

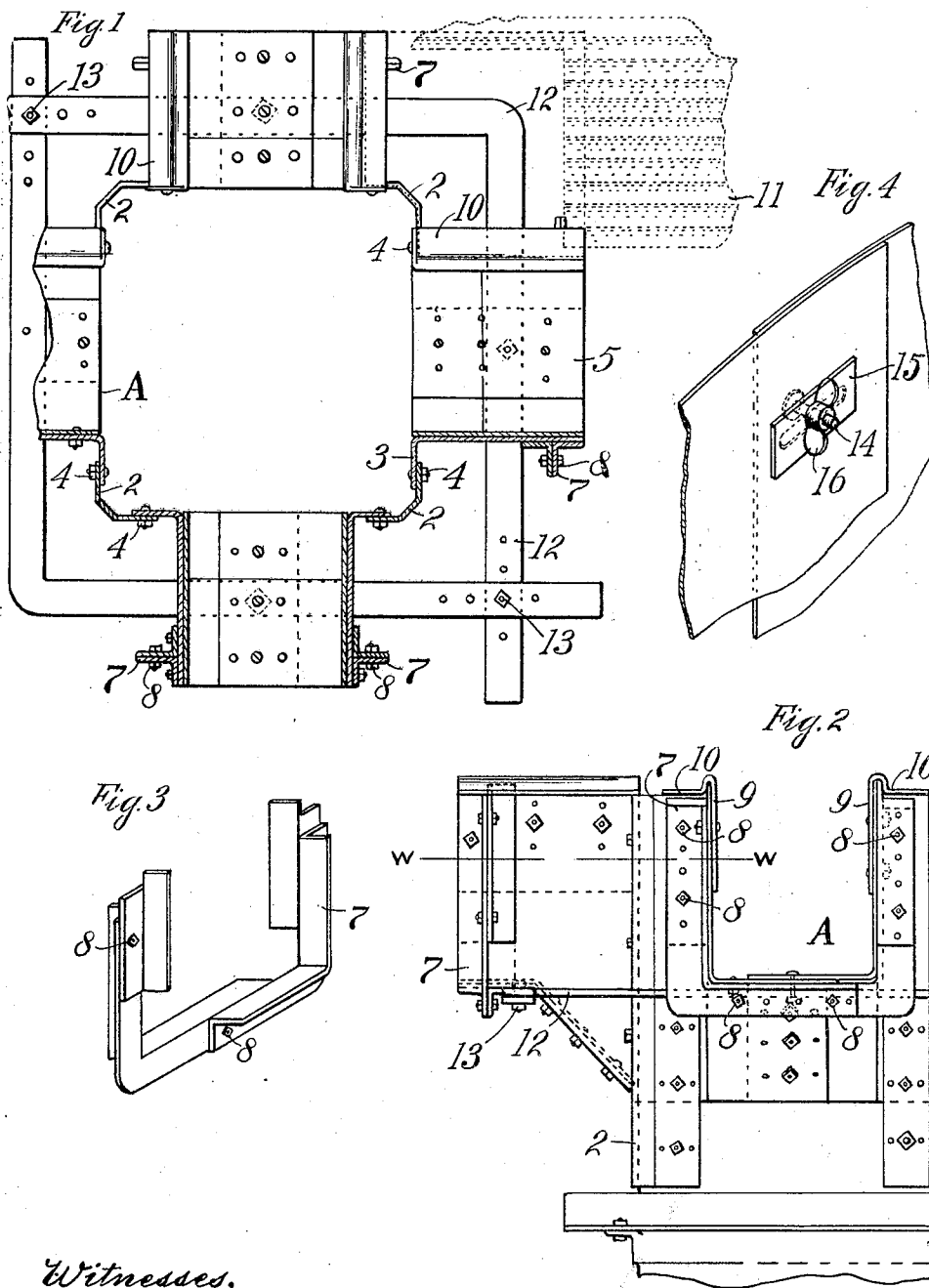
P. A. & L. P. DESLAURIERS.
MEANS FOR FORMING CONCRETE CEILINGS AND SUPPORTING COLUMNS.

APPLICATION FILED JUNE 29, 1907.

Patented Dec. 28, 1909.

4 SHEETS—SHEET 1.

944,543.



Witnesses,
George Voelker
Hattie Smith.

