W. H. GEDNEY.

Construction of Floors for the Passage of Pipes.

No. 160,014 Patented Feb. 23, 1875.

Fig: 1.

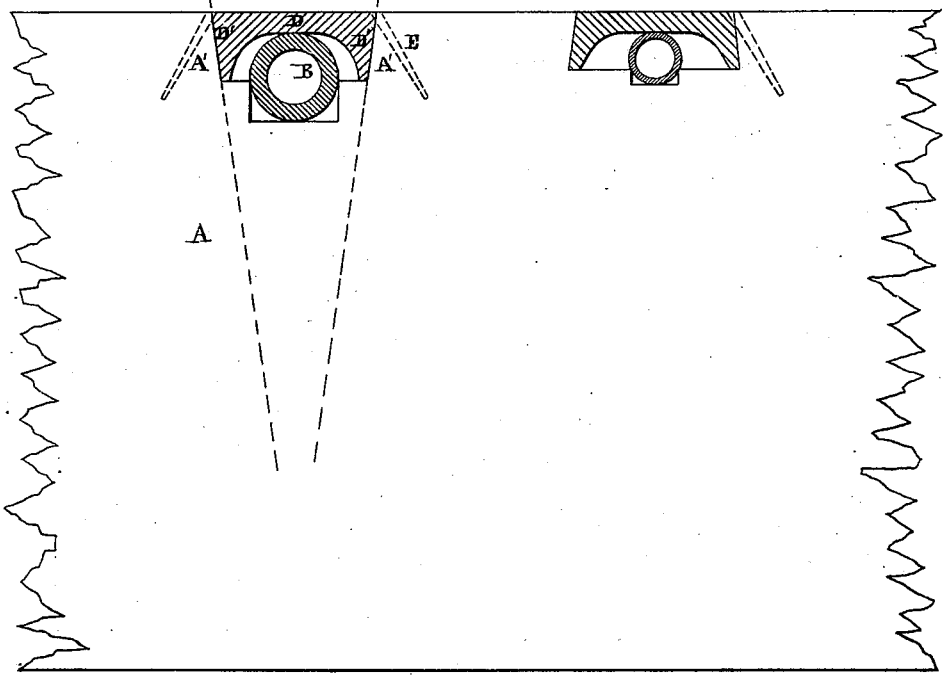


Fig: 3

Fig: 2.

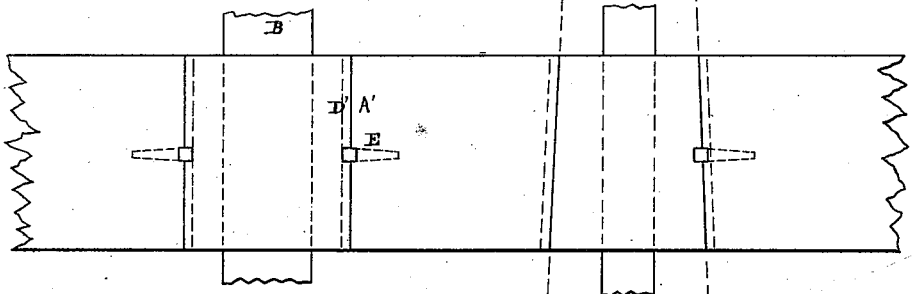
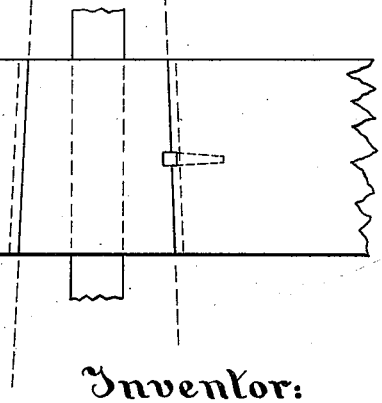


Fig: 4.



Witnesses:

W. C. Dey.

E. Volkmann.

Inventor:

W. H. Gedney,

by his attorney

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UNITED STATES PATENT OFFICE.

WILLIAM H. GEDNEY, OF NEW YORK, N. Y.

IMPROVEMENT IN THE CONSTRUCTION OF FLOORS FOR THE PASSAGE OF PIPES.

