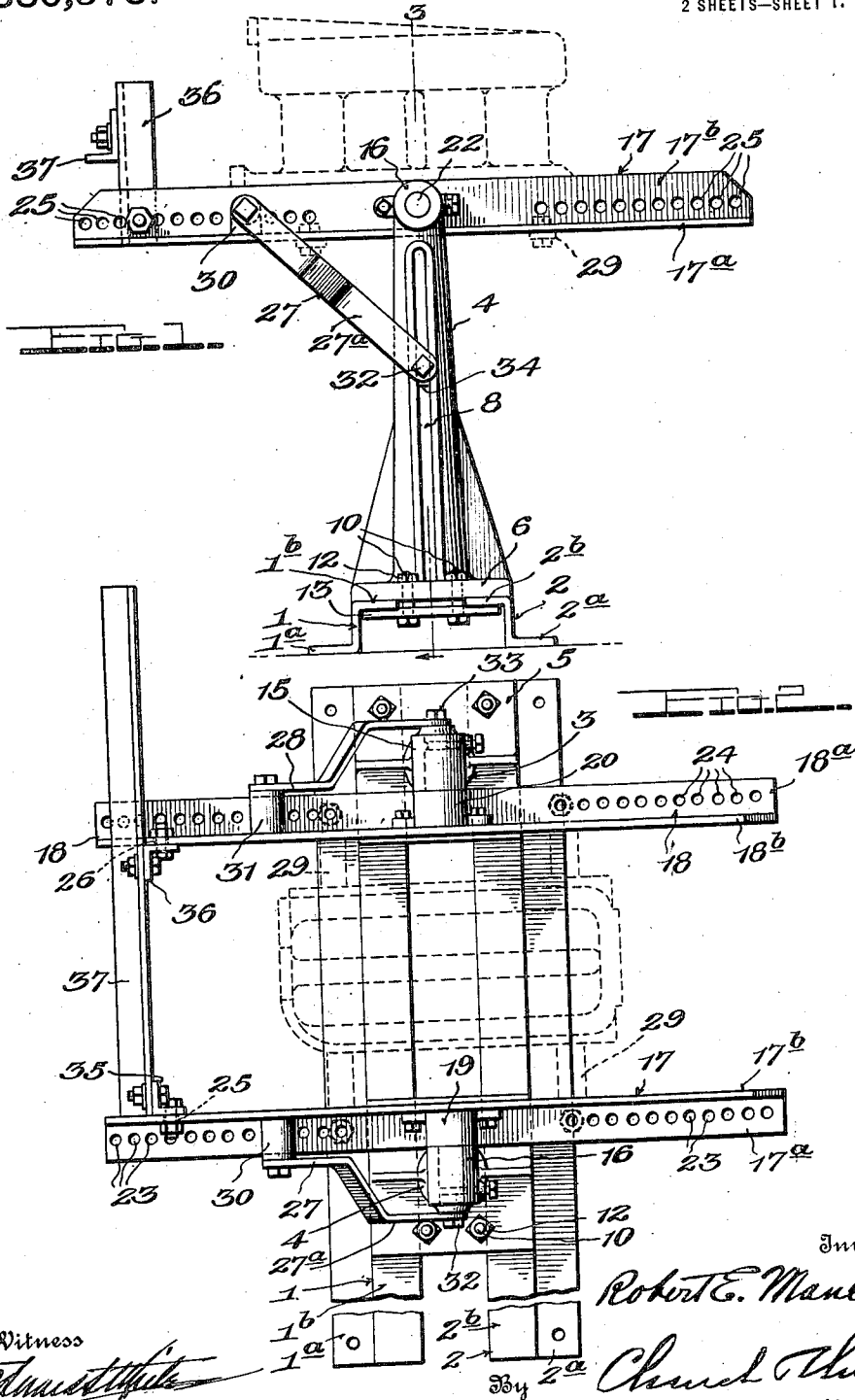


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ENGINE STAND.
APPLICATION FILED JULY 18, 1917.

Patented June 7, 1921.
2 SHEETS—SHEET 1.

1,380,573.



