(No Model.) 2 Sheets—Sheet 1.

P. M. BRUNER.

METHOD OF BUILDING ENGINE FOUNDATIONS.

No. 501,914. Patented July 25, 1893.

Fig. 1.

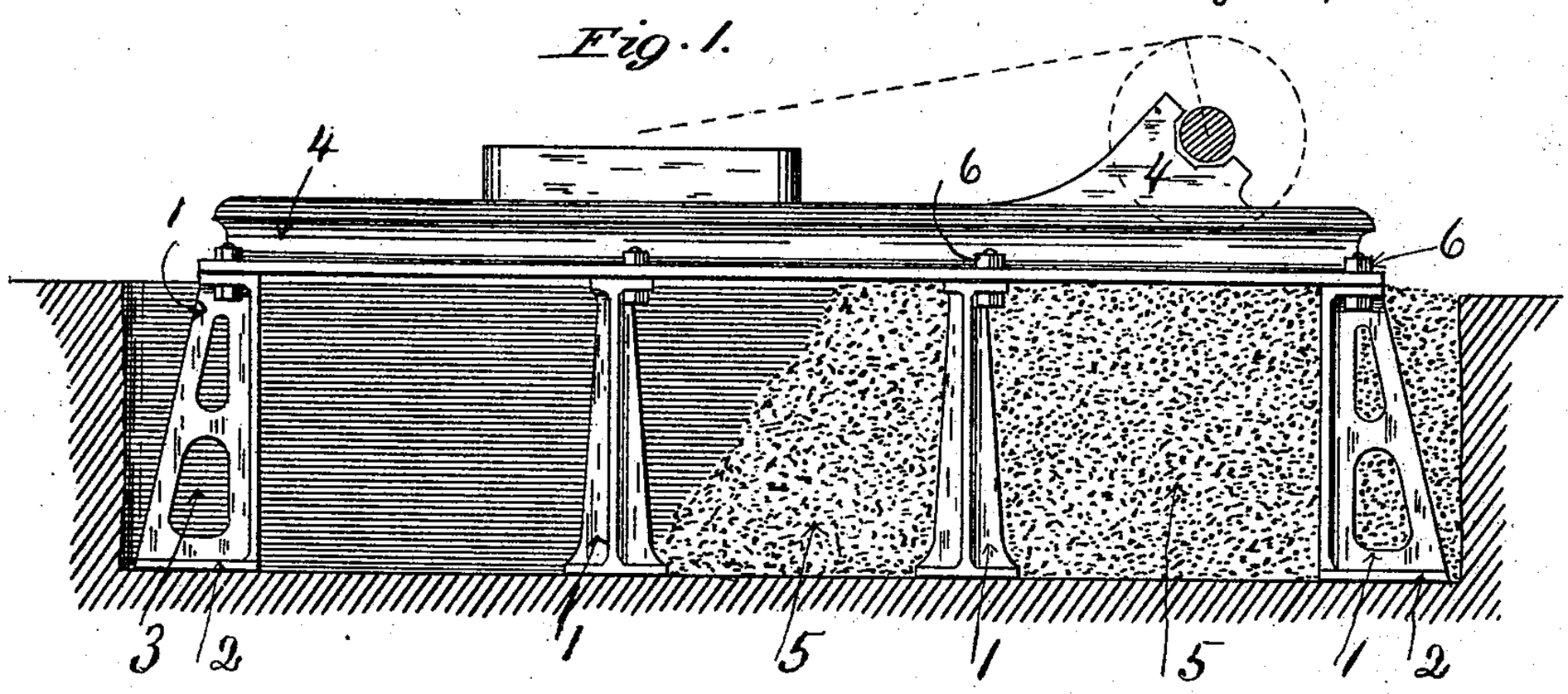


Fig. 2.

