H. R. SMITH.

BEDSILL FOR PILE DRIVERS.

APPLICATION FILED MAR. 25, 1921.

1,407,003. **Patented Feb. 21, 1922.**

2 SHEETS—SHEET 1.

Fig. 1.

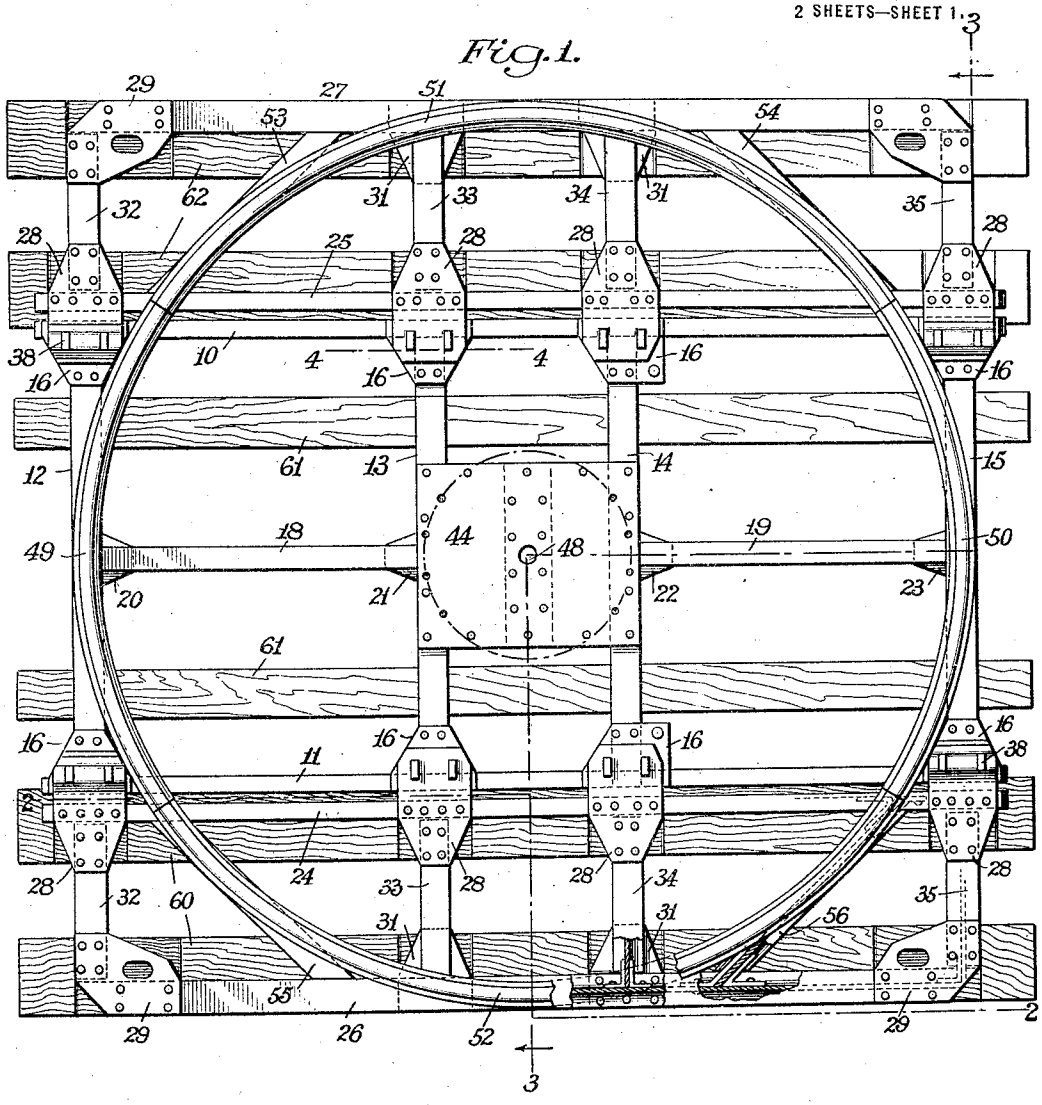
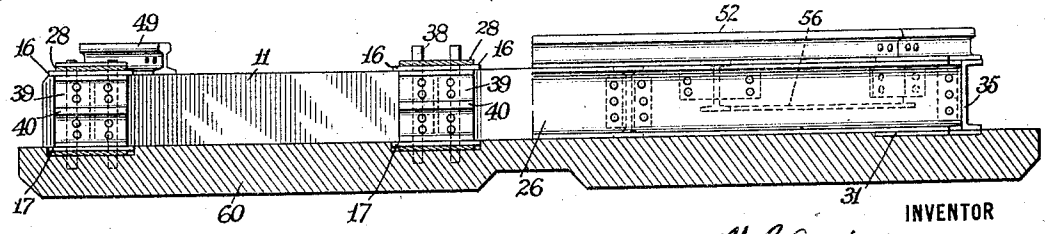


