No. 678,272. Patented July 9, 1901.

L. NEUMAYER.

DIVIDER AND BAG FILLER FOR POWDERS.

(No Model.) (Application filed May 25, 1900.) 2 Sheets—Sheet 1.

Fig. 1.

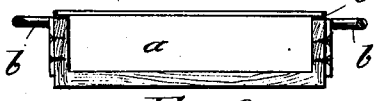


Fig. 3.

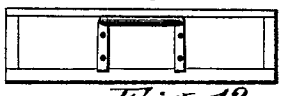
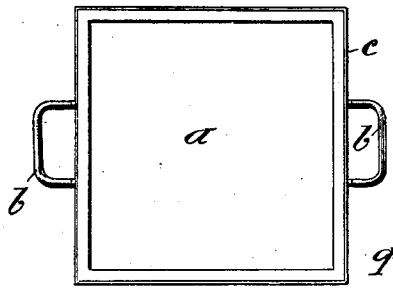


Fig. 12

Fig. 2.



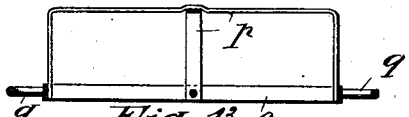


Fig. 13.

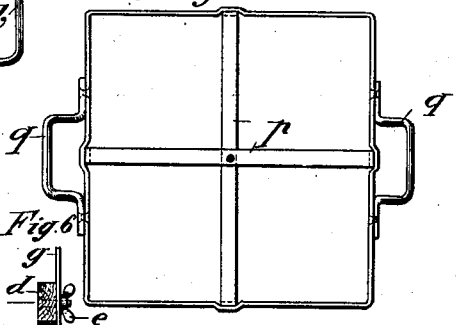


Fig. 4.

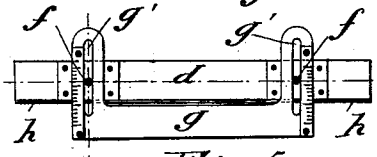


Fig. 6

Fig. 5

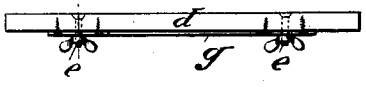


Fig. 14.

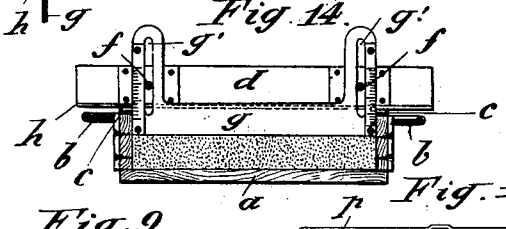


Fig. 7.

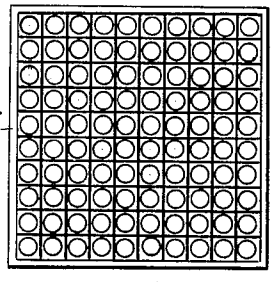


Fig. 9.

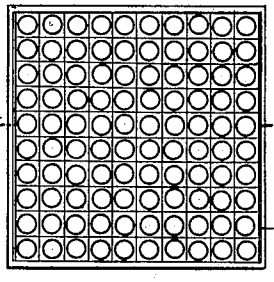


Fig. 15.

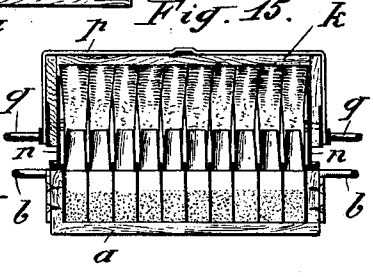


Fig. 8.

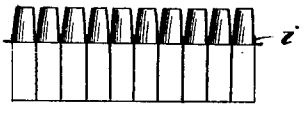
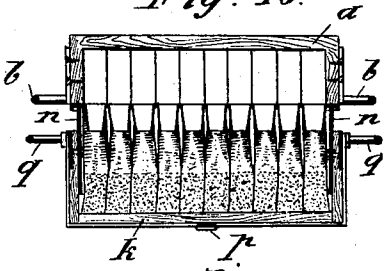


Fig. 16.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 678,272 Patented July 9, 1901.

