April 21, 1931. L. A. CAMEROTA 1,802,107

SHOCK ABSORBING BASE FOR JAR MOLDING MACHINES

Filed June 6, 1928

FIG. I.

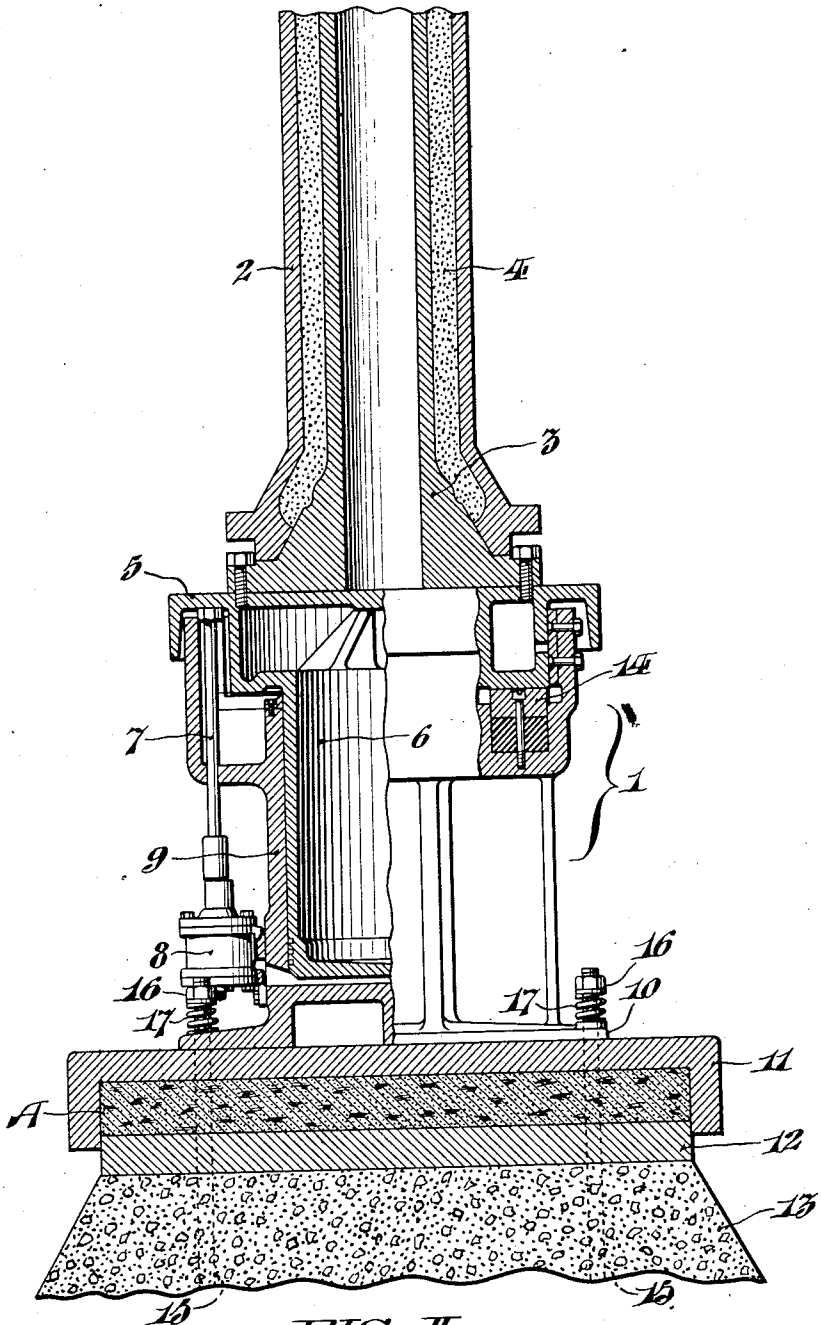
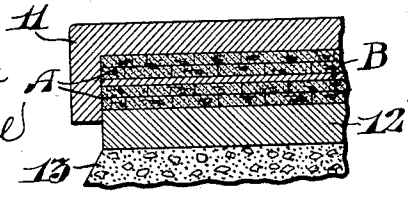


FIG. II.



WITNESSES

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UNITED STATES PATENT OFFICE

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SHOCK-ABSORBING BASE FOR JAR-MOLDING MACHINES

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My invention relates to a shock absorbing base for what is termed in foundry practice a "jar-molding" machine, a vibrating or jolting device commonly used in foundries for molding sand in a flask preparatory to making a casting.

The objects of my invention are to provide a base for a machine of this character which will withstand the severe jolting accompanying the operation of the machine, to increase the efficiency of the machine, and to reduce to a minimum the wear and tear on the foundation.

While I am fully aware that machine foundations have been made in which resilient materials of various description have been employed to absorb vibrations, my invention is novel in that it satisfies the unusual requirements which are characteristic of jar-molding machines, in which the foundation is subject to very severe shock at periodic intervals and in which the character of the base has a pronounced effect on the efficiency of the machine as measured by the time or the number of vibrations required to form the mold.

The special means which I employ, combined with the other instrumentalities of this invention and for the purpose as before premised, may be understood by reference to the embodiment of the invention shown in the accompanying drawings in which Fig. I shows a front elevation, partly in section, of a jar-molding machine and its foundation; and,

Fig. II shows an alternate form of shock absorbing base.