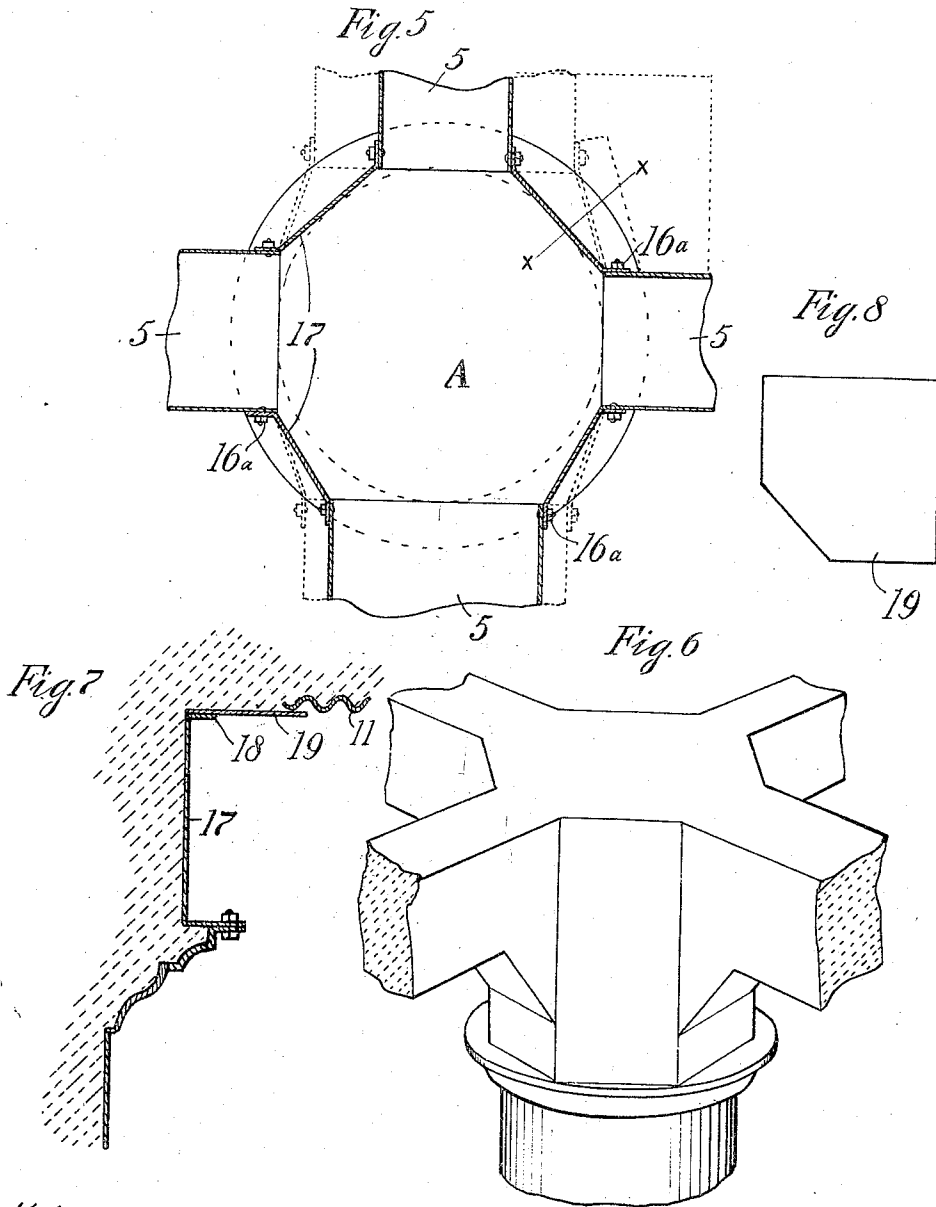
Inventors,
Philippe A. Deslauriers
Louis P. Deslauriers
by Rothrop & Johnson
their Attorneys.

P. A. & L. P. DESLAURIERS.
 MEANS FOR FORMING CONCRETE CEILINGS AND SUPPORTING COLUMNS.
 APPLICATION FILED JUNE 29, 1907.

944,543.