Witness

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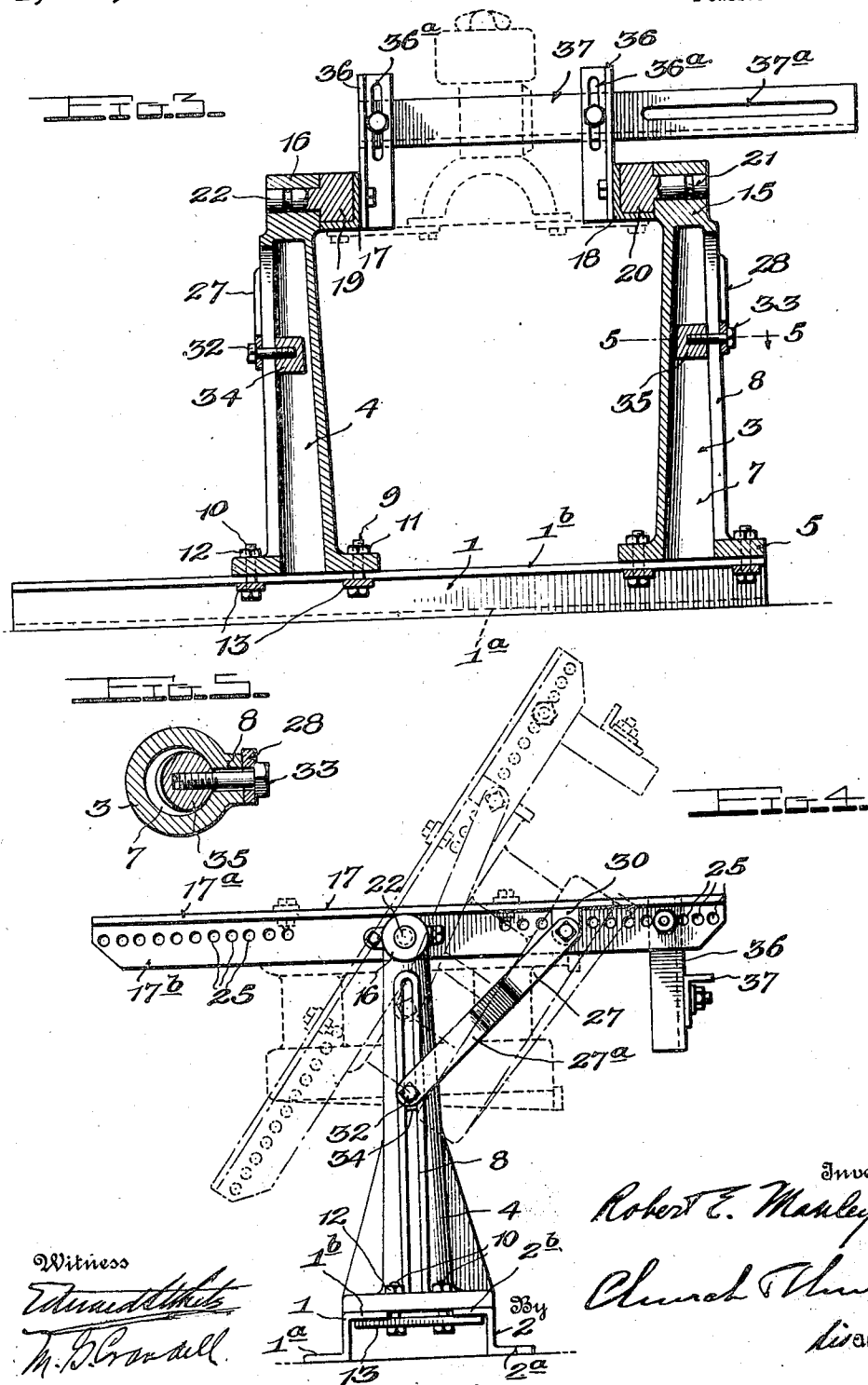
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UNITED STATES PATENT OFFICE.

ROBERT E. MANLEY, OF YORK, PENNSYLVANIA, ASSIGNOR TO THE MANLEY MANUFACTURING COMPANY, OF YORK, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ENGINE-STAND.

1,380,573.

Specification of Letters Patent.

Patented June 7, 1921.

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To all whom it may concern:

Be it known that I, ROBERT E. MANLEY, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Engine-Stands; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

The essential object of this invention is the provision of an improved stand which is especially adapted for supporting engines, particularly of the internal combustion type, when overhauling the same. A stand constructed in accordance with this invention is capable of supporting the engine at any desired position, so that the workmen can get at the engine from every way. It is also provided with a great variety of adjustments, features permitting the stand to be accommodated readily for the support of engines of different sizes and types.

With the above and other objects in view, the invention consists in certain constructions, arrangements and combinations of parts hereinafter described in the preferred form and particularly pointed out in the claims at the end of the specification.

