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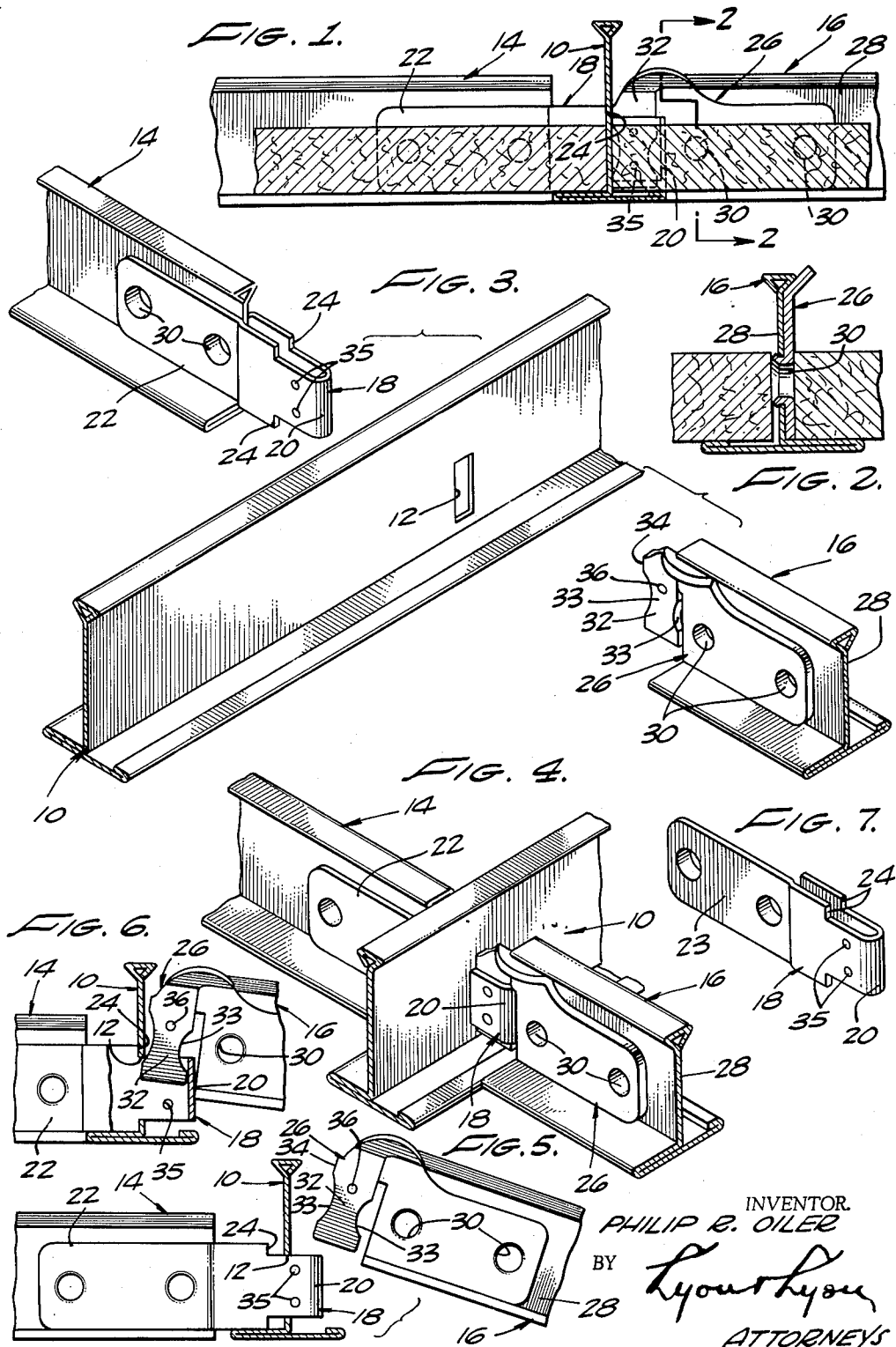
P. R. OILER