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

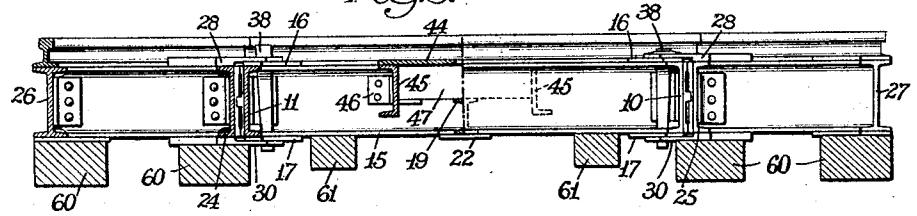


Fig. 4.

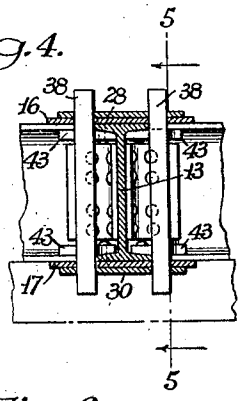


Fig. 5.

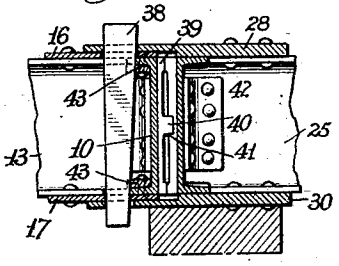
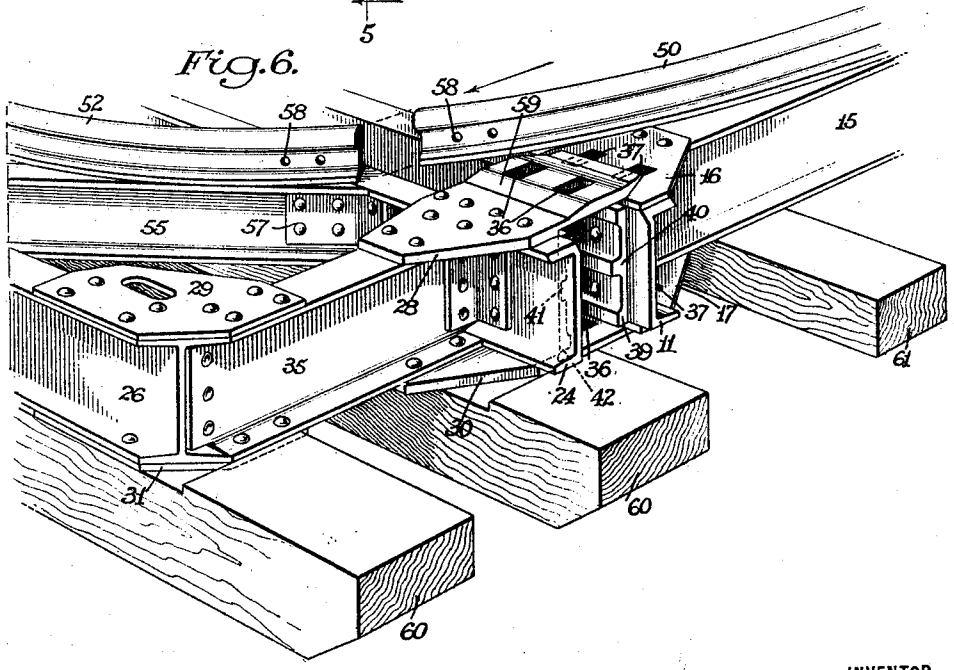


Fig. 6.



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BED SILL FOR PILE DRIVERS.

1,407,003. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed March 25, 1921. Serial No. 455,561.

