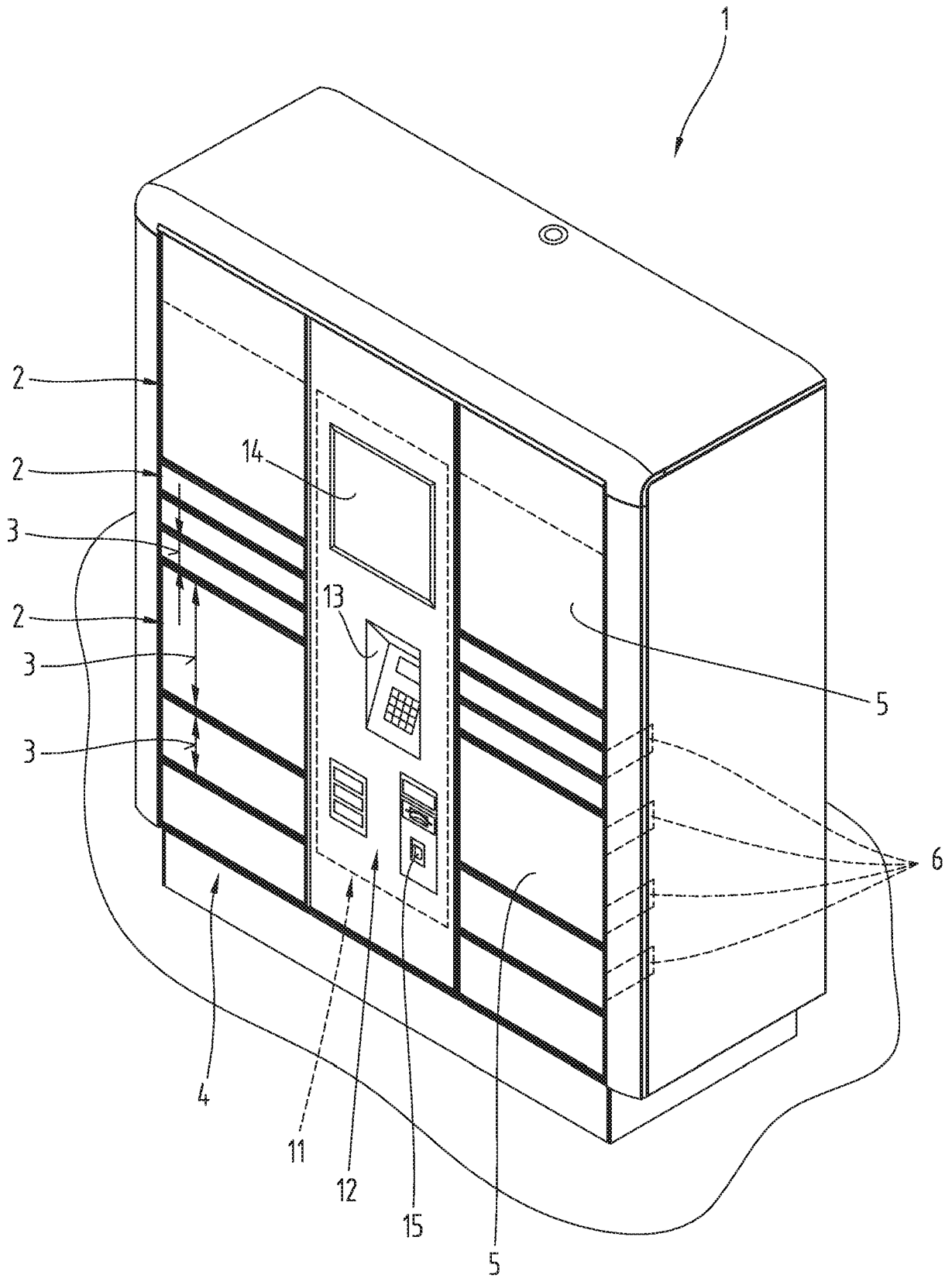
**kendetegnet ved, at**

den akustiske indikering af det oplåste modtagerums (2) position sker ved gentaget eller i et begrænset tidsrum vedvarende påvirkning af aktuatoren (18) for låseanordningen (6) i det udvalgte modtagerum (2) med energisignalet, hvorved den akustiske indikering af det åbnede modtagerum (2) afsluttes, når et detekteringselement (16) detekterer, at rumdøren (5) til det udvalgte modtagerum (2) igen lukkes.