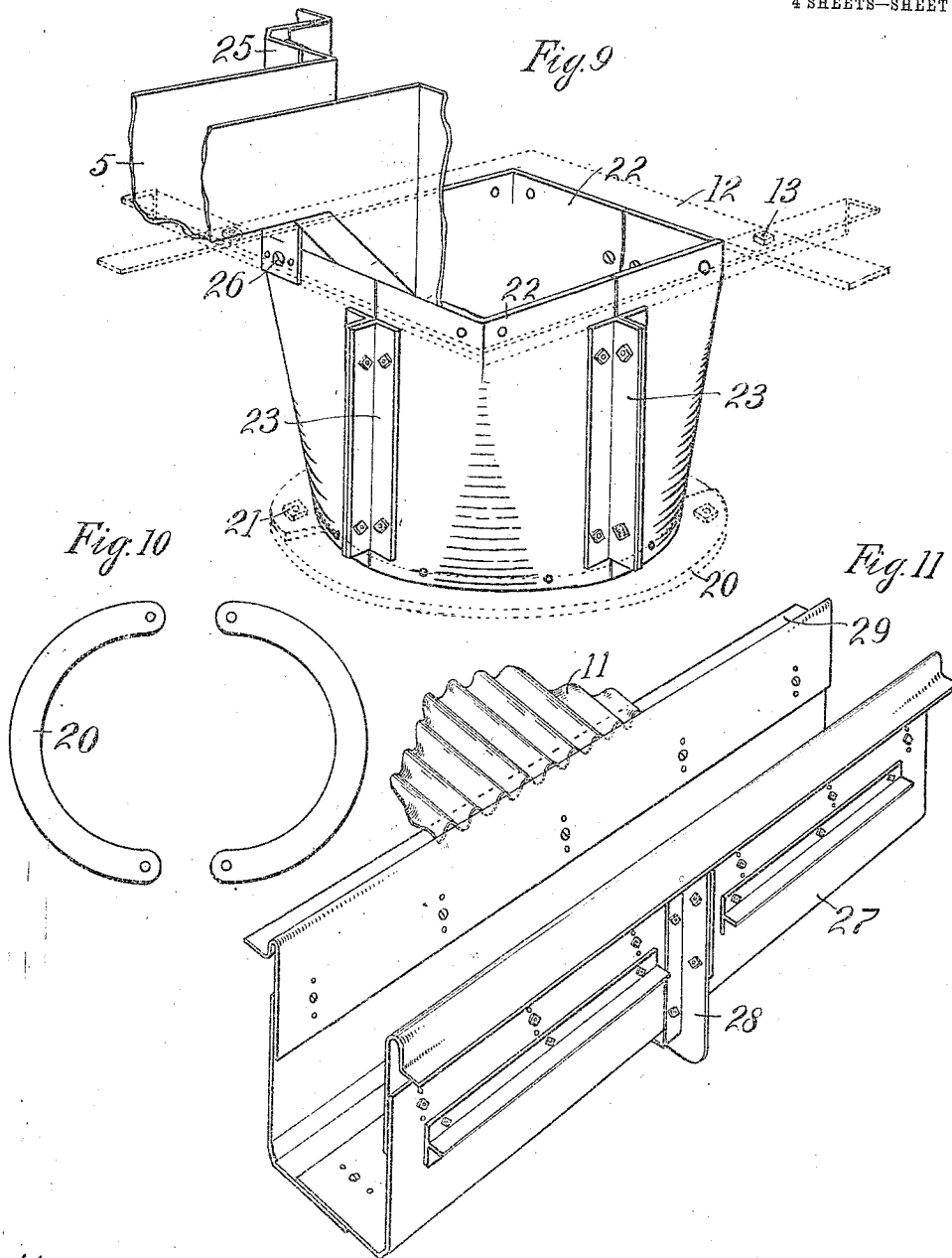
Patented Dec. 28, 1909.

4 SHEETS—SHEET 2.



Witnesses,
 George Voelker
 Hattie Smith.

Inventors,
 Philippe A. Deslauriers
 Louis P. Deslauriers
 by *Lothrop Johnson*
 their Attorneys.



Witnesses,
 George Voelker
 Harry Smith

Inventors,
 Philippe A. Deslauriers
 Louis P. Deslauriers
 by Rothrop & Johnson
 their Attorneys.

