J. E. ALBINSON.

PIPE VISE STAND.

APPLICATION FILED MAR. 31, 1921.

1,426,531. Patented Aug. 22, 1922.

2 SHEETS—SHEET 1.

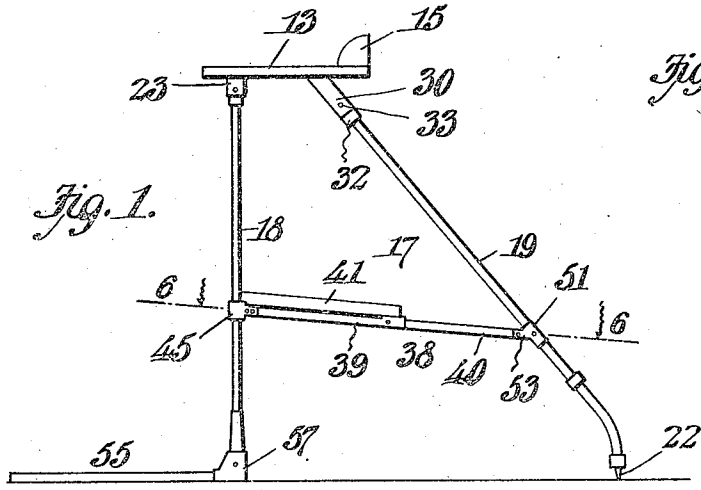


Fig. 1.

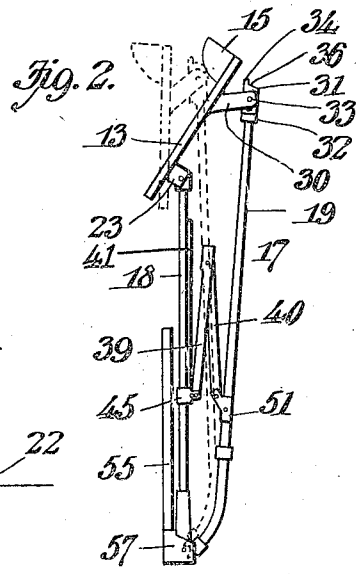


Fig. 2.

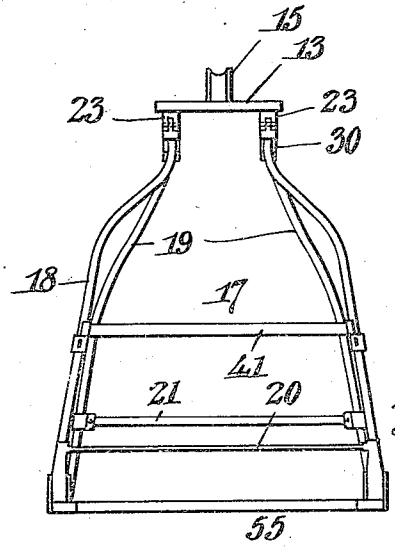


Fig. 3.

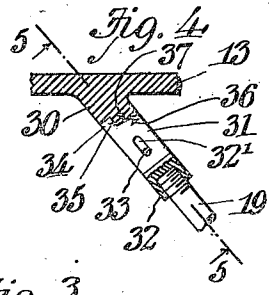


Fig. 4.

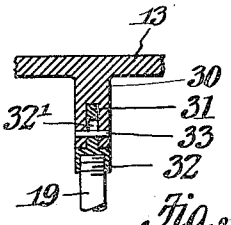
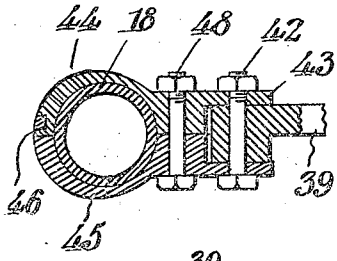


Fig. 5.



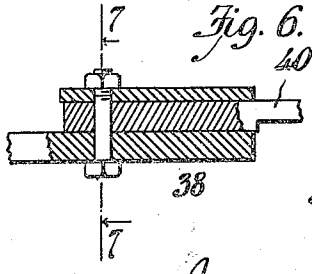
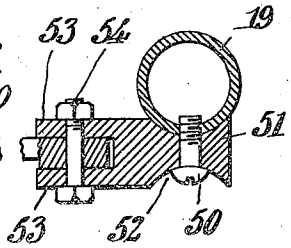


Fig. 6.



