

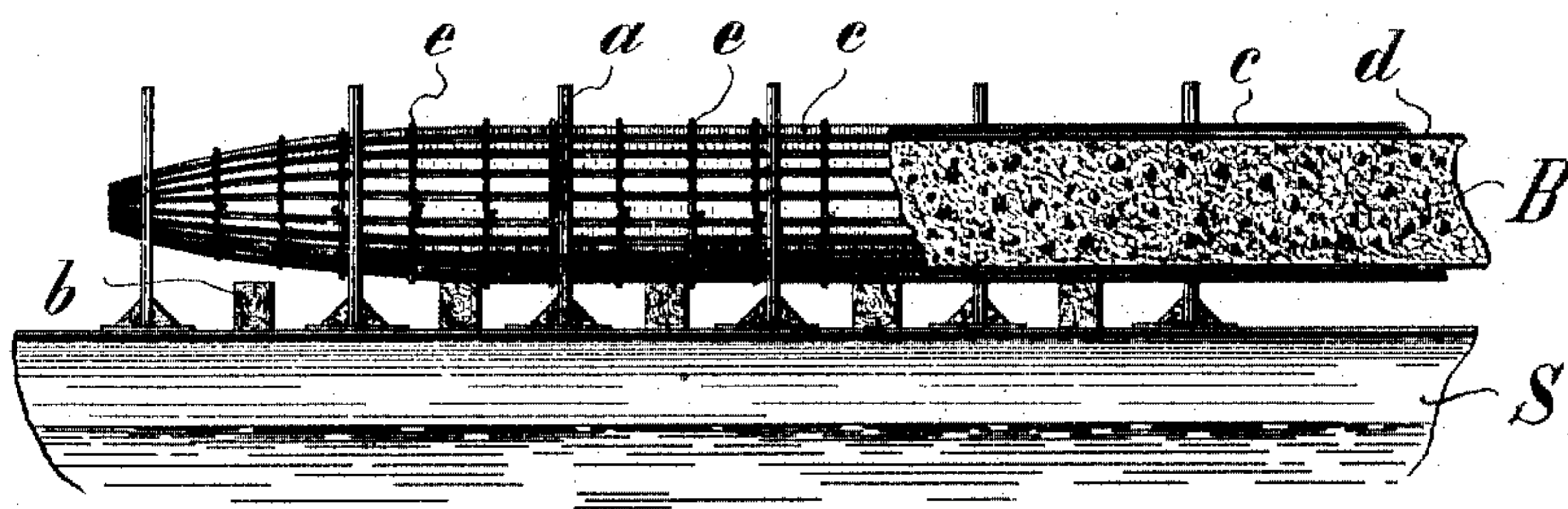
No. 777,619.

PATENTED DEC. 13, 1904.

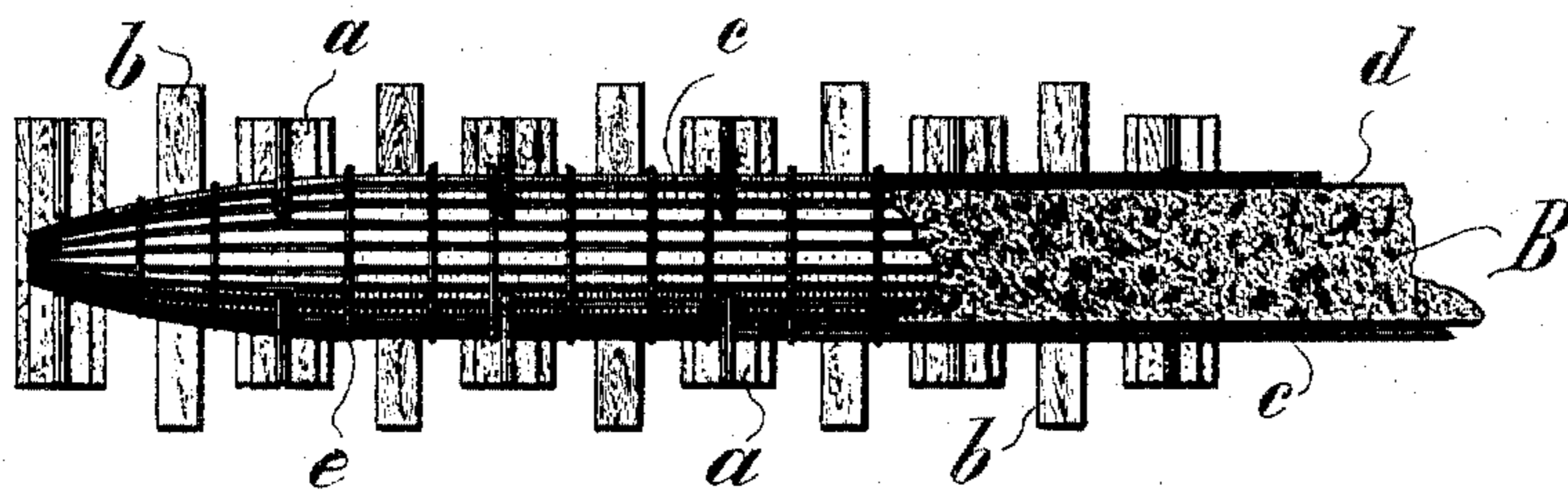
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DEVICE FOR USE IN HYDRAULIC ENGINEERING.  
APPLICATION FILED JAN. 7, 1904.

