No. 870,382. PATENTED NOV. 5, 1907.

M. E. PERRY.

METAL CEILING CONSTRUCTION.

APPLICATION FILED FEB. 21, 1907.

Fig. 1

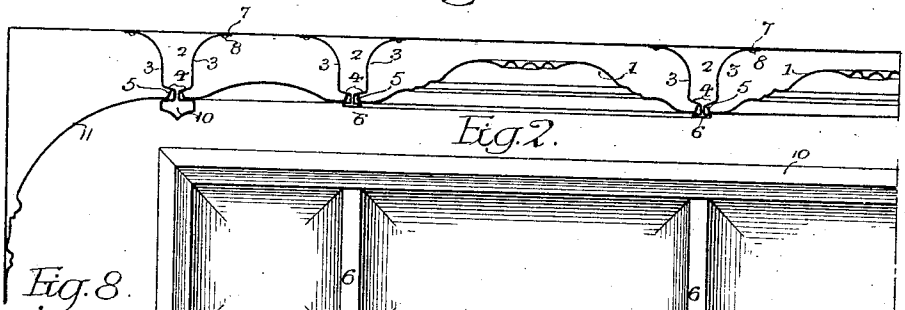


Fig. 2.

Fig. 8.

Fig. 6.

Fig. 4.

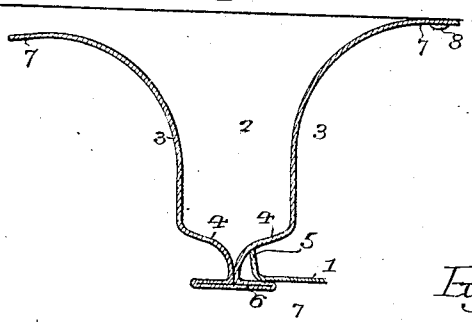


Fig. 5.

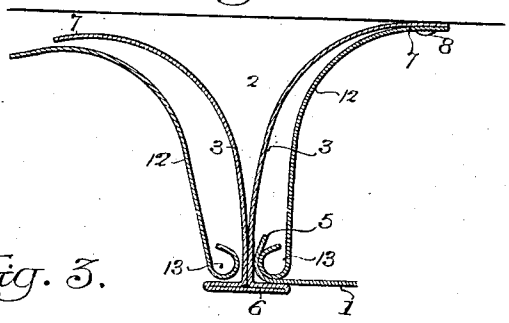


Fig. 3.

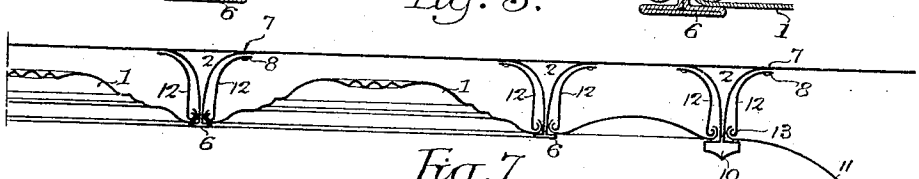
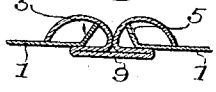


Fig. 7.



Witnesses:
Titus H. Howe.
Augustus B. Coppes

Inventor:
Manville E. Perry
by his Attorneys.
Howson & Howson

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MANVILLE E. PERRY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO EVAN L. MOORE, OF PHILADELPHIA, PENNSYLVANIA.

METAL-CEILING CONSTRUCTION.

No. 870,382. Specification of Letters Patent. Patented Nov. 5, 1907.

Application filed February 21, 1907. Serial No. 358,746.

To all whom it may concern:

Be it known that I, MANVILLE E. PERRY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Metal-Ceiling Construction, of which the following is a specification.

My invention relates to metal ceilings of the type built up of independent tiles, sheets, or plates, and the object of my invention is to provide supporting means whereby such tiles, sheets, or plates may be readily placed and firmly secured in position without the use of exposed nails, screws, or other form of fastening devices.