In the drawings:—

Figure 1 is a side elevation of an engine stand constructed in accordance with the present improvements.

Fig. 2 is a top plan view of the same.

Fig. 3 is a vertical sectional elevation taken in a plane indicated by the line 3—3 in Fig. 1.

Fig. 4 is a view similar to Fig. 1 illustrating different positions of the swinging supporting elements of the stand.

Fig. 5 is a detail horizontal section taken in a plane indicated by the line 5—5 of Fig. 3.

Like reference characters throughout the several figures indicate the same parts.

As shown in the drawings, the base of the engine stand is constructed of a pair of parallel, spaced metal bars of commercial cross section; for example, the bars 1, 2, constituting the base may be ordinary Z bars having lower outwardly-extending horizontal flanged portions 1^a, 2^a, adapted to rest on and be secured to the floor, and upper, inwardly extending horizontal bars 1^b, 2^b.

Mounted on the base thus constructed and resting on the upper horizontal flanged portions 1^b, 2^b of the base is a pair of uprights 3, 4. Said uprights are preferably formed of vertical cast iron cored columns provided at their lower ends with integral horizontal plate members 5, 6, which rest on the base of the stand. It will be noted that each upright is provided with an inner vertically extending chamber 7 which communicates with the exterior of the upright by means of a vertically extending slot 8. The purpose of the chamber and the slot will hereinafter appear.

In order to accommodate the stand to engines of varying widths, at least one of the uprights is made adjustable horizontally with respect to the other, said adjustment being effected as follows: Passing through the horizontal plate member 6 of the upright 4 are two pairs of bolts 9, 10, each pair of which is located close enough to the other pair to permit the shanks thereof to pass between the inner edges of the flanged portions 1^b, 2^b of the base, as shown more particularly in Figs. 1 to 4. Carried by the bolts 9, 10 are clamping bars 13 extending laterally with respect to the base, which clamping bars are adapted to engage the bottom faces of the flanged portions 1^b, 2^b. Two pairs of nuts 11, 12, are screwed on the upper ends of the shanks of said bolts 9, 10, and, by tightening up the nuts 11, 12, the clamping bars will be drawn into firm engagement with the portions 1^b, 2^b of the base. When it is desired to shift the upright 4 along the base the several nuts 11, 12 will be loosened so as to release the clamping bars 13. This being accomplished the upright 4 may be readily slipped along the base to the desired point and clamped into position. It is not necessary that the other upright 3 be adjustable and it will be found convenient to rigidly secure said upright to the base by bolts passing through the horizontal plate 5 and portions 1^b, 2^b of the base.

At their upper ends the uprights 3, 4, are adapted for the support of a swinging engine supporting frame and for this purpose the uprights are formed with horizontal bearings 15, 16, respectively. The swinging frame consists of a pair of movable supporting elements or bars 17, 18, extending laterally with respect to the base of the stand. Secured to the bars 17, 18, sub-

stantially intermediate their ends are heads 19, 20, respectively, provided with pintles 21, 22, which pintles are journaled in the horizontal bearings 15, 16, of the uprights 3, 4. Thus, the supporting elements or bars 17, 18, are pivotally mounted at the upper ends of the uprights 3, 4, and may be swung through nearly a complete circle of 360° to any angle of position with respect to said uprights. The supporting bars 17, 18, are conveniently angle bars having their horizontal flanged portions 17^a, 18^a, extending oppositely away from their vertical flanged portions 17^b, 18^b. Arranged in a series extending toward each end of each bar are holes 23, 24, respectively, formed in the horizontal portions 17^a, 18^a. The vertical portions 17^b, 18^b, of the bars are similarly provided at each end with holes 25, 26. These holes permit engines of varying sizes as to length to be supported between the bars 17, 18 by the connecting pieces 29, as shown in Figs. 2 and 3. Said connecting pieces may be secured to the base of the engine and also by bolts passing through the proper holes 23, 24 in the bars 17, 18.