NO MODEL.

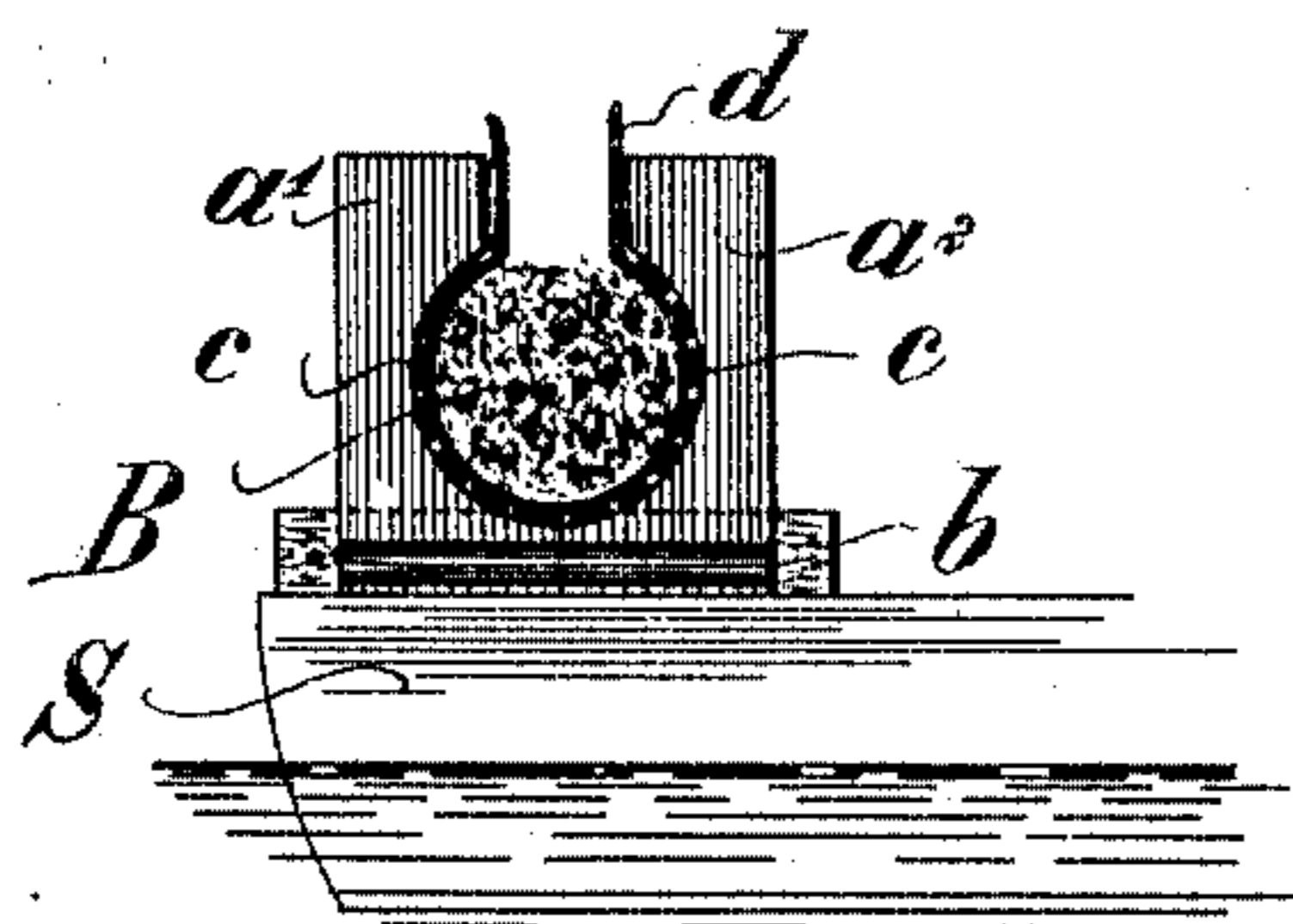
*Fig.1.*



*Fig.2.*



*Fig.3.*



*Witnesses*  
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# UNITED STATES PATENT OFFICE.

DANIEL JOHANN FEUERLÖSCHER, OF GRATZ, AUSTRIA-HUNGARY.

