Oct. 4, 1927. 1,644,288

O. E. STREHLOW

METHOD OF EXCAVATING

Original Filed Dec. 11, 1923

Fig. 2.

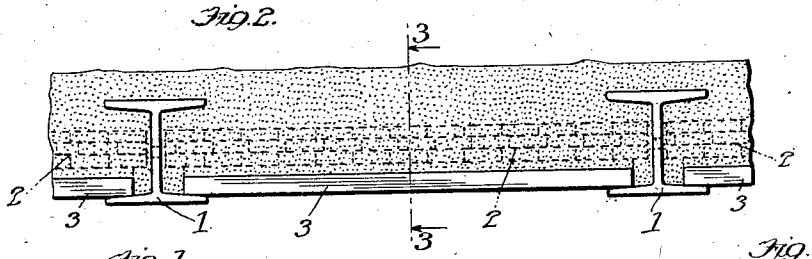
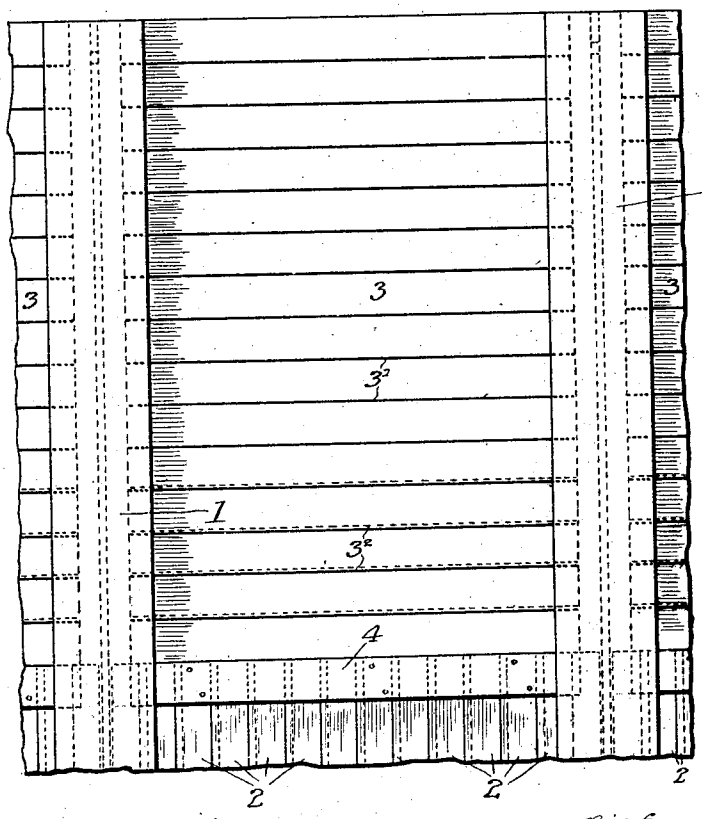


Fig. 1.

Fig. 3.



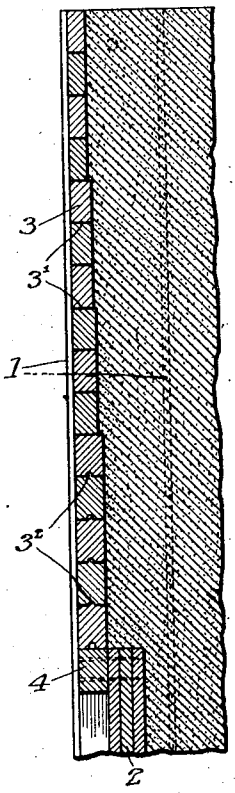
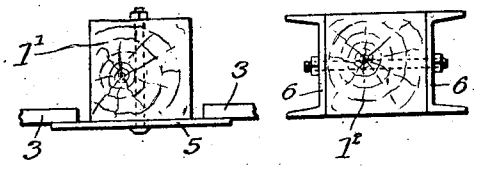


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.



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Patented Oct. 4, 1927. 1,644,288

UNITED STATES PATENT OFFICE.

OSCAR E. STREHLOW, OF EVANSTON, ILLINOIS.

METHOD OF EXCAVATING.

Application filed December 11, 1923, Serial No. 679,980. Renewed May 16, 1927.

This invention relates to a method of excavating.

Stated generally, the object of the invention is to provide a method of excavating which will be effective and relatively inexpensive, both as regards material and labor—as compared with any method of excavating of which I have any knowledge.