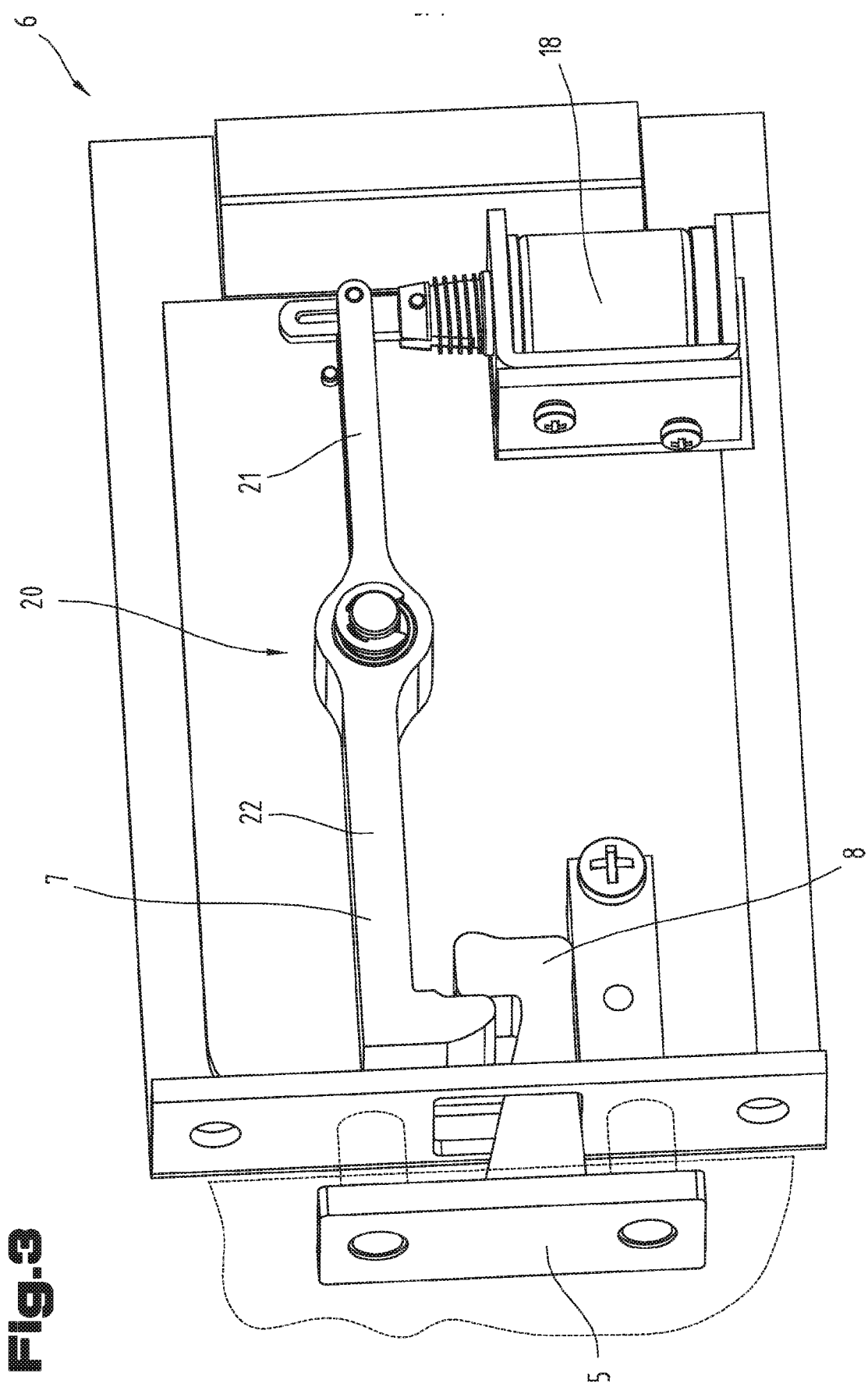
2. Fremgangsmåde ifølge krav 1, **kendetegnet ved, at**, med henblik på akustisk indikering af det åbnede modtagerum (2), energisignalet har en frekvens mellem 20 kHz og 20 kHz, navnlig mellem 40 Hz og 6 kHz.
- 5 3. Fremgangsmåde ifølge krav 1 eller 2, **kendetegnet ved, at**, med henblik på akustisk indikering af det åbnede modtagerum (2), frekvensen og/eller signalføreløbet for energisignalet varieres i løbet af indikeringstidsrummet.
- 10 4. Fremgangsmåde ifølge et af de foregående krav, **kendetegnet ved, at** energisignalet til den akustiske indikation tilvejebringes intermitterende, navnlig at energisignalet tilvejebringes mellem 0,1 sekunder og 4 sekunder og dernæst ikke tilvejebringes mellem 0,1 sekund og 4 sekunder.
- 15 5. Fremgangsmåde ifølge et af de foregående krav, **kendetegnet ved, at** aktuatoren (18) omfatter en elektromagnet, og energisignalet er en elektrisk strøm, ved hjælp af hvilken elektromagneten magnetiseres.
- 20 6. Fremgangsmåde ifølge et af de foregående krav, **kendetegnet ved, at**, ved den akustiske indikation af det oplåste modtagerum (2), frekvensen eller aktiveringsenergien for energisignalet vælges således, at aktuatoren (18) ikke helt lukker låseanordningen (6), således at låseanordningen (6) svinger omkring den åbnede tilstand.
- 25 7. Fremgangsmåde ifølge et af de foregående krav, **kendetegnet ved, at** en flerhed af låseanordninger (6) således tidsforskudt påvirkes med et energisignal, at der fra et centralt bruger-interface (12) helt til det åbnede modtagerum (2) dannes en akustisk bane.
- 30 8. Fremgangsmåde ifølge krav 7, **kendetegnet ved, at**, ved dannelsen af den akustiske bane, låseanordningen (6) nærmest ved brugerinterfacet (12) først påvirkes med et energisignal, og et energisignal dernæst påvirker de enkelte låseanordninger (6) hen imod det åbne modtagerum (2), hvorved, når en yderligere låseanordning (6) udsættes for signalet, energisignalet ikke længere påvirker låseanordningen (6), som tidligere blev påvirket af energisignalet.

9. Fremgangsmåde ifølge krav 7 eller 8, **kendetegnet ved, at** låseanordningen (6) i det oplåste modtagerum (2) påvirkes med et energisignal med en anden frekvens end de låseanordninger (6), som danner den akustiske bane.

**Fig.1**







**Fig. 9**

**Fig.4**

