

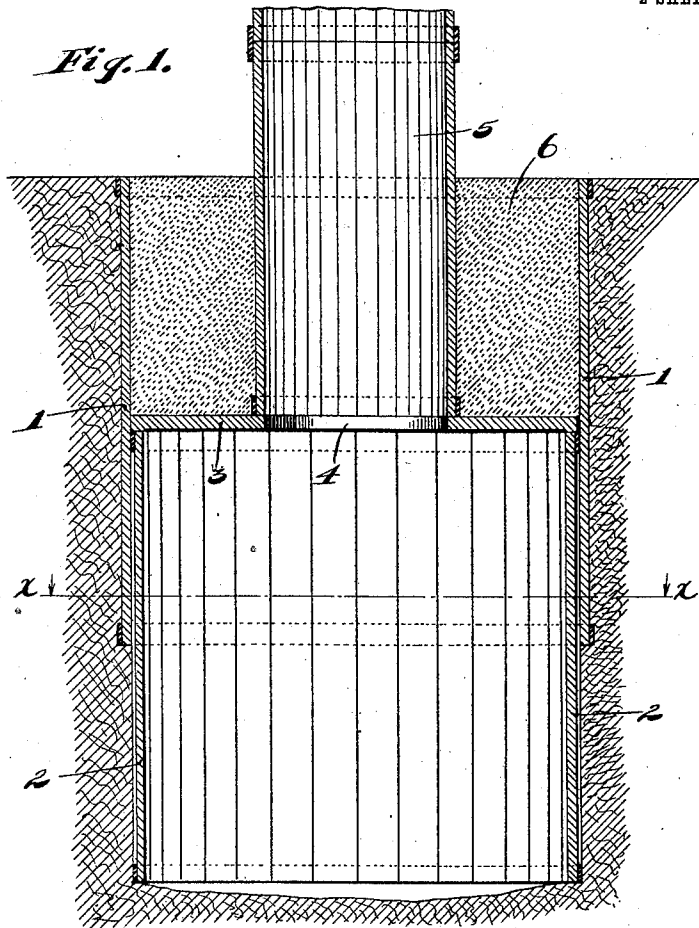
J. J. BULGER.  
METHOD AND APPARATUS FOR THE CONSTRUCTION OF FOUNDATIONS.  
APPLICATION FILED MAR. 8, 1911.

1,003,171.

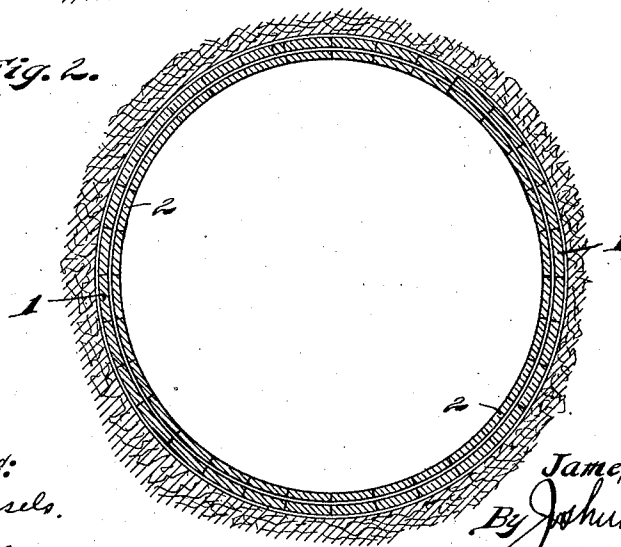
Patented Sept. 12, 1911.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
C. E. Weirich.  
B. H. Richards

Inventor:  
James J. Bulger,  
By Joshua R. H. Fells  
his Attorney

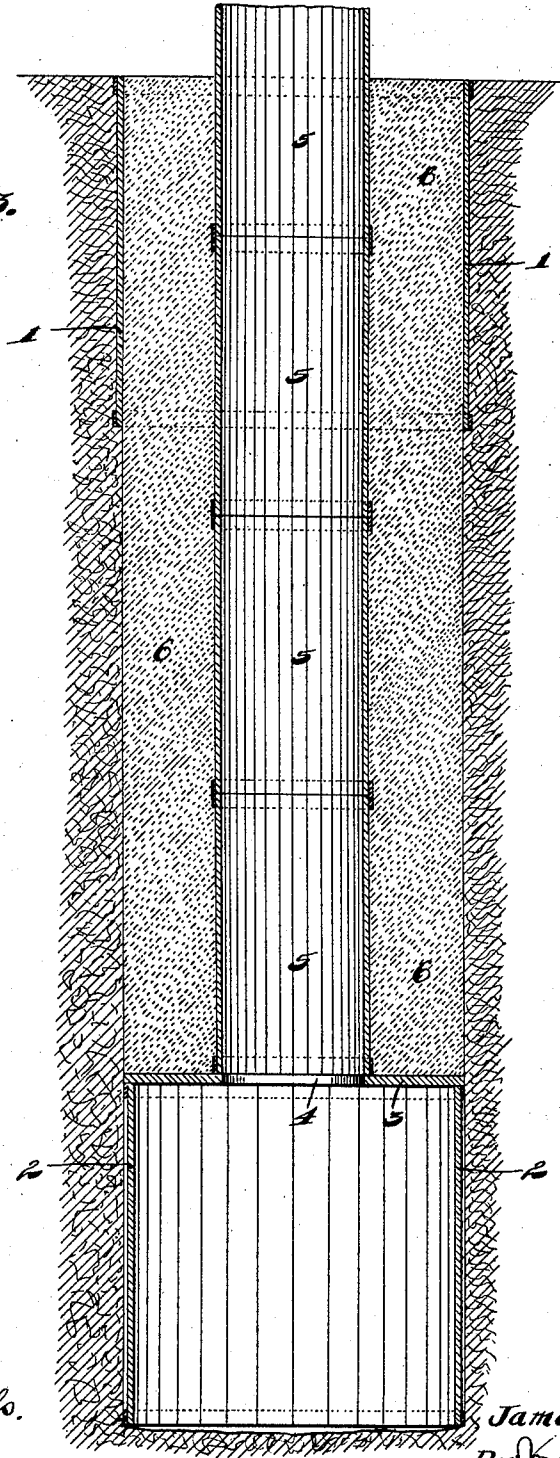
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2 SHEETS—SHEET 2.

