

Jan. 1, 1935.

E. B. SARGENT

1,986,122

PARTITION RISER

Filed June 24, 1932

3 Sheets-Sheet 1

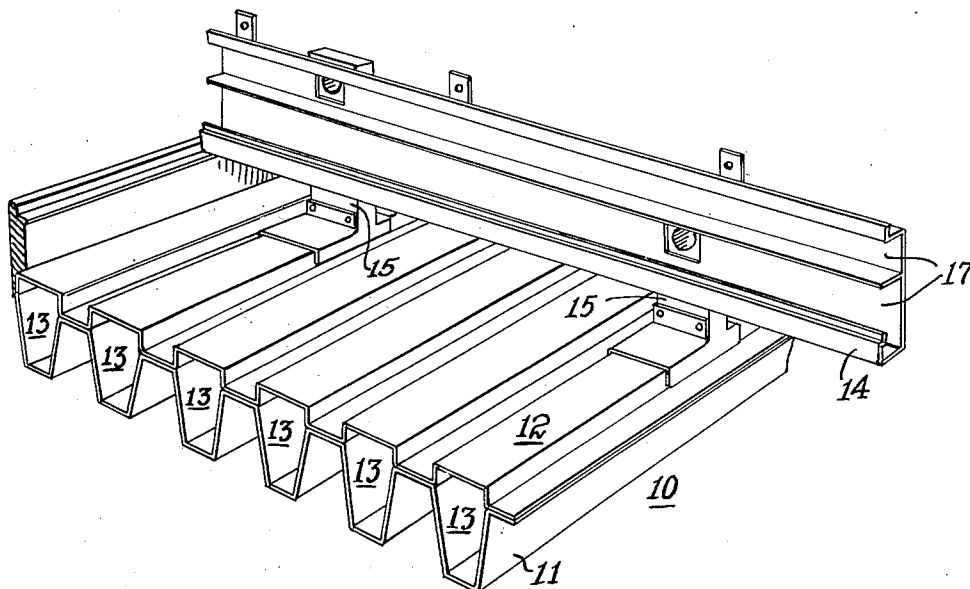


Fig. 1.

INVENTOR.
Edward B. Sargent
BY *Green & McCallister*
ATTORNEYS.

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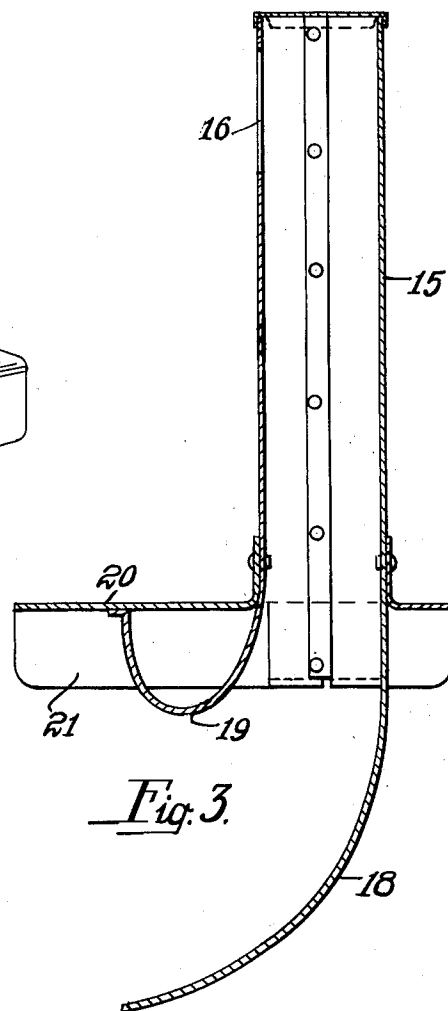
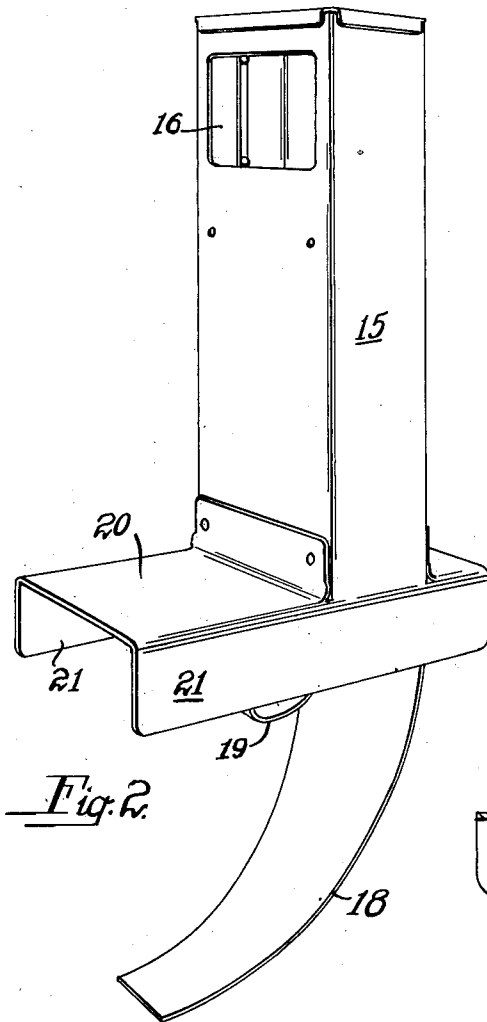
E. B. SARGENT

