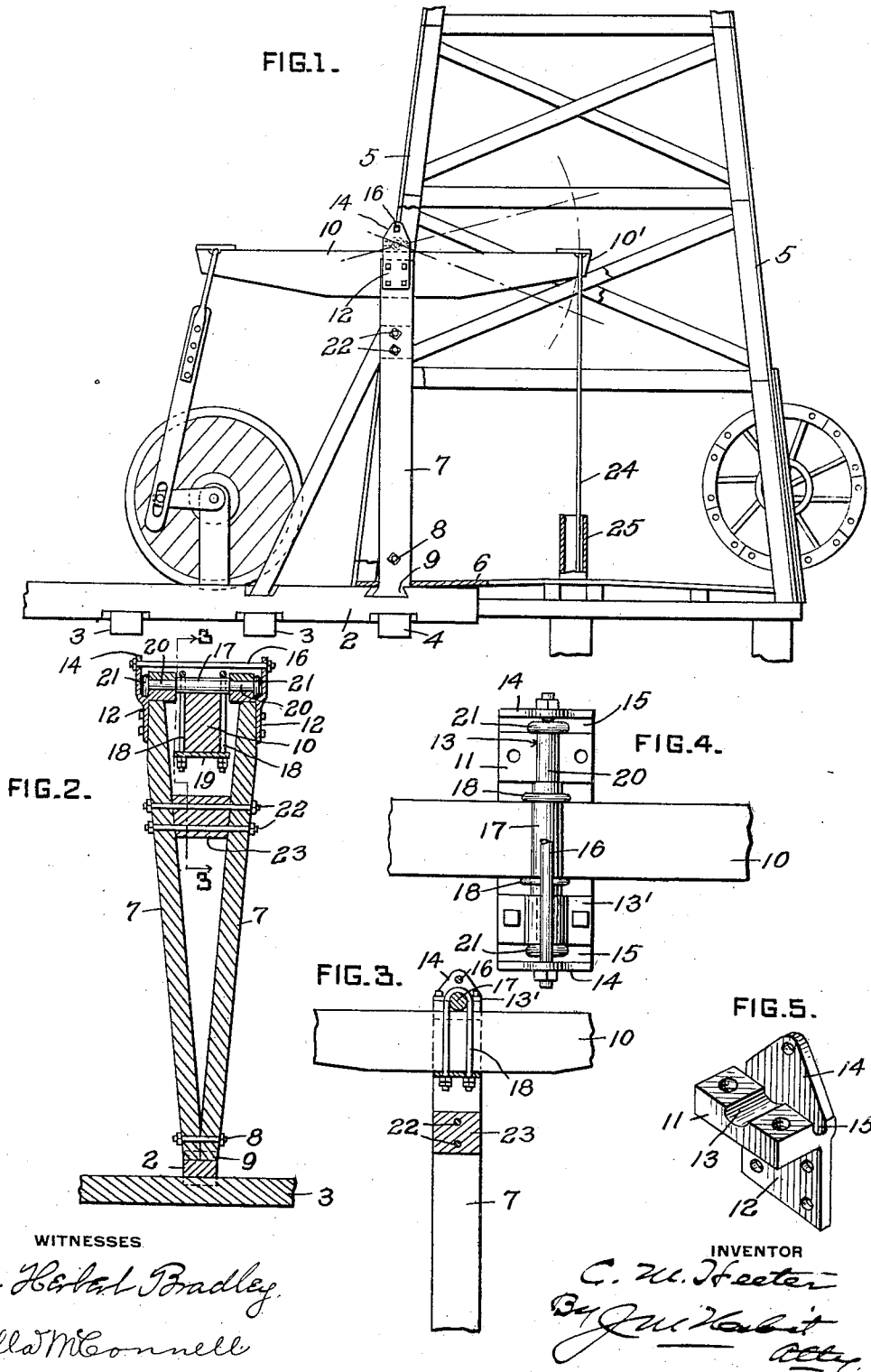


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 SAMSON POST AND RIG IRON.
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WITNESSES
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SAMSON-POST AND RIG-IRON.

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To all whom it may concern:

Be it known that I, CHARLES M. HEETER, a citizen of the United States, and resident of Butler, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Samson-Posts and Rig-Irons, of which the following is a specification.

The object of this invention is to provide an improved samson post which is designed especially for an under-slung walking beam, *i. e.*, a beam journaled at the upper side instead of in the more usual location at the lower side. This arrangement necessitates the provision of sufficient space between and beneath the bearings to accommodate the walking beam, also suitable means for supporting the separated bearings. In the present invention due regard is had for these requirements without interfering with the necessary substantial construction, and particularly with regard to solidly mounting the samson post on the main sill. This sill is in effect the back bone of the rig ground work. It extends well outwardly from the derrick and rests on several cross sills or ties, the latter also serving to support the band wheel and other associated parts. The main sill holds the several parts in alinement with each other and with the well, whereby the walking beam is maintained in proper position relatively to the well. With the present invention, the substantial mounting of the samson post on the main sill is not interfered with, the construction in this regard not being essentially different from the usual practice.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a well rig with the improved samson post in position therein. Fig. 2 is a sectional elevation of the samson post taken at right angles to the position in which it is shown in Fig. 1. Fig. 3 is a vertical section taken on line 3-3 of Fig. 2. Fig. 4 is a view of the samson post and walking beam shown partly in top plan and partly in sectional plan. Fig. 5 is a detail view of one of the guides.

