

W. COX.

PROCESS OF HANDLING SHAPED OR MOLDED MASSES OF INCOHERENT MATERIAL.

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920,276.

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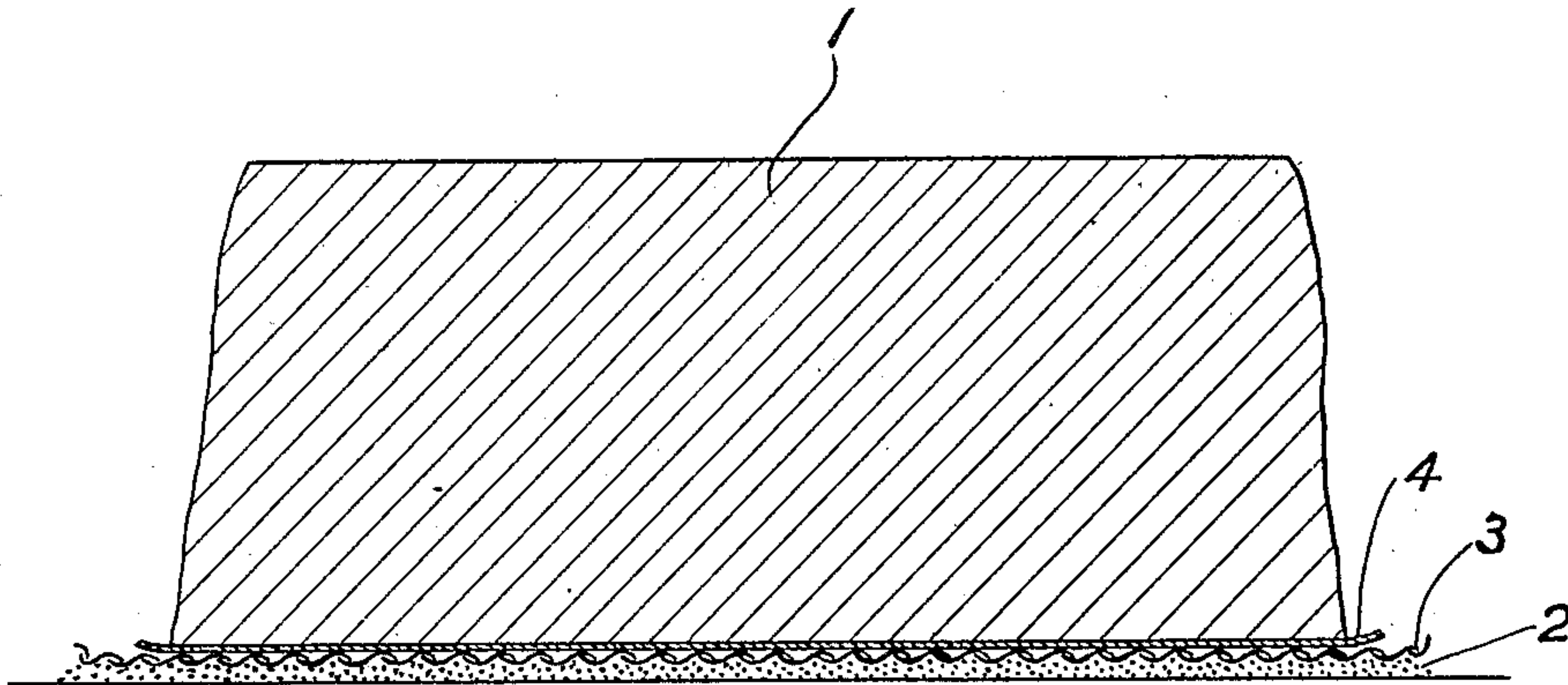


FIG. 1.