Specification forming part of Letters Patent No. **160,014**, dated February 23, 1875; application filed October 2, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. GEDNEY, of New York city, in the State of New York, have invented certain Improvements relating to Floors of Buildings, which may be termed a Beam-Key, or a Beam-Key and Pipe-Cap, of which the following is a specification:

The floor-timbers of buildings usually require to be crossed by pipes for conducting water or gas. The common plan is to sink the pipe into the upper edge of the timber, so that its highest point is flush with or a little below the top of the timber. The flooring can then extend smoothly over the whole.

Two evils result from the ordinary arrangement. The timber is weakened by the cutting away of a portion, and the pipes when soft or thin are liable to be injured by nails driven through the flooring unless great care is exercised in locating the nails.

The strain to which the upper side of a floor-beam is subjected is entirely compressive. I have devised a beam-key of cast-iron or analogous hard and firm material, which may be tightly driven into the notch, so as to restore the strength of the beam by substituting a mass equally incompressible with the wood which is removed, and also form an efficient protector for the lead pipe or other crossing pipe or piece. It is adapted to be properly applied with little labor or skill.

The following is a description of what I consider the best means of carrying out the invention. The accompanying drawings form a part of this specification.

Figure 1 is a side elevation, and Fig. 2 a plan view, of what I esteem the preferable form. The remaining figures are modifications. Fig. 3 is a side elevation, and Fig. 4 a plan view, of a form in which the key is applied by driving it sidewise from one side of the beam.

Similar letters of reference indicate corresponding parts in all the figures.

In Figs. 1 and 2, A is a floor-timber, and A′ A′ the sides of the notch formed therein. B is a pipe, and D is the beam-key. The latter has a flat upper face with a hollow upper side, adapted to cover one or more pipes, and is formed with deep sides D′ D′, slightly inclined, and with recesses on its upper angles to receive nails E, which are driven obliquely into the wood A after the bridge-piece is in place.

The form shown in Figs. 1 and 2 is widest at the upper face and contracts as it descends. Laying one of the beam-keys on the upper face of the floor timber and applying a saw of ordinary thickness against the ends successively in the plane thereof, and sawing down a little way, the cuts thus made will be exactly in the right position to allow the rigid metallic beam-key to be driven down after the wood between the cuts has been removed. The taper of the ends D′ D′ and the corresponding inclination of the saw-cuts should be such as to a very little more than correspond to the thickness of the saw. The beam-key D D′ D′ should descend easily into the notch thus made for it, until it has descended nearly to the proper depth. It should then require forcing to complete the rest of the sinking. This forcing induces a strong compression against the ends of the grain of the wood at the faces A′ A′.

Referring to Figs. 3 and 4, the same general principles of application and function are involved, but the taper or inclination of the faces D′ D′ and the corresponding inclination of the saw-cuts forming the shoulders A′ A′ in the beam are different. In this form the faces A′ A′ may be perpendicular, but I have drawn them a little dovetailing. An inclination is given endwise. To produce the saw-cuts for these, the castings may be laid upon the beam and the saw successively applied on each side, being guided by the two faces D′ D′, as before.

It will be understood that special templets or other means may be provided for guiding the saw, or that special machinery may be made for producing notches of the proper size and with proper inclinations of the faces.

In most cases only one pipe requires to cross a beam at one point, but I propose to make my beam-key for general use of sufficient width to accommodate two pipes of ordinary size. I desire to make the upper portion of the metal as thin as consistent with safety. I propose, if the expense is warranted, to form the beam-keys of wrought-iron or steel, but ordinarily green sand castings may serve, due regard

being had to the deposition of the metal, to avoid making any special weak point in the top.

I propose to make the beam-keys a little longer than the thickness of an ordinary floor-timber, so as to let them usually overhang a little on each side.

My invention so fully compensates for the removal of the wood from the beam that the present rules requiring the pipes to be carried across near the ends of the beams, so as to preserve the middle portions intact, may be safely rescinded.

The beam-keys will usually retain their places with great tightness. The nails E are only safeguards against a displacement, which is not at all probable, even if the nails are omitted.

I claim as my invention—

1. The beam-key D, having slightly-inclined faces D′ D′, and a hollowed body adapted to serve as and for the purposes herein specified.

2. The combination of the beam A, notched as shown, and having plane abutting faces A′ A′, with the inclosed pipe or crossing-piece B and beam-key D D′ D′, as herein specified.

In testimony whereof I have hereunto set my hand this 29th day of September, 1874, in the presence of two subscribing witnesses.

WILLIAM H. GEDNEY.

Witnesses:
GEO. E. JARDINE,
JAY H. VAN NORDEN.