Referring to the drawings, 2 designates the main sill of a well rig which is mounted on cross ties 3 and derrick sill 4, the latter constituting a support for two of the derrick corner posts 5, one of the latter being broken away in Fig. 1 to avoid obscuring the samson post. The main sill extends well beneath the derrick floor 6 as shown.

The samson post consists of two uprights 7 having their lower ends tied together by bolt 8 and in engagement with each other and with the lower extremity of the two-part post mortised in the main sill as indicated at 9. This is the usual manner of securing the post to the main sill, but in the former practice the post consists of a single heavy upright. In the present invention, the two uprights 7 comprising the post diverge upwardly with their upper ends spaced apart sufficiently to provide space to accommodate the walking beam 10. Secured to and forming an upward continuation of each upright 7 is a bearing-forming head 11 which is flanged downwardly on its outer side at 12 and apertured for bolting to upright 7, and extending upwardly from the head and spaced outwardly from the bearing socket 13 is the up-standing arm 14, the position of said arm resulting in the formation of a space 15 between it and the upper portion of block 11. Above the beam the two arms 14 are secured together by the transverse tie-rod 16.

The beam is suspended in the space between the upper ends of uprights 7 on transverse shaft 17, being secured thereto by the U-shaped bolts 18 and the clamping plate 19. The projecting portions of shaft 17 at opposite sides of the beam form trunnions 20 which bear in sockets 13 of heads 11, and at the extremities of the trunnions are the knob-like enlargements 21 which project into spaces 15, and with the bearing caps 13 in place the knobs on the trunnion extremities provide for tying together the bearings, thereby further reinforcing the two-part post against spreading. This transverse reinforcement in addition to tie-rod 16, also transverses bolts 22 and block 23 beneath the beam, provide a post that is quite as strong as though made of a single heavy timber, and at the same time the mounting of the two-part post on the main sill is not different from the single-timber construction.

The advantages of the invention will be readily apparent to those skilled in the art. Owing to the scarcity of timber, the two uprights 7 each of smaller dimensions than the usual single timber cost materially less than the latter, and the under-slung mounting for the walking beam permits of the use of a much shorter beam than when the beam is journaled at its under side, this being

due to the fact that with the journal at the top of the beam the deflection of the tool or pump-actuating beam extremity 10' is comparatively slight in moving either upward or downward, far less than it would be if it were attempted to fulcrum so short a beam at its under side, the result being that when drilling, the lateral deflection of cable 24 is not sufficient to cause it to wear unduly as a result of its engagement with stand-pipe 25 of the well. The shortening of the beam results in setting the samson post closer to the derrick, thereby shortening the main sill and making the ground frame-work more compact.

I claim:

1. The combination with a samson post consisting of two uprights spaced apart at their upper ends, of alined bearings secured to the uprights and consisting of heads resting on the extremities thereof and provided with journal seats, flanges depending from the heads and secured to the uprights, and journals for a walking beam rotatable in said seats.

2. The combination with a samson post consisting of two uprights spaced apart at their upper ends, of alined bearings secured to the uprights and consisting of heads resting on the extremities thereof and provided with journal seats, flanges projecting upwardly from the heads, walking beam journals mounted in said seats, and a tie-rod above and paralleling said journals and connecting said upwardly extending flanges.

3. The combination with a samson post consisting of two uprights spaced apart at their upper ends, of alined bearings secured to the uprights and consisting of heads resting on the extremities thereof and provided with journal seats, flanges extending upwardly from the outer sides of the heads, the flanges spaced outwardly from the seats, walking beam journals mounted in the seats and having knob-like extremities

extending into the spaces between the seats and the upwardly extending flanges, and a tie-rod above and paralleling the journals and secured to the upwardly extending flanges.

4. The combination with a samson post consisting of two uprights spaced apart at their upper ends, of alined bearings mounted on the uprights, a walking beam journal shaft mounted in the bearings, and enlargements on the extremities of the shaft engaging the outer sides of the bearings, whereby the shaft comprises a tie for holding the bearings from spreading apart.

5. The combination of the main sill of a well rig, a samson post consisting of two uprights secured together at their lower ends and mounted on the main sill as one post, separating means between said uprights intermediate of their ends, forming spaced apart upper ends of said uprights, bearings secured to the separated upper ends of the uprights, connecting means for said separated upper ends of said uprights, a walking beam adapted to oscillate between said uprights, and trunnions projecting from the walking beam and mounted in said bearings.

6. The combination of a well rig including the main sill forming a portion of the rig foundation and projecting outwardly therefrom, of a samson post consisting of two uprights spaced apart at their upper ends to receive separated walking beam bearings, said uprights converging below said spaced apart upper ends and secured together to form a unitary post at their lower ends, said unitary post resting on and secured to the main sill.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. HEETER.

Witnesses:

HOWARD I. PAINTER,
J. B. DICK.