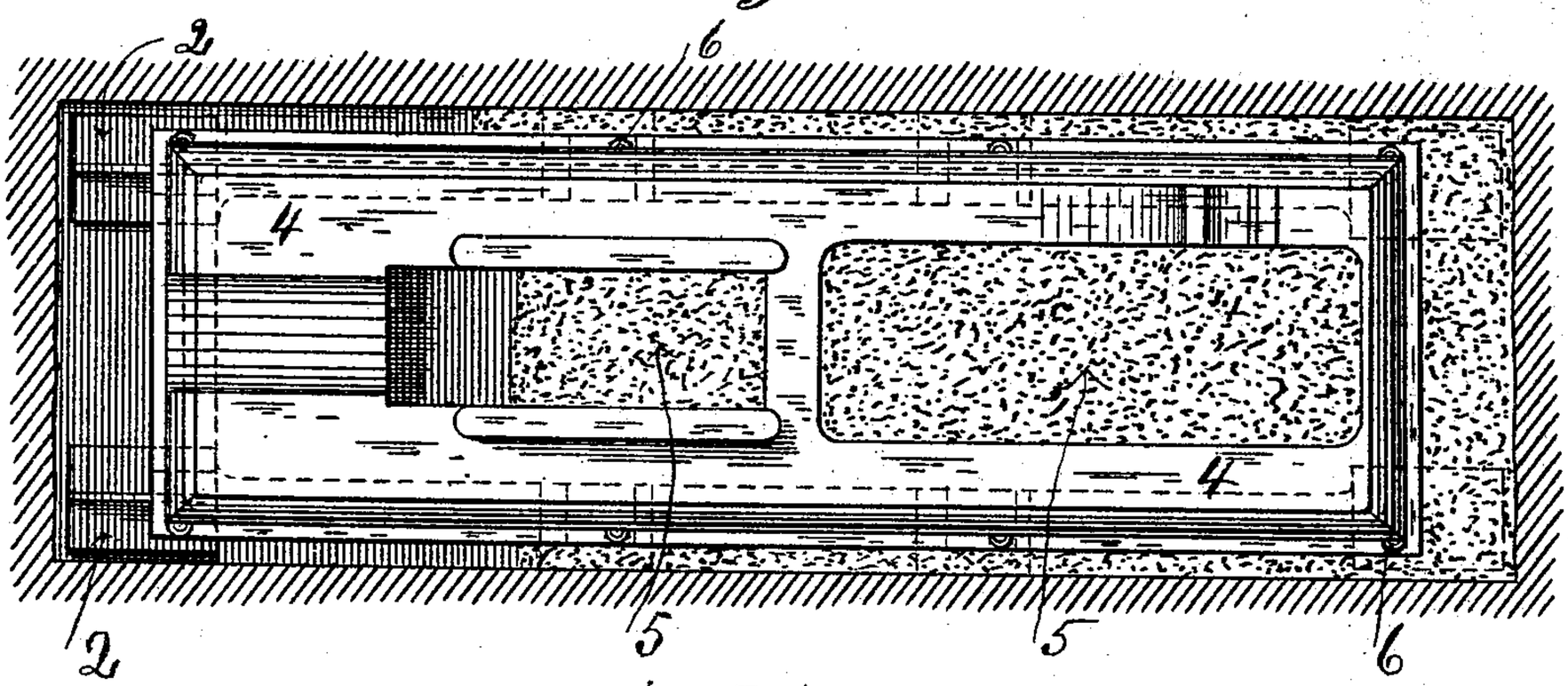
