

(No Model.)

L. GRANT & F. A. MOONEY.

APPARATUS FOR LAYING CONCRETE ON INCLINED SURFACES.

No. 541,848.

Patented July 2, 1895.

Fig. 1.

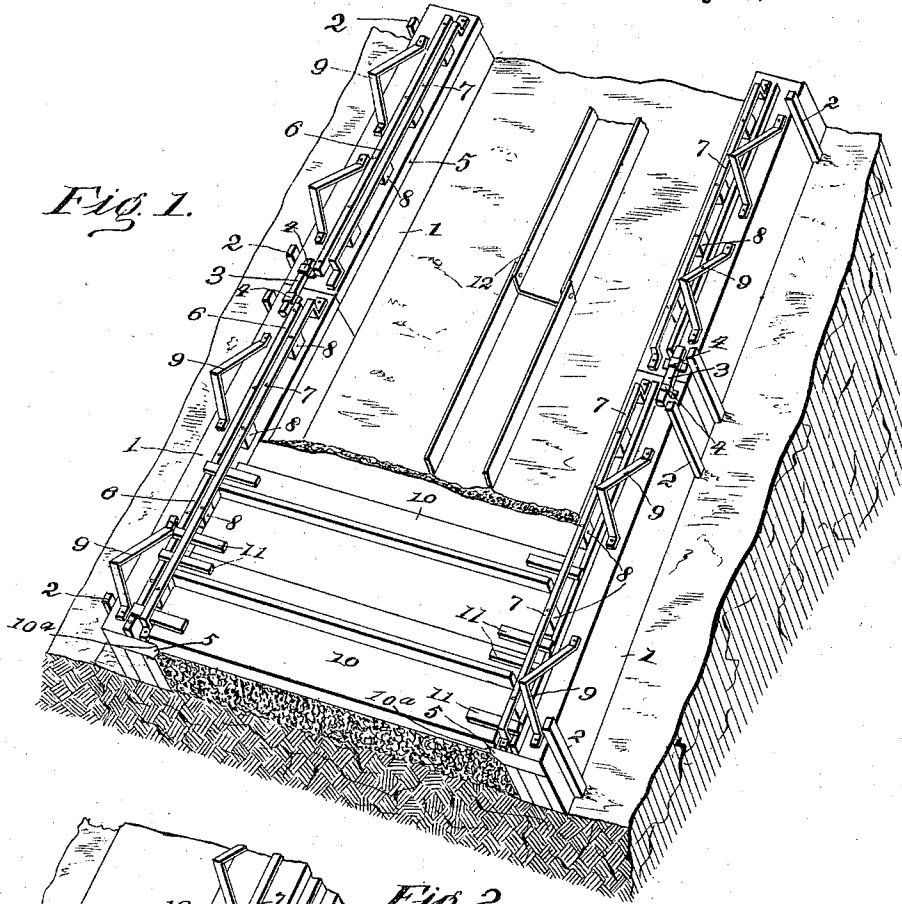
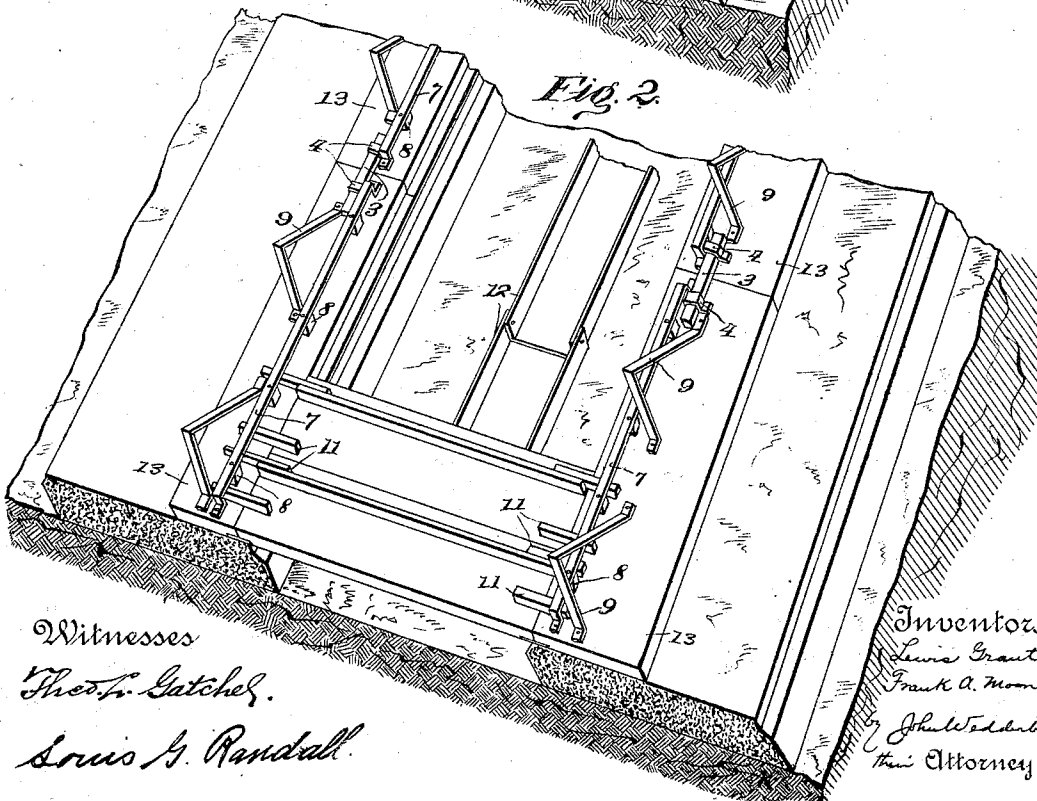


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

LEWIS GRANT AND FRANK A. MOONEY, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR LAYING CONCRETE ON INCLINED SURFACES.

