US 20200405119A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2020/0405119 A1**

LIU et al. (43) **Pub. Date: Dec. 31, 2020**

(54) **AUTOMATIC CLEANING STORAGE BASE FOR ELECTRIC MOP**

(71) Applicant: **SHENZHEN JASHEN TECHNOLOGY CO., LTD.**, SHENZHEN (CN)

(72) Inventors: **Zhi-Chang LIU**, SHENZHEN (CN); **Xiao-Ming ZHANG**, SHENZHEN (CN); **Jian-Xin XI**, SHENZHEN (CN)

(21) Appl. No.: **16/560,316**

(22) Filed: **Sep. 4, 2019**

(30) **Foreign Application Priority Data**

Jun. 25, 2019 (CN) 201910560001.4
Jun. 25, 2019 (CN) 201910560059.9
Jun. 26, 2019 (CN) 201910564423.9
Jun. 26, 2019 (CN) 201910565112.4
Jun. 26, 2019 (CN) 201910566387.X

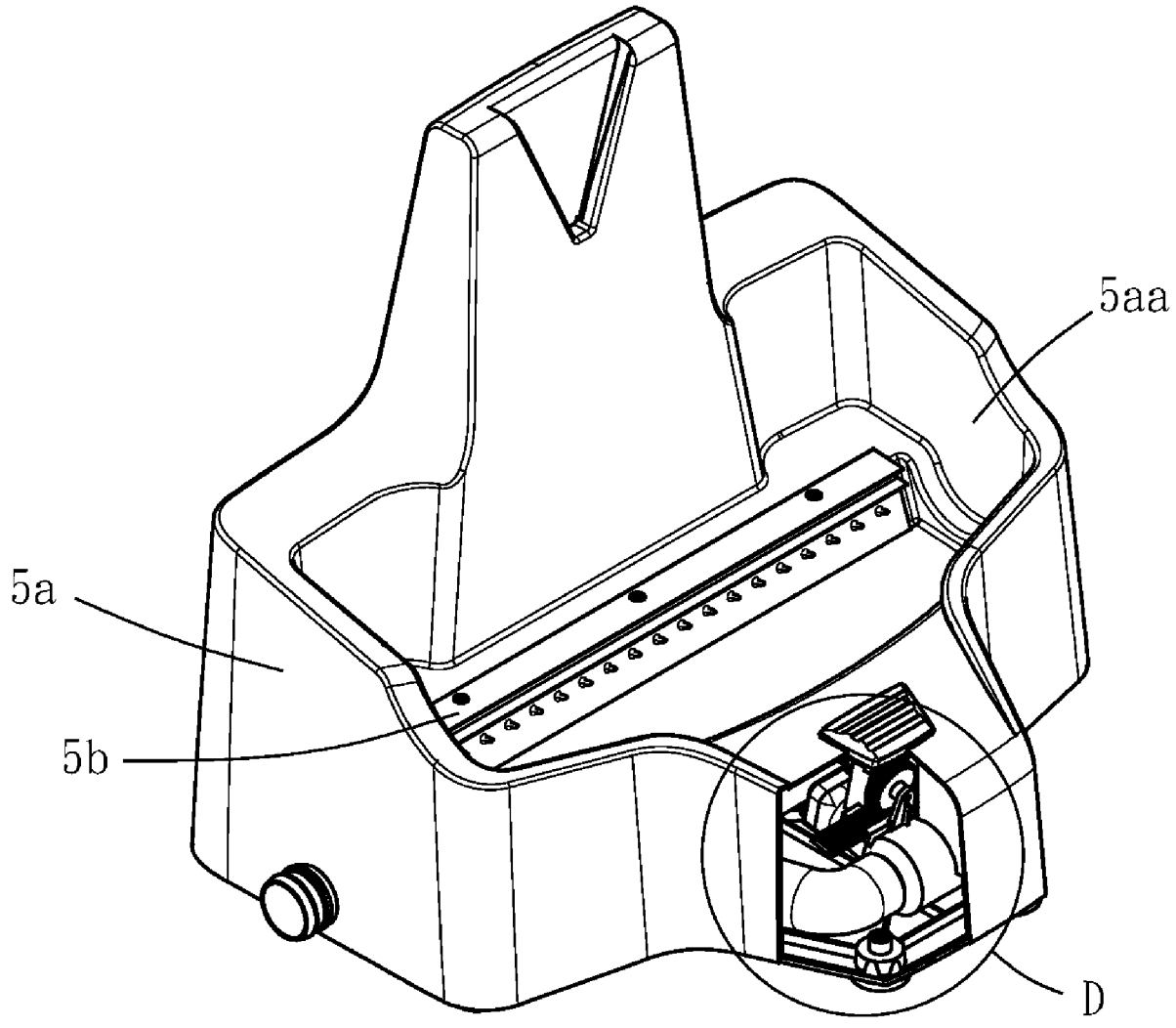
Publication Classification

(51) **Int. Cl.**
A47L 13/50 (2006.01)

(52) **U.S. Cl.**
CPC ***A47L 13/50*** (2013.01); *A47L 11/18* (2013.01)

(57) **ABSTRACT**

Disclosed is an automatic cleaning storage base for an electric mop. The electric mop has a rotatable cleaning roller; the automatic cleaning storage base comprises a casing member, a cleaning tank is formed in an upper surface of the casing member, and a decontamination assembly for scrubbing the cleaning roller is disposed in the cleaning tank; the roller is cleaned by using the decontamination assembly of the present invention, thereby avoiding the cumbersome manual operation in the prior art, avoiding staining human hands, and achieving a good effect.