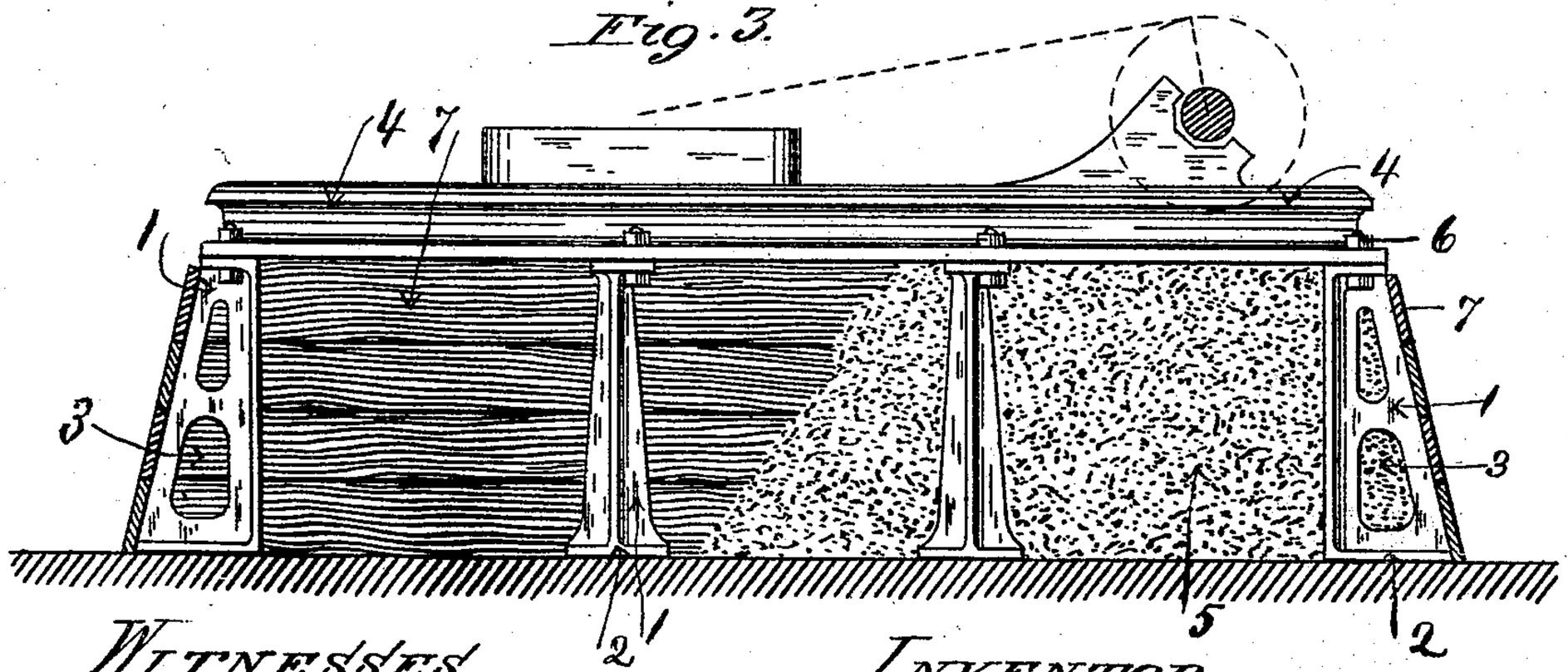