The drawings show in Fig. I a jar-molding machine, comprehensively designated by the numeral 1, and being used in this instance for making a sand mold for centrifugally cast pipe. Upon the jar-molding machine 1, there is shown a closed cylindrical flask 2, a pattern 3 concentric with the flask, and the sand lining 4, which is in the process of being formed into a mold.

The jar-molding machine 1 illustrated in the drawings is of the pneumatic type and includes a table plate 5 having integral therewith a piston 6 movable in the cylinder 9. A control valve 8 regulates the admission of air to the chamber beneath the piston 6, to cause its intermittent operation, a bunter pin 7 being utilized to cut off the air as the piston 6 reaches the top of its stroke. Mounted circumferentially of the cylinder 9 are a series of jarring discs 14 which receive the shock accompanying the drop of the table plate 5 and transmit it to the base 10 of the machine.

The base 10 of the jar-molding machine 1 rests upon a housing 11 which is shown as a separate member from the base plate 12, the latter being machined to fit within the housing 11. Completely confined within and filling the enclosure bounded by the base plate 12 and the housing 11 is a layer or layers of slabs of compressed granulated cork A which I preferably employ as the shock absorbing medium for reasons hereinafter set forth. The entire apparatus is shown supported on a concrete foundation 13. To retain the base 10 of the machine 1 in level position, I employ a number of rods 15, preferably situated at the four corners of the base 10, which penetrate the cork A and its housing 11 and which are secured at their lower ends in the foundation 13. At the head of each rod 15 there is an adjusting nut 16 and spring 17.

In Fig. II the shock absorbing medium for the housing 11 is shown as a laminated pad with layers of compressed granulated cork A separated by a metal plate B.

While the jar-molding machine illustrated in the drawings is of a particular type, the supporting base is readily adaptable for use in connection with other types of jolting or jarring machines used for forming a mold. The base is also suitable for jar-molding where the flask is permitted to drop successively by gravity and for jarring machines when used for shaking out sand molds.

The operation of the machine is as follows: The air is turned on and the table plate 5 is caused to vibrate violently, the valve 8 controlling its motion. In the customary use of the machine the molding sand is poured from above into the annular space

between the pattern 3 and the flask 2. As the flask 2 is rapidly raised and lowered, the lowering movement is accompanied by considerable shock which serves to pack the sand to form the mold 4 in the flask 2. It is most important with machines of this character that the pattern 3 be kept in vertical alignment at all times, and accordingly the adjusting nuts 16 can be periodically turned to level the housing 11. While, due to the intense shock and heavy weight acting upon the housing 11, it becomes occasionally necessary to readjust the housing 11, the granulated cork A being substantially incompressible, there is no appreciable settling of the base 10 over a long period of time.

With reference to the kind of shock absorbing medium employed in the housing 11, I have found that compressed granulated cork has peculiar qualities of elasticity and resiliency which cause it to effectively deaden severe shock, and that while ordinary cork and other similar materials will disintegrate or become permanently distorted under excessive shock, compressed granulated cork, when substantially confined, will not deteriorate. The shock-absorbing pad, while essentially including a layer of compressed cork, or material having substantially the same compactness and resiliency, may, of course, include other materials such as metal plates, provided that the composite pad is wholly confined within and fills the surrounding housing. In jarring machines of the character illustrated, when large wooden planks are used for the base of the machine they break up in a short time, and with their use it is impossible to stand near the machine, whereas with the use of my foundation one can work with comfort in the near vicinity of the machine. Furthermore, supplementing the advantages already described, with the use of the shock absorbing medium mentioned, not only is the impact arrested to such an extent that the foundation is capable of withstanding the shock, but the nature of the recoiling action of the base is such that the efficiency of the machine is materially increased, there being a reduction in the number of jolts required either when forming the mold in the flask or when shaking it out by the jarring process.

While I have described my invention with some particularity, it will be apparent to those skilled in the art that changes may be made in the form of the apparatus disclosed without departing from the spirit of my invention, as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination of a jar-molding machine and a shock-absorbing base, said base comprising a housing, and material completely confined within and filling said housing; said material including a layer of compressed cork.

2. The combination of a jar-molding machine and a shock-absorbing base, said base comprising a housing including relatively movable upper and lower members, and a shock-absorbing pad completely confined within and filling said housing, said pad including a layer of compressed cork.

3. The combination of a jar-molding machine and a shock-absorbing base, said base comprising a substantially box-shaped housing, including relatively movable upper and lower members, and shock-absorbing material completely confined within and filling said housing, said material including a layer of compressed cork.

4. The combination of a jar-molding machine and a shock-absorbing base, said base including two relatively movable members, the one a part of the foundation and the other a part of the jar-molding machine, said members forming an enclosure, and a shock-absorbing pad completely confined within and filling said enclosure, said pad including a layer of compressed cork.

5. The combination of a jar-molding machine and a shock-absorbing base, said base including two relatively movable members, the one a part of the foundation and the other a part of the jar-molding machine, said members forming an enclosure, material completely confined within and filling said enclosure, said material including a layer of compressed cork, and adjusting means for regulating the normal relative position of said relatively movable members.

In testimony whereof, I have hereunto signed my name at Florence, New Jersey, this 31st day of May, 1928.

LOUIS A. CAMEROTA.