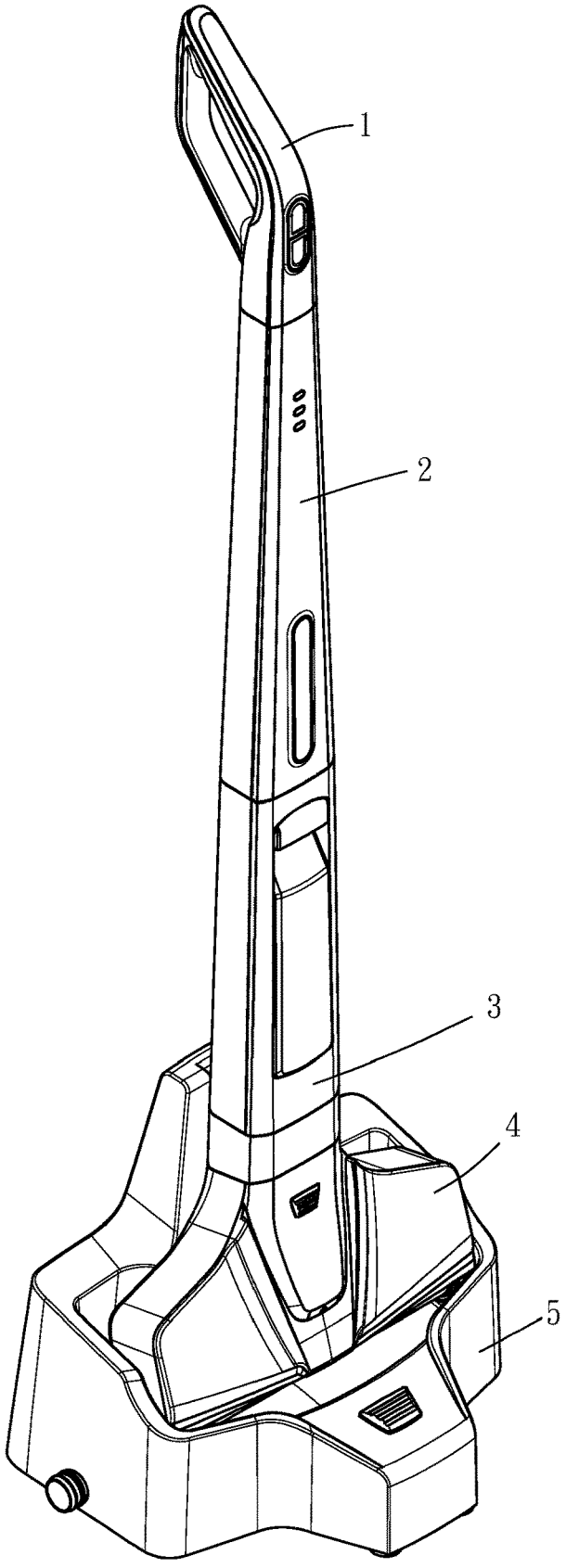


FIG. 1

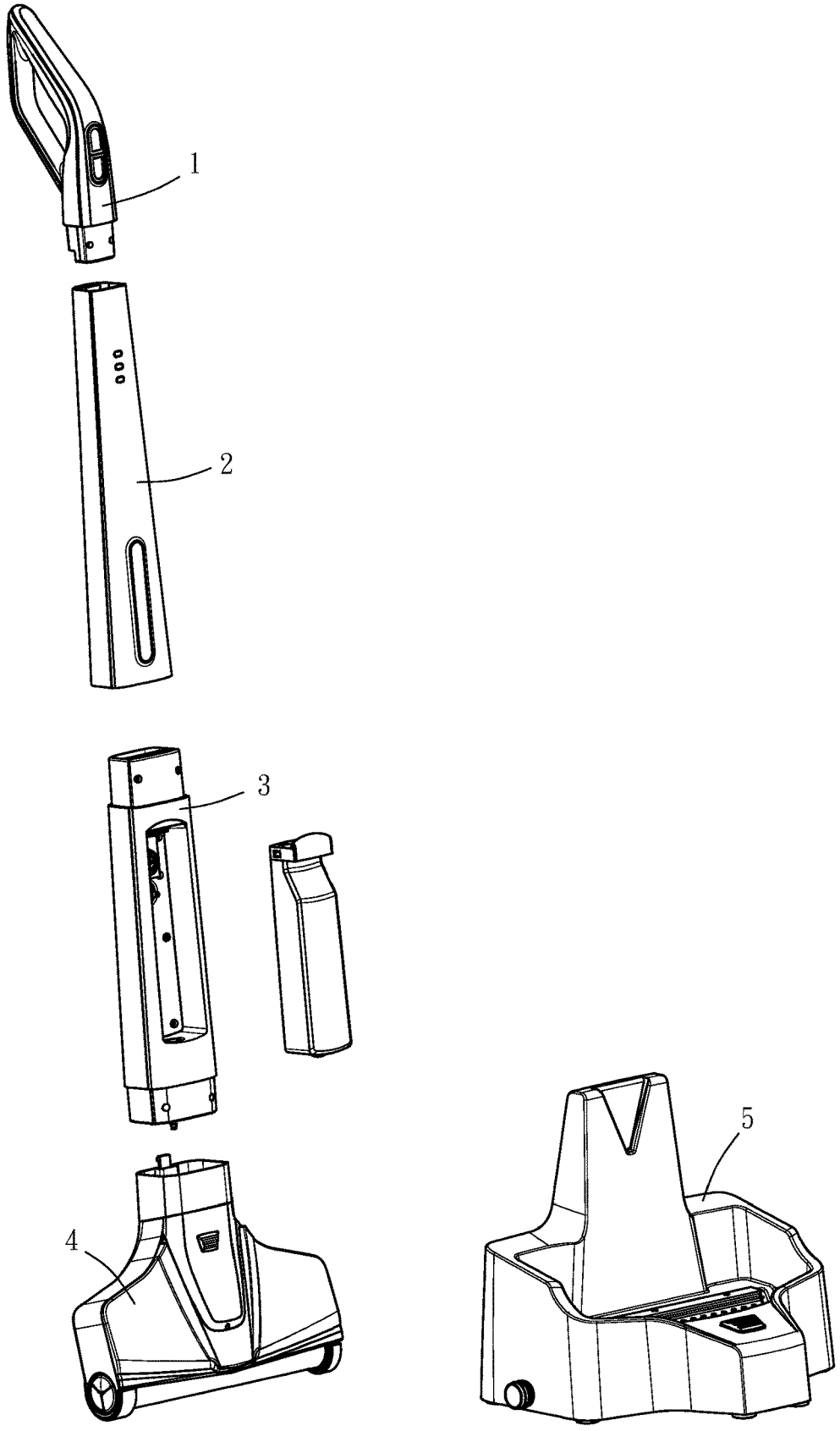


FIG. 2

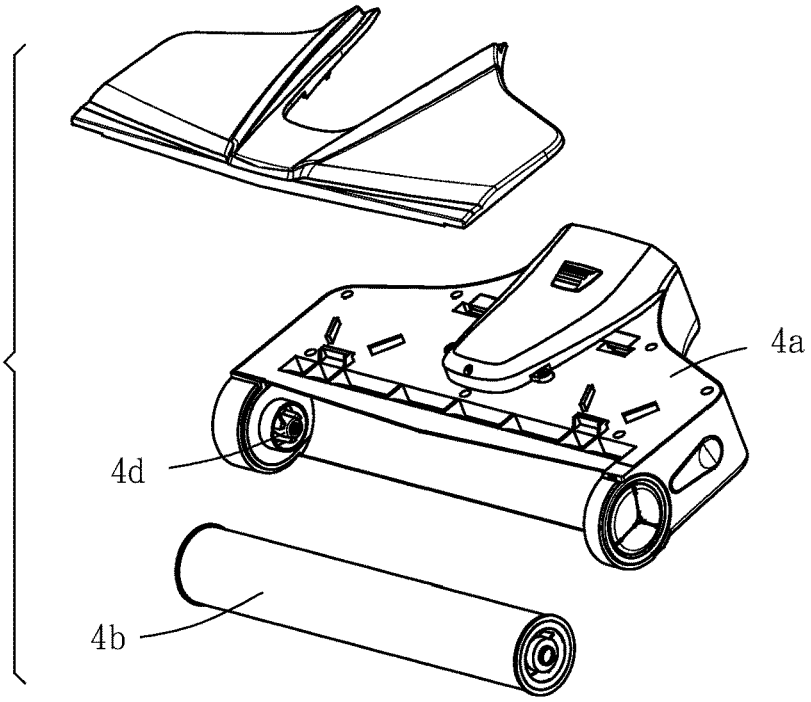


FIG. 3

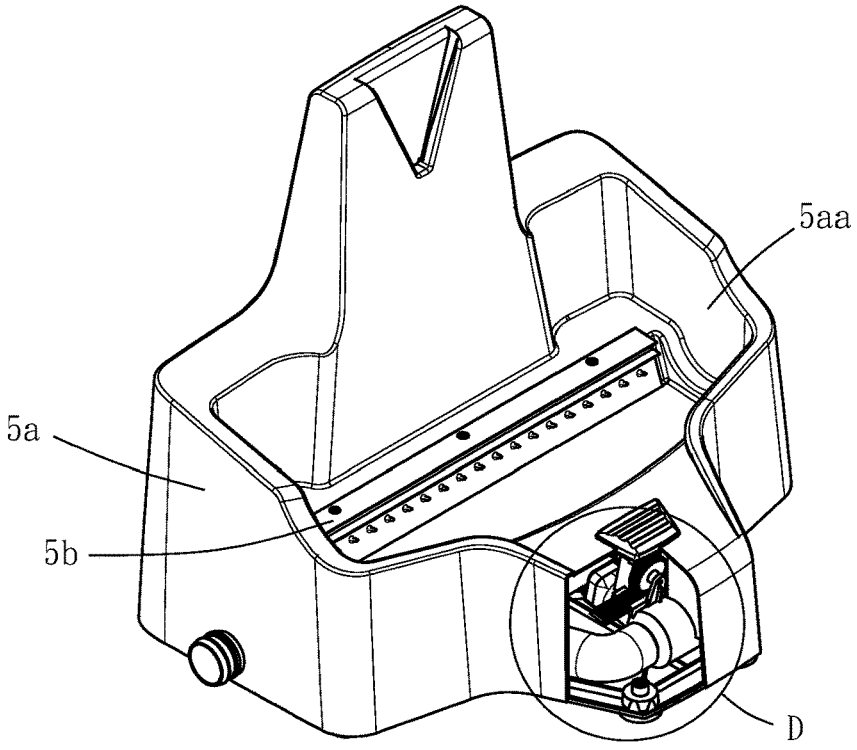


FIG. 4

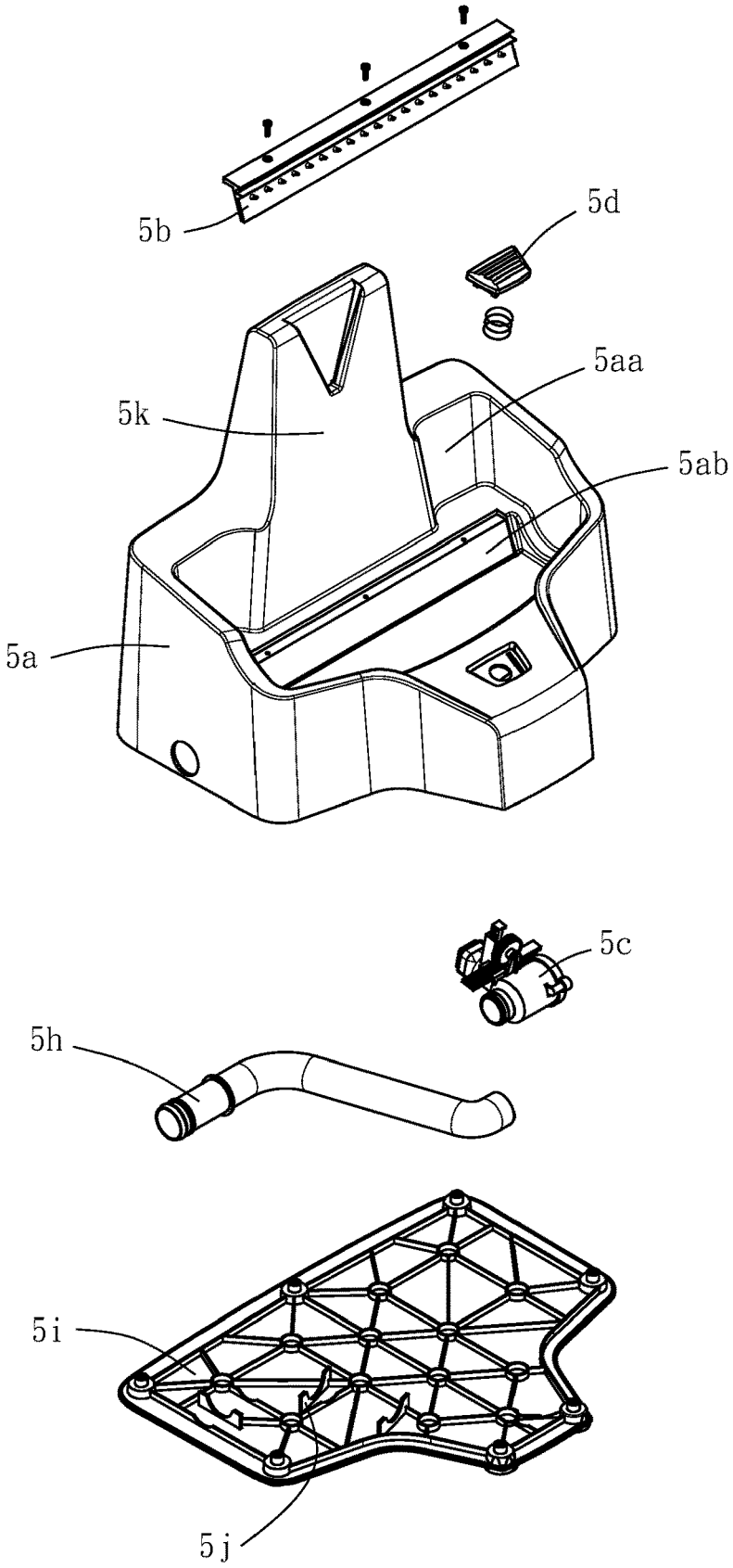


FIG. 5

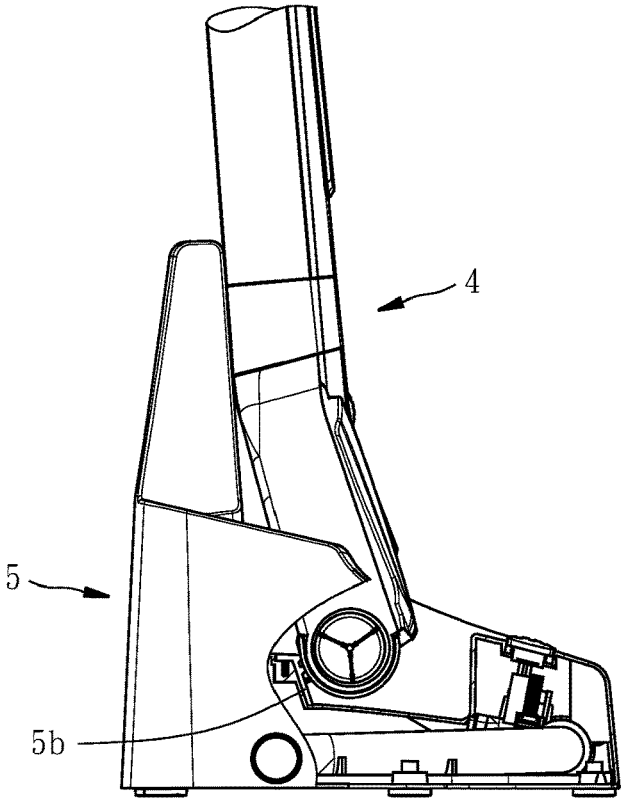


FIG. 6

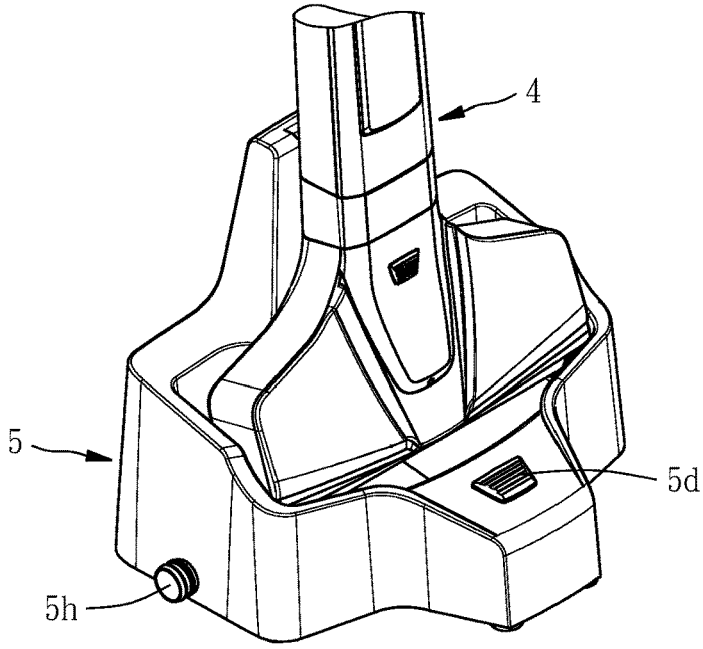


FIG. 7

AUTOMATIC CLEANING STORAGE BASE FOR ELECTRIC MOP

BACKGROUND OF THE INVENTION

1. Technical Field

[0001] The present invention relates to a mop, and more particularly to an automatic cleaning storage base for an electric mop.

2. Description of Related Art