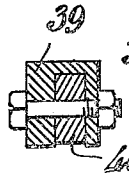


Fig. 7.

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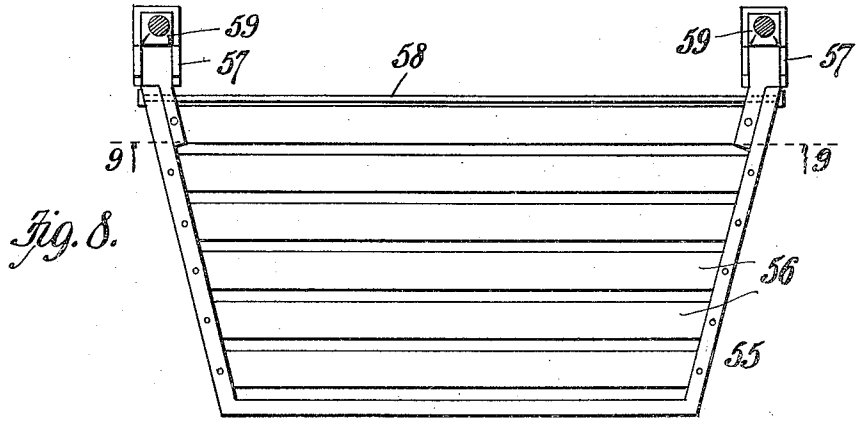


Fig. 8.

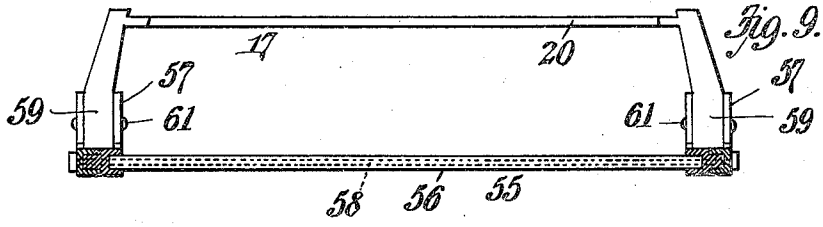


Fig. 9.

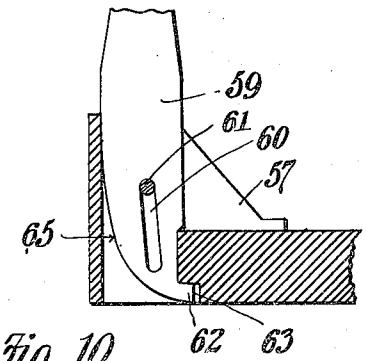


Fig. 10.

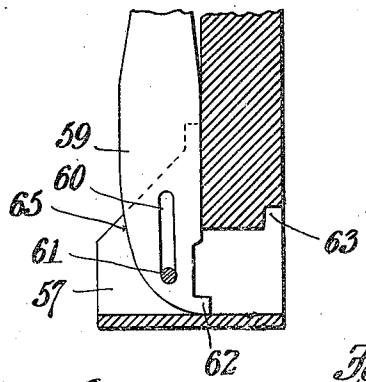


Fig. 11.

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BY

Dwight A. Gill. ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES E. ALBINSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

PIPE VISE STAND.

1,426,531. Specification of Letters Patent. **Patented Aug. 22, 1922.**

Application filed March 31, 1921. Serial No. 457,405.

To all whom it may concern:

Be it known that JAMES E. ALBINSON, a citizen of the United States, residing at Washington, in the District of Columbia, has invented certain new and useful Improvements in Pipe Vise Stands, of which the following is a specification.

This invention relates to pipe vise stands, having particular reference to portable and collapsible stands of this character, an important object of the invention being to provide a vise stand of comparatively light construction so that the same may be readily carried about or transported, which may be compactly folded so as to be easily handled, which occupies but a small amount of space when collapsed, which may be easily set up when required, which will provide a rigid structure when set up, and with which a variety of types or sizes of vises may be used.

A further object is to provide a stand or bench of the general character set forth which is of such construction that the strains to which the same must necessarily be subjected when in use will be equally distributed to all of its supporting elements, whereby rigidity of the stand when in use is at all times assured and wobbling of the same is obviated.