Fig. 12

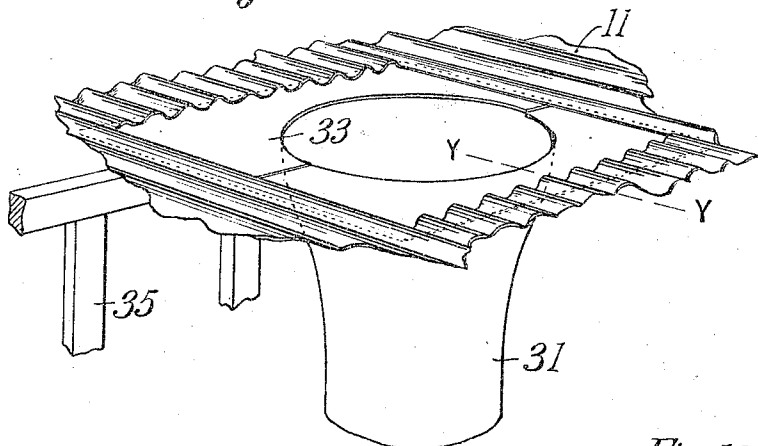


Fig. 13

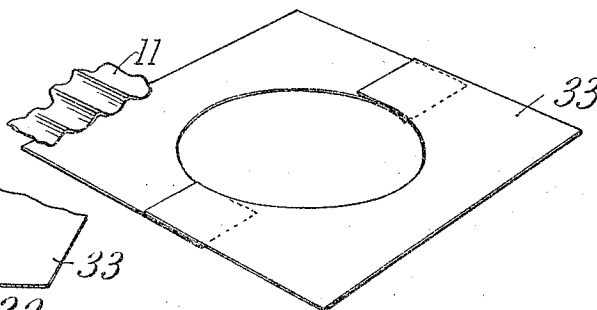
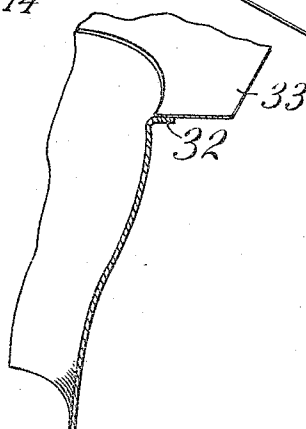


Fig. 14



Witnesses,
 George Voelker
 Lattie Smith

Inventors,
 Philippe A. Deslauriers
 Louis P. Deslauriers
 by Dethrop & Johnson
 their Attorneys.

UNITED STATES PATENT OFFICE.

PHILIPPE A. DESLAURIERS AND LOUIS P. DESLAURIERS, OF ST. PAUL, MINNESOTA.

MEANS FOR FORMING CONCRETE CEILINGS AND SUPPORTING-COLUMNS.

944,543.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed June 29, 1907. Serial No. 381,561

To all whom it may concern:

Be it known that we, PHILIPPE A. DESLAURIERS and LOUIS P. DESLAURIERS, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota; have invented certain new and useful Improvements in Means for Forming Concrete Ceilings and Supporting-Columns, of which the following is a specification.

Our invention relates to improvements in means for forming a concrete ceiling and supporting columns, and consists particularly in improved expansible molds for the ceiling and adjacent portions of the columns.

To this end our invention consists in the features of construction and combination hereinafter particularly described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a plan view of one form of our invention, Fig. 2 is a side elevation of the same partly broken away, Fig. 3 is a perspective view of a templet frame forming part of our invention, Fig. 4 is a detail of an adjustment for overlapping plates embodied in the invention, Fig. 5 is a plan view of a modified form of our invention, Fig. 6 is a perspective view of a concrete casting formed by the mold shown in Fig. 5, Fig. 7 is a section on line $x-x'$ of Fig. 5, Fig. 8 is a plan view of a supporting plate used in connection with the mold shown in Fig. 5, Fig. 9 is a perspective view of a modified form of mold for round columns, Fig. 10 is a detail of a clamping ring to be used in connection with the mold shown in Fig. 9, Fig. 11 is a perspective view of a beam mold, Fig. 12 is a perspective view of a modified form of mold to be used in connection with a round column, Fig. 13 is a perspective view of plates forming part of the mold shown in Fig. 12, and Fig. 14 is a section on line $y-y'$ of Fig. 12.

In the drawings A represents a mold or casing for the top of a square column. In order to make the mold expansible for different sizes of columns we construct the same of a series of plates 2 and 3 adjustably connected by bolts 4. The plates 2 form the corners of the column and the plates 3 are bent outwardly at right-angles thereto to support an intermediate mold 5 for the ceiling beams. The mold 5 is composed of right-angle plates adjustably connected by bolts as shown in Fig. 2 so as to be expansi-

ble in cross section. The mold 5 is inclosed by a templet frame 7 composed of bars adjustably connected by bolts 8. Secured to the sides of each mold 5 are brackets 9 having flanges 10 extending outwardly from above the mold to form supporting ledges for the ceiling mold plates 11 which are preferably corrugated as shown. Supporting the molds 5 is a templet frame 12 consisting of right-angle bars adjustably connected by bolts 13.

In Fig. 4 is shown a form of adjustable connection for the plates of the molds, consisting of a bolt 14 passing from one plate through a slotted opening in the other plate, the slotted opening being covered by a cap plate 15 and held in position by a nut 16 upon the bolt. Thus the concrete will be prevented from working through the slotted opening.

