

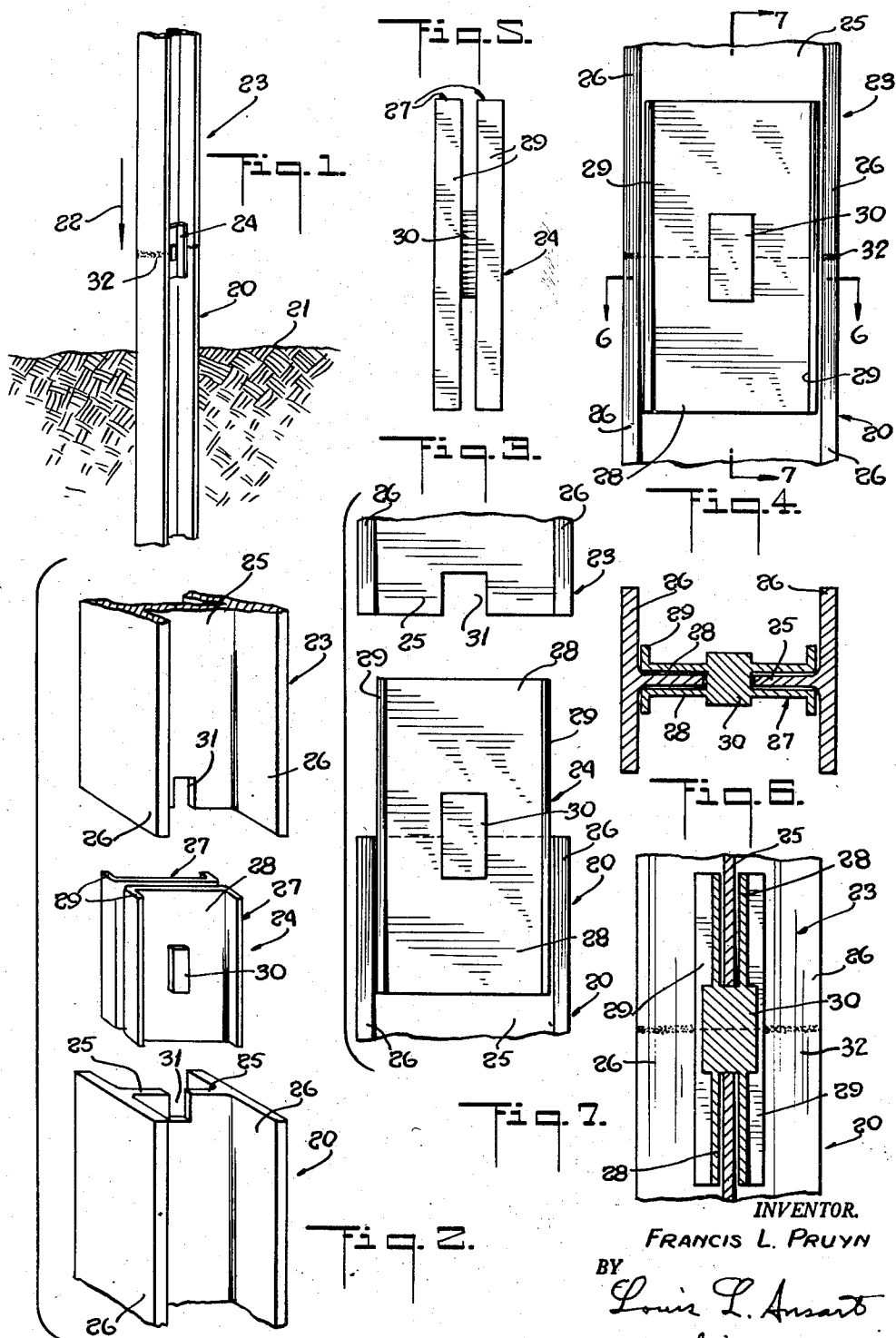
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COUPLING FOR PILE SECTIONS

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COUPLING FOR PILE SECTIONS

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The present invention relates to means for connecting together end-to-end structural shapes such as H-beams used as bearing piles or sections thereof, and more particularly to an inside sleeve connection.

Heretofore it has been common practice in driving H-beam piles to a considerable depth, to drive a length of H-beam into the earth until the upper end of said length reaches a convenient location. Another bearing pile section was then positioned above and in end-to-end relation with respect to the lower bearing pile section and the adjacent ends welded together, thus enabling driving operations to continue. There was however considerable trouble in holding the upper pile section in proper position for and during the welding operation, and there was a corresponding loss of time which increased the expense.

An important object of the present invention is to provide means for connecting together adjacent ends of two upright aligned pile sections whereby the aforesaid difficulties will be avoided.

Another object of the invention is to provide a connecting device or sleeve to be placed on the upper end of the lower of two pile sections and to receive the lower end of the upper section and hold said upper section in proper position with reference to said lower section.

