(No Model.)

J. F. COTTER.

CEILING PLATE FOR STEAM RISERS.

No. 458,443. Patented Aug. 25, 1891.

Fig. I.

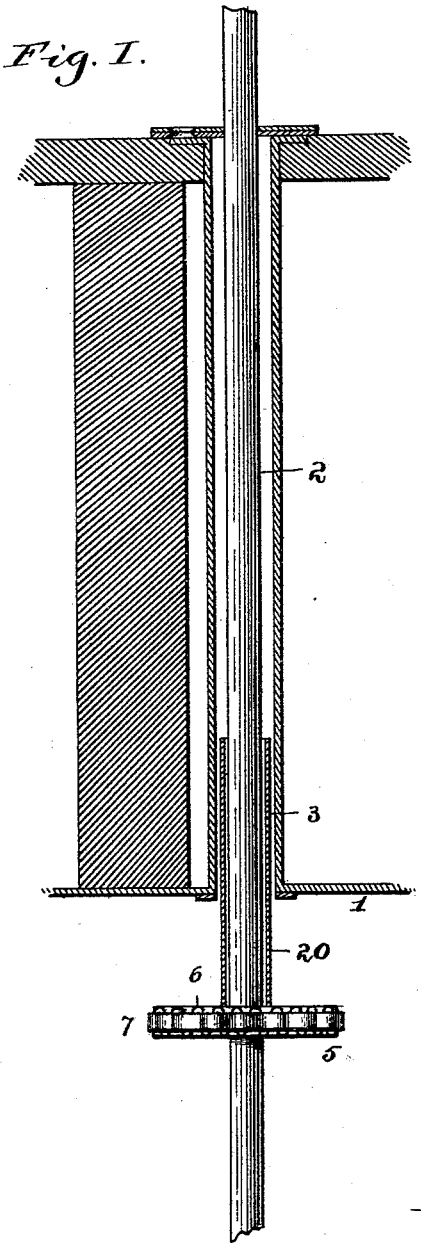


Fig. II.

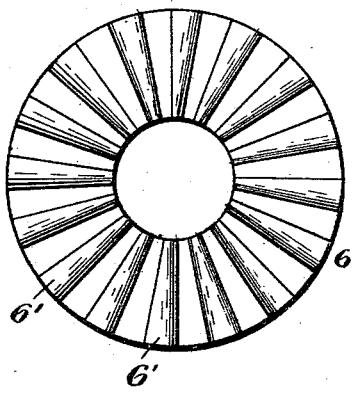


Fig. III.

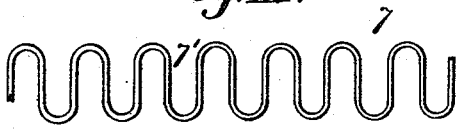


Fig. IV.

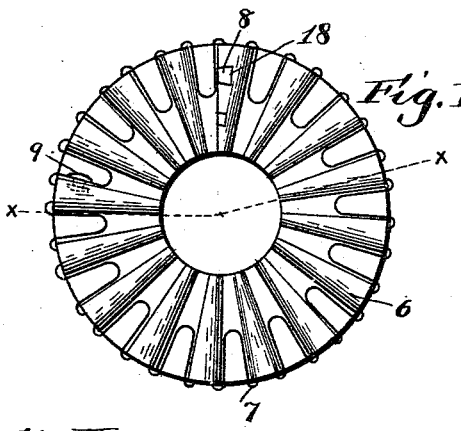
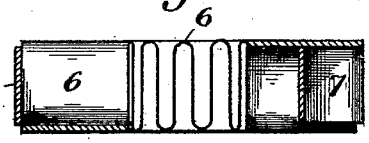


Fig. V.



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UNITED STATES PATENT OFFICE.

JOHN F. COTTER, OF KANSAS CITY, MISSOURI.

CEILING-PLATE FOR STEAM-RISERS.

SPECIFICATION forming part of Letters Patent No. 458,443, dated August 25, 1891.

Original application filed March 31, 1890, Serial No. 346,082. Divided and this application filed November 28, 1890. Serial No. 372,872. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. COTTER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Ceiling-Plates for Steam-Risers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a ceiling-plate for use on steam pipes or risers in the application of steam-pipes to buildings; and the object of the invention is to provide a separable plate adapted to be applied to a steam pipe or riser after the same has been placed in a building and which will clamp or hold itself on such pipe or riser by frictional contact therewith at a point close to the ceiling to conceal the unsightly hole and broken edges in the ceiling, as well as to clamp itself on such riser below the ceiling, in order to support a finish-tube, which protects the woodwork adjoining the riser in a manner shown and described in an earlier application filed by me on the 31st day of March, 1890, Serial No. 346,082, and of which the present application is a division.

With these and other ends in view my present invention is a ceiling-plate comprising an inner corrugated ring or strip and another ring corrugated transversely to the inner ring and sprung into the ends of the corrugations of the inner ring, substantially as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, Figure I is an elevation of a pipe or riser with the plate attached thereto. Fig. II is a plan view of the inner section of the ceiling-plate. Fig. III is an edge view of the outer section of said plate. Fig. IV is a plan view of the ceiling-plate entire, showing the manner of connecting the two sections. Fig. V is a detail sectional view on the line x x of Fig. IV.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

1 is the ceiling of a room. 2 is the steam pipe or riser, and 3 is the vertical thimble.