[0002] The mop is a common household cleaning tool that mainly includes a mop rod for holding and a mop head for cleaning. With the advancement of technology, many more motorized and even intelligent mops have been introduced.

[0003] The direct cleaning of the mop relies on a cleaning part on the mop head. According to different designs, the cleaning part may be cloth strips and may be a sponge roller. The traditional mop head has a problem in use, that is, the cleaning problem of the mop head and the cleaning part after cleaning the floor. In the prior art, the mop head and the cleaning part are mostly washed manually, which causes troublesome operation and stains the human hands. The drainage system is very inconvenient to use. In addition, the cleaning part of the traditional mop is fixed. When a contact surface of a mop is dirty, it is necessary to change another direct to continue cleaning the floor with a clean surface, and there is also a problem of inconvenience in operation.

BRIEF SUMMARY OF THE INVENTION

[0004] In view of the problem in the prior art that the mops are mostly scrubbed manually, which causes troublesome operation and stains the human hands, the present invention provides a cleaning base assembly for cleaning the cleaning portion, and automatic cleaning is realized by the rotation of the cleaning roller during cleaning, thereby avoiding the trouble and pollution of manual cleaning; moreover, a decontamination assembly is disposed in the cleaning base assembly to help scrub the cleaning roller, so that the cleaning effect is further improved, and the overall use is convenient and the effect is good.

[0005] To achieve the above-mentioned objective, the present invention provides an automatic cleaning storage base for an electric mop. The electric mop has a rotatable cleaning roller; the automatic cleaning storage base comprises a casing member, a cleaning tank is formed in an upper surface of the casing member, and a decontamination assembly for scrubbing the cleaning roller is disposed in the cleaning tank; the roller is cleaned by using the decontamination assembly of the present invention, thereby avoiding the cumbersome manual operation in the prior art, avoiding staining human hands, and achieving a good effect.

[0006] Preferably, the cleaning tank is provided with a positioning groove for placing the electric mop.