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DIVIDER AND BAG FILLER FOR POWDERS.

(No Model.) (Application filed May 25, 1900.) 2 Sheets—Sheet 2.

Fig. 10.

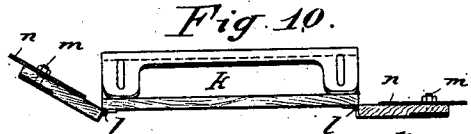


Fig. 17.

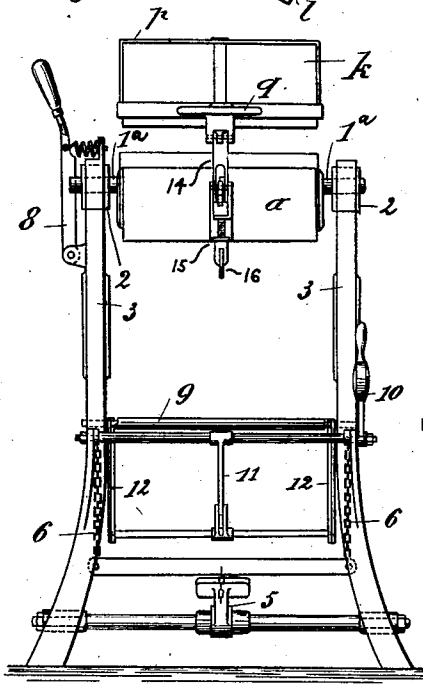


Fig. 18

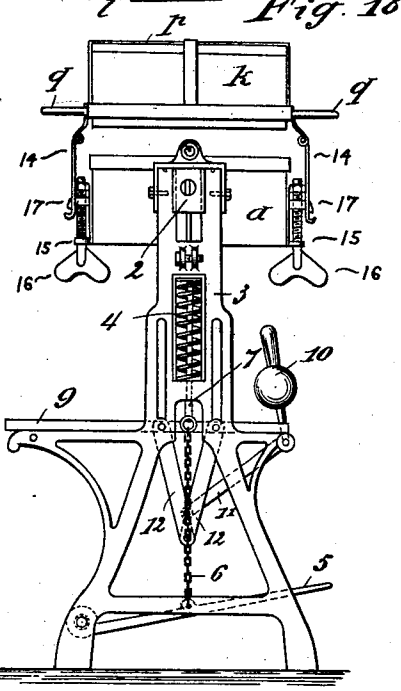
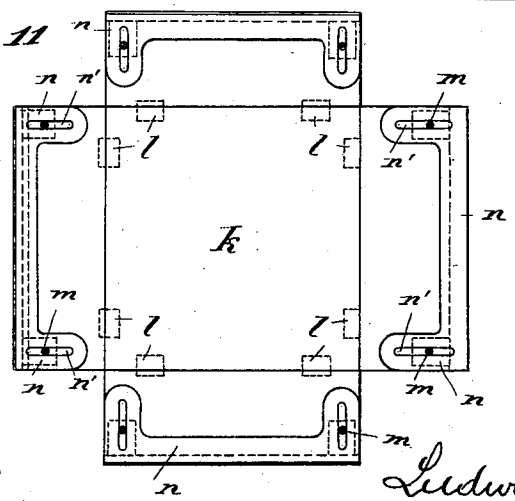


Fig. 11



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LUDWIG NEUMAYER, OF MERSEBURG, GERMANY.

DIVIDER AND BAG-FILLER FOR POWDERS.

SPECIFICATION forming part of Letters Patent No. 678,272, dated July 9, 1901.

Application filed May 25, 1900. Serial No. 17,940. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG NEUMAYER, a subject of the German Emperor, and a resident of Merseburg, Germany, have invented certain new and useful Improvements in Devices for Dividing Pulverulent Masses into Equal Parts and Filling Same into Paper Bags, of which the following is a specification.

The object of my present invention is to provide a device whereby a given quantity of pulverulent ware is mechanically divided into any desired number of equal parts and then filled into a corresponding number of paper bags or other receptacles.

