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(57) **ABSTRACT**

The invention is related to a capsule filler comprising: a capsule cap containing tray, a plurality of capsule body containing plates, a lifting base, and a frame, in which a plurality of spacer plates are provided on the top of the lifting base, which are movable. The capsule cap containing tray and each of the capsule body containing plates include thereon a plurality of sets of capsule receiving holes for placing capsules, each set including a plurality of capsule receiving holes, being correspondingly placed in top as well as bottom and number. The number of each set of capsule receiving holes is seven or a multiple of seven. The present invention provides a more suitable design of a capsule filler for animal hospitals.

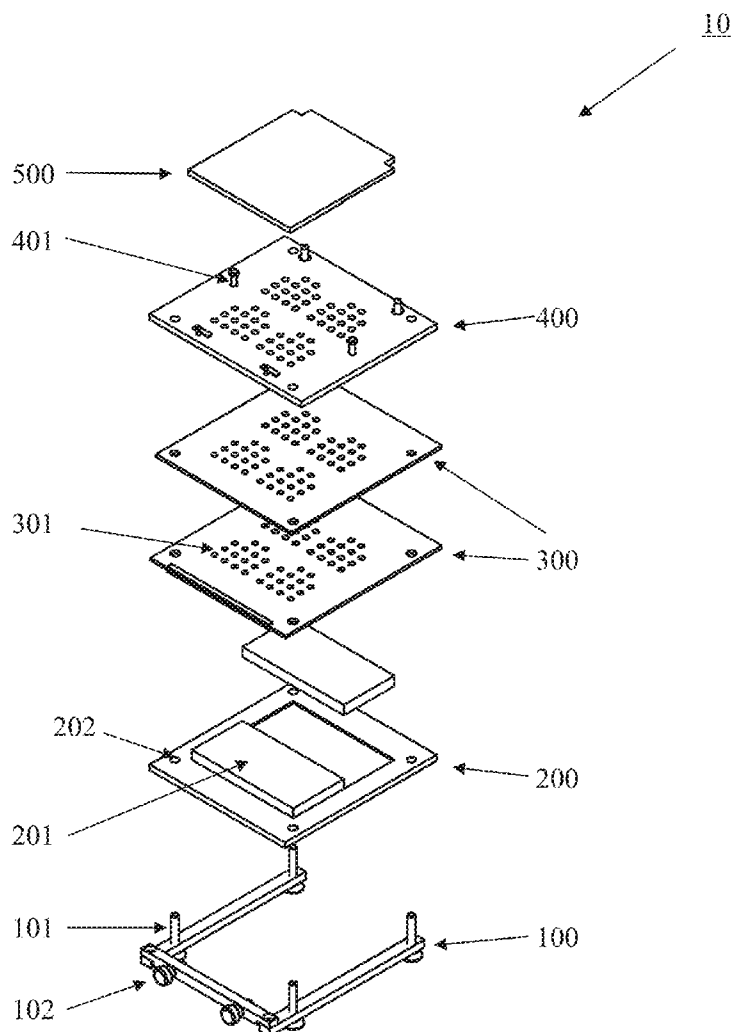
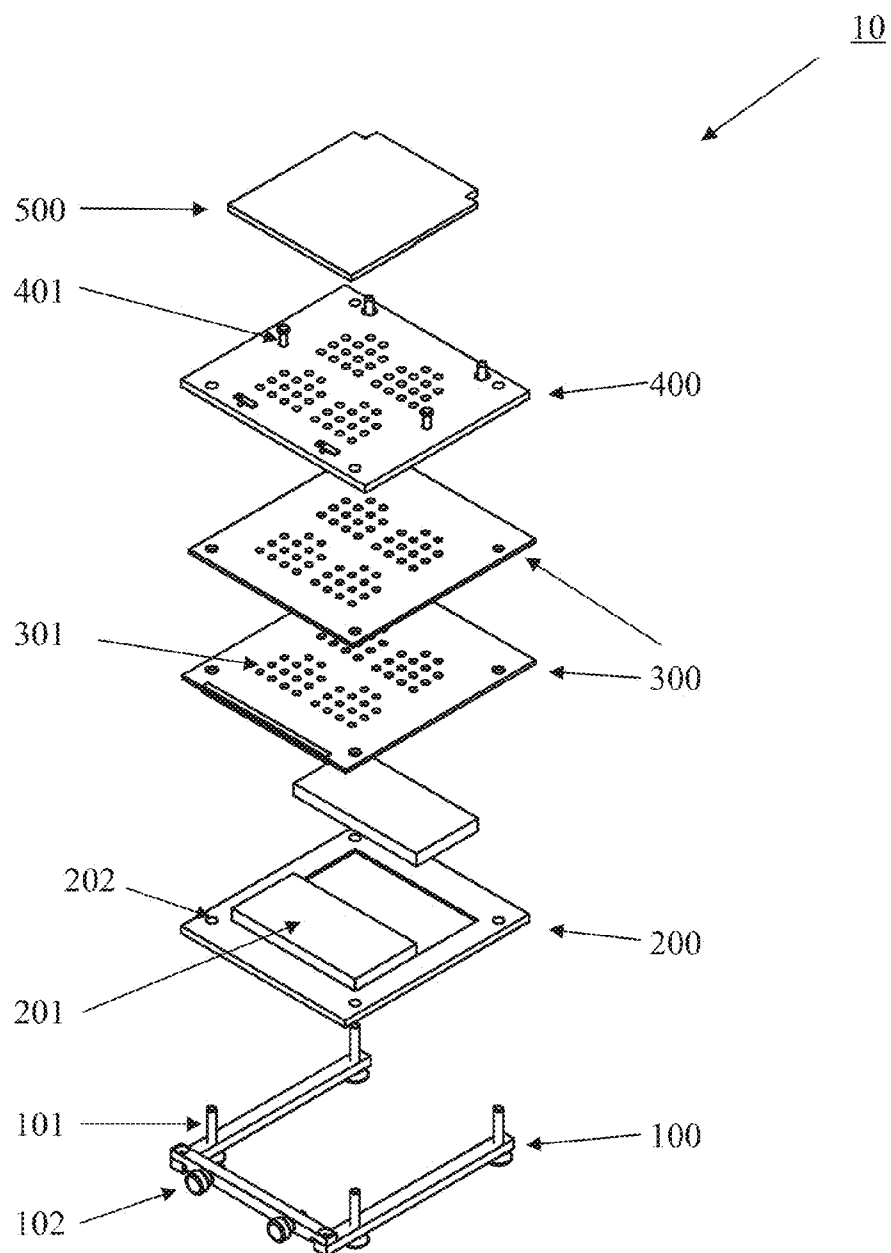