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3 Sheets-Sheet 2



INVENTOR.
Edward B. Sargent
BY *Green & McCallister*
ATTORNEYS.

Jan. 1, 1935.

E. B. SARGENT

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Fig. 4.

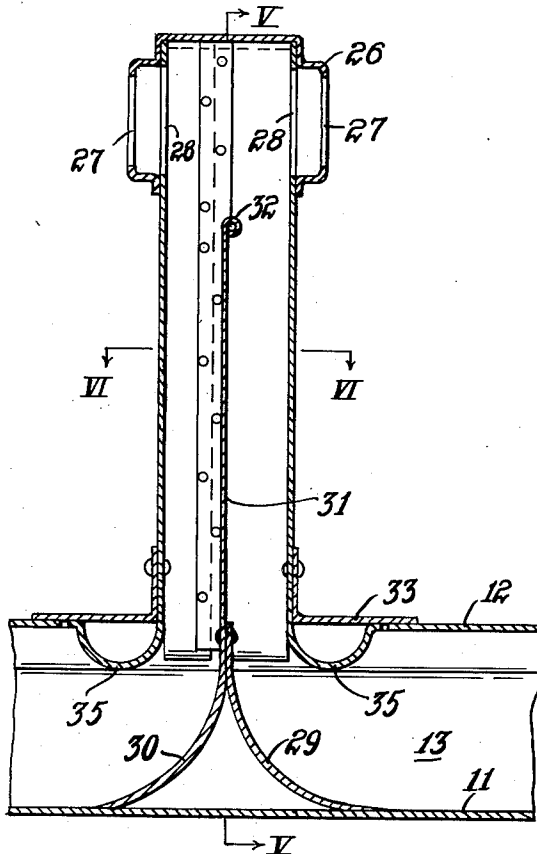


Fig. 5.

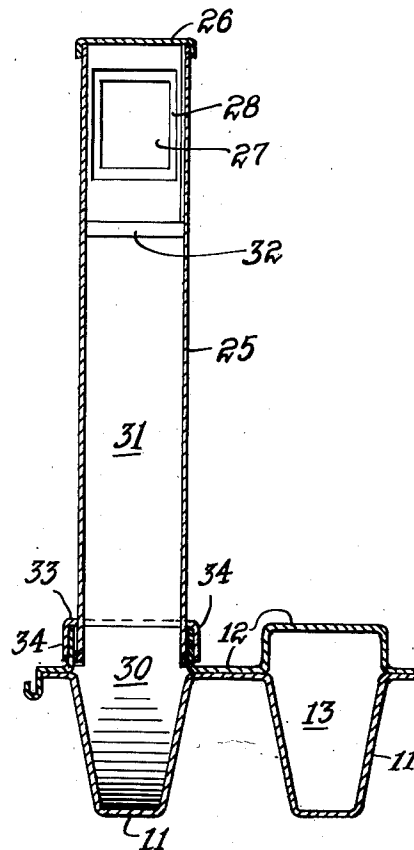
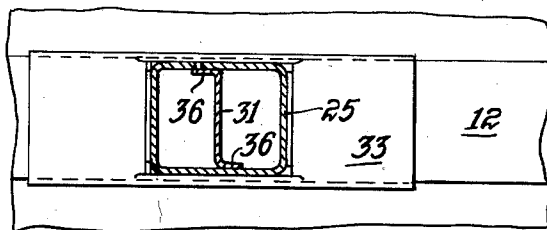


Fig. 6.



INVENTOR.
Edward B. Sargent
BY *Green & McColister*
Attorneys.