More specifically, objects of the invention are:

To provide a method of excavating in which comparatively very few vertical supporting members or piles will be required;

In the practice of which, short and, therefore, cheap pieces of lumber or other sheathing material—or even scrap lumber—may be used for forming panels supporting the walls of the excavation between the vertical supports;

In the practice of which, the thickness of the lumber or other sheathing material used may be graduated to meet requirements, or where the material being excavated is sufficiently firm, may be omitted altogether;

In the practice of which, the width of the sheathing material is immaterial, thus providing for the use of random widths, which are cheapest;

To provide a method of excavating in which the actual excavation will be of minimum size, thereby reducing the quantity of excavation, backfill and the length of shores or bracing, where used;

To provide a method of excavating in which a minimum of shoring or cross-bracing—or none at all—will be required, thereby providing ample and unobstructed working space for performing other work, such as operating large sectional forms for concrete construction, or pile drivers or power shovels within the excavation, the use of which lessen the time and expense required for doing the work; and

To provide a method of excavating in which, for the most part, the panel portions of the bulk heads or retaining walls which close the spaces between adjacent vertical supporting members or piles, and which support the walls of the excavation, may be constructed by hand, as work progresses, quickly and with unskilled labor, and may follow excavation closely, thus permitting other work which follows to be started and carried on without waiting for the excavation to be completed, thereby correspondingly shortening the time required to complete the job as a whole.

In most cases to attain the objects of the invention my improved method of excavating consists in driving piles at spaced intervals with the sides thereof proximate the line of excavation adjacent to but outside of, said proposed excavation, said piles having flanges on their adjacent faces which project into the spaces between them, excavating along the faces of said piles proximate to the excavation and inserting members in position between adjacent piles from within the excavation through the spaces between adjacent piles as excavation progresses, with their ends interlocked behind flanges on adjacent piles where necessary on account of the loose character of the soil, thus forming a retaining wall which will prevent caving in of the wall of the excavation.

The vertical supporting members or piles are driven before excavating operations are begun, while the sheathing members are inserted into position between adjacent piles, where necessary, as excavation progresses usually panel by panel and piece by piece.

In the practice of my improved method, the vertical supporting members are usually spaced from 3 to 12 feet between centers—depending upon conditions—thus permitting the use of short and, therefore, cheap lengths of material for the transverse sheathing, which in many cases may consist of scrap lumber of random widths. Where the character of the soil requires, adjacent transverse sheathing members may be formed with tight joints, as tongues and grooves, shiplap or the like and, on the other hand, where the soil is sufficiently firm, the sheathing may be omitted entirely. In many cases, it may happen that on the same job, different strata of soil will be encountered at different locations and different depths, which will require different treatment. That is to say, some soils may only require the use of lumber the contacting edges of which are plain, others may require tight joints and for still others the sheathing may be omitted altogether.

My improved method of excavating also comprises the various other steps and operations hereinafter described and claimed.

material forming the upper panel sections 3 may be removed and salvaged, said horizontal panel sections being removed by hand, so far as possible, and the supporting members 1 being pulled out by a suitable rig.

My invention contemplates embodying the bulkhead or retaining wall as a part of the finished structure, if desired.

By "front" as used herein to designate faces of the bulkhead or retaining wall and the parts thereof, I mean the faces towards the excavation.

I claim:

1. The method of excavating which consists in driving piles to a depth beyond the full depth of the proposed excavation at spaced intervals before excavating operations are begun with the sides thereof proximate the line of excavation adjacent to but outside of said proposed excavation, said piles having flanges on their adjacent faces which project into the spaces between said piles, excavating along the faces of said piles proximate to the excavation, and inserting sheathing members in position between adjacent piles from within the excavation through the spaces between adjacent piles as excavation progresses with their ends interlocked behind flanges on adjacent piles where necessary on account of the loose character of the soil, thus forming a retaining wall which will prevent caving in of the wall of the excavation.

2. The method of excavating as specified in claim 1, which also includes as a step backfilling behind said sheathing members.

3. The method of excavating which consists in driving piles beyond the contemplated depth of excavation at spaced intervals before excavating operations are begun with the sides thereof proximate the line of excavation adjacent to, but outside of said proposed excavation, said piles having flanges on their adjacent faces which project into the spaces between said piles, excavating along the faces of said piles proximate to the line of excavation, and inserting sheathing members in position between adjacent piles from within the excavation through the spaces between adjacent piles as excavation progresses with their ends interlocked behind flanges on adjacent piles where necessary on account of the loose character of the soil, thus forming a retaining wall which will prevent caving in of the wall of the excavation.

In witness that I claim the foregoing as my invention, I affix my signature this 7th day of December, A. D. 1923.

OSCAR E. STREHLOW.