## DEVICE FOR USE IN HYDRAULIC ENGINEERING.

SPECIFICATION forming part of Letters Patent No. 777,619, dated December 13, 1904.

Application filed January 7, 1904. Serial No. 188,042. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL JOHANN FEUERLÖSCHER, manufacturer, a subject of the Emperor of Austria-Hungary, residing at Jakominiplatz 16, Gratz, Styria, Austria-Hungary, have invented Improved Devices for Use in Hydraulic Engineering, of which the following is a specification.

This invention relates to hydraulic engineering; and its object is to provide a substitute for the customary fascines in the construction of foundations, conduits, stagings, and more especially in the construction of weirs and dams, for securing foundation-bases and floors, and for filling in deep holes under water.

The device consists of a body formed by inclosing concrete in an outer casing or envelop formed of boards, battens, or laths lined with sackcloth or the like and tied at suitable intervals throughout its length, similarly to a fascine, and which being sunk in the water before the concrete has set will adapt itself to the configuration of the bottom, thus preventing underwashing or undermining of the base of foundation.

The accompanying drawings illustrate the nature of the device, as well as a suitable arrangement for the construction thereof.

Figure 1 is an elevation, and Fig. 2 is a plan view, both partly in section, and Fig. 3 a cross-section.

In accordance with the arrangement shown in the drawings a number of patterns or templates *a*, each consisting of two easily-detachable parts *a'* *a''*, of a clear diameter corresponding to the diameter of the cylinder to be produced, are set up at predetermined intervals on the bank or along the side of a pontoon or barge *S*. Between these templates *a* sleepers *b* are placed, the upper surfaces of which project slightly above the level of the lowest points of the interior surface of the templates *a*, thus supporting the weight of the sinking cylinder to be produced, while entirely relieving the templates. Flexible boards or laths *c* are arranged in the templates *a*, about half-way up the latter, being held in position, if necessary, by pinning or nailing, so that a suffi-

cient interval is left between them, with a view to the subsequent "choking" or racking down of the cylinder. The casing of boards or laths thus formed is provided inside with a lining *d*, of sackcloth or the like, and the prepared concrete material *B* is thrown into the semitubular channel thus formed and well rammed down. As the filling-in progresses further boards or laths are put into the templates *a* outside the lining *d*, one by one, until the cylinder is filled completely. Thereupon the ends and edges of the lining *d* are cut off evenly, tied up at the ends, and sewed up lengthwise. The casing of boards or lath is then completed and the cylinder is "choked," by means of the customary "fascine-choker" or racking apparatus, and tied with strong wire ties *e*. In the case of long cylinders care should be taken to arrange the boards so that they are "broken-jointed"—that is to say, that the joints of the boards are not all in the same section. Further, the boards placed at the cylinder ends must be curved inward and tapered off toward the end, after the manner of barrel-staves, to a length of about one and one-half meters, so as to form the pointed ends of the cylinder.

To stiffen the sinking cylinders, longitudinal wires may be embedded in the concrete, as required, near the periphery. After the cylinder has been bound the templates *a* are removed, and the cylinder, resting on the sleepers *b*, is rolled over until it drops into the water from the bank or over the broadside of the barge, the position to be occupied by it being regulated, if required, by letting it slide down into the desired position along slanting beams or planks or by means of suitable tackle. These sinking cylinders afford the great advantage that they can be applied anywhere and even in the strongest currents, and more especially where entire or partial diversion of the watercourse would be impossible and where the employment of cofferdams would involve great difficulties. Although their cost is considerable as compared with fascine-work, the difference is more than balanced by the greater durability, as fascines, more especially in watercourses carrying much rubble, will have their outer sur-

faces rubbed through in a short time, and consequently break up, while in the case of sunk cylinders, even after the wire ties have rusted through and the casing of boards has been floated away, the solid concrete body will still remain in position.

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

10 1. The herein-described device for hydraulic constructions, consisting of a lined casing or envelop filled with concrete and tied up at suitable intervals of its length, and which, being sunk into the water before the concrete  
15 has set will adapt itself to the form of the bottom.

2. A device for use in hydraulic construction, consisting of a casing composed of lon-

gitudinal strips of material, a flexible lining inside of said casing, and a filling of concrete. 20

3. A device for use in hydraulic engineering, consisting of a casing composed of longitudinal strips of material, a flexible lining inside of said casing, a filling of concrete, and means for loosely securing the strips in place. 25

4. A device for use in hydraulic engineering, consisting of a casing composed of longitudinal strips of material, a flexible lining inside of said casing, a filling of concrete, and tie-bands encircling said casing at intervals. 30

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL JOHANN FEUERLÖSCHER.

In presence of—

ALVESTO S. HOGUE,  
ALBERT BENCKE.