In Figs. 5 to 7 is shown a modified form of our invention. In this form the mold A consists of corner plates 17 adjustably connected by bolts 16^a to the inner ends of the beam mold 5, said beam molds being shown conventionally in Fig. 5. The plates 17 are bent outwardly at their upper ends to form flanges 18 upon which is designed to rest ceiling mold plates 19. We show in Fig. 5 the molds A and 5 proportioned to construct different widths of ceiling beams and in Fig. 6 is shown a column top and connected ceiling beams formed by the mold shown in Fig. 5. The mold A in Fig. 5 is inclosed below the beam molds 5 by a suitable templet frame such as the templet frame 20 shown in Fig. 10, consisting of two semi-cylindrical bars connected at their ends by bolts 21.

In Fig. 9 is shown a mold for the upper end of a round column just below the crown consisting of plates 22 bent at their lower ends to form a round column and at their upper ends to form a square, the plates being connected by angle irons 23. The branch molds 5 for the ceiling beams are shown provided with downwardly inclined inner ends extending inside the top of the column mold, the remainder of the column top being formed by the plates 25 connected with the branch molds and with the column mold as by means of bolts 26. By dotted lines we show a square templet frame inclosing the top of the column mold and a round templet frame inclosing the lower end of the mold.

In Fig. 11 is shown a beam mold 27 which, it will be noted, corresponds in construction to the mold 5 and which in operation constitutes an extension thereof. The mold 27 is inclosed by a templet frame 28 corresponding to the templet frame 7 and with brackets 29 corresponding with the brackets 10 for supporting the ceiling plates 11. Thus by combining the column and crown molds with the beam molds and supporting thereon the plates 19 and ceiling plates a metal mold is secured for the entire ceiling and crowns of all the supporting columns. By supporting the flat plates 19 at the corners of the molds A a support is secured for the ceiling plates 11 thus allowing ordinary sheet metal plates to be used for the ceiling mold without having to cut their ends to fit the column molds.

In Figs. 12 to 14 we show a non-expandible mold 31 for the top of a round column formed with an outwardly extending flange 32 to receive a plate 33 corresponding to the plate 19. The plates 33 form a rectangular mold for the ceiling at the top of the column and a support for the ceiling mold plates 11.

Among the most important advantages of our invention is the securing of mold forms for the crowns of the columns which will allow ordinary sheet metal plates with square cut ends to be used for the ceiling molds without necessitating the cutting off of said plates to conform to the tops of the columns. This we accomplish by means of the plates 19 or 33 suitably supported from the column top mold and over which plates 19 or 33 the ceiling mold plates 11 overlap. Of course, it will be understood that these mold plates will be supported by ordinary scaffolding 35 as partly shown in Fig. 12.

We claim:

1. Means for forming a concrete ceiling and connected columns, comprising a sheet metal mold shaped to form the top of each column, an outwardly bent supporting flange formed on the upper edge of said mold, and plates entirely surrounding said mold and overlapping said flange for the purpose of molding the adjacent portion of the ceiling.

2. Means for forming connecting concrete columns and ceiling, comprising a sheet

metal mold for each column top carrying an outwardly directed ledge, mold plates supported upon said ledge and surrounding said column casing, and ceiling mold plates overlapping said supporting mold plate.

3. Means for forming a concrete ceiling and connected columns, comprising a sheet metal mold for forming the top of each column, an outwardly extending bracket carried by the upper end of said mold, supporting mold plates carried by said brackets, and ceiling mold plates overlapping said supporting mold plates, for the purpose set forth.

4. Means for forming concrete ceiling and connecting columns, comprising a longitudinal split casing for each column top, means securing the same closed, outwardly extending brackets arranged in connection with the top of said casing, supporting mold plates supported upon said brackets, and ceiling mold plates overlapping said supporting mold plates.

5. Means for forming concrete ceiling and supporting columns comprising a longitudinally split casing for each column top, means securing the same closed, beam molds extending outwardly from opposite sides of said casing, brackets extending outwardly between said column top and beam molds, mold plates supported upon said brackets and ceiling mold plates overlapping said mold supporting plates.

6. Means for forming a concrete ceiling and supporting columns, comprising an expandible casing for the top of each column, an expandible templet frame for said casing, expandible beam molds extending outwardly from opposite sides of said casing, and an expandible templet frame for said beam molds, brackets extending outwardly from said casing intermediate of said beam molds, brackets extending outwardly from the opposite sides of said beam molds, and ceiling mold plates supported by said brackets.

In testimony whereof we affix our signatures in presence of two witnesses.

PHILIPPE A. DESLAURIERS.
LOUIS P. DESLAURIERS.

Witnesses:

H. S. JOHNSON,
HATTIE SMITH.