To all whom it may concern:

Be it known that I, HERMAN R. SMITH, a citizen of the United States of America, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bed Sills for Pile Drivers, of which the following is a full, clear, and exact description.

This invention relates to bedsills for pile drivers, and its chief object is to provide a bedsill composed of sections, which can be secured together in a simple and effective manner for use and which can be readily taken apart for convenience in handling and shipping. A further object is to provide a sectional bedsill (on which the turntable revolves which supports the tower or "lead") in which the several sections of the frame are locked together by removable keys driven into place, so as to exclude as far as possible the use of bolts.

In the preferred form of the invention my improved bedsill is composed of a center section, and a pair of wing-sections adapted to be arranged in the plane of the center section at the sides thereof, edge to edge. Each section in this form comprises a rectangular frame of steel members, as I-beams and channels, and the members at the meeting edges are provided with laterally extending plates which overlap the adjacent section above and below, forming socket joints which are rigidly connected or locked together by vertical keys set in vertically aligned apertures in the cooperating parts of the joint. Each section of the frame is mounted on timber skids so that the assembled bedsill can be shifted forwardly and rearwardly on the usual rollers, and at the center of the middle or center section is a bearing for the turntable pivot. Each section also carries an arc of the rail-circle, composed preferably of short lengths of T-rail bent to circular form.

The embodiment outlined above is illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of the bedsill properly assembled.

Fig. 2 is a longitudinal section on the two planes indicated by the line 2—2 in Fig. 1.

Fig. 3 is a partial cross section on line 3—3 of Fig. 1.

Fig. 4 is a detail section on line 4—4, and Fig. 5 is a detail section on line 5—5 of Fig. 4, illustrating one of the socket-joints locked together by tapered keys.

Fig. 6 is a detail perspective view, on a larger scale, showing one of the joints in the course of being assembled.

In the bedsill illustrated the center section of the frame comprises two parallel laterally spaced channels 10, 11, arranged with their flanges extending inwardly, and four transverse I-beams 12, 13, 14, 15, at right angles to the longitudinal side members 10, 11, rigidly and permanently connected thereto by upper and lower gusset plates 16, 17. The transverse members 12—13 and 14—15 are connected by central longitudinal I-beams 18, 19, of less height, attached thereto by gusset plates 20, 21, 22, 23.

The two side or wing sections of the frame are composed of longitudinal inner members 24, 25, in the form of channel irons with their flanges turned outwardly (with respect to the adjacent members 10, 11, of the center section) and longitudinal outer members in the form of I-beams 26, 27, connected by means of upper gusset plates 28, 29, and lower gusset plates 30, 31, to transverse I-beams 32, 33, 34, 35, which are in alignment with the transverse members 12, 13, 14, 15 of the center section, as clearly shown in Fig. 1. The gusset plates 28, 30 are long enough to overhang the plates 16, 17 on the center section, forming sockets to receive the latter, and the four plates, which may be conveniently termed key-plates, are provided with apertures 36, 37, in such position as to be in vertical alignment when the sections are assembled, to receive the keys 38, as clearly indicated in Figs. 4, 5 and 6. As shown, the keys are tapered, and the apertures are of corresponding size, so that as the former are driven into place the sections of the frame are drawn firmly together. Bending movements tending to bend the center section or the wing section downwardly relatively to the other are taken in tension by the lower gusset or joint-plates and in compression by the upper plates, as will be readily understood. At each set of joint-plates one of the channel members, as 10, Fig. 5, and 11, Fig. 6, is provided with a shear plate

39, having a central longitudinal rib 40, adapted to enter a corresponding groove 41 in an otherwise similar shear plate 42 on the adjacent channel member 24, 25, for the purpose of taking any shearing stresses which may be exerted on the sections at the joints. To provide wider bearing surfaces for the keys and to relieve the edges of the key apertures from excessive wear, the flanges of the channels 10, 11 are equipped with wear-blocks 43, Fig. 5, riveted to the flanges.

At the center of the main or center section of the bedsill frame provision is made for the bearing on which the pile driver turntable (not shown) rotates. For this purpose a flat plate 44 is riveted on top of the transverse members 13, 14, which, it will be seen, are closer to each other than to the end members 12, 15. The plate is also supported by longitudinal channels 45, Fig. 3, connected to the members 13, 14 by angle pieces of which one is shown at 46, and is also supported centrally by two flanged members or channels, of which one is shown at 47 in the figure just mentioned. The plate 44 is provided at its center with an opening 48 for the turntable pivot, not shown.