For supporting and retaining the bars 17, 18 in any one of their positions of adjustment with respect to the uprights 3, 4, side braces 27, 28 are provided. As shown in Fig. 2, the upper ends of the side braces are pivotally mounted on heads 30, 31, which project respectively from the bars 17, 18, the pivotal points of the side braces being located beyond the pivotal points of the bars 17, 18. At their lower ends, the side braces 27, 28 are respectively provided with headed studs 32, 33, which are rotatably mounted in the side braces and project laterally into the interior of the upright members 3, 4, through the vertically-disposed slots 8. The inner ends of said studs 32, 33 are screw-threaded, as shown, and screwed thereon are threaded clamping blocks 34, 35 which are located within the hollow upright members 3, 4. By loosening the studs 32, 33 the clamping blocks 34, 35 are respectively shifted out of engagement with the wall of the upright members, and the studs 32, 33 are thus free to slide within the slots 8. When the parts are so adjusted the bars 17, 18 may be tilted to any desired angle relatively to the upright members, thereby permitting the engine supported thereon to be shifted to the most convenient position. The bars 17, 18 may be locked in their angular position of adjustment by the simple expedient of tightening up the studs 31, 32 so as to cause the clamping blocks 34, 35 to firmly engage the walls of the upright members. In order to permit the side braces to clear the upright members, when the side braces are moved, incident to an adjustment of the bars 17, 18, the side braces are offset as shown at 27^a, 28^a.

Provision is also made for supporting three-point suspension engines upon the frame consisting of the bars 17, 18. For this purpose the bars 17, 18 are provided with relatively vertical supports 36, respectively mounted on opposite sides thereof by nuts and bolts passing through any two of the holes 25 and 26,—a construction permitting adjustment of the vertical supports longitudinally of the bars 17, 18. Connecting the supports 36 is a bar 37 which extends laterally of the bars 17, 18. Said bar 37 may be secured to the supports 36 by means of nuts and bolts, the latter being adapted to pass through vertically extending slots 36^a in the vertical supports, thereby providing a vertical adjustment of the bar 37 relatively to the bars 17, 18. The bar 37 is furthermore provided with a laterally extending slot 37^a which is adapted to receive one of the bolts which connects the bar to the adjacent vertical support 36. Thus, the bar 37 is also laterally adjustable coincident with the adjustment of the vertical supporting member 4. In mounting a three-point suspension engine on the pivoted frame, two of the points of suspension are mounted on the bars 17, 18, and the third point of suspension is mounted on the bar 37.

What is claimed is:

1. A supporting member, a plurality of upright members secured thereto, a plurality of work holding elements coaxially pivoted one on each of said upright members providing an unobstructed passage-way, means for securing an engine to said work holding elements, means connected to one of said work holding elements and to the upright member on which it is pivoted for holding said elements in desired adjusted position, and similar means for the other holding element and the upright member on which it is pivoted.

2. A base, an upright member secured to said base, a second upright member adjustably secured to said base and movable with respect to said first mentioned upright member, a work supporting member pivoted to each of said upright members, a third work supporting member adjustably connected to each of said work holding members, thus forming a frame having one end open, and means for holding a plurality of said work holding members in adjusted position so as to maintain said frame in such position that the open end of the same may be above or below the said pivots.

3. A stand for supporting engines and like devices, comprising a pair of upright members, one of said upright members being adjustable relatively to the other, means for retaining said adjustable upright member in adjusted position, movable supporting elements pivotally mounted on the respective

upright members, whereby an engine may be supported between said upright members in different angular positions of adjustment with respect to said upright members, means
5 for retaining said movable supporting elements in any one of their angular positions, and an adjustable supporting bar extending laterally of and connecting one end of the movable supporting elements, substantially
10 as described.

4. A stand for supporting engines and like devices, comprising a pair of upright members, one of said upright members being adjustable relatively to the other, means
15 for retaining said adjustable upright member in adjusted position, movable supporting elements pivotally mounted on the respective upright members, whereby an engine may be supported between said upright
20 members in different angular positions of adjustment with respect to said upright members, means for retaining said movable supporting elements in any one of their angular positions, and a vertically and longi-
25 tudinally adjustable supporting bar extend-

ing laterally of and connecting one end of the movable supporting elements, substantially as described.

5. A stand for supporting engines and the like, comprising a pair of hollow slotted
30 upright members, movable supporting bars pivotally mounted on the respective upright members, whereby an engine may be supported between said upright members in different angular positions of adjustment with
35 respect to said upright members, side braces pivotally mounted at their ends on the supporting bars beyond the pivotal points of the latter, laterally projecting threaded studs rotatably mounted in the opposite
40 ends of the side braces and extending inwardly through the slots of the upright members and threaded locking blocks within said upright members and mounted on the
45 threaded ends of said studs, whereby rotation of the latter will be effective to lock said side braces in fixed position, substantially as described.

ROBERT E. MANLEY.