UNITED STATES PATENT OFFICE

1,986,122

PARTITION RISER

Edward B. Sargent, Mount Lebanon, Pa., assignor,
by mesne assignments, to H. H. Robertson
Company, Pittsburgh, Pa., a corporation

Application June 24, 1932, Serial No. 619,091

12 Claims. (Cl. 247—3)

This invention relates to underfloor wiring conduit systems for buildings, and more particularly to apparatus for establishing outlets in the partitions or walls of a building having a metallic base floor formed of a plurality of closely spaced, hollow sheet metal beams.

One object of this invention is to provide fittings for converting the hollow beams of a sheet metal base floor into underfloor conduits, whereby electrical wiring may be led into the beams and fittings for facilitating the withdrawal of the wiring from the runs of the beams.

A further object is to provide a fitting for establishing electrical service outlets in the partitions of a building having a hollow metallic beam base floor forming an underfloor wiring conduit system.

These and other objects which will hereinafter be made apparent to those skilled in this particular art are accomplished by means of this invention, one embodiment of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of a section of a hollow beam sheet metal base floor equipped with a fitting embodying my invention for securing access to the interior of the beams.

Fig. 2 is an enlarged perspective view of the fitting.

Fig. 3 is a view in vertical section of the fitting shown in Figure 2.

Fig. 4 is a view in vertical section of a modified form of my improved fitting.

Fig. 5 is a view in section taken on lines V—V of Figure 4, and

Fig. 6 is a section taken on line VI—VI of Figure 4.

In general, the present invention contemplates the provision of fittings for the hollow beams of a sheet metal base floor for establishing communication between the interior of the beams and a junction box of the type adapted to be positioned in a wall of a building whereby the interiors of the beams form runs for electrical wiring. These fittings may, for convenience, be termed risers, since the top of the fitting is adapted to extend above the top of the beam. This upstanding part of the riser may be free standing or it may be concealed within a wall or partition. To enable electric service to be furnished at a desired location within the building such as in partition walls intermediate of the length of the beams, my invention also contemplates a fitting or riser for facilitating the "fishing" or withdrawal of the electric wires from the runs in the beams so that an outlet may be formed in the top of the riser. The riser may also be used to introduce the wires into the beams, and also for the reintroduction of the wires into the interior of the beams after they

have been fished out and an outlet connection established.

These fittings may be of any desired sectional shape and of a predetermined height sufficient to extend above the surface of the finish floor when the fittings are operatively positioned on the beams. The lower end of the fitting is adapted to be received within the interior of and to engage the side walls of the beams so that the wires being led through the beams will engage this portion of the fitting and be deflected up out of the beams. The lower ends of the fitting or riser are rounded to provide wire pulling surfaces for safeguarding against damage to the insulation on the wires being pulled into or out of the beams.

The deflecting portions on the risers used at the ends of the beams face in the direction of the run of the beams and completely close the ends thereof. The risers adapted to be used in the partition walls intermediate of the ends of the beam are preferably divided into two compartments, each of which has a rounded deflector on the lower end thereof. These deflectors face in opposite directions and permit wiring to be drawn into the fitting from opposite runs of the beam and also enable the wiring to be reinserted into the runs of the beam and continued to another part of the building after an outlet has been established in the partition wall.

Referring now to the drawings in detail, I have illustrated a metallic base flooring 10 comprising an under sheet 11 and an upper sheet 12 which are pre-formed or corrugated to form a series of closely spaced, hollow floor beams 13. In the construction of the building, the sections of the sheet metal flooring 10 are mounted directly on the steelwork of the building and are so arranged that the interior of the beams in one section open into the interior of the adjoining longitudinal sections thereby forming a series of closely spaced passageways extending from one part of the building to another, which are suitable for use as conduits or runs for electric wiring. These beams 13 are usually spaced on six inch centers and when made accessible through the use of my improved fittings, form a highly flexible underfloor wiring conduit system.

In order to secure access to the interior of the beams 13 so that feed wires may be led into the beam from a junction box 14 of the type adapted to be positioned in the wall of a building, and through which conductors are led from a suitable source of electric supply, I provide a fitting or riser 15 which is erected upon pre-selected of the beams 13 preferably before the finish flooring is superimposed on the tops of the beams, and which opens into the box 14 and the top of the beams.

The riser 15 comprises a hollow elongated

body of any sectional shape and of a height sufficient to extend into a partition wall above the surface of the finish floor. One face of the hollow member 15 is provided with an opening 16 adjacent to the top thereof which is adapted to communicate with an opening formed in the box 14.

