

S. E. TODD.  
Tile-Machines.

No. 149,962.

Patented April 21, 1874.

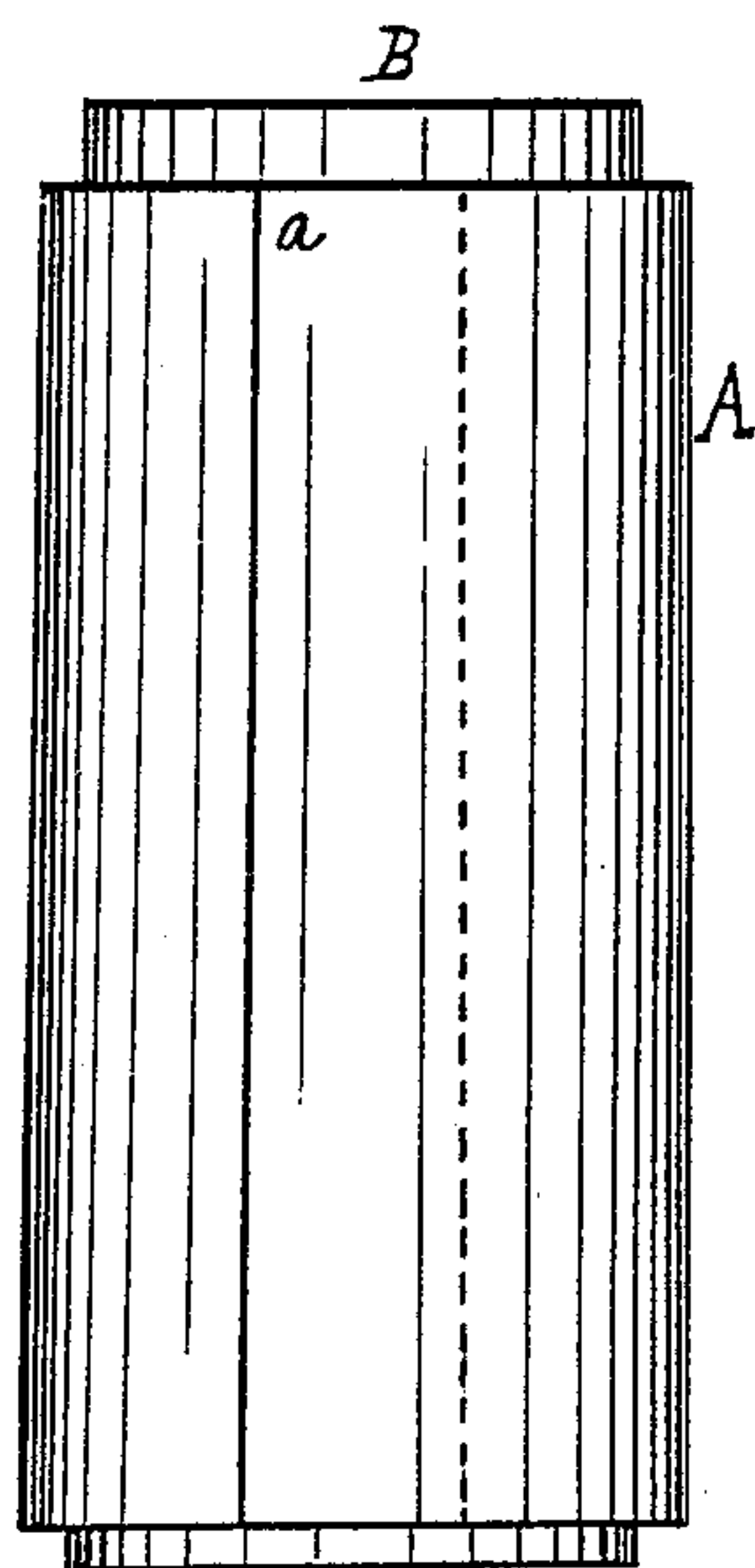


Fig. 2.