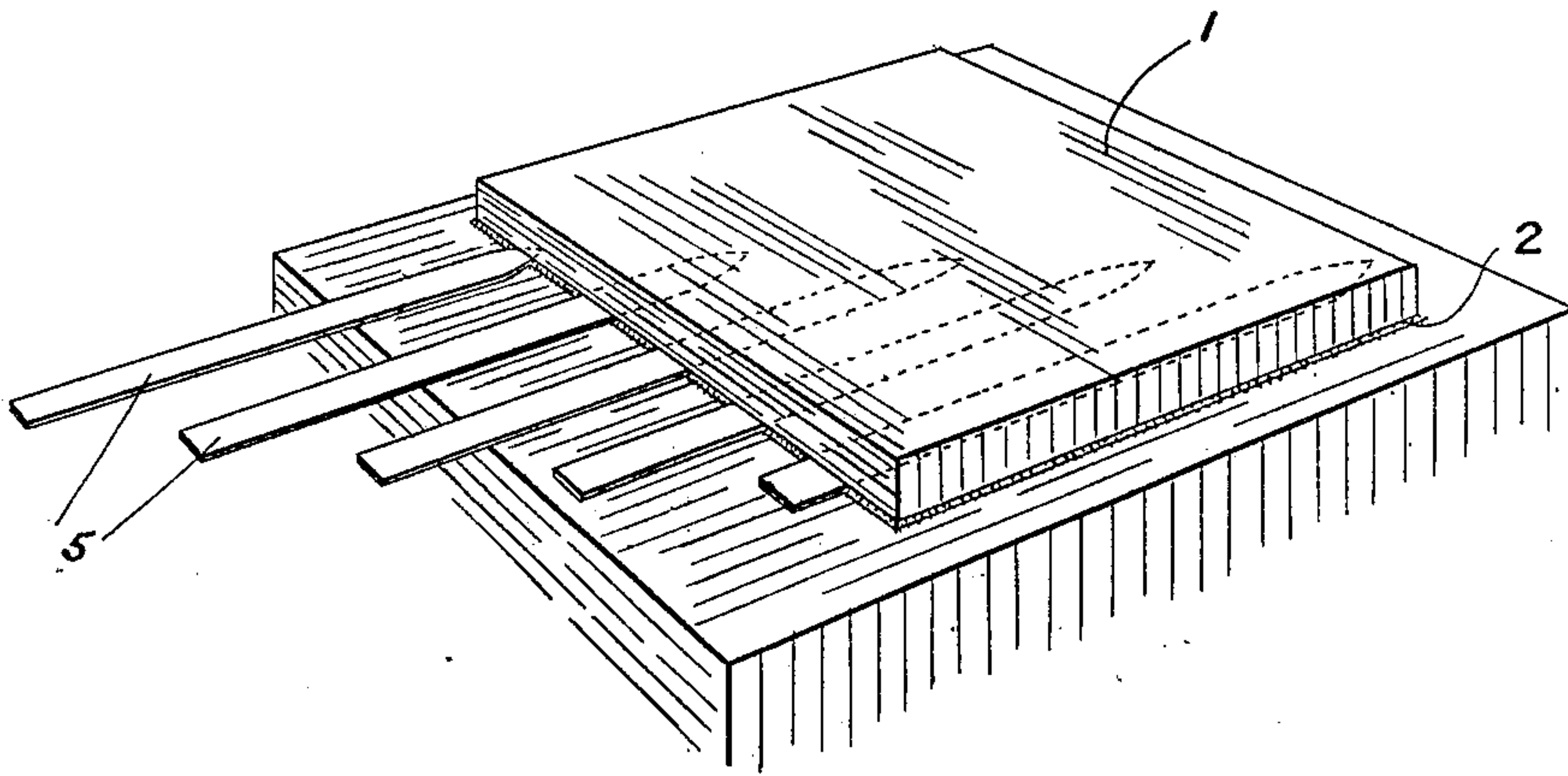


FIG. 2.

WITNESSES:

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## PROCESS OF HANDLING SHAPED OR MOLDED MASSES OF INCOHERENT MATERIAL.

No. 920,276.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed July 25, 1908. Serial No. 445,439.

*To all whom it may concern:*

Be it known that I, WALTER COX, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Process of Handling Shaped or Molded Masses of Incoherent Material, of which the following is a specification.

Building material can be made by dampening such material as silica sand mixed with a fusible material, then molding or shaping the mass, then heating it so as to partially fuse it, then pressing it and finally annealing it. Such dampened material is necessarily incoherent and it is also more or less incoherent even after it has been partially fused. It is difficult on account of the incoherent character of the material to transfer it, for example, into and out of the furnace in which it is heated, especially if it be molded into comparatively large masses or slabs, because it is practically impossible to get a scoop or shovel under and out from under it without unduly disturbing its form and coherence.

One object of the present invention is to provide for handling incoherent molded or shaped masses or slabs, and this object is accomplished by placing the molded mass or slab upon a bed or layer of finely divided material with or without the interposition of paper, wire netting, or the like between the two, and then passing narrow blades or knives through the layer of comminuted material and under the slab or mass, so that a scoop or slide may be then worked under the blades or fingers and used as a means for handling the slab or mass.