The invention consists of a case serving to receive the pulverulent ware to be divided and filled into bags, &c., a divider, a second case serving to receive the filled bags, and a device for shaking and reversing the dividing and filling cases.

In the accompanying drawings, Figure 1 is a vertical section, Fig. 2 a top plan view, and Fig. 3 a side elevation, of the case *a*, serving to receive the pulverulent ware to be divided into equal parts and then filled into paper bags, &c.; Figs. 4, 5, and 6, details in side elevation, top plan, and transverse section, respectively, of the adjustable evener for spreading the material uniformly in case *a;* Fig. 7, a bottom plan view of the divider; Fig. 8, a vertical section thereof on line *x y* of Fig. 7, and Fig. 9 a top plan view of said divider. Fig. 10 is a vertical section, and Fig. 11 a top plan view, of the case serving to receive the filled bags, in the latter view with its sides opened flatwise; Figs. 12 and 13, respectively, a side elevation and a top plan view of the skeleton frame or basket for holding together the bottom and side walls of the case last above mentioned; Fig. 14, a detail illustrating the operation of the evener in connection with case *a* and its contents; Fig. 15, a transverse section showing the case *a* with its contents and the divider introduced therein, with the bag-holding case on top thereof and the skeleton side and bottom holding frame thereover; Fig. 16, a corresponding view of said parts inverted to permit the contents of case *a* to run into the bags held by the other case. Fig. 17 is a front elevation, and Fig. 18 a side elevation, of the apparatus for shaking and inverting the cases in operation.

The case *a* is provided with handles *b* and has its upper edges reinforced by means of angle-irons or equivalents *c*. The inner faces of the case are lined with suitable material, such as sheet metal, &c.

The divider is formed of a number of sockets made of equal sizes and one end of which is made square in cross-section. Said sockets are assembled so that they form a rigid device adapted to be snugly fitted into the case *a*. The end opposite to the square section of each socket is made circular in cross-section. The outer sockets are surrounded by a frame *i*, which serves at the same time to support said sockets when it is laid upon the upper edges *c* of the case *a* and to prevent the divider from falling out of the latter when the operator reverses the device, as hereinafter explained. The case *k*, serving to receive the filled bags, is formed of a flat bottom, to which are hinged the four side walls by means of hinges *l*. Said walls are provided with slidable parts *n*, provided with slots *n'*, through which extend guide-pins secured to the walls, and the nuts *m* of which serve to lock said slidable parts on the walls of the case *k*, so that the height of the latter may be made corresponding to the height of the paper bags employed in each particular case. The bottom and side walls of the case *k* are held together by means of an outer case or basket. (Shown in Figs. 12 and 13.) This outer case is formed of a frame *o* and two crossing stirrups *p*, secured thereto, and provided with handles *q* for easily manipulating the case, which fits snugly over the case *k*, so that the latter is then held in closed position.

The device so far described is manipulated as follows: The pulverulent ware to be divided into equal parts and filled into bags is poured into the case *a* and uniformly spread out over the bottom thereof by means of any suitable device—for instance, by means of the device shown in Figs. 4 to 6. Referring to these figures, *d* represents a wooden bar, the under side of which is covered with a metal band *h*. *f f* indicate threaded guide-pins secured to the side of said bar and ex-

tending through slots g' g' in a vertically-adjustable plate g, so that when the bar d is moved over the upper edges of the case a, Fig. 14, the material contained in the latter will be given a perfectly even surface. Then the socket-divider is introduced into the case a, with the square mouths of the sockets pressed into the pulverulent mass to the bottom of the case a, the frame i of the divider resting then on the upper edges c of the case a. Now the paper bags or other receptacles are fitted over the sockets of the divider, and over the latter is finally fitted the second case k. In order to prevent the bags fitted over the extreme sockets of the divider from being mutilated between the edges of the cases a and k, the walls of the case k are movably connected to the bottom of the latter, as already described, so that said walls are brought to their vertical position after the case k is put upon the case a. Then the skeleton shown in Figs. 12 and 13 is fitted over the case k, whereby the device is in the position shown in Fig. 15. Now when the device is turned over or inverted by means of the handles b q the pulverulent ware drops through the sockets into the paper bags, Fig. 16. After removing the case a and the divider the filled paper bags are arranged in the case k.