My invention is fully shown in the accompanying drawings, in which:

Figure 1, is a sectional elevation of a portion of a ceiling, illustrating the manner in which the supporting means forming the subject of my invention hold the sectional plates in place; Fig. 2, is an inverted plan view of a portion of ceiling showing the supports made in accordance with my invention; Fig. 3, is a sectional view similar to Fig. 1, illustrating another form of supporting means embodying my invention; Fig. 4, is an enlarged sectional view of the preferred form of supporting means forming the subject of my invention; Fig. 5, is an enlarged sectional view of the supporting means shown in Fig. 3; Fig. 6, is a similar view of another form of support; Fig. 7, is a sectional view of a detail of my invention, and Fig. 8, is a view of a special application of the support forming the subject of my invention.

The essential object of my invention is to provide secure and substantial supporting means for the independent sheets or plates employed for metal ceilings, without the use of exposed nails, screws, or other fastening devices. I accomplish this end by providing engaging means for the meeting edges of said plates; the exposed portion of such support, between which and wall of the same the plates are clamped, providing a parting strip to close the space that would otherwise exist between adjoining plates.

The preferred form of my structure is fully shown in Figs. 1 and 4, in which the metal plates or sheets forming the ceiling have turned edges, which are confined when the ceiling is finally finished and set in place, between the parting strips of the supports and shoulders on the legs of said supports.

In the drawings herewith, 1, 1, represent the plates of a ceiling structure, in which such plates, usually about two feet square, are retained in place by a clamping support or fastening device forming the subject of my invention. The improved form of support, indicated at 2 in Figs. 1 and 4, comprises a single piece of metal bent to the shape shown, having leg portions 3, a return bend 4 to engage the turned edges 5 of the plates 1, and a flat portion 6 forming a parting strip; such strip showing on the exterior of the ceiling, and closing the joint between the independent plates forming the same.

The portion 6 of the support, forming the parting strip, is made by folding the metal of the same upon itself as shown; the shoulders 4 engaging the margin of the turned edges 5 of the plates 1 thereby clamping the same between them and the parting strips. The leg members 3, which may be substantially straight and parallel, or curved and flaring, as desired, terminate in feet 7 whereby the support can be readily secured to the ceiling by nails 8 passing through said feet. The plates 1 are readily slipped into position after the supporting members have been secured to the ceiling and for the cross joints between said plates at right angles to the parting strips 6, I provide clamping parting strips 9, of the character clearly shown in Fig. 7.

In finishing the ceiling at the corners where the side walls join the same, a molding 10, used as a finishing in connection with the cove 11, is combined with one of the supporting members as in Figs. 1 and 3, taking the place of usual parting strip and showing that the same type of clamping fastener provided for the larger surfaces of the ceiling may be used for the finishing places. In assembling this structure, the work of erection is usually done from one side of the ceiling to another, with the last mounted support in a semi-loose condition; one side being unfastened, as shown in Fig. 4, and when in this shape the plates which are to be held by the opposite side of the last mounted support can be readily slipped into place. When all of the plates to be engaged by said support are in place, the unconfined portion of the latter is pushed toward the leg which has been secured, and this serves to bind the turned edges of the plates firmly in place between the parting strip and the shoulders of the support.

In the form of structure shown in Figs. 3 and 5, I provide the same form of parting strip, made by folding the metal of the support, as shown in Figs. 1 and 4, but in this modified structure I provide additional means for holding the ceiling plates in place, comprising supplemental strips 12, arranged under slight tension so as to grip the turned edges 5 of the ceiling plates 1 between the same and the underside of the parting strip 6. In this case the curved portion 13 of the supplemental strip provides the clamping means.

In Fig. 3, I have shown a section of ceiling supported by the modified devices, and in Fig. 5, I have shown an enlarged view of one of these structures, illustrating the manner of confining the plates by such support. In mounting this form of the support, as also in mounting that shown in Figs. 1 and 3, one side only is fastened down at a time, and the nails which

hold said support also serve to hold the spring or tension members 12 between the ends 13 of which and the upper side of the parting strip 6, the turned edges 5, of the plates 1 are clamped. In this instance, also, the cross joints between the plates are covered by the same type of parting strip as shown in Fig. 7. In assembling this form of structure in place, the turned edges 5, of the plates are slipped between the parting strip 6 of the support and the tension member on one side of said support, and this is readily accomplished as the support is unconfined on one sde. When one row of plates has been assembled in proper position, the opposite side of the support is fastened down with its tension member, and this draws the other side so as to grip the edge of the plates.

In Fig. 6, a slightly modified form of structure is shown in which the shoulders 4^a have a return bend forming an interlock for the turned edges 5 of the plates.

