

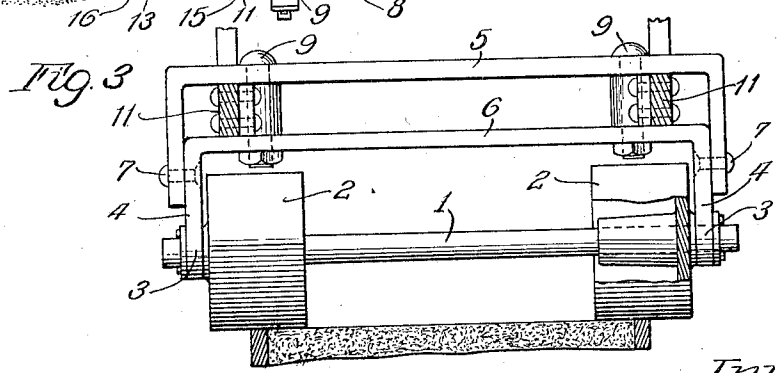
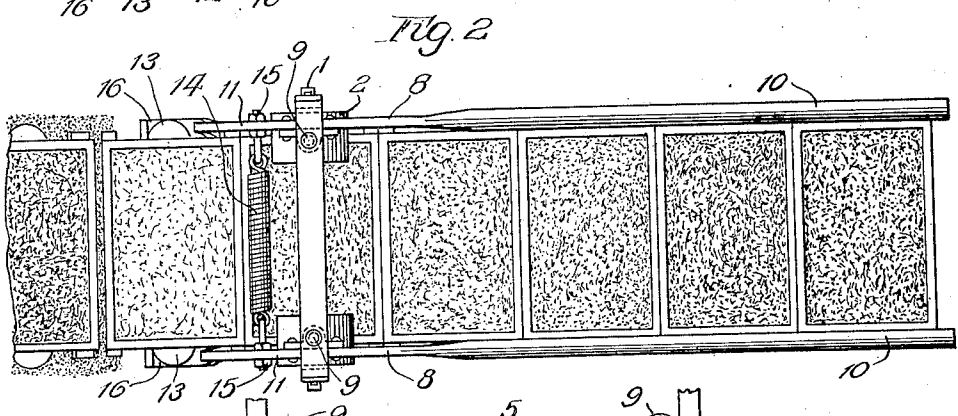
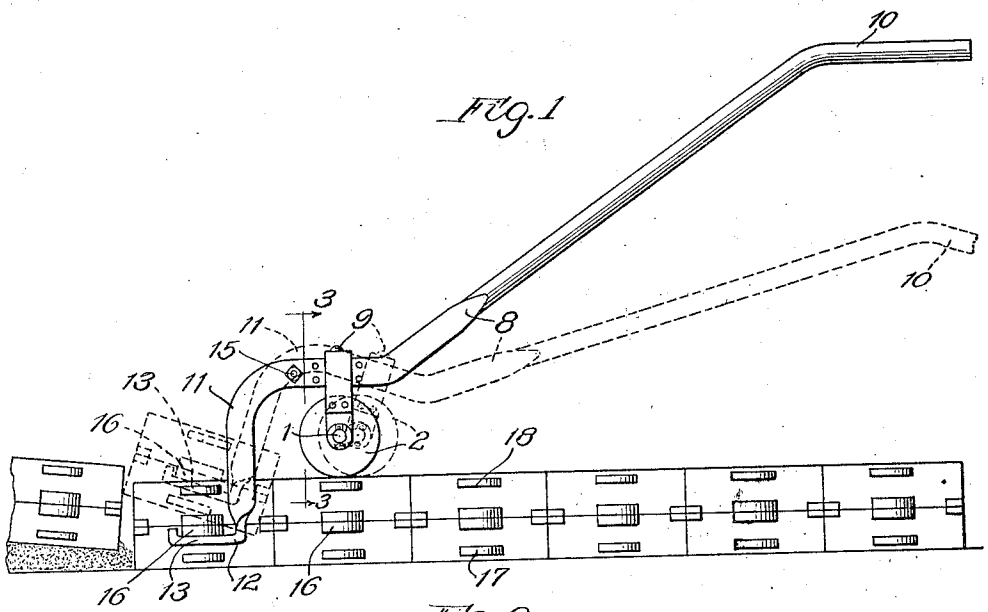
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A. NELSON

SHAKING OUT DEVICE

Filed Aug. 27, 1921



Inventor:  
Albert Nelson  
By: Wm. C. Bell, Atty.

# UNITED STATES PATENT OFFICE.

ALBERT NELSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN BRAKE SHOE & FOUNDRY COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

## SHAKING-OUT DEVICE.

Application filed August 27, 1921. Serial No. 496,040.

*To all whom it may concern:*

Be it known that I, ALBERT NELSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shaking-Out Devices, of which the following is a specification.

In the manufacture of castings in sand molds, it has heretofore been customary after pouring the mold to manually lift the flasks and shake out the sand and casting by vigorous up and down movements of the flasks. This process involves heavy labor and consumes time to an extent that present conditions will not permit.

The object of the invention is to provide a device adapted to travel over a row of flasks and to be engaged with each flask, and operated for shaking out the sand and casting, and which includes the mechanical advantages of a pair of levers constructed and arranged to enable the work to be performed speedily and with a minimum amount of physical exertion.