Figure 1



## CAPSULE FILLER

### FIELD OF THE INVENTION

**[0001]** The present invention relates to an improved capsule filler.

### BACKGROUND OF THE INVENTION

**[0002]** The demand of customized drug capsulation is increasing. When diseased animals need oral medication, drug of appropriate dose is customized and fed to animals. Drug customization is needed because different drugs are applied for different disease treatment. In addition, there is a large variety of animal's size and body weight. Therefore, more than 80% of the animal drug are customized. To make feeding the customized drug easy, drug is typically milled into powder, and then filled in capsules.

**[0003]** Capsule fillers are invented to facilitate the capsule filling process. However, there are several drawbacks with traditional capsule fillers. First of all, there are basically 100 capsule receiving holes in the conventional capsule filler. High density of the hole configuration makes the manual handling process inconvenient. Moreover, during each manual handling process, all of the capsules in the capsule receiving holes are filled; even not all the capsules are actually required. In this case, empty capsules are made, which will cause the capsules damage by repeating quite often a time. Finally, all the capsule receiving holes of a traditional filler are at the same size, meaning that using a separate capsule filler is necessary for producing capsules in different sizes. Therefore, it is desired to overcome the drawbacks of the conventional capsule fillers.

### SUMMARY OF THE INVENTION

**[0004]** The present invention provides a capsule filler comprising: a capsule cap containing tray, positioned at an upper side of the capsule filler, including a first hole at each corner; a plurality of capsule body containing plates, positioned beneath the capsule cap containing tray, each of the capsule body containing plates including a corresponding second hole at each corner; a lifting base, positioned beneath the plurality of capsule body containing plates, including thereon a corresponding third hole at each corner and a plurality of spacer plates, wherein the spacer plates are movable from the lifting base; and a frame, positioned beneath the lifting base and including a pin corresponding to the first hole, the second hole, and the third hole at each corner for feeding through the lifting base, the capsule body containing plates and the capsule cap containing tray, wherein the capsule cap containing tray and each of the capsule body containing plates include thereon a plurality of sets of capsule receiving holes for placing capsules, each set including a plurality of capsule receiving holes, being correspondingly placed in top as well as bottom and number, and wherein placement and number of the spacer plates on the lifting base are corresponding to those of the plurality of capsule receiving holes in a vertical or horizontal direction.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0005]** FIG. 1 is a schematic diagram of a capsule filler of the invention.

### DETAILED DESCRIPTION OF THE INVENTION

**[0006]** The present invention provides an improved capsule filler. The improved capsule filler has spacer plates with which an operator can fill a target group of capsules only, even though empty capsules are placed in all the capsule receiving holes. Furthermore, the improved capsule filler comprises capsule receiving holes in different sizes. It is possible to fill capsules in different sizes with using only one improved capsule filler. As such, it provides a cost-efficient solution for capsule filling. In addition, in the improved capsule filler, seven or a multiple of seven of capsule receiving holes are grouped together. Typically, animal hospitals give weekly prescription. For example, if the prescription is "two capsules per day for one week", the number of capsules is fourteen. The improved capsule filler is more suitable for most animal hospitals.

**[0007]** Hence, the present invention provides a capsule filler comprising: a capsule cap containing tray positioned at an upper side of the capsule filler, the capsule cap containing tray includes a first hole at each corner; a plurality of capsule body containing plates positioned beneath the capsule cap containing tray, each of the capsule body containing plates includes a corresponding second hole at each corner; a lifting base positioned beneath the plurality of capsule body containing plates, the lifting base includes thereon a corresponding third hole at each corner and a plurality of spacer plates, the spacer plates are movable from the lifting base; and a frame positioned beneath the lifting base, the frame includes a pin corresponding to the first hole, the second hole, and the third hole at each corner for feeding through the lifting base, the capsule body containing plates and the capsule cap containing tray. The capsule cap containing tray and each of the capsule body containing plates include thereon a plurality of sets of capsule receiving holes for placing capsules, each set including a plurality of capsule receiving holes, being correspondingly placed in top as well as bottom and number, and placement and number of the spacer plates on the lifting base are corresponding to those of the plurality of capsule receiving holes in a vertical or horizontal direction.

**[0008]** In one embodiment, the plurality of capsule receiving holes have an identical size in aperture in a same set of capsule receiving holes and have an identical or different size in aperture in a different set of capsule receiving holes.

**[0009]** In another embodiment, a number of each set of capsule receiving holes is seven or a multiple of seven.

**[0010]** In still another embodiment, the capsule cap containing tray further comprises a plurality of pushing levers for separating caps and bodies of the capsules.

**[0011]** In still another embodiment, the frame further comprises at least one lateral pushing knob or cam, allowing lateral displacement of the plurality of capsule body containing plates for clamping the capsules.

**[0012]** In still another embodiment, a distance between each of the plurality of capsule receiving holes is spaced in a bigger dimension.

**[0013]** In still another embodiment, the capsule filler of the present invention further comprises a cover above the capsule cap containing tray.

### EXAMPLES

**[0014]** The examples below are non-limiting and are merely representative of various aspects and features of the present invention.