3,213,979

SUSPENDED CEILING

Filed Sept. 20, 1962

2 Sheets-Sheet 1



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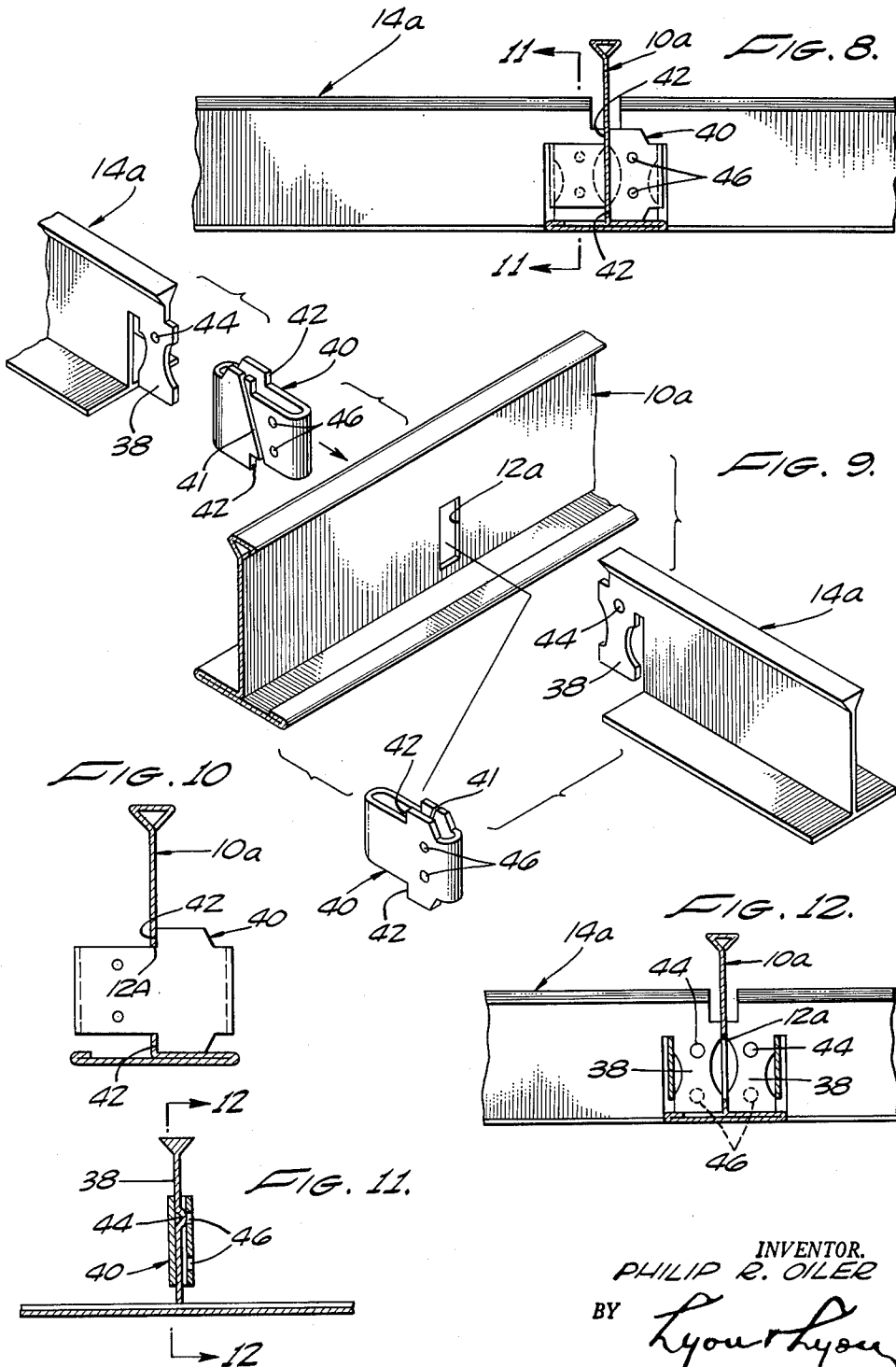
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2 Sheets-Sheet 2



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1

3,213,979

SUSPENDED CEILING

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This invention relates to an improved suspended ceiling.

It is an object of this invention to provide a system for supporting acoustical tile and the like which is readily and easily installed.

A further object of this invention is to provide such a system which while simply installed still retains the desired strength.

Still a further object of this invention is to provide a system wherein a series of longitudinal runners are interconnected by transverse runners and wherein novel means are provided to accomplish the interconnection which prevent twisting or misalignment thereof.

Another object is to accomplish this interconnection without having any portion of the connecting means extending above the height of the runners.

Other objects and advantages will be readily apparent from the following description:

FIGURE 1 is a side elevation partially in section of a system embodying this invention.

FIGURE 2 is a view taken along line 2—2 of FIGURE 1.

FIGURE 3 is a perspective of the components used to interconnect longitudinal and transverse runners in a disassembled state.

FIGURE 4 is a view similar to FIGURE 3 in an assembled state.

FIGURE 5 is a side elevation showing one transverse runner disconnected.

FIGURE 6 is a view similar to FIGURE 5 with the runner partially connected.

FIGURE 7 is a perspective of an alternate form of the loop shown in FIGURE 3.

FIGURE 8 is a side elevation partially in section of a modified form of this invention.

FIGURE 9 is a perspective of the components used to interconnect longitudinal and transverse runners in a disassembled state.

FIGURE 10 is a fragmentary section illustrating insertion of the loop into the longitudinal runner.

FIGURE 11 is a view taken along line 11—11 of FIGURE 8.

FIGURE 12 is a view taken along line 12—12 of FIGURE 11.

The longitudinal runners 10 are shown T-shaped but may have any desired cross-section, and are punched at intervals with rectangular slots 12. The transverse runners 14 and 16 are likewise shown T-shaped and abut the longitudinal runner adjacent slot 12. These runners are preferably of a suitable steel suitably coated for appearance. To the extremity of runner 14 is connected a loop 18. Loop 18 has its closed end 20 projecting outwardly from runner 14 and adapted to project through slot 12. The legs 22 of the loop straddle the upright leg of T-shaped runner 14. Holes are punched through the runner and one leg to accommodate metal forced there-through from the other leg to pin the loop to the runner. Shoulders 24 are formed on the legs adapted to abut the upright leg of runner 10 adjacent slot 12.