Fig. 3.



WITNESSES
Edward C. Purcell
W. W. Byrne.

INVENTOR
Preston M. Bruner
By his attorney
Alfred Ramel.

(No Model.) 2 Sheets—Sheet 2.

P. M. BRUNER.

METHOD OF BUILDING ENGINE FOUNDATIONS.

No. 501,914. Patented July 25, 1893

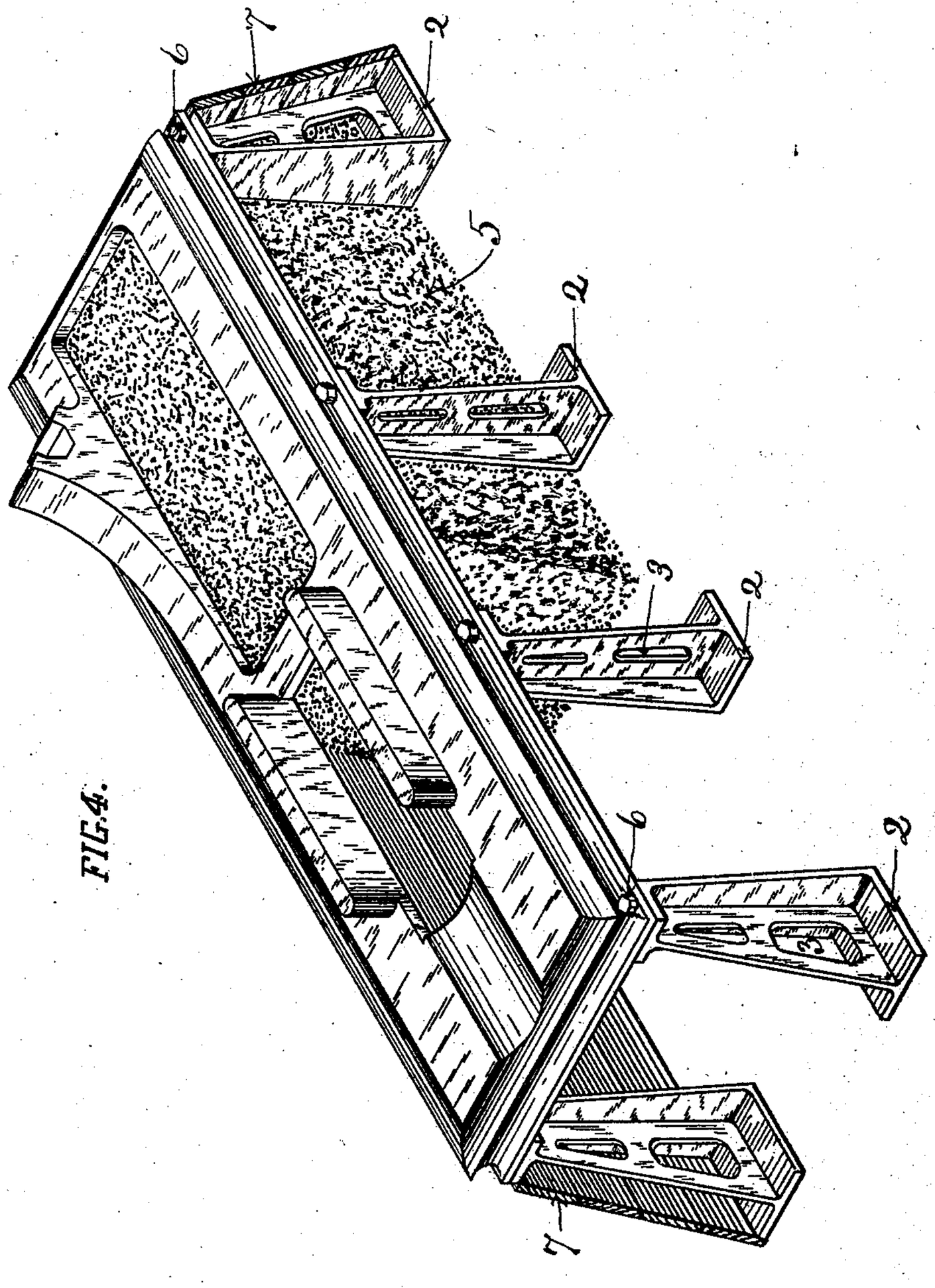


FIG. 4.

WITNESSES.
W. W. Byrne.
H. K. Wagner.

INVENTOR.
Preston M. Bruner
By his attorney
Alfred Barnel

UNITED STATES PATENT OFFICE.

PRESTON M. BRUNER, OF ST. LOUIS, MISSOURI.

METHOD OF BUILDING ENGINE-FOUNDATIONS.

SPECIFICATION forming part of Letters Patent No. 501,914, dated July 25, 1893.

Application filed March 22, 1892. Serial No. 425,990. (No model.)

To all whom it may concern:

Be it known that I, PRESTON M. BRUNER, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in the Method of Building Foundations for Engines, of which the following is a full, clear, and exact description.

My invention relates to the methods of making foundations for engines or other machinery, and has for its object such improvements as to enable this to be done in a more practical and simple manner.

It consists in the method hereinafter set forth in the specification and claims.

In the accompanying drawings, which serve to illustrate my invention, and in which like numerals of reference denote like parts in the several figures, Figures 1 and 3 are side elevations of an engine foundation built according to my improved plan, Fig. 1 being that of a foundation below the floor level and Fig. 3 that of one above the floor level. Fig. 2 is a plan view of the same; and Fig. 4 is a perspective view of the same.