## Example 1

**[0015]** FIG. 1 shows a capsule filler **10** of the present invention. When filling drug powders into capsules, empty capsules are inserted in a capsule cap containing tray **400** one by one. The capsule cap containing tray **400** includes a first hole at each corner. The insertion direction is capsule caps at the top and capsule bodies at the bottom. The capsule bodies are fed through a plurality of capsule receiving holes **301** from a capsule cap containing tray **400** to a plurality of capsule body containing plates **300**, positioned beneath the capsule cap containing tray **400**, each including a corresponding second hole at each corner. After insertion, the capsule body containing plates **300** are pushed laterally by using at least a lateral pushing knob **102** on a frame **100**, in order to provide lateral displacement of the plurality of capsule body containing plates **300** for clamping the capsules. Subsequently, the capsule caps and the capsule bodies are separated by using at least a pushing lever **401** on the capsule cap containing tray **400**. At this time, the capsule caps remain on the capsule cap containing tray **400**, and the capsule bodies remained on the capsule body containing plates **300**. After separation, the capsule cap containing tray **400** is removed from the pins **101**, which is corresponding to the first hole, the second hole, and the third hole at each corner for feeding through the lifting base **200**, the capsule body containing plates **300** and the capsule cap containing tray **400**. The lateral pushing knob **102** on the frame **100** is operated to adjust the capsule bodies. The capsule bodies are aligned with the capsule body containing plates **300** at a top surface. The drug powders are further filled into the capsules. After filling, the capsule cap containing tray **400** is moved back to the pins **101**. Finally, a lifting base **200**, which is positioned beneath the plurality of capsule body containing plates **300** and including thereon a corresponding third hole at each corner and a plurality of spacer plates **201**, is pushed upward to assemble the capsule caps and the capsule bodies, thus the capsule filling operation is completely achieved. The spacer plates **201** are movable from the lifting base **200**. The spacer plates **201** are specific to the corresponding capsule receiving holes **301**. Therefore, the capsules in the corresponding capsule receiving holes **301** are assembled only when the spacer plates **201** are linked with the lifting base **200**. In addition, the “set” could be applied as a unit for different sizes designation of the capsule receiving holes **301**. Thus, the improved capsule filler of the invention is advantageous for filling capsules in different sizes. The number and the configuration are designed as: the number of capsule receiving holes **301** in a set is seven or a multiple of seven. A distance between each of the plurality of capsule receiving holes **301** can be spaced in a bigger dimension. The capsule filler **10** may comprise a cover **500** above the capsule cap containing tray **400**. The improved capsule filler is suitable for most animal hospitals, which is more convenient to use.

**[0016]** While the invention has been described and exemplified in sufficient detail for those skilled in this art to make and use it, various alternatives, modifications, and improvements should be apparent without departing from the spirit and scope of the invention.

**[0017]** The invention illustratively described herein suitably may be practiced in the absence of any element or elements, limitation or limitations, which are not specifically disclosed herein. The terms and expressions which have been

employed are used as terms of description and not of limitation, and there is no intention that in the use of such terms and expressions of excluding any equivalents of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

**[0018]** Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the appended claims.

What is claimed is:

1. A capsule filler comprising:

- a capsule cap containing tray positioned at an upper side of the capsule filler, wherein the capsule cap containing tray includes a first hole at each corner;
- a plurality of capsule body containing plates positioned beneath the capsule cap containing tray, wherein each of the capsule body containing plates includes a corresponding second hole at each corner;
- a lifting base positioned beneath the plurality of capsule body containing plates, wherein the lifting base includes thereon a corresponding third hole at each corner and a plurality of spacer plates, and wherein the spacer plates are movable from the lifting base; and
- a frame positioned beneath the lifting base, wherein the frame includes a pin corresponding to the first hole, the second hole, and the third hole at each corner for feeding through the lifting base, the capsule body containing plates and the capsule cap containing tray, wherein the capsule cap containing tray and each of the capsule body containing plates include thereon a plurality of sets of capsule receiving holes for placing capsules, each set including a plurality of capsule receiving holes being correspondingly placed in top as well as bottom and number, and wherein placement and number of the spacer plates on the lifting base are corresponding to those of the plurality of capsule receiving holes in a vertical or horizontal direction.

2. The capsule filler of claim 1, wherein the plurality of capsule receiving holes have an identical size in aperture in a same set of capsule receiving holes and have an identical or different size in aperture in a different set of capsule receiving holes.

3. The capsule filler of claim 1, wherein a number of each set of capsule receiving holes is seven or a multiple of seven.

4. The capsule filler of claim 1, wherein the capsule cap containing tray further comprises a plurality of pushing levers for separating caps and bodies of the capsules.

5. The capsule filler of claim 1, wherein the frame further comprises at least one lateral pushing knob, allowing lateral displacement of the plurality of capsule body containing plates for clamping the capsules.

6. The capsule filler of claim 1, wherein a distance between each of the plurality of capsule receiving holes is spaced in a bigger dimension.

7. The capsule filler of claim 1, further comprising a cover above the capsule cap containing tray.

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