More specifically, the invention has for its object to provide a rolling device adapted to travel along a row of flasks and provided with means whereby it can be manually manipulated to engage the flasks successively and impart thereto an agitating movement to shake out the sand and casting.

Other objects and advantages will more fully appear as the description proceeds, and I have illustrated, as an example, one embodiment of the invention in the accompanying drawing, in which—

Fig. 1 is a side elevation of the invention shown in position on a row of flasks and in dotted lines indicating the position taken in shaking out a mold.

Fig. 2 is a plan view of the assembly shown in Fig. 1; and

Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

The reference numeral 1 indicates an axle having wheels 2 journaled thereon and having its ends mounted in suitable bearings 3 in a frame 4 consisting of a pair of U-shaped members 5 and 6 arranged as indicated in Fig. 3 and held together by the rivets 7 or other suitable fastening devices.

A pair of levers 8 are pivoted by bolts or rivets 9 to the frame 4. As shown, the rear ends of these levers are formed into han-

dles 10 and the front ends are bent first downwardly at 11 and then forwardly at 12 to make the supports 13 for the flasks. A spring 14 connected to the levers by bolts 15 tends to normally keep the lower ends of the device in the position shown in Fig. 2.

It is convenient to use my device on a plurality of flasks arranged close together in a row, as indicated in the drawings. In the form of the invention illustrated, the wheels of the traveling frame are arranged on the row of flasks and the device is moved along until the lower ends 13 to support the flask are disposed in operative relation to projecting parts of the first flask in the row. These projecting parts may be the flanges 16 or handles 17 and 18 on the drag and cope. To lift the cope, it will only be necessary to engage the device with the supports 18; to lift the entire flask the supports may be engaged with the handles 17 or with the flanges 16. The device is manipulated by means of the handle levers in cooperation with the spring, and when it is properly positioned on the row of molds and the supports are engaged with a flask, pressure is applied to the handles to depress them and lift the flask, as indicated in broken lines in Fig. 1. Then the operator may impart to the flask through the handle levers a more or less vigorous up-and-down movement sufficient to shake the sand and the casting out of the flask. Since the levers are so pivoted that the front ends or arms 11 are short as compared with the handle portions of the levers on the other side of the pivots, it will require comparatively little force applied to the handles to lift the flask and to manipulate the handles to shake out the sand and casting from the flask, and the labor of this operation is greatly reduced. It is convenient to construct the device so that it will rest on one flask while the adjacent flask is being lifted and shaken, and so that it can be readily caused to travel from one flask to another along the row.

It will be understood that the device is equally useful with flasks having one or more cheeks interposed between the cope and drag and can be made to suit flasks of various sizes.

Various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and

scope of the invention or sacrificing any of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

5 I claim:

1. A device of the class described, comprising a rolling support adapted to move along the tops of a series of flasks, a lever mounted on said support and having a long arm to serve as a handle and a short arm having flask engaging means extending below said support to engage a flask next to that on which the support rests.

2. In a shaking out device, the combination of a traveling support adapted to move along the tops of a series of flasks, and levers pivoted to said traveling support and having long arms to serve as handles and short arms having flask engaging means extending below said traveling support to engage a flask next to that on which the traveling support rests.

3. A device of the class described comprising a pair of levers, a rolling support serving as a fulcrum for said levers whereby they are divided into two arms of unequal length, the longer arms serving as handles and the shorter arms having load supporting means extending below said rolling support when the handles are in normal operating position.

4. In a shaking out device, the combination of a traveling support, a pair of levers, transverse pivots connecting said levers to said traveling support and dividing them into arms of unequal length, handles carried by the longer arms, and load supports carried by the shorter arms and extending below said traveling support when the longer arms are in normal operative position.

5. In a shaking out device, the combination of a traveling support, a pair of levers, transverse pivots connecting said levers to said support and dividing them into arms of unequal length, handles carried by the longer arms, load supports carried by the shorter arms and extending be-

low said traveling support when the longer arms are in normal operative position, and yielding means tending to hold said load supports in engagement with a load.

6. In a shaking out device, the combination of a traveling support, levers pivoted to said support on axes transverse to their length and having long arms providing handles and short arms equipped with load supports, and a spring for holding said load supports engaged with a load.

7. In a shaking out device, the combination of a support, a pair of levers, pivots connecting the levers to the support and dividing them into long and short arms, handles on said long arms, said short arms being bent downwardly, flask supports on said short arms, and a spring connected with said levers and adapted to hold said flask supports in engagement with a flask.

8. In a shaking out device, the combination of a rolling frame adapted to travel on a row of flasks, levers pivotally mounted on said frame and adapted to be swung vertically and horizontally, means on said levers below said frame for engaging the ends of a flask in the row upon which the device travels, and handles on said levers for operating the levers.

9. In a shaking out device, the combination of a rolling frame adapted to travel along a row of flasks, a pair of levers pivotally mounted in parallel relation on said frame, means on said levers for engaging the ends of a flask in the row, a spring connecting said levers between the pivots and said engaging means, and handles on said levers for operating the levers.

10. In a shaking out device, the combination of a rolling frame adapted to travel along a row of flasks, a pair of levers pivotally mounted on the frame in substantially parallel relation, means on the levers below the frame for engaging the ends of a flask, and handles at the outer ends of said levers.

ALBERT NELSON.