My ceiling-plate 5 is to be applied to the riser of the steam-pipe at or near the point where the riser enters the ceiling or passes into a wall or other surface or at a point below the ceiling. This ceiling-plate is constructed to be readily applied to the riser, to hold itself thereon by frictional contact, and to expand or contract with the steam-pipe according to the temperature of the same or the surrounding atmosphere.

The ceiling-plate is constructed of two parts, members, or rings 6 7, each bent or formed from a single piece or strip of sheet metal of any suitable kind, and said members or rings are interlocked with each other. The strip or piece of sheet metal of which the inner member or ring 6 of the ceiling-plate is made is corrugated at right angles to the plane of its face or the length thereof with a series of corrugations 6′, while the other member of ring 7 has its strip of metal corrugated, as at 7′, in a plane at right angles to the length of the corrugations 6′ of the inner member 6. The corrugations of the member 6 lie at right angles to the longitudinal axis of the pipe or riser around which the ceiling-plate is placed, and the ring or member 6 is bent into annular form to provide an opening for the admission of the steam pipe or riser, the inner edge of the metal strip of which the member 6 is formed being presented to the surface of the steam pipe or riser. This inner member 6 clasps the steam pipe or riser very firmly, so as to hold itself in place thereon, and the force or pressure with which the inner member 6 grasps the steam-pipe is increased by the outer ring or member 7 engaging or interlocking with the inner member. The outer member 7 has its corrugations 7′ let or sprung into the ends of the corrugations 6′ of the inner ring, and the outer member is constructed so as to compress the inner member and cause it to bind very firmly on the steam-pipe.

In practice I prefer to provide the outer ring or member 7 with twice the number of corrugations of the inner ring, so that the corrugations of the outer member enter each corrugation and the space between the corrugations of the inner member; but this is not essential. The ends of the inner ring or member 6 are joined by lapping or interlock-

ing the end corrugations of the ring and by a tongue 8 on one end, which enters an aperture 18 on the other end of the ring 6, the tongue being bent after it passes through the aperture in order to obviate disengagement of the parts. The outer ring is secured at one end to the inner ring, as by a rivet 9, while the free end of the outer corrugated ring is interlocked with the riveted or fastened end thereof, or secured in place by any suitable contrivance.

I have found by practical experience that a ceiling-plate constructed as herein described can be very readily applied to a steam pipe or riser, that it holds itself thereon with a firm grasp, that it expands or contracts with the steam-pipe which it embraces without being released from said pipe, and that it provides a neat and ornamental finish at the point where the pipe enters the ceiling and covers and conceals the tongues at the lower end of the thimble.

It frequently happens that a steam-pipe must pass through or in close juxtaposition to a girder or to a molding or cornice near the ceiling of a room, and in order to protect the girder, cornice, or molding from the radiation of heat from the steam pipe or riser and without extending the thimble below the line of the ceiling I provide a separate finish-pipe 20, which is fitted closely around the steam pipe or riser. The lower end of this finish-pipe 20 extends below the ceiling the desired distance, and it rests on and is supported by the ceiling-plate, which plate grasps the pipe with sufficient force to hold itself and the finish-pipe in place, while the upper end of this pipe 20 is fitted into the thimble. This finish-pipe and the ceiling-plate are constructed to expand and contract with the steam pipe or riser; and to provide for this desiderata in the finish-pipe I bend the edges of the pipe so as to interlock and form an expansion-joint, as is obvious.

The operation and advantages of my invention will be readily understood from the foregoing description, taken in connection with the drawings.

I do not confine myself to the form and proportion of parts and details of construction herein shown and described as embodiments of my invention, and I therefore reserve the right to make such changes and modifications as fall within the spirit of my invention.

No claim is herein made to the combination, with a steam pipe or riser, of the ceiling-plate rigid with the pipe or riser at or below the surface of a ceiling and a finish or protection tube fitted around the riser and resting on or supported by the ceiling-plate, as said devices are claimed, among others, in my earlier application filed March 31, 1890, Serial No. 346,082, hereinbefore referred to.

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

1. An expansible ceiling-plate adapted to hold or clamp itself on a steam-pipe, consisting of an inner corrugated ring or strip and another ring corrugated, as specified, and sprung into the ends of the corrugations of the inner ring, substantially as described.

2. An expansible ceiling-plate consisting of two members or parts, one of which is corrugated at right angles to the axis of the pipe and the other member is corrugated at right angles to the length of the corrugations of the first-named member, the two members having the corrugations thereof interlocked, substantially as described.

3. An expansible ceiling-plate consisting of two parts or members, the inner member being corrugated at right angles to the longitudinal axis of a pipe which is adapted to pass centrally through the inner member and the outer member having its corrugations fitted or sprung into the ends of the corrugations of the inner member, substantially as described.

4. An expansible ceiling-plate consisting of two parts or members, the inner member being bent into annular form to provide a pipe-receiving opening and having a continuous series of corrugations, which lie at right angles to the axis of the pipe-opening, and the outer ring being corrugated at right angles to the length of the corrugations of the inner member, said outer member having an increased number of corrugations which fit in and between the corrugations of the inner member or ring, substantially as described.

5. A ceiling-plate consisting of an inner corrugated ring having its corrugations at right angles to the pipe-receiving opening therein and having the ends thereof joined together, as described, and another corrugated member having its corrugations fitted into the ends of the corrugations of the inner member and suitably fastened or connected to said inner member, substantially as described.

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

JOHN F. COTTER.

Witnesses:
EDWARD S. CASTLE,
JOHN MCDONNELL.