Affixed to the other transverse runner 16 is a hook 26. One end thereof is adapted to lie against the upright leg 28 of runner 16 and has holes 30 therethrough which align with holes through leg 28 through which rivets and the like project to fix the hook to the leg. The remaining

2

end 32 of hook 26 is hook-shaped and is adapted to fit through that portion of loop 18 which projects through slot 12. It has scalloped cut-outs 33 to allow for easier installation and is provided with portions 34 which abut the upright stem of the longitudinal runner snugly when the hook is in place.

The end 20 of loop 18 has a series of small holes 35 therein and end 32 of hook 26 has a small protuberance 36 thereon which will fit into one of the holes when properly assembled. The hook and loop are so proportioned that the end of runner 28 will abut longitudinal runner 10 when same are interconnected preventing twisting of same.

An alternate form of loop 18 is shown in FIGURE 7. In this construction only one leg of the loop is attached to the upright stem of runner 14, the other leg being left free so that it can squeeze when being inserted through the slot and allowed to spring back tightly after insertion.

It is apparent that both the hook 26 and the loop 18 can be formed out of the material in the runners, if the runner material can provide adequate strength and rigidity without the necessity of attaching separate hooks and loops.

In FIGURES 8 through 12 a modified form of this invention is illustrated. The longitudinal runners 10a are provided with rectangular slots 12a. The transverse runners 14a have hooks 38 formed at their extremities. A spring clip 40 has a closed loop at each end and is cut along one side as at 42 to permit contraction thereof. The clip is provided with shoulders 42 which abut the upright leg of longitudinal runner 10a when inserted into slot 12a as best seen in FIGURE 10. Each hook 38 has a protuberance 44 adapted to seat into one of the holes 46 in clip 40. This modified form of interconnection has the added advantage of uniformity of the transverse runners eliminating possible confusion in assembling the ceiling.

While what hereinbefore has been described as the preferred embodiment of this invention, it is readily apparent that alterations and modifications can be resorted to without departing from the scope of this invention and such alterations and modifications are intended to be included within the scope of the appended claims.

I claim:

1. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot.

2. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said loop having shoulders formed thereon abutting one side of the upright leg of said longitudinal runner.

3. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said loop having shoulders formed thereon abutting one side of the upright leg of

3

said longitudinal runner, and said hook having a portion which abuts the opposite side of said upright leg.

4. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said hook and loop being formed so that the flanged extremities of said transverse runners abut the flanges of said longitudinal runner when the hook is in the loop.

5. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said hook and loop being formed so that the flanged extremities of said transverse runners abut the flanges of said longitudinal runner when the hook is in the loop, said loop having shoulders formed thereon abutting one side of the upright leg of said longitudinal runner.

6. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said hook and loop being formed so that the flanged extremities of said transverse runners abut the flanges of said longitudinal runner when the hook is in the loop, and said hook having a portion which abuts the opposite side of said upright leg.

7. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross-sections, a loop affixed to the end of one transverse runner projecting through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said hook and loop being formed so that the flanged extremities of said transverse runners abut the flanges of said longitudinal runner when the hook is in the loop, said hook and loop having aligned protuberance and hole formed thereon.

8. In a suspended ceiling the combination of: a longitudinal runner having generally flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one transverse runner projecting

4

through said slot, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot, said hook and loop being formed so that the flanged extremities of said transverse runners abut the flanges of said longitudinal runner when the hook is in the loop, said loop having shoulders formed thereon abutting one side of the upright leg of said longitudinal runner, said hook having a portion which abuts the other side of said upright leg, said hook and loop having aligned protuberance and depression formed thereon.

9. In a suspended ceiling the combination of: a longitudinal runner having generally a flanged cross-section with a slot through the upright leg thereof, a pair of transverse runners having generally flanged cross sections, a loop affixed to the end of one cross runner projecting through said slot, said loop having one leg rigidly attached to the cross runner and the other leg unattached to provide spring action across the diameter of the loop, a hook affixed to the end of the other runner hooking through that portion of said loop projecting through said slot.

10. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with an upright leg having a slot therethrough, a pair of transverse runners having a generally flanged cross-section, a loop insertable into said slot, a hook affixed to the end of one or more of the transverse runners hooking to that portion of the loop projecting through said slot.

11. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with an upright leg having a slot therethrough, a pair of transverse runners having a generally flanged cross-section, a loop insertable into said slot, a hook affixed to the end of one or more of the transverse runners hooking to that portion of the loop projecting through said slot, said loop having shoulders thereon abutting one side of the upright leg of said longitudinal runner.

12. In a suspended ceiling the combination of: a longitudinal runner having a generally flanged cross-section with an upright leg having a slot therethrough, a pair of transverse runners having a generally flanged cross-section, a loop insertable into said slot, a hook affixed to the end of one or more of the transverse runners hooking to that portion of the loop projecting through said slot, said hook and loop being so formed that the flanged extremities of said transverse runner abut the flanged portion of said longitudinal runner when the hook is in the rod.

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