The usual method of forming a foundation for an engine consists in digging out the hole [where the foundation is to be below floor level] and, after having prepared duplicate templet plates or frames, with bolt-holes therein corresponding to the bolt-holes in the bed-plate of the engine frame, for the anchoring bolts, the desired location of the engine is approximated as closely as possible, and one of the templet frames with the bolts, with its foot flange plates, in place, is located in the bottom of the foundation hole, the upper ends of the stay or anchor bolts being held in their proper relative positions by the second templet frame. Generally, only the upper or second templet frame is used. The masonry or stone-work is then built in, around the bolts to the desired height and then the engine bed subsequently placed thereon and secured. The principal feature of objection and, in fact, of disadvantage, in this method of procedure is that it is very difficult to definitely and accurately locate the proper place for the engine by the position of these anchoring bolts.

As illustrated in the drawings, in my method, I make use of iron standards, 1, preferably formed with foot flanges, 2, to anchor the same, or with perforations, 3, through the web of the same, adapting the concrete, 5, placed around them as hereinafter described, to bind more effectively therewith, to support the bed plate, 4, of the engine frame in the exact place it is desired to locate it. The bed plate, 4, is bolted to these standards, 1, by the bolts, 6, rigidly securing each standard to the bed plate, adapting the whole to be moved about until the exact desired location is attained, if necessary, by experimentally running the engine. The foundation is then filled in with concrete, 5, making of the whole one solid mass of stone-work, the concrete binding with the standards, 1, and firmly anchoring them and making for the engine a solid, rigid foundation exactly in the location desired.

When the top of the foundation is desired to be altogether, or partly, above ground, as illustrated in Figs. 3 and 4, the sides of the standards, 1, may be used to rest boards, 7, against, so as to form a mold or box in which to form the foundation. After the concrete, in this case, is partly set, the boards, 7, can be removed and the sides of the foundation finished in any desirable manner.

The features of advantage, are self-evident, in that the engine bed, with the working parts thereon, if necessary, is supported in exactly its proper place, vertically and horizontally, by the standards and this position undisturbed in the building of the foundation. Concrete cheaper in composition and more readily handled can, by the adoption of my improved method, be used. It at once dispenses with the annoying feature of the probable necessity of adjusting the projecting ends of the anchoring bolts when the engine bed is subsequently placed, and the possible contingency of a final adjustment of the bed plate itself, features present in the old methods. And further, it might be added, it is not necessary, as in the old method, to prepare the foundation some time before it can be used in order to allow of the "setting" of the masonry work.

The feature of detachably securing the bed plate 4 to the standards 1 by the bolts 6 is of advantage, as, for instance, when it is desired to remove the bed plate to finish the founda-

tion, which renders the same more conveniently and efficiently done, permitting the middle part of the upper surface of the foundation to be finished flush with the rest.

I do not desire to be understood as dispensing altogether with the anchoring bolts ordinarily employed, as they may, in some instances, be employed to advantage in connection with the supporting standards I make use of.

I claim—

1. The herein-described method of building an engine foundation and anchoring the bed-plate of the engine thereto, which consists,—first, in setting up the standards; second, in placing the bed-plate thereon and bringing all to a level; third, building a portion of the foundation; fourth, removing the bed-plate; fifth completing the foundation; and, sixth, in replacing the bed-plate, substantially as described.

2. In a foundation for engines or other machinery, the combination with the engine bed plate, or other equivalent part, of anchoring standards rigidly secured to said bed plate for supporting the said bed plate in position while the foundation is being built and for anchoring the same to the said foundation, and suitable means for securing the standards to the bed-plate, substantially as described and for the purposes specified.

3. In an engine or machinery foundation, the combination of the foundation composed of concrete with anchoring standards a bed plate rigidly secured to said standards, and suitable means for securing the bed-plate to the standards, substantially as described.

4. The herein-described method of building a foundation for an engine, or other heavy machinery, consisting,—first, in setting up the standards in approximate position; second, in placing the engine bed-plate, or equivalent part, on the standards and securing the bed-plate thereto; third, in leveling the bed-plate and bringing the same into alignment; and, fourth, in building the foundation in and around the standards, substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 17th day of March, 1892.

PRESTON M. BRUNER.

Witnesses:
H. K. WAGNER,
W. M. BYRNE.