[0007] Preferably, the decontamination assembly comprises a squeezing scraper strip, and the squeezing scraper strip is disposed at an edge of the positioning groove.

[0008] Preferably, the cleaning tank is formed by recessing the upper portion of the casing member, and the casing member is bent to form a cavity below.

[0009] Preferably, the bottom surface of the cleaning tank is an inclined surface.

[0010] Detailed constructions or features provided in the present invention will be described in the detailed description of the following embodiments. However, those skilled in the art should understand that the detailed description and the specific embodiments of the present invention are intended to be illustrative of the invention and not to limit the scope of the invention.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0011] FIG. **1** is an assembled perspective view of a preferred embodiment of the present invention.

[0012] FIG. **2** is an exploded perspective view of a preferred embodiment of the present invention.

[0013] FIG. **3** is a partial exploded perspective view of a preferred embodiment of the present invention, showing the exploded structure of a mop head assembly.

[0014] FIG. **4** is a schematic view of a cleaning base assembly according to a preferred embodiment of the present invention.

[0015] FIG. **5** is an exploded perspective view of a cleaning base assembly according to a preferred embodiment of the present invention.

[0016] FIG. **6** is a schematic view of the combined arrangement of the cleaning base assembly and the mop head assembly according to a preferred embodiment of the present invention.

[0017] FIG. **7** is another schematic view of the combined arrangement of the cleaning base assembly and the mop head assembly according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] The technical content and features of the present invention will be described in detail below by referring to the preferred embodiments and the drawings. The present invention is mainly applied to an electric mops and wet type electric mops, and those skilled in the art can understand that the description terms of the embodiments are generic description of which the application field is not limited; for example, material or shape terms include but are not limited to the materials or shapes specified by the description, and the positional terms include but are not limited to "arrange", "close to", "connect", or "abut". The word "one" for indicating the number of components means one and more than one component. The directional expressions such as "upper", "lower", "inside", "outside", "top" and "bottom" mentioned in the contents of the description are merely illustrative terms based on the normal use direction, not intended to limit the scope of the claims.

[0019] As shown in FIG. **1** and FIG. **2**, an automatic cleaning mop comprises: a mop rod assembly having a handle segment assembly **1**, an upper rod assembly **2**, and a lower rod assembly **3**; a mop head assembly **4**; and a cleaning base assembly **5**; the mop head assembly **4** is disposed at the lower end of the mop rod assembly, and the cleaning base assembly **5** is used for placing and cleaning the mop head assembly **4**. The mop rod assembly comprises at least two connecting segments, and the at least two connecting segments are detachably connected to each other.

[0020] As shown in FIG. **3**, FIG. **4** and FIG. **5**, the mop head assembly **4** has a mop head housing **4***a* on which a

rotatable cleaning roller **4***b* is disposed. Preferably, the mop head housing **4***a* is internally provided with a motor for driving the cleaning roller **4***b*, and the motor is connected to the cleaning roller **4***b* through a transmission mechanism assembly. Preferably, the transmission mechanism assembly comprises a change gear set, a drive belt and a roller connector **4***d*; the motor **4***c*, the change gear set, the drive belt and the roller connector **4***d* are sequentially connected; the roller connector **4***d* is rotatably disposed on the mop head housing **4***a*; and the cleaning roller **4***b* is fitted to the roller connector **4***d*. Preferably, one end of the roller connector **4***d* is correspondingly connected to a pulley of the drive belt at one end, the roller connector **4***d* is fitted at the other end, and the roller connector **4***d* is mounted on the mop head housing **4***a* by a bearing.

[0021] As shown in FIG. **4** to FIG. **7**, the cleaning base assembly **5** has a casing member **5***a*; a cleaning tank **5***aa* is formed in the upper surface of the casing member; a decontamination assembly for scrubbing the mop is disposed in the cleaning tank **5***aa*, and the housing member **5***a* is provided with a drainage system for discharging sewage. Preferably, a positioning groove **5***ab* for placing the mop head is disposed in the cleaning tank **5***aa*. Preferably, the decontamination assembly comprises a squeezing scraper strip **5***b*, and the squeezing scraper strip **5***b* is disposed at an edge of the positioning groove **5***ab*. Preferably, the drainage system comprises a drain valve **5***c*, an water inlet end of the drain valve **5***c* is connected into the cleaning tank **5***aa*, a water outlet end of the drain valve **5***c* is connected to the outside of the casing member **5***a*, and a button **5***d* for starting the drain valve **5***c* is disposed on the casing member **5***a*.