SPECIFICATION forming part of Letters Patent No. 541,848, dated July 2, 1895.

Application filed February 13, 1895. Serial No. 538,230. (No model.)

To all whom it may concern:

Be it known that we, LEWIS GRANT and FRANK A. MOONEY, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Laying Concrete on Inclined Surfaces; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an apparatus for laying cement upon inclined surfaces, being designed for application upon the sloping sides of water reservoirs.

The apparatus consists of a portable frame made up of a pair of side-sections adapted to receive or be connected with extensions thereof, and so situated relatively to one another as to form a molding channel between them, having internally projecting beveled edges at the top thereof, provided with a series of detachable covers or lids and means for securing said lids thereto.

The invention is clearly illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a perspective view looking at one of the sloping sides of the reservoir, showing one of our packing frames applied thereto with two of the sectional lids thereof in place. Fig. 2 is a similar view showing two molded sections of concrete with the frames applied thereto that we employ for filling in between the sections.

Like numerals indicate like parts in both the views.

1, 1, represent the two side sections of the frame we employ for molding the sections of concrete. These are of a depth to correspond with the thickness of the concrete desired, and are placed laterally of the sloping sides of a reservoir extending from the top thereof to the bottom, and are kept from spreading by means of the pins or pegs 2, 2, driven into the ground along the sides thereof. These may be made in short longitudinal sections, which are connected and secured in place by the wedges 3, engaging loops or staples 4 at the ends thereof. The side sections 1, of said frame are made with internally extending

beveled edges 5 at the upper part thereof and on their upper faces are provided with longitudinally extending ridges 6, parallel with the sides thereof and of an equal height throughout their length. Between said ridges 6 and the inner edges of said sections 1 are located, one on each section,—long metallic staples or loops 7 extending parallel to said ridges and slightly higher than said ridges. These staples or loops are supported at intervals along their length by blocks 8. Also located at intervals along the top of the frame are angular brackets 9, 9, upon which boards may be laid for workmen to stand on to provide a horizontal base and preventing injuring the surface of the concrete already laid.

10, 10 represent the lids or covers of the compartment made by the side-sections of the frame, which are counter-sunk on their under face, as shown at 10^a, to a depth regulated by the depth of finish required. These lids or covers have their outer ends resting on the beveled edges of the frames and are secured in place by means of the wedges 11, 11, passing under the elongated staple 7 and over the ridges 6. Along the center of the compartment, we may locate a chute 12 for the concrete to run down when mixed. Through the lids 10 into the compartment formed between the side sections of the frame, we introduce the concrete in its soft condition, pack and ram it thoroughly and allow it to harden inside the frame. It will be seen that it will take the form of the space between the side sections and when it has become sufficiently hard,—say in two or three days,—the frame is removed. Similar sections are laid throughout the length of the sides of the reservoir, a slight space intervening between each section. These spaces are filled up by the means illustrated in Fig. 2, wherein are shown frames similar in construction to those just described except that the side pieces 13, thereof, are flat and adapted to rest upon the top surface of the concrete sections. In all other respects they are identical. The concrete laid therein is packed and rammed in the same manner as before and when hardened a homogeneous flat surface of concrete over the entire sloping side of the reservoir is produced. If it is desired to work the surface for purposes of smoothing, or of finish-

ing in any other respect, it can be done by workmen standing on boards laid upon the angular brackets 9, 9, whereby they are supported upon a horizontal step and do not injure the surface of the concrete.

It will be observed that we have devised an apparatus for laying concrete on inclined surfaces which is extremely simple, and can be operated cheaply and effectively, and as easily as if the concrete were being laid on a flat surface.

We have described our apparatus in its preferred form, but it is obvious that many minor changes may be made therein without departing from the nature or spirit of the invention or sacrificing any of its advantages.

Having now described our invention, what we claim, and desire to secure by Letters Patent, is—

In an apparatus of the character described,

the combination of a frame made in two sections, having internally projecting beveled edges, adapted to be placed laterally along an inclined surface and to be held from spreading by pegs driven into the earth along the sides thereof, and sectional lids or covers for said section, the said lids or covers being counter-sunk forming shoulders which engage the inner edges of the side sections and adjustable means for securing said lids in place, substantially as and for the purpose described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

LEWIS GRANT.

FRANK A. MOONEY.

Witnesses:

WALTER STRADLING,
ADOLPH H. FRANCK.