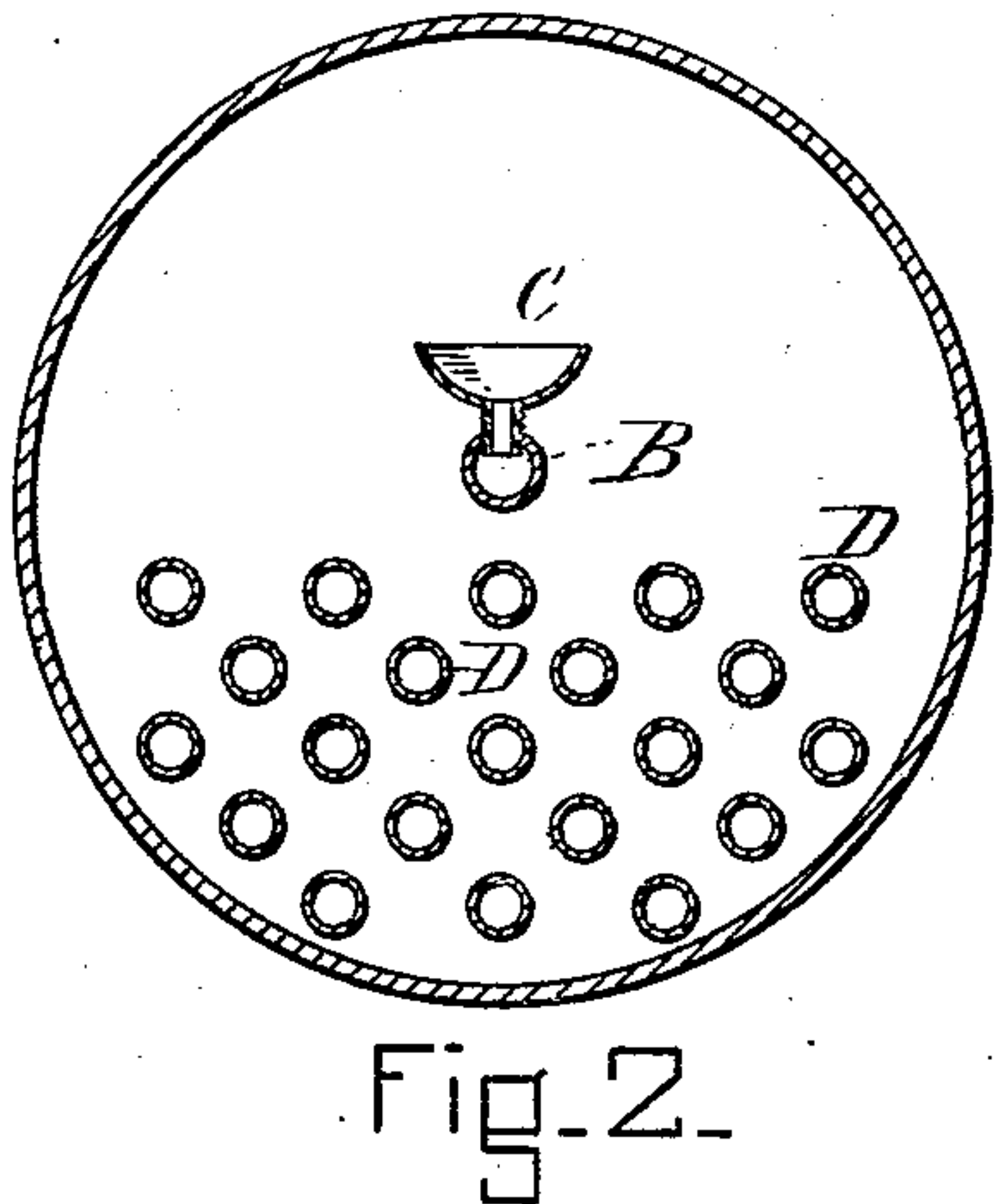
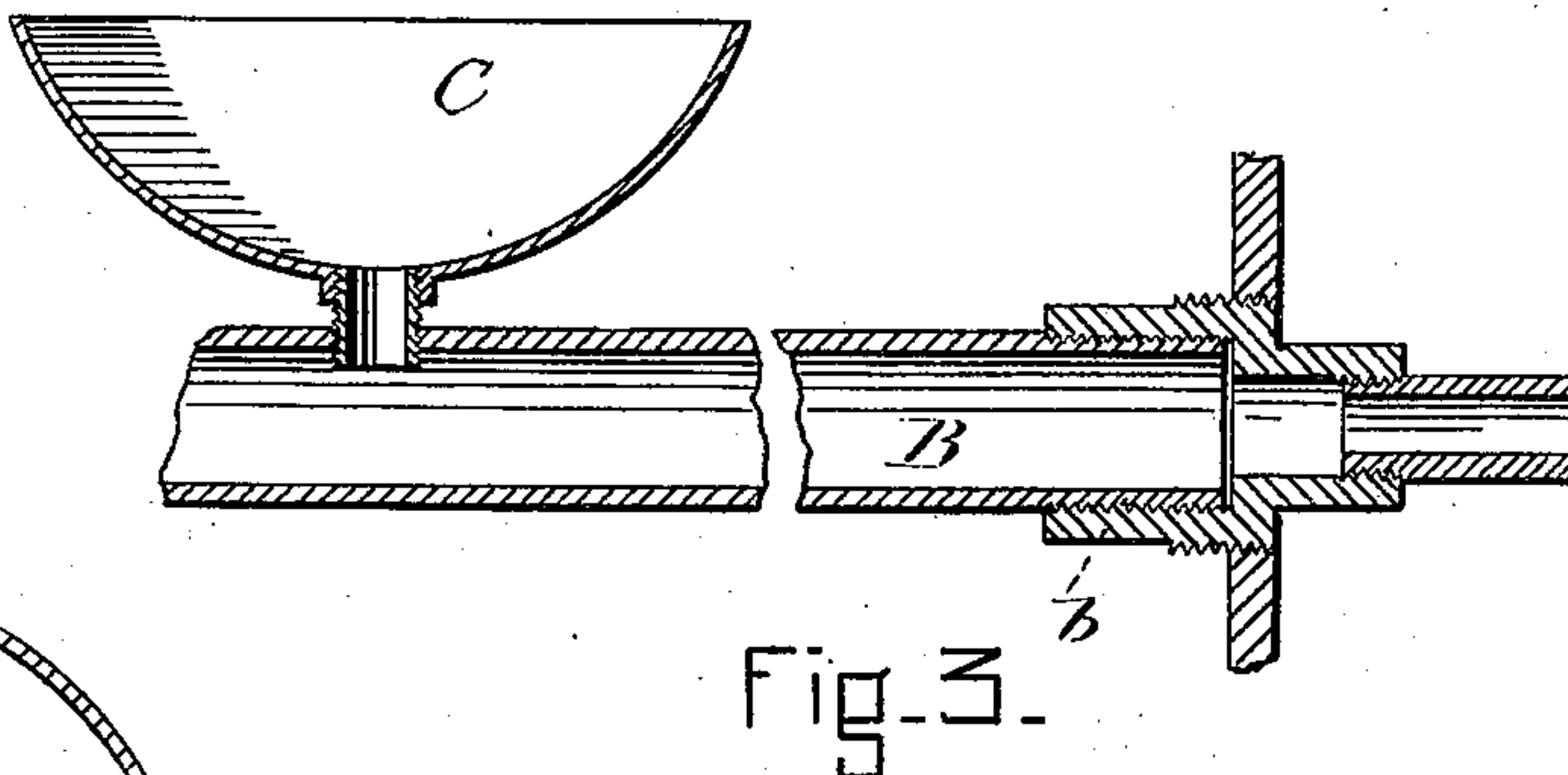