For the sake of description reference may be made to the drawings in which—

Figure 1, is a sectional view showing a molded slab or mass of incoherent material resting upon a layer of comminuted material and having wire netting and a layer of paper interposed between the two, and Fig. 2, is a perspective view illustrating the use of the knives or blades.

In the drawings 1, is a molded mass of incoherent material, such as a mixture of sand and fusible material as powdered cullet, which may be simply dampened with water or may have been partially fused according

to the stage in the process of manufacture at which it may be considered.

2, is a layer of comminuted material as sand, and when this layer is arranged in the furnace in which the mass 1, is heated, it should be of refractory sand or other material, so that it will not substantially fuse during the operation of partially fusing the mass or slab 1.

3, is a sheet of wire netting placed on top of the layer of sand 2, and it may remain in or on the finished article.

4, is a layer or sheet as of paper, or other material, which may be consumed when the slab or mass 1, is heated.

To lift the slab or mass 1, for example, into or out of the furnace or onto and off of the press, use is made of the blades or fingers 5, which are shown as provided with pointed ends. These blades 5, are inserted singly or in groups and successively, or all together, under the slab or mass 1, and through the layer of sand 2, and under the netting 3, and sheet 4, when these are present. After the blades have been inserted, a scoop, or the like, is passed under them and the scoop affords means for lifting the mass, for example, into a furnace. When in the furnace the scoop is first withdrawn and then the blades 5, are withdrawn and this operation is repeated whenever it is desirable to handle the mass or slab 1. Since the blades are comparatively small and may be moved with the requisite rapidity, it follows that they can be inserted under and withdrawn from the mass or slab 1 with such rapidity that the inertia of the particles of the mass is not disturbed and the mass remains sufficiently coherent. When the scoop or other implement is inserted under or withdrawn from under the blades they hold the mass 1, so steady that it is not unduly disturbed. When the layers or sheets 3 and 4 are present they assist in holding the mass 1, against disturbance by the movement of the knives or blades, and they also oppose any tendency that the knives or blades might have to strike up into the mass 1.

One function of the knives or blades in connection with the layer of sand or comminuted material 2, is to provide for getting a scoop or the like under the relatively incoherent slab without unduly disturbing its



equilibrium, and this is accomplished because each blade or knife operates upon only a small portion of the mass or slab 1, and the successive action of the knives or blades, therefore is not calculated to overcome the inertia of its particles, and because the blades or knives can be moved with such celerity that their passage does not disturb the particles of the mass or slab 1.

10 What I claim is,

1. The mode of handling a shaped or molded mass of comparatively incoherent material without substantially disturbing its form, which consists in placing the mass upon a layer of comminuted material and then inserting or withdrawing blades or knives through the layer of comminuted material and under the mass, whereby the inertia of its particles is not disturbed, substantially as described.

2. The mode of handling a shaped or molded mass of comparatively incoherent material without substantially disturbing its form, which consists in shaping a dampened mass of comparatively refractory mineral earth containing a mineral fusible material upon a series of blades or knives, placing the mass and underlying knives or blades upon a layer of refractory comminuted material and withdrawing the knives or blades through the layer of refractory material with such rapidity that the inertia of the mass is undisturbed, substantially as described.

3. The mode of handling a shaped or molded mass of comparatively incoherent mate-

rial without substantially disturbing its form, which consists in placing the mass upon a sheet superposed upon a layer of comminuted material and then inserting or withdrawing blades or knives through the comminuted material and under the sheet with such rapidity that the inertia of the particles of the mass remains undisturbed, substantially as described.

4. The mode of handling a shaped or molded mass of comparatively incoherent material without substantially disturbing its form, which consists in placing the mass upon a layer of comminuted refractory material arranged in a furnace and then inserting or withdrawing blades or knives through the layer of comminuted material and under the mass, whereby the inertia of its particles is not disturbed, substantially as described.

5. The mode of handling a shaped or molded mass of comparatively incoherent material without substantially disturbing its form, which consists in placing the mass upon a layer of comminuted material, and then inserting or withdrawing an instrument or tool through the comminuted material and under the mass, whereby the latter is not unduly disturbed, substantially as described.

In testimony whereof I have hereunto signed my name.

WALTER COX.

Witnesses:

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S. E. PATTERSON.