*Fig. 3.*



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

JAMES J. BULGER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES J. CASHION, OF CHICAGO, ILLINOIS.

METHOD AND APPARATUS FOR THE CONSTRUCTION OF FOUNDATIONS.

1,003,171.

Specification of Letters Patent.

Patented Sept. 12, 1911.

Application filed March 3, 1911. Serial No. 613,027.

*To all whom it may concern:*

Be it known that I, JAMES J. BULGER, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Methods and Apparatus for the Construction of Foundations and the Like, of which the following is a specification.

My invention relates to improvements in method and apparatus for the construction of foundations and the like and has for its object the provision of an improved method and apparatus of this character.

The invention consists in the method and apparatus hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a vertical section showing the apparatus as in use in an early stage of the process. Fig. 2 a section of the apparatus taken on line *x—x* of Fig. 1, and Fig. 3 a vertical section of the apparatus taken at a later stage in the process.

In carrying on my improved process I first prepare a preliminary excavation of a diameter slightly greater than the exterior diameter of the proposed foundation or pier and of a depth which will permit of work being performed therein. This hole is lined with permanent lagging 1 adapted to prevent caving in of the walls thereof and of an interior diameter equal to the exterior diameter of the foundation or pier to be constructed. Within this permanent lagging I provide a movable interior lagging 2 of a diameter to loosely fit within lagging 1 and provided with a cover 3 having a central aperture 4 therein. A lagging 5 is placed around aperture 4 and extended upwardly therefrom. Men enter the lagging 2 and excavate from beneath the same, removing the excavated material through lagging 5 by means of buckets or other suitable means. As lagging 2 descends the annular space around lagging 5 is filled with concrete 6 which thus serves as a weight to assist in the descent of lagging 2. By the time lagging 2 has passed the lower end of the permanent lagging 1 the concrete will have set sufficiently to serve to hold the walls of the excavation against caving in, as indicated

in Fig. 3, additional lagging 5 being added as occasion requires. This process is continued until the desired depth is reached whereupon the interior lagging is removed and the inner space filled with concrete from the top.

By this method, it will be observed, that all of the work, excepting the actual excavation, is performed from above, and consequently at great convenience. The weight of the concrete constantly added on top of lagging 2 will serve to materially assist in the descent of said lagging.

While I have illustrated and described the preferred construction and method of procedure for carrying my invention into effect these are capable of variation or modification without departing from the spirit of my invention. I therefore, do not wish to be limited to the exact details of construction and the precise steps set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior movable lagging with a cover, an aperture in said cover and lagging surrounding said aperture and extending upwardly therefrom; and then excavating under said interior lagging and filling in the space around said upwardly extending lagging with plastic material, substantially as described.

2. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior movable lagging with a cover, a central aperture in said cover and lagging surrounding said aperture and extending upwardly therefrom; and then excavating from said interior lagging and filling the space around said upwardly extending lagging with plastic material, substantially as described.

3. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior movable lagging with a cover, an aperture in said cover and lagging surrounding said aper-

ture and extending upwardly therefrom; and then excavating under said interior lagging and filling in the space around said upwardly extending lagging with concrete, substantially as described.

4. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior lagging with a cover, a central aperture in said cover and lagging surrounding said aperture and extending upwardly therefrom; and then excavating under said interior lagging and filling in the space around said upwardly extending lagging with concrete, substantially as described.

5. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior movable lagging with a cover, an aperture in said cover and lagging surrounding the said aperture and extending upwardly therefrom; then excavating under said interior lagging and filling in the space around said upwardly extending lagging with plastic material; then removing said interior lagging; then filling in the space inclosed by said interior lagging with plastic material, substantially as described.

6. The method of construction which consists in first sinking a hole; then placing permanent lagging around the sides of said hole; then providing an interior movable lagging with a cover, a central aperture in

said cover and lagging surrounding said aperture and extending upwardly therefrom; then excavating under said interior lagging and filling in the space around said upwardly extending lagging with concrete; then removing said interior lagging; and then filling the space inclosed by said interior lagging with concrete, substantially as described.

7. Apparatus of the class described, comprising an exterior permanent lagging surrounding the upper portion of an excavation; an interior movable lagging fitting within said exterior lagging and having a cover provided with an aperture therein; and lagging extending upwardly from said cover and surrounding said aperture, substantially as described.

8. Apparatus of the class described, comprising an exterior permanent lagging surrounding the upper portion of an excavation; an interior movable lagging fitting within said exterior lagging; a cover for said interior lagging having a central aperture therein; and lagging extending upwardly from said cover and surrounding said aperture, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES J. BULGER.

Witnesses:

HELEN F. LILLIS,  
JOSHUA R. H. POTTS.