Other objects, features and advantages will appear upon consideration of the following detailed description and of the drawings in which:

Fig. 1 is a perspective view illustrating a pile section driven into the ground, an upper pile section in alignment with the first mentioned pile section, and a connection between the adjacent ends thereof constituting one embodiment of the invention;

Fig. 2 is an exploded view of the connection illustrated in Fig. 1;

Fig. 3 is a view illustrating the joint of Fig. 1 as seen along a line of sight perpendicular to the webs, the upper pile section being in raised position.

Fig. 4 is a view similar to Fig. 3 but showing the lower end of the upper pile section resting on the upper end of the lower pile section;

Fig. 5 is an edge elevation of the connector or sleeve illustrated in Fig. 2;

Fig. 6 is a section taken along the line 6—6 of Fig. 4; and

Fig. 7 is a section taken along the line 7—7 of Fig. 4. Referring to Fig. 1, an H-beam 20 has been driven into the earth 21 as indicated by arrow 22. H-beam 20 may be used alone as a bearing pile or may be a lower section of a pile having an upper section 23 end-to-end therewith and connected thereto by means including a coupling member or inside sleeve 24.

Each of H-beam sections 20 and 23 comprises a central web 25 and flanges 26 and each sleeve 24 comprises two channels 27 arranged back-to-back and having base webs 28 and side flanges 29. Said channels 27 are of such dimensions that they can fit between flanges 26 of the H-beams at opposite edges of webs 25 of the H-beams with webs or bottoms 28 of said channels at opposite

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faces of webs 25 and side flanges 29 adjacent to the inner faces of flanges 26. The webs 28 of channels 27 are secured together centrally thereof by webs or connectors 30 preferably of rectangular cross section and adapted to fit into open slots 31 in the adjacent ends of H-beams 20 and 23 and hold sleeve 24 against movement longitudinally of said H-beams. Said connectors 30 extend through and to the outside of said webs 28 of the channels 27, thus reinforcing the connections with said channels 27.

In driving the lower H-beam section 20 into the earth, the upper end may be considerably battered and distorted. In that event the upper end of this pile section would have to be squared as by burning off said upper end. Then as indicated in Fig. 3 the coupling or inside sleeve 24 would be placed on the upper end of pile section 20 with the channels on opposite sides of web 25 and with rectangular connector 30 fitting in the open-ended slot 31 and limiting movement of coupling or inside sleeve 24 longitudinally of the pile. Then the upper section or H-beam 23 is lowered from its Fig. 3 position until it takes the position indicated in Figs. 4, 6 and 7.

The dimensions of H-beams differ to a considerable extent and it is therefore necessary to provide for variations in clearance between the sleeve 24 and the H-beams 20 and 23. In order to avoid undesirable looseness, steel wedges could be used between the webs of the H-beams 20 and 23 and the webs 28 of channels 27 and between flanges 26 of the H-beams and flanges 29 of the channels 27.

In subsequent driving by blows on the upper end of the upper pile section 23, said wedges may be loosened and fall out. It would therefore be desirable to secure them in position as by spot welding. In order to produce a strong connection the flanges 26 of the two H-beams 20 and 23 may be connected by welds 32 as indicated in Figs. 4 and 7.

It will be evident that the coupling member or inside sleeve 24 serves to provide a strong and effective connection between the adjacent ends of the H-beams 20 and 23.

Although only two H-beam sections are shown, others may be added in order to drive to greater depths.

It should be understood that various changes may be made and that certain features may be used without others without departing from the true scope and spirit of the invention.

What is claimed is:

1. An inside sleeve for connecting the abutting ends of upright superimposed H-beam pile sections, comprising channels adapted to extend longitudinally of said pile sections back-to-back with their webs at opposite sides of said H-beam sections to prevent tilting of the upper pile section in one general vertical plane and their flanges at opposite sides of the webs of said channels positioned to engage opposite flanges of said pile sections to prevent tilting of said upper pile section in a second general vertical plane perpendicular to the first, and a member connecting the webs of said channels midway between the sides thereof and adapted to pass through an opening in the web of at least one of said pile sections at its abutting end.

2. An inside sleeve for connecting the abutting ends of upright superimposed H-beam pile sections according to claim 1 wherein said connecting member between the webs of said channels is adapted to pass through aligned openings in the abutting ends of the webs of said H-beam pile sections.

3. An inside sleeve for connecting two aligned H-beam pile sections comprising two channel members back to back, and a central member connecting said channels and having parallel lateral faces, said central member spacing said channels to adapt them to receive the webs of the

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H-beam sections and the flanges of the channels being spaced to adapted them to fit between the flanges of the H-beam sections, and said central member being adapted to fit in an opening in the web of at least one H-beam at its abutting edge.

4. The combination of two aligned H-beam pile sections with abutting ends having aligned slots in their webs, with an inside sleeve comprising two channels back to back and spaced to receive the webs of said H-beam sections therebetween, a connecting member between said channels spacing them to provide for entry of said webs of the H-beam pile sections, said connecting member fitting in the slots of the webs of said H-beams and the

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widths of said channels being such that the flanges at their sides fit between the flanges of the H-beam pile sections.

5. The combination according to claim 4 in combination with means including welds connecting the flanges of said H-beam sections.

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