A further object is to provide improved means for maintaining the stand firmly in operative or erected position, and in the manner of mounting the said means upon the stand.

The invention has for a further object to provide a stand of that character wherein a vise table or bench is employed, also a foot board or platform associated with the stand, and whereby means of an improved nature is used for connecting the frame to the table to permit of the latter assuming certain positions when collapsed, and further characterized by improved connections between the said platform and the stand.

With these objects in view, together with others which will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts, all as will be described more fully hereinafter, illustrated in the accompanying drawings, and particularly pointed out in the claims.

In the drawings:—

Fig. 1 is a side elevation of a vise stand constructed in accordance with the invention, the stand being shown in operative or set up position,

Fig. 2 is a similar view of the stand in collapsed position,

Fig. 3 is a front elevation of the stand in set up position,

Fig. 4 is a slightly enlarged fragmentary sectional view, illustrating the means employed for connecting the rear legs of the stand with the table,

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4,

Fig. 6 is a sectional plan view taken on line 6—6 of Fig. 1,

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6,

Fig. 8 is a horizontal sectional view taken through the lower portions of the front legs of the stand and showing the means of connecting the feet of the stand with the platform,

Fig. 9 is a sectional view taken substantially upon line 9—9 of Fig. 8,

Fig. 10 is an enlarged fragmentary view showing the connection between the foot of the stand and the platform, the view showing the parts as they will appear when the stand is set up, and

Fig. 11 is a similar view of the parts when the platform is in folded position.

The base or platform or table upon which the vise is to be attached is indicated at 13, and comprises a plate of metal or other material of sufficient size to accommodate the vise and to resist the pressures to which the table must necessarily be subjected. The table is preferably of such type that various sizes or styles of vises may be accommodated, in order that the stand may be employed in a number of uses, and any preferred means may be resorted to in adapting the vise to the table. It will be understood, of course, that devices other than vises may be applied to the table if desired, and though the invention is described as designed primarily for the accommodation of vises, its use is not to be understood as being so confined. Near the rear end of the table there is provided a former 15, affording means whereby pipes or rods may be bent or shaped, as will be understood.

The stand for the vise bench or table is indicated generally at 17, and comprises front and rear legs 18 and 19 respectively. These legs are arranged in pairs as shown,

the legs of each pair being disposed relatively far apart at their lower ends to insure stability, and being extended inwardly toward each other at their upper ends to be secured to the under side of the table 13. In the present instance, the legs of the frame are formed of pipe of relatively small diameter, which will prove sufficiently strong in practice to bear the weights and strains incident to the use of the vises, yet being of such light weight to permit of the device being easily handled. Other material, however, may be used in constructing the supporting frame. The front legs of the frame are tied together near their lower ends by a cross bar or rod 20, while the legs of the rear pair are similarly connected by the bar 21; these tie rods thus acting to stabilize the frame, to hold the legs of each pair true, and to assist in distributing the weights and strains equally to all parts of the frame. When in set up position, the front legs are disposed at substantially right angles to the table 13, while the rear legs extend rearwardly beyond the table at an inclined angle therewith. The rear legs are therefore longer than the front legs, and near their outer or free ends are bent or inclined downwardly as shown and provided with feet having relatively sharp prongs 22 to engage in the ground or a floor to prevent slipping.

The upper ends of the legs are pivotally or hingedly connected to the table 13. To facilitate this connection, spaced apertured projections or members 23 are provided for each of the front legs, the said members in this instance being formed integral with the table 13. The rear end of the table is provided with depending rearwardly inclined projections 30, the lower ends of which are bifurcated as shown to receive tongues 31 at the upper ends of the rear legs 19. The tongues 31 are formed upon the caps or nipples 32 attached to the legs, and are provided with longitudinally disposed slots 32′ to receive pins 33 carried by the projections 30. The upper ends of the tongues 31 are each provided with toes 34 to engage behind shoulders 35 at the bases of the furcated portions of the projections 30; such interlocking engagement of these parts only taking place when the projections 30 and legs 19 are in true alinement with each other and when the pins 33 are at the bases of the slots 32′. When thus positioned the legs 19 will be held against forward swinging movement by engagement of the toes behind the said shoulders, and the legs 19 will be prevented swinging rearwardly by engagement of the surfaces 36 of the tongues 31 with the surfaces 37 at the bases of the bifurcated portions.