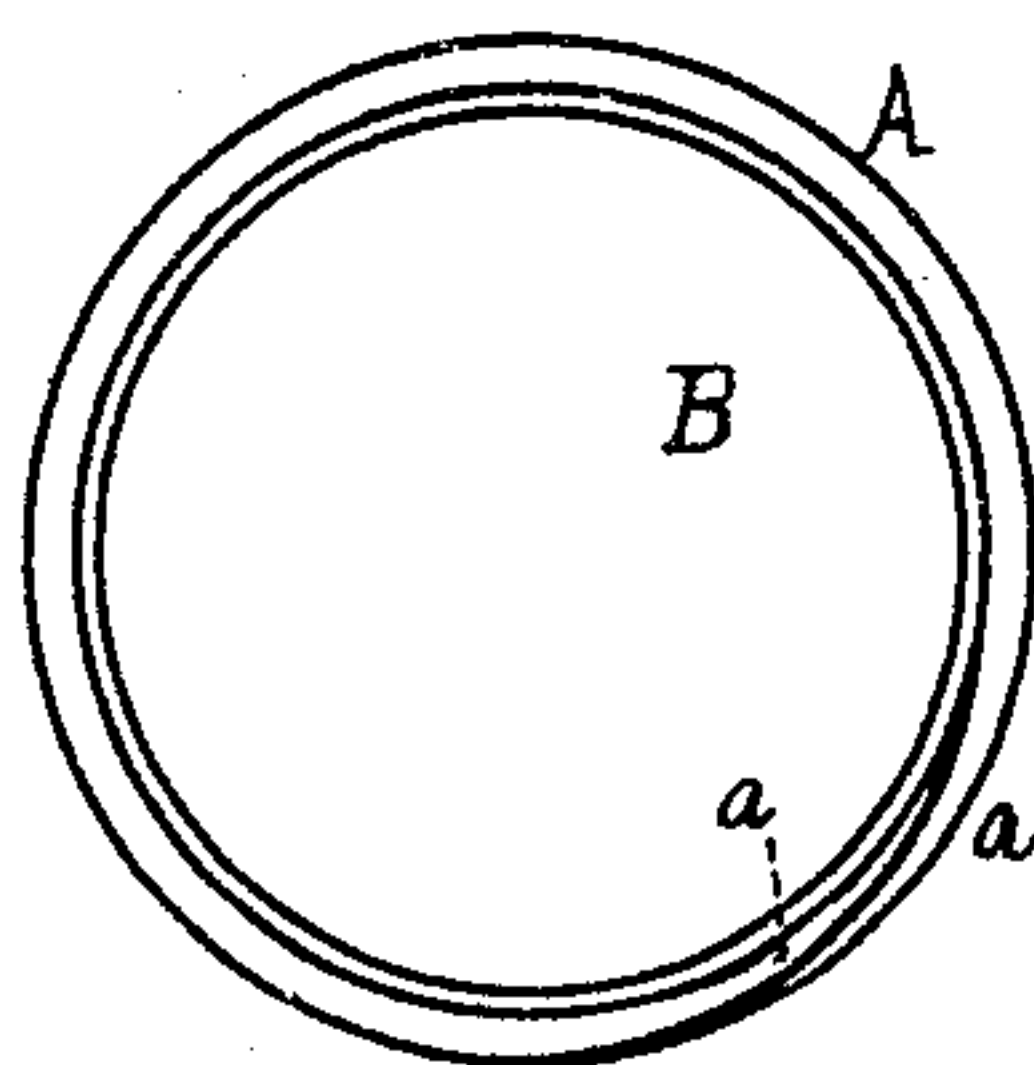


Fig. 1.

Witnesses:-  
Frank H. Jordan.  
Charles E. Clifford

Inventor:-  
Samuel E. Todd  
per  
Wm. Henry Clifford.  
att'y.

# UNITED STATES PATENT OFFICE.

SAMUEL E. TODD, OF BRIDGEPORT, CONNECTICUT.

## IMPROVEMENT IN TILE-MACHINES.

Specification forming part of Letters Patent No. **149,962**, dated April 21, 1874; application filed March 18, 1874.

*To all whom it may concern:*

Be it known that I, SAMUEL E. TODD, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Cores used in the Manufacture of Drain-Pipe, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation. Fig. 2 is a top plan.

Same letters show like parts.

The object of my invention is to produce certain improvements in the cores used in the manufacture of cement and other pipes used for drainage, &c.

One of the difficulties experienced in the manufacture particularly of hydraulic-cement pipes is that of accomplishing the removal of the core from the joint of pipe soon after it is molded, and while the pipe remains within the case or mold. My invention is intended to obviate this difficulty.

The core which I employ is made of wood for the sake of cheapness. Such cores, if brought in contact with the cement, become roughened, and affect injuriously the interior surface of the pipe. The protector is employed to prevent the cement acting upon the wooden core, and to facilitate the removal of the core from the pipe.

My invention consists in the combination of a core and core-protector.

In the accompanying drawings, A shows the core-protector, and B the core. The core is placed within the protector, and is somewhat longer than it. The core is slightly tapering or conical, being so made for convenience of removal, either upward or downward, as hereinafter set forth.

It should be specified that for a device to keep the core and core-protector in place, I employ a circular aperture, conforming in its size to that of the protector at the bottom. Into this aperture I then place one end of the

core, surrounded by the core-protector, which together fill the aperture. On the under side of the aperture, into which the protector fits, I place a slide, which, when withdrawn, allows the core, sliding through the protector, to drop into an excavation beneath the circular aperture; or the core may be placed within the protector with its largest end upward, and, instead of dropping down through the protector, be lifted up through it by a handle on the upper end.

When a joint of pipe is to be molded, the core and protector are first placed in the aperture, as hereinbefore described. The mold is then properly placed around the core, and the material forming the pipe is then filled in and tamped in the space between the protector and the case, as common.

After the pipe is completed and sufficient time has elapsed for the removal of the core, the operation is performed as follows: If the core is removed downward, then, the slide upon which it rests being drawn out, the core is caused to slide through the protector and to drop into the excavation beneath the aperture. If the largest end of the core is placed in the upper end of the pipe, then the core is lifted up through the protector. The protector is then lifted upward through the bore of the newly-formed joint of pipe.

It will be observed that the core is solid, and with my protector may be made of wood, or any convenient material, inasmuch as it is not brought in contact with the cement, and not subjected to moisture.

The protector is formed of a cylinder or other forms, of sheet metal, of one or more pieces, with loose overlapping edges, as shown at *a*, thus making a smooth interior surface.

My invention possesses the advantages of presenting a polished surface for the formation of the bore of the pipe; of permitting the removal of the core without fracture of the pipe; of firmness to resist the compression of the material around the core; and of cheapness in manufacture, and at the same time allowing the core being freely removed.

I do not claim any device for keeping an elastic or flexible core expanded. My core is

made of solid wood and is unyielding. Neither do I claim an elastic or flexible core.

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

The pipe-mold core consisting of the wooden cylinder, surrounded by the sheet-metal protector, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of February, 1874.

SAML. E. TODD.

Witnesses:

WILLIAM HENRY CLIFFORD,  
SEYMOUR L. PARKER.