J. B. COOK & J. W. HEATH.

Alarms for Prisons, &c.

No. 168,971. Patented Oct. 19, 1875.

FIG. 1.

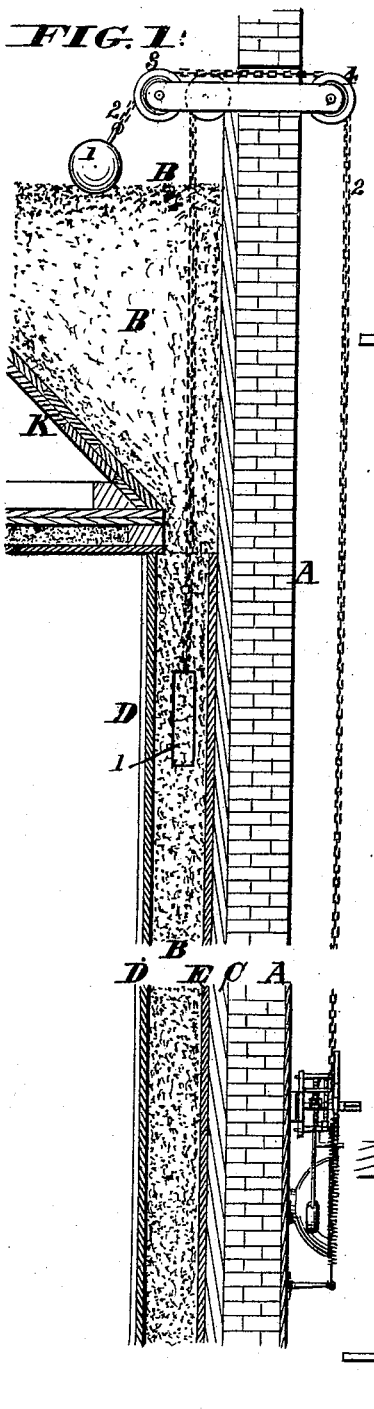


FIG. 2.

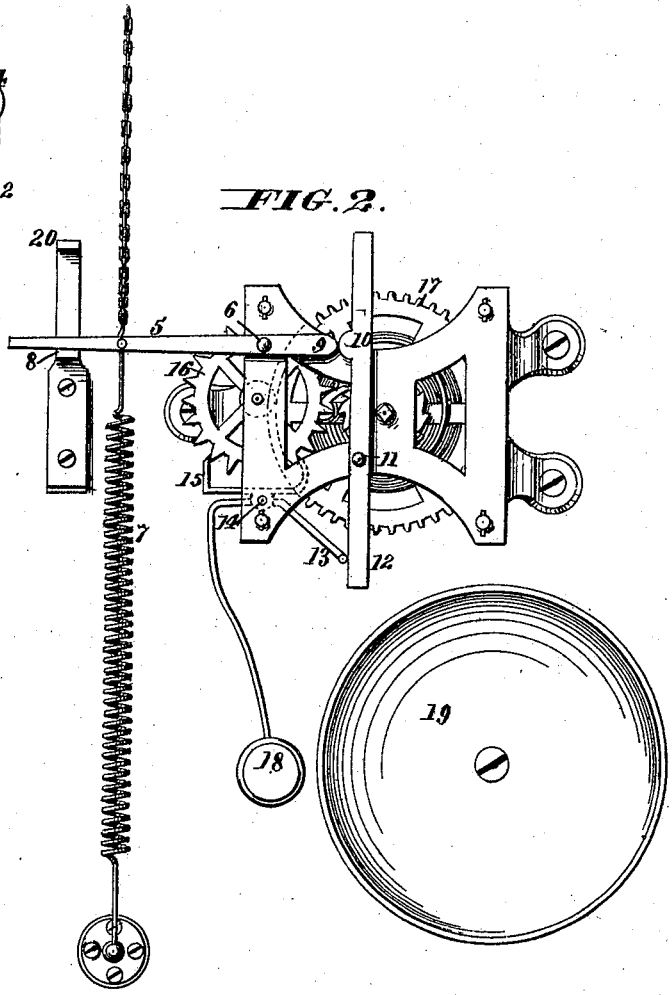
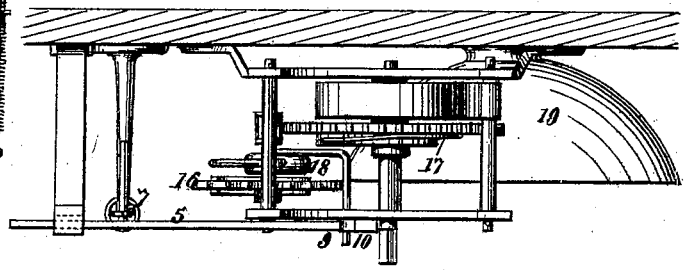


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES B. COOK AND JAMES W. HEATH, OF MEMPHIS, TENNESSEE.