Oct. 4, 1927. 1,644,289

T. W. TIMPSON

DISPLAY TABLE

Filed Nov. 3, 1926

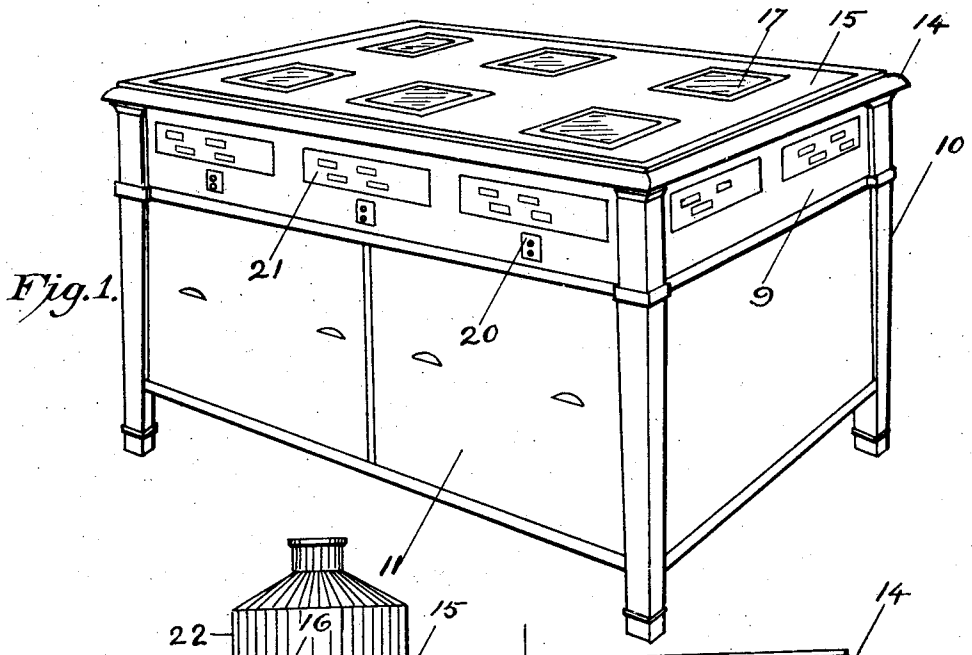


Fig. 1.

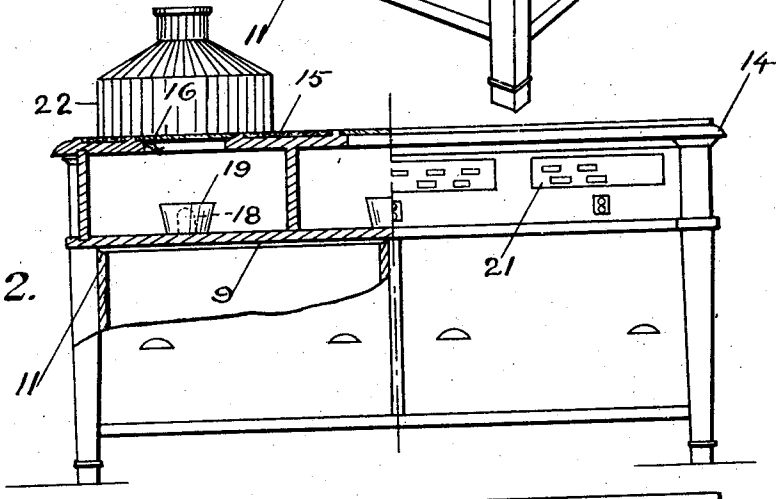


Fig. 2.

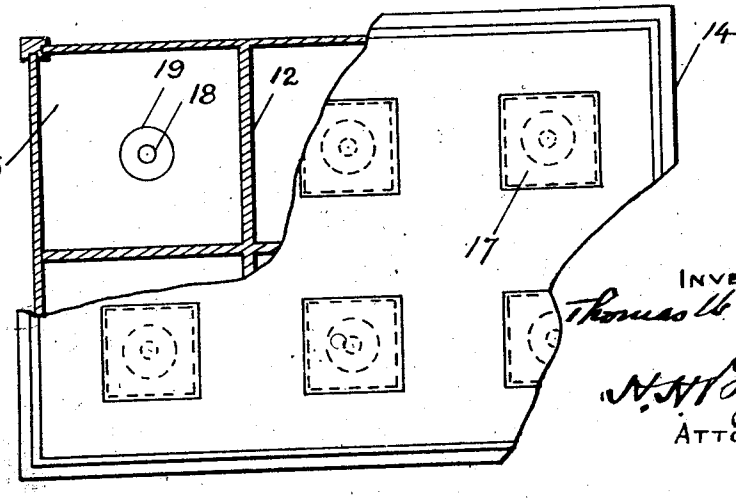


Fig. 3.

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