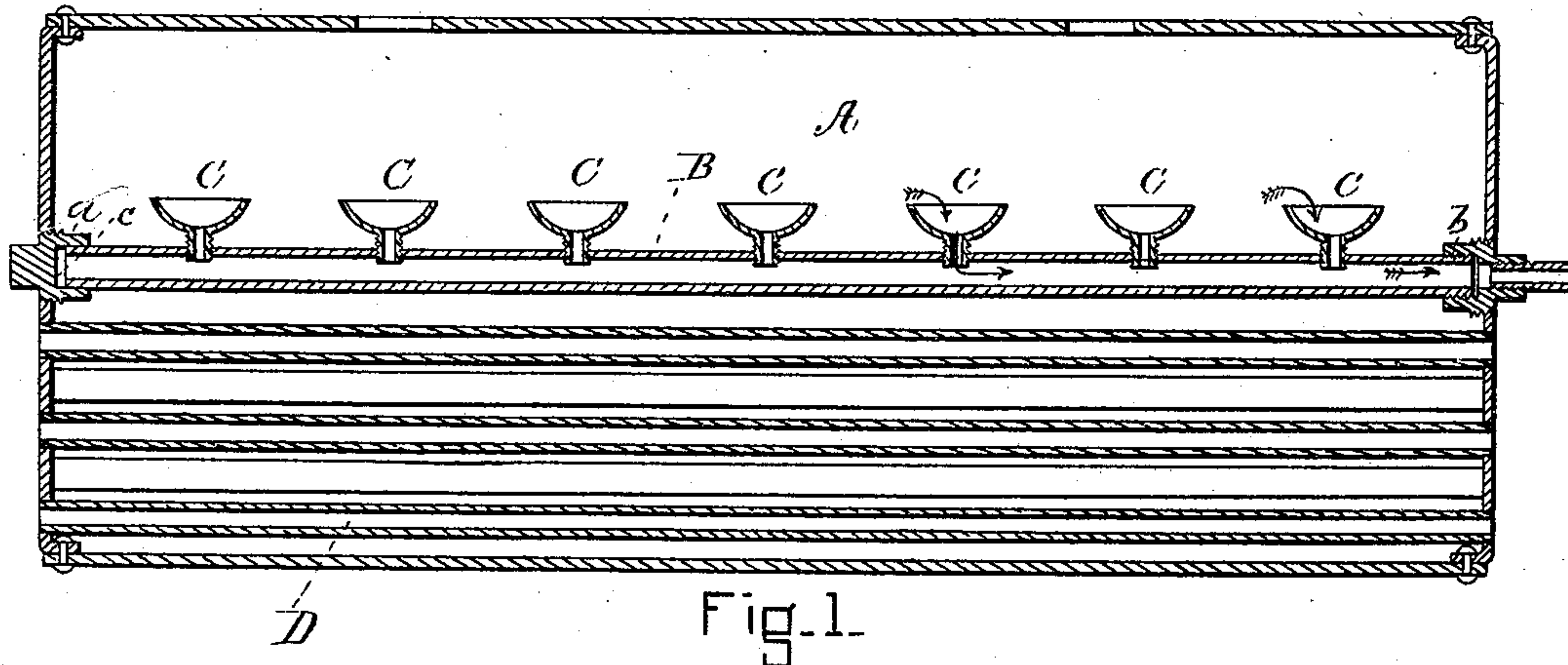