It will be seen that the several cases or the whole device must be somewhat shaken in operation in order to facilitate the passage of the pulverulent mass from one receptacle into another. To this end and for the purpose of easily reversing or inverting the cases I have provided the device shown in Figs. 17 and 18 of the accompanying drawings.

Referring to Figs. 17 and 18, a represents the case containing the pulverulent mass to be filled into the paper bags or other receptacles. The sides of said case are provided with studs 1^a 1^a, journaled in bearings 2 2, adapted to move vertically in slots provided in the frames 3 3. Each of said bearings is pressed upwardly by the action of a coiled spring 4 and may be lowered by depressing a treadle 5, connected to said bearings by means of chains 6 and connecting-rods 7. After releasing the treadle the bearings are rapidly raised by the action of the springs 4 4, whereby the case a is shaken. In order to prevent accidental overturning of the case a, the end of one of the studs c is provided with a slit or groove engaged by a spring-actuated lever 8, so that the case may be maintained in either an upright or inverted position. To the case a is suitably secured the case k, the walls of which are held together by means of the stirrups p, provided with the handles q q, already described. In order to prevent the case k from falling down after loosening its connection with the case a, I have arranged between the lateral frames 3 3 a platform 9, guided in vertical slots provided in said frames and adapted to be raised and lowered by means of a weighted lever 10, a lever-arm 11, and guide-rods 12 13. To lock the skeleton p to the case a, slotted hasps 14 are hinged to said skeleton, and upon the case a are arranged brackets 15, in which work thumb-screws 16, engaging the screw-threaded shanks of hooks 17 to draw them down into the slots of the hasps, and thereby secure said hasps.

The operation of the device is as follows: After filling the case a and securing the case k thereto said cases are rotated on the studs, so that the case k is suspended under the case a. By depressing the treadle 5 and afterward releasing same the cases are strongly shaken. Then the platform 9 is raised under the bottom of the case k by depressing the weighted lever 10, whereupon the connections between the cases a and k are loosened, whereby the case k may be removed laterally. The socket-divider is not shown in Figs. 17 and 18; but the operation may be readily understood without showing said divider. It is evident that the springs serving to shake the cases may be dispensed with and cams or equivalents substituted therefor. Again, the platform 9 may be raised and lowered by means of other devices, such as rack-and-pinion mechanism, and the whole device may be operated by hand or any suitable power.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character set forth, the combination with a receiving-case, adapted to contain pulverulent ware, suitable studs on the side walls of said case, a socket-divider snugly fitting into said case, and having a plurality of equally-sized sockets adapted to receive paper bags, a second case having hinged walls and adapted to be inverted over the receiving-case, means for holding the hinged walls together and means for temporarily securing the cases and divider together, of a suitable frame, vertical slots in said frame, bearings adapted to receive the studs of said receiving-case and to slide in said slots, springs attached to the frame and the bearings and pressing the latter upwardly, a treadle pivoted to the frame and suitable connections between the bearings and the treadle, substantially as and for the purpose set forth.

2. In a device of the character set forth, the combination with a receiving-case adapted to contain pulverulent ware, suitable studs on the side walls of said case, a socket-divider snugly fitting into said case, and having a plurality of equally-sized sockets adapted to receive paper bags, a second case having hinged walls and adapted to be inverted over the receiving-case, means for holding the hinged walls together and means for temporarily securing the cases and divider together, of a suitable frame, vertical slots in said frame, bearings adapted to receive the studs of said receiving-case and to slide in said slots, springs attached to the frame and the bearings and pressing the latter upwardly, a treadle piv-

oted to the frame and suitable connections between the movable bearings and the treadle, a vertically-movable platform guided on the frame and adapted to be brought under the bottom of the lower case, and means for raising and lowering said platform, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

LUDWIG NEUMAYER.

Witnesses:
RUDOLPH FRICKE,
CHAS. J. BURT.