IMPROVEMENT IN ALARMS FOR PRISONS, &c.

Specification forming part of Letters Patent No. **168,971**, dated October 19, 1875; application filed September 14, 1875.

CASE B.

To all whom it may concern:

Be it known that we, JAMES BARTHOLOMEW COOK and JAMES WILSON HEATH, both of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Alarms for Prisons and other Structures, of which the following is a specification:

This invention is for the purpose of giving warning in case of an attempt to break through the walls of the structure, constructed on the principle described in Letters Patent granted to the said Cook and Heath on the 28th day of September, 1875, for the construction of jails, &c., with hollow walls, to be filled with sand, sand and gravel, or other mobile material.

The present improvement consists in combining with a jail or other wall, or wall-lining, made hollow, and filled with sand or other loose material, an alarm apparatus consisting of a weight communicating with a sounder or tell-tale of any suitable character, adapted to give warning in the event of the depletion or lowering of the loose filling within the hollow wall or wall-lining.

In the accompanying drawing, Figure 1 is a vertical section of a portion of the hollow wall of the jail with mobile filling and alarm or tell-tale apparatus applied. Fig. 2 is an elevation of an alarm on a larger scale. Fig. 3 is a plan of the same.

In Fig. 1, A may represent external wall of jail-building; C, an inner facing, and D E the two shells of a hollow lining, which is filled with sand or other loose or mobile material, shown at B, communicating with a hopper, K, above, which is also filled with the same material. 1 1 represent one or more weights, resting at any point within the mobile filling, or on the surface of the mobile filling B in the hopper K, and each attached to a chain, 2, passing over pulleys 3 4. The lower end of each chain 2 connects with a detent-trigger, 5, of an alarm apparatus, said trigger being fulcrumed at 6, and held down by a spring, 7, against a stop, 8, so as to retain said trigger in its normal horizontal position, with its rear end 9 resting against a stud or projection on the detent-lever 10. The said lever is fulcrumed at 11, and, by its lower end 12, bears against an arm, 13, rigidly attached to the shaft 14 of pallets 15, which control an escapement-wheel, 16, attached to a clock-movement, 17, of common construction. The shaft 14 carries a hammer, 18, which is arranged to strike a bell, 19, so as to sound an alarm when the lever 10 is released by a trigger, 5. 20 is a stop limiting the upward movement of the trigger 5.

Now, it is obvious that so long as the sand is at rest, so also will the weight remain at rest; but should a movement occur in the sand—say, for instance, an escape of the sand at its lower portion—a descent of the whole mass or column will follow, and the weight on its surface will partake of the same movement.

The principle involved is the transmission of movement from one body to another. A cord or wire attached to a weight at one end and to an alarm of any suitable kind at the other will illustrate the invention in its simplest form. Whenever a downward movement of the mobile material takes place the weight follows, pulling the wire, and springs the trigger, and sets the alarm in motion. Its application to all jails or other buildings built with hollow walls filled with mobile material is wide and varied, and the method consists in placing in suitable intervals, say every four or six feet, weights. Attached to these weights is the wire connected to the alarm.

This alarm can be located wherever desired in the office of the building, away from the influence of all parties, and when not able to have direct action from the weight (which is the power) to the alarm, then a system of cranks, levers, or pulleys is to be used, as in the ordinary arrangement of bell-hangers' work. As stated before, its application is varied, and depends upon the shape, size, and general arrangement of the building, and the different walls to be operated upon.

The system can be made by electro-magnetic attachments, the connection being broken by the fall of the weight, thus setting in motion the alarm.

The system also can be applied by having strong mechanism to the ringing of a large

bell in a tower to warn the neighborhood, where the buildings are isolated.

The advantages are, that the power that operates upon the alarm is hid and cannot be disturbed, and remains intact so long as the mobile material remains the same. A movement of the mobile material creates a corresponding movement in the weights, and transmits the same to the wire, and then to the alarm.

A force or power being produced by a displacement of the mobile filling by the descent of the weight, a power is gained which can be, by suitable attachments, made to operate upon any suitable system of alarms, and by a separate system of wires, being one to each cell or room or vault, and all being gathered and brought to an annunciator, the exact disturbance or movement of the mobile material will be known.

The following is what we claim as new, and desire to secure by Letters Patent:

1. An alarm or tell-tale apparatus for prisons or other structures, having one or more weights, which control the alarm mechanism, supported upon or within sand or similar gravitating mobile substance, said substance filling the hollow walls or wall-lining of said structure, and so arranged that when the wall or lining is punctured the gravitating substance moves downward, the weight follows, and the alarm is started.

2. The combination, with the weight 1 and chain or wire 2, of the trigger 5, lever 10, and alarm mechanism, substantially as set forth.

JAMES B. COOK.
JAMES W. HEATH.

Witnesses:
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WM. BERRY.