[0022] The specific structural form of the cleaning base assembly **5** is given in this embodiment, wherein the casing member **5***a* is the body of the cleaning base assembly **5**, and the cleaning tank **5***aa* is used for containing water for cleaning the mop. The decontamination assembly is used to help the roller on the mop to discharge the adsorbed sewage. In the above embodiment, the decontamination assembly comprises a squeezing scraper strip **5***b* and a bolt for fixing the squeezing scraper strip **5***b*. Moreover, as shown in the figure, the squeezing scraper strip **5***b* is strip-shaped and has a 7-shaped cross section. In actual design, the lower outer surface of the squeezing scraper strip **5***b* is provided with a bulge for improving the squeezing effect, the bulge is opposite to a mounting fixing portion at the upper part of the squeezing scraper strip **5***b*, and the lower part of the bulge is inclined outwardly to improve the squeezing effect. The structure of the bulge can also be replaced by other structures having the same function, such as bumps. In the specific application, the roller of the mop is placed in the positioning groove **5***ab*, and at this time, the squeezing scraper strip **5***b* is in a state of squeezing the roller, and then water for cleaning is poured into the cleaning tank **5***aa*, and then the roller begins to rotate. The roller is squeezed by the squeezing scraper strip **5***b*, and thus the roller is physically cleaned. After the roller is cleaned to a certain extent, sewage after cleaning is discharged, and when the sewage is discharged to expose the roller, the sewage in the roller can be squeezed out due to the squeezing by the squeezing scraper strip **5***b*. In the specific implementation, in order to naturally discharge sewage out of the cleaning tank **5***aa*, the bottom surface of the cleaning tank **5***aa* is set as an inclined surface to facilitate the natural flowing and drainage of the sewage. The casing member **5***a* is integrally formed; therefore, as shown in the figure, the cleaning tank **5***aa* is formed by recessing downward the whole upper plate surface of the casing member **5***a*, and correspondingly the positioning groove **5***ab* is also formed by entirely recessing the casing member **5***a*. Through the bending of the main plate surface of the casing member **5***a*, a cavity is naturally formed underneath it for arranging the relevant components of the drainage system. In addition, a bottom casing plate **5***i* is provided to be mounted at the lower end of the casing member **5***a*, and the relevant components of the drainage system are sealed in the cavity for protection. In order to arrange the drain pipe **5***h* more stably, a fixing clamping plate **5***j* for fixing the drain pipe **5***h* is also arranged. In the specific implementation, in order to place the mop more stably, the plate body is entirely protruded upward, thus forming a resting portion **5***k* for resting the mop on the casing plate **5***a*.

What is claimed is:

1. An automatic cleaning storage base for an electric mop, the electric mop has a rotatable cleaning roller, wherein the automatic cleaning storage base comprises a casing member, a cleaning tank is formed in an upper surface of the casing member, a decontamination assembly for scrubbing the cleaning roller is disposed in the cleaning tank, and the casing member is provided with a drainage system for discharging sewage.

2. The automatic cleaning storage base for an electric mop according to claim **1**, wherein the decontamination assembly comprises a squeezing scraper strip, and the squeezing scraper strip is disposed at an edge of the positioning groove.

3. The automatic cleaning storage base for an electric mop according to claim **1**, wherein the drainage system comprises a drain valve, an water inlet end of the drain valve is connected into the cleaning tank, and a water outlet end of the drain valve is connected to the outside of the casing member.

4. The automatic cleaning storage base for an electric mop according to claim **1**, wherein a button for starting the drain valve is disposed on the casing member.

5. The automatic cleaning storage base for an electric mop according to claim **4**, wherein a return spring for returning the button is further disposed between the button and the casing member.

6. The automatic cleaning storage base for an electric mop according to claim **1**, wherein a water outlet end of the drain valve is connected with a drain pipe, and the drain pipe is connected to the outside of the casing member.

7. The automatic cleaning storage base for an electric mop according to claim **1**, wherein the cleaning tank is formed by recessing the upper portion of the casing member, and the casing member is bent to form a cavity below.

8. The automatic cleaning storage base for an electric mop according to claim **1**, wherein the bottom surface of the cleaning tank is an inclined surface.

* * * * *