W. A. BUTLER.

Sectional Cores.

No. 138,853. Patented May 13, 1873.

Fig. 1.

Fig. 4.

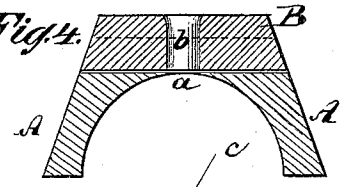
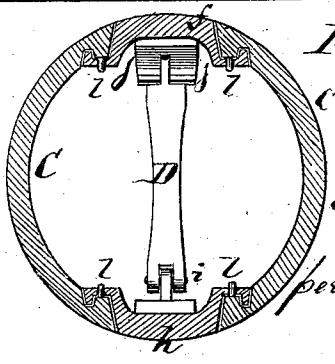


Fig. 2.

Fig. 3



Witnesses
John Becker.
Fred Haynes

Wm. A. Butler
per Brown & Allen.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM A. BUTLER, OF NEW YORK, N. Y.

IMPROVEMENT IN SECTIONAL CORES.

Specification forming part of Letters Patent No. **138,853**, dated May 13, 1873; application filed March 10, 1873.

To all whom it may concern:

Be it known that I, WILLIAM A. BUTLER, of the city, county, and State of New York, have invented an Improved Sectional Core and Mold for Casting Lead Traps, of which the following is a specification:

This invention has reference to a new sectional core to be used in casting the S and other shaped lead traps of sinks, water-closets, &c., and also to improvements in the outer molds in which such traps are cast. The invention consists in making the core of a series of plates which are connected by lap-joints, and held in position during the process of casting by inner transverse links. These links are connected with strings or wires, whereby they can be tripped. In the cross-section the core is at every part composed of four or more pieces, of which two opposite to each other are held apart by one of the said links that reaches from one to the other. When the link is tripped by being pulled, these two opposite sections will fall inward, and release the other sections of the same line of cross-section, to collapse the entire part of the core which said links serve to hold in place. In this manner I can, by having five, six, or more links, collapse the entire core after the pipe has been cast, and thereupon readily remove its pieces from within the trap. Each link enters with its free end a slotted spring fastened to one of the sections of the core, and is by such spring locked in position, so that it may not spontaneously cause the collapse of the core. The lap-joints of the several sections are beveled to some extent, so that the inward pressure of the contracting trap, when the same has been cast, will cause the collapse of the core after the link shall have been tripped in the manner indicated.

In the accompanying drawing, Figure 1 represents a side view, partly in section, of my improved sectional core, showing it within the outer mold A. Fig. 2 is a longitudinal section on the line C C, Fig. 1, the section being observed in the direction of the arrow, which is shown in Fig. 1. Fig. 3 is a transverse section of the core; Fig. 4, a detail transverse section of part of the outer mold.

Fig. 3 is shown on a larger scale than the other figures.

Similar letters of reference indicate corresponding parts.

The letter A represents the outer mold, made in two longitudinal halves, which can be placed and locked together and opened apart in the customary manner. Where the mold is perforated, as at *a* in Fig. 4, to admit the material to be cast into the annular space between a mold and core, there is above such perforated portion a similarly-perforated plate, B, which can be moved transversely over the mold. The lead or other material for forming the trap is poured through the apertures *b a* into the mold, and when the casting is completed there will be a projecting plug or lug within the aperture *b*. I then hammer the slide B at one side, and cause it to move over the mold and to cut off, by such motion, the said projecting portion of the lead, and leave the casting round and perfect within the mold. C is the core of the mold, made of proper diameter and shape, and supported on small pins *d d* within the mold A, so as to leave an annular space between it and said mold, as shown. Into this narrow space the casting is poured. The core, in cross-section, is at every portion of its length composed of four plates or pieces, *e*, *f*, *g*, and *h*, as shown in Fig. 3, and in the direction of its length it consists of a suitable number of such plates placed alongside of each other successively, in the manner indicated in Fig. 1. The parts *f* and *h*, which are opposite to each other in the cross-section, are held apart by an interior link, D, which is pivoted at *i* to the inner side of the plate *h*, while its free end enters a notch or recess in the spring *j* that is attached to the inner side of the plate *f*. The pieces *e* and *g* at the same cross-section are, by lap-joints, clearly shown in Fig. 3, supported on the two pieces *f* and *h*, and thus the pipe or core C is, in cross-section, held in cylindrical form by means of the link D, which holds the pieces *f* and *h* separated. For properly connecting the parts small pins *l* enter from the inner parts of the plates *e* and *g* through the overlapped portions of the plates *f* and *h*, as shown. Such a link, D, and spring *j* is provided for every series of four plates, *e f g h;* and where such pieces are made of greater length, as near the ends of the core, I may place two links between every four such

plates. This is indicated by dotted lines in Fig. 1. Every link—at least every one of those that are in the innermost portion of the core—is connected with a string or wire, *m*, which has a handle, *n*, at its outer end, and within convenient reach.

After the trap has been cast the string or wire *m* leading to the innermost link D is pulled and this link tripped or sprung inward upon the plate *h*, to which it is pivoted. The support of the plate *f* is thereby removed, and such plate will tumble inward and cause also the adjoining plates *e* to *g* to fall in, thus making the four collapse at the place where they were formerly held apart by such link. In the same manner all the sections of the core may be collapsed successively, until finally the entire core may be shaken out of the trap in pieces.

It will be observed, by reference to Fig. 3, that the joints of the contiguous plates are more or less beveled or inclined, which is for the purpose of facilitating the collapse of the core by the inward pressure of the contracting-trap around it.

The several longitudinal sections may be joined together by inwardly-projecting pins *o* entering from one of the plates into the spring J attached to another, as shown in Fig. 2, and also into the lugs that hold the pivots *i* on such other plate, as shown in the same figure. In this manner the several parts of the core are properly held together and in cylindrical cross-section as long as the core is required for service, and can still be thrown easily into the trap for facilitating their removal therefrom.

The links D, which are near the ends of the trap, need not necessarily be connected with the strings or wires *m*, as they can be easily tripped by a tool introduced into the end of the core.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the plates *e f g h*, when connected with each other by lap-joints and pins *l*, as specified.

2. A link, D, pivoted to the plate *h*, and held by the spring *j* to the opposite plate *f*, as specified.

3. The strings or wires *m*, combined with the links D of the sectional core, for tripping said links within the core, as set forth.

4. The pins *o*, applied to the sections of the core to connect the same longitudinally, in the manner specified.

WILLIAM A. BUTLER.

Witnesses:
A. V. BRIESEN,
MICHAEL RYAN.