So that different types of electric service may be supplied to different beams 13 of the base floor, the box 14 (as shown) is divided into a plurality of runs 17, the number of which depends, of course, upon the number of different types of electric service to be supplied in the building. In Fig. 1, I have shown the box 14 as being provided with two runs, each of which is operatively connected to selected of the beams 13 by one of my risers 15. While I have shown only one riser for each of the runs 17, it is understood that as many of the beams 13 may be provided with risers communicating with the runs 17 as are desired to be used for each type of service, and the risers 15 opening into one of the runs 17 may be so spaced that they are in communication with alternate beams when two different types of service are being furnished in the building and with every third beam when three types of electrical service are being supplied.

In the erection of one of the partition risers 15, a hole is cut through the top of selected beams 13 and the lower end of the fitting is arranged to project into the interior of the beam. To facilitate the withdrawal of the feed wires being inserted into the hollow beams 13, the lower end of the riser 15 is provided with a deflecting member 18 which fills the interior of the beam and is adapted to engage the side walls and bottom of the beam so that the wires will be deflected up into the hollow body of the riser, to enable the feed wires to be readily connected to the conductors in the runs 17. In order to protect the insulation on the feed wires inserted into the cells, the lower end of the wall of the fitting having the opening 16 therein is extended into the beam and bent to form a well rounded pulling surface 19 over which the wires may be drawn. The rounded surface 19 is substantially parallel to the deflecting member 18.

The partition riser 15 is held in place on the beam by a plate member 20 secured to the bottom of the hollow body and having depending flanges 21 on the edges thereof which are shaped to fit over and cover the top and sides of the beam. This plate member 20 may be welded to the beam 13 or secured thereto in any other suitable manner, and not only holds the riser in operative relation to the beam, but also restores the beam to its original strength. The riser 15 also may be used to establish service outlets in the partitions of the building as well as to establish communication between the interior of the beams and a service box. When used as partition outlets the openings 16 form seats for receiving the service outlet connections.

When it is desired to establish an outlet in a partition wall intermediate of the length of the beam, I prefer to use a modified form of my riser which will permit feed wires to be drawn into the fittings from opposite runs in the beam so that the ends of the beam beyond the point where the partition outlet is desired, will be accessible.

This modified form of riser as shown in Figs. 4, 5, and 6, comprises a hollow, elongated member 25 of any sectional shape and of a sufficient

height to locate the outlets to be mounted therein at a height above the surface of the finish floor. The outlet fittings may be secured in a metal plate 26 fitting over the top of the body 25 of the riser and having oppositely disposed openings 27 therein which register with openings 28 formed in the front and rear faces, respectively, of the body 25. The lower portion of the riser 25 is provided with two deflecting members 29 and 30 which are mounted on the lower end of a partition wall 31 subdividing the hollow member 25 into two compartments as illustrated in Figure 4. The upper end of the partition member is arranged to terminate slightly below the bottom of the openings 28 in the member 25 to afford access to either of the compartments of the fitting, and the upper end of the partition wall 31 is preferably bent over to form a rounded pulling edge 32 to permit wiring to be drawn thereover without being liable to injure the insulation on the wire.

The deflecting members 29 and 30 are shaped to substantially correspond to the shape and size of the interior of the beams and cooperate with the bottom of the beam to deflect and guide the wiring being "fished" or drawn through one of the beams into one of the compartments of the fitting. The fitting is held in place on the beam 13 by a plate member 33 having depending flanges 34 along the sides thereof which cover the top and sides of the beam, respectively. The plate member 33 may be secured to the beams in any suitable way so that the original strength of the beam will be restored thereto.

The lower end of the side walls of the riser 25 are preferably extended into the interior of the beam and are bent to form a rounded portion 35 over which the wiring may be drawn without damage to its insulation. The partition wall 31 may be formed in any suitable manner and secured to the sides of the hollow member 25 in any suitable manner. In Figure 6, the partition is shown with oppositely disposed flanges 36 along the sides thereof which are riveted to the sides of the hollow member 25.

From this description, it is apparent that my improved fitting, in combination with the hollow beams of a sheet metal base floor, provide a highly flexible underfloor wiring conduit system in which the interiors of the beams form the runs for the electric wiring.

My improved fittings not only permit access to be had into the interior of the beams at a point adjacent the end thereof, but also enables electrical service to be provided on one or both sides of the beam in a most simple, economical, and convenient manner.

The deflecting members on the lower ends of the fittings, since they substantially close the interior of the beam, enable the wiring to be fished through the beams with comparative ease and drawn up into the fitting where the wires may be readily secured to the terminals of an electrical outlet operatively positioned within the openings formed in the hollow body of the fitting. The hollow body of the fitting is preferably of a width or thickness corresponding to the width of the partition so that the outlet opening at the top of the member will be exposed and readily accessible.