(No Model.)

E. H. ASHCROFT.
CLEANER FOR STEAM BOILERS.

No. 254,446.

Patented Mar. 7, 1882.



WITNESSES
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EDWARD H. ASHCROFT, OF LYNN, MASSACHUSETTS.

CLEANER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 254,446, dated March 7, 1882.

Application filed January 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. ASHCROFT, of Lynn, in the county of Essex and State of Massachusetts, a citizen of the United States, have invented a certain new and useful Improvement in Cleaners for Steam-Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of devices known as "cleaners" for steam-boilers, whereby the scum or other matter held in suspension upon the surface of the water in the boiler may be blown off therefrom; and it is substantially an improvement on the device covered by Patent No. 247,736, granted me October 4, 1881.

This invention is applicable to a variety of boilers; but I will illustrate it by means of a common cylindrical tubular boiler.

Figure 1 represents a vertical longitudinal section of a cylindrical tubular boiler, showing the adaptation of my invention; Fig. 2, a transverse section of the same boiler, showing an end view. Fig. 3 illustrates an enlarged detached sectional view of the pipe, its mode of attachment, and the scum-collecting cups.

A is the boiler; B, the mud-pipe; C, the scum-collecting cups, and D the tubes.

a is the bearing of the loose end, and *b* the rigid end, of the pipe to which the blow-off pipe is attached. A space, *c*, is shown between the loose end of the mud-pipe and its bearing-abutment, to allow for expansion and contraction. The arrow-heads show the action and direction of the scum and matter when being blown off. The operation will readily suggest itself.

It is well known that boilers are liable to become incrustated inside with a hard deposit of the minerals contained in the water, which, by resisting the conduction of heat, impairs at once the evaporative power of the boiler, its durability, and safety.

To prevent internal incrustation is the object of my invention. To this end I locate or suspend a pipe lengthwise in the boiler. This pipe is provided with cups, preferably made of copper, and united to said pipe by short nipples, or in any approved manner, said cups being adapted to supplant or take the place of the perforations in the pipe shown in the former patent. One end of this pipe fits closely

in one of its bearings, allowing space for end-play, while the other end is screwed into its bearing to hold the pipe in proper position in the boiler, with the cups facing upward. The pipe-bearings or hollow plugs are screwed into the heads of the boiler several inches below the high-water line of the boiler, so as to allow the cups to be about on a line with the water-surface, to permit the entrance of water and scum therein to be blown off at proper intervals.

It is obvious that the cups may be made higher or lower, or some higher and some lower than the others, to meet the varying levels of the water in the boiler.

I am aware that scum-vessels have been located at the surface of the water in steam-boilers, and suspended there in various ways; but for some yet unknown reason they do not do satisfactory work. I do not therefore claim any such device; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination, in a steam-boiler, of the mud or scum pipe located near the surface of the water therein, said mud-pipe being capable of reciprocating longitudinally in hollow plugs inserted in the boiler-heads, and provided with scum-collecting cups, in the manner shown and described.

2. The combination, in a steam-boiler, of the mud or scum pipe and its end bearings, one end of said pipe being rigidly fixed in one of its bearings and the other end adapted to loosely slide in the opposite bearing, said bearings being inserted in the boiler-heads to allow lengthwise expansion, said pipe being provided with scum-collecting cups, in the manner set forth.

3. An article of manufacture, consisting of the blow-off, its tight and loose bearings, consisting of hollow plugs adapted to be inserted in boiler-heads, and its scum-collecting cups constructed in such manner that as a device it may be adapted to any boiler to which it is capable of being attached, substantially as described.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

EDWARD H. ASHCROFT.

Witnesses:

JAMES B. SILSBEE,
EZRA BAKER.