The rail-circle, concentric with the bearing aperture 48, is composed of two T-rail sections 49, 50, arranged diametrically opposite to each other on the center frame-section and secured to the members 10, 11, 12 and 15 thereof in any convenient manner, not shown; and two sections 51, 52, also diametrically opposite to each other on the side or wing sections and secured to the members 25—27, 24—26 thereof. Diagonal supports 53, 54, 55, 56 are also provided for the rail sections on the wing frame-sections, these diagonal supports being in the form of channels or I-beams secured to the members 25—27 and 24—26 by means of angle pieces, as 57, Fig. 6. If desired, the several sections of the rail circle may be connected together by means of fishplates (not shown) secured by bolts through the holes 58, Fig. 6.

The swing-line, not shown, by which the turntable is revolved, encircles the rail circle on the outside, and to prevent the line from catching on the keys which lock the socket-joints outside of the rail circle, the upper socket-plates 28 (see Fig. 6) are provided with beveled elevations, as 59, over which the line can slide easily, and the keys are shortened so that their upper ends will be flush with or but slightly above the plates, as indicated in Fig. 3.

The center and side sections of the frame are mounted on timber skids, 60, 61, 62, which extend longitudinally as indicated in Fig. 1.

It is here to be understood that the invention is not limited to the specific construction herein illustrated and described but can be embodied in other forms without departure from its spirit.

I claim:

1. A bedsill for pile drivers, comprising a plurality of bedsill sections arranged edge to edge in the same plane, cooperating locking devices at the adjoining edges to secure the sections releasably together, and a rail circle composed of arc-shaped rail sections abutting end to end and secured on the respective bedsill sections.

2. A bedsill for pile drivers, comprising a plurality of sections arranged edge to edge in the same plane, socket-joints at the adjoining edges of the sections, and removable keys cooperating with the socket joints to lock the same.

3. A bedsill for pile drivers, comprising a plurality of sections arranged edge to edge in the same plane and having at adjoining edges a plurality of key-plates extending laterally from one section and overhanging the adjoining section above and below, and removable keys extending through said key-plates and the overlapped portions of the adjoining section, to prevent relative lateral and longitudinal displacement of the sections and to resist bending stresses.

4. A bedsill for pile drivers, comprising a plurality of sections arranged edge to edge in the same plane, socket-joints at the adjoining edges of the sections, removable keys cooperating with the socket-joints to lock the same, and shear-plates carried by the adjoining edges of the sections and cooperating to resist shearing stresses.

5. A bedsill for pile drivers, comprising a plurality of sections arranged edge to edge in the same plane and having at adjoining edges a plurality of key-plates extending laterally from one section and overhanging the adjoining section above and below, removable keys extending through said key plates and the overlapped portions of the adjoining section, to prevent relative lateral and longitudinal displacement of the sections and to resist bending stresses, and shear-plates carried by the adjoining edges of the sections and cooperating to resist shearing stresses.

6. In a sectional bedsill for pile drivers, a frame section having a longitudinal side-member and a plurality of transverse members, and gusset-plates connecting the said side and transverse members together above and below; a frame section alongside of the other in the same plane, having a longitudinal side-member adjoining the side member of the other section, a plurality of transverse members, and gusset-plates connecting together the said side and transverse members of the second section above and below; the gusset-plates of one scetion being extended laterally to form sockets embracing

the gusset-plates of the other section; and removable keys extending vertically through the overlapping and overlapped gusset-plates to lock the sections together.

7. In a sectional bedsill for pile drivers, a frame section having longitudinal side members and a plurality of transverse members, and gusset-plates connecting the said side and transverse members together above and below; a frame section at the side of the other in the same plane, having a longitudinal member adjoining the said side member of the other section, a plurality of transverse members, gusset-plates connecting together the said side and transverse members of the second section above and below; the gusset-plates of one section being extended laterally to overlap the gusset-plates of the other section, above and below; removable keys extending vertically through the overlapping and overlapped gusset-plates to lock the sections together; and cooperating shear-plates on the adjoining side members to resist shearing stresses.

In testimony whereof I hereto affix my signature.

HERMAN R. SMITH.