By dividing the hollow member of the fitting into two compartments and having two oppositely disposed deflectors secured thereto, it is possible to supply electrical service from one end of the floor beam to the other since the

wiring may be drawn from the beam up through one of the compartments, connected to a service outlet, and then re-inserted into the beam through the other compartment and led to another portion of the building where an outlet is desired. It is also apparent that several of the risers having two oppositely disposed deflectors may be operatively positioned in each of the beams of the floor so that outlets may be formed where desired. These risers permit the electric wires to be readily introduced into or withdrawn from the interior of the beams.

It is also readily apparent that I have provided fittings for converting the hollow beams of a sheet metal base floor into an underfloor wiring system in which single fittings are provided for securing access into the interior of the beams at the ends thereof, and double fittings for securing outlets intermediate of the length of the beams.

While I have shown the intermediate fitting as having two compartments, it is to be understood that a riser having a single compartment may be used intermediate of the ends of the beam. When such a fitting is installed intermediate of the length of the beam and it is desired to make the other end of the beam available as a run for electric wiring, another fitting similar to the first must be erected on the beam so that the deflecting member on the second fitting or riser faces in the opposite direction from the deflector on the first fitting or riser.

While I have shown my fittings or risers as applied to a hollow sheet metal base floor of a specific construction, it is to be understood that the fittings may be applied to any type of hollow beam flooring without departing from the spirit of my invention. It will also be understood that the invention may be embodied in other forms within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. An underfloor wiring system comprising a series of closely spaced hollow sheet metal beams, a hollow fitting adapted to be applied to selected of said beams and having deflecting members extending into the interior of the beam, and a portion extending above said beam for receiving an outlet connection.

2. The combination with a flooring conduit provided with an opening in the top thereof, of a hollow fitting mounted upon the conduit and having a curved portion extending down into the conduit whereby a wire introduced into the top of said fitting will be deflected into said conduit by the curved portion thereof.

3. A fitting of the character described adapted to be mounted upon a hollow beam to form an electrical conduit, comprising an upright hollow member having an outlet opening in the upper portion thereof, and a deflector projecting downwardly into and engaging the bottom of the electrical conduit for deflecting wiring during movement thereof from the conduit up into the fitting.

4. A fitting of the character described comprising an upright hollow member having an outlet receiving opening in a lateral portion thereof, and a deflector extending downwardly and outwardly from a wall of said hollow mem-

ber for deflecting a wire moved against the same from a direction at substantially right angles to the plane of said wall, up into the fitting.

5. A fitting of the character described, comprising an upright conduit having an outlet opening in the upper portion thereof, a longitudinally extending partition member within the conduit terminating below the upper end of the conduit, and a pair of oppositely disposed deflectors extending downwardly and outwardly from the plane of said partition member, said deflectors facilitating in the directing of wires from a direction at substantially right angles to the plane of the partition member up into the fitting.

6. A fitting of the character described, comprising an upright conduit having an outlet opening in the upper portion thereof, an outwardly extended deflector depending from said conduit for deflecting a wire from a direction at substantially right angles to the plane of a wall of said conduit up into the fitting and a rounded surface on the lower end of one wall of said conduit for safeguarding against injury to a wire engaging said surface.

7. The combination with a metallic hollow beam sub-floor forming a flooring conduit provided with an opening in the top thereof, of a fitting mounted upon the conduit and having a deflector extending down into the conduit for deflecting a wire moved from the conduit up into the fitting, and a rounded surface opposite and above the face of said deflector forming a rounded pulling surface for safeguarding against injury to a wire engaging said surface.

8. The combination with an electric wiring conduit, of a fitting operatively supported thereon and extending into the same and having deflecting means extending into the conduit for deflecting a wire up into the fitting.

9. A fitting of the character described comprising an upright conduit having provision for supporting an electrical receptacle in the upper portion thereof, and a deflecting member projecting beyond the lower end of the conduit for insertion into a wiring conduit to deflect wires up into the fitting.

10. The combination with an electrical wiring conduit, of a fitting operatively supported thereon with the interior of the fitting in open communication with the interior of the wiring conduit and deflecting means extended from the fitting into the conduit for deflecting a wire from the conduit into the fitting.

11. The combination with a flooring conduit, of a fitting operatively supported thereon with the interior of the fitting in open communication with the interior of the flooring conduit and deflecting means extending from the fitting into the conduit for deflecting a wire from the conduit into the fitting.

12. A fitting of the character described comprising a hollow upright member, a supporting member secured to the hollow upright member near the bottom thereof, and a deflecting member attached to said upright member and extended below the said supporting member to enter a conduit upon which the upright member is positioned by said supporting member.

EDWARD B. SARGENT.