The joint made in accordance with my invention is very tight, and in assembling the plates to form the ceiling they are readily and quickly fitted in place. In completing a ceiling after the manner of my invention, little or no putty is needed to close the joints between the parting strips prior to applying a coating of paint or other material in finishing the work.

A particular advantage of the supporting means forming the subject of my invention lies in the fact that it is readily adjustable, and should the original surface of the ceiling be humpy or out of true, it is only necessary to spread the legs of the support by pressure applied to the parting strip of the same; thereby decreasing the distance between the wall and the outer face of the parting strip, and truing any prior inequality in the surface of the old ceiling.

With the form of support which I have devised I may employ plates finished in the shop as regards all ornamentation or coating, the edges of the same slipping easily into place and in proper position to be clamped by the support without danger of injury of any character.

By inverting the form of ceiling support which I have disclosed, and mounting it upon a bar 15, in the manner shown in Fig. 8, I provide a suitable support for the sheets of glass forming a sky-light; such sheets fitting between the supports in a manner similar to the ceiling plates, while leakage is prevented by embedding their edges in putty as indicated at 16.

I claim:

1. The process of mounting metal ceilings formed of detached plates, which consists in providing flexible supports for said plates having duplex engaging parts and duplex attaching parts, securing one of said supports permanently in place, securing another support in proper relation thereto but unattached at one side, slipping the edges of the ceiling plates between the engaging parts of both the fixed and semi-detached supports, and maintaining said latter support in the semi-detached condition until all of the plates to be confined thereby are mounted in place.

2. The process of mounting metal ceilings formed of detached plates, which consists in providing flexible supports for said plates having duplex engaging parts and duplex attaching parts, securing one of said supports permanently in place, securing another support in proper relation thereto but unattached at one side, slipping the edges of the ceiling plates between the engaging parts of both the fixed and semi-detached supports, maintaining said latter support in the semi-detached condition until all of the plates to be confined thereby are mounted in place, and then permanently securing the semi-detached support whereby the plates engaged by one side of the same are clamped in place.

3. In a metal ceiling structure, the combination of a series of plates forming said ceiling, supporting means for said plates, the latter having turned edges, and clamping means carried by said supports and engaging the lower surface and the margin of the turned edges only of said plates.

4. In a metal ceiling structure, the combination of the plates, supports for the same, said supports having parting strips closing the joint between said plates and engaging the lower surface of the same, and clamping means carried by said supports engaged by the margin of the turned edges only of the plates whereby the latter are confined by the parting strips and said clamping means.

5. In metal ceiling construction, the combination of plates forming the same and having turned edges, and supports for said plates having parting strips and clamping portions respectively engaging the lower surface and the margin of the turned edges only of said plates, said supports being made of single sections of sheet metal and having flaring legs.

6. In metal ceiling construction, the combination of plates forming the same and having turned edges, and supports for said plates having parting strips and clamping portions respectively engaging the lower surface and the margin of the turned edges only of said plates, said supports being made of sheet metal in a single piece, and being flexible for adjustment from and toward the mounting to which they are secured.

7. In metal ceiling construction, the combination of the plates forming the same and having turned edges, supports for said plates having clamping portions to receive said turned edges, a parting strip covering said edges and integral with the support, and supplemental clamping members also having parting strips to receive the edge of the sheets and disposed at right angles to the parting strips of the supports.

8. A flexible support for metal ceiling plates having turned edges, said support having clamping means for engagement with the lower surface and the margin of the turned edges only of said plates, and having flaring legs capable of adjustment from and toward their point of attachment.

9. As a new article of manufacture, a support for metal ceiling plates having turned edges, said support having a parting strip formed of two plies of the metal pressed together, shoulders between which and said parting strip the edges of the plates are confined by engagement with the lower surface and the margin of the turned edge only of said plates, and flexible legs whereby the position of said parting strip may be adjusted from and toward the point at which the support is attached, said legs being abruptly bent to form the shoulders.

10. As a new article of manufacture, a support for metal ceiling plates having turned edges, said support having means for engagement with the lower surface of the plates and shoulders for engagement with the margin of the turned edges of the same, and compressible supporting legs whereby said edges can be clamped by the shoulders at the point of engagement with said support, said legs being abruptly bent to form the shoulders.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

MANVILLE E. PERRY.

Witnesses:
MURRAY C. BOYER,
JOS. H. KLEIN.