The front and rear legs of the frame are connected by the collapsible or foldable brace indicated at 38, to hold the legs against collapsing. This brace comprises the arms 39—40, the former being pivotally connected to the front legs at one end, while the rear ends of the arms 40 are similarly connected with the rear legs of the frame. The adjacent ends of these arms are pivoted together in overlapping relation, and the overlapping portions of the forward arms overhang and rest upon the adjacent portions of the rear arms 40 to prevent the said arms moving downwardly out of alinement with each other.

A tray 41 is hinged between the forward legs of the frame and when swung downwardly rests at its free end upon the arms 39. This tray is capable of swinging upwardly when the device is to be collapsed, and when extended in horizontal position affords a holder for tools, supplies, etc., of the workman.

The forward ends of the brace members 39 are pivoted as at 42 between spaced lugs 43 at the rear ends of clamp sections 44—45, the latter being of arcuate shape and when assembled forming sleeves conforming to the size and shape of the legs 18 of the frame. The forward faces of section 45 are slotted and receive tongues 46 on sections 44; this construction securely yet detachably locking the forward ends of the sections together, while the rear portions of said sections are detachably held together by bolts or screws 48.

The legs 19 at the rear of the supporting frame are closer together than are the legs 18 of the front pair, in order that the frame may be properly collapsed and rendered compact, and the rear ends of arms 40 of the foldable brace must therefore be attached to the outer side of the said rear legs. To the outer side of each rear leg is attached, as by a screw 50, a block 51, the latter being channeled as at 52 upon each side to conform to the contour of the leg 19, and it will be seen that when the screw 19 is tightened the block will be held securely upon the leg and against rotative movement thereon. By channeling the block upon both its inner and outer faces, the said blocks are rendered adaptable to both the right and left hand legs of the rear pair. The upper end of each block is provided with angularly and forwardly projecting spaced ears 53, between which the rear ends of brace arms 40 are pivoted, as at 54.

In connection with the stand, I provide a platform upon which the workman stands, the said platform in addition to affording a comfortable and dry foot rest for the workman, enables the weight of the latter to assist in stabilizing the frame. This platform is indicated at 55, and comprises

a frame formed preferably of angle iron having three sides, the channel or open sides of the frame affording pockets or rests for the transversely disposed platform slats 56. The extremities of the channel iron frame carry clevis members 57, the latter being secured to the irons by rivets or bolts, and the opposite ends of the irons are tied together by the tie rod or bolt 58. The clevis members receive the lower ends of the feet 59 of the front legs of the frame, the said feet being provided with longitudinally disposed slots or recesses 60 to receive pins 61 carried by the clevises. The lower ends of the feet 59 are provided with forwardly projecting toes 62 adapted to engage and interlock with the shoulders 63 in the clevises when the legs of the frame and the platform are disposed at right angles to each other, as shown in Fig. 10. When in this position, the rear portion of the foot of each leg will be in binding engagement with the rear portion of their respective clevises at a point above the pivotal connection of the leg with the clevis. The rearward strain of the frame will therefore be borne by the clevises, while upward movement of the legs will be restrained by engagement of the toes with the shoulder portions 63 of the clevis portions 59. The rear surface of each foot of the forward legs is rounded as at 65, to permit of the feet being turned in the clevises after the toes of the feet have been withdrawn from engagement with the shoulders of the clevises; the said curved or rounded portions permitting of the feet being retracted sufficiently to cause such disengagement. This construction, while affording a rigid connection between the legs and platform when disposed at right angles to each other, enables the platform to be easily swung up against the front legs of the frame to assume a position in a spaced plane wherewith.

In use, the frame will assume the position shown in Figs. 1 and 3. When so set up, the prongs of the rear legs are engaged in the ground or floor, and the shoulders at the point of connection of the rear legs with the table projections will be interlocked, as above described. The clevises and feet of the frame will also be locked together, as shown in Fig. 10. The tray 41 will be swung to horizontal position and will rest upon braces 38. The strains to which the frame will be subjected incident to work being done upon the table will be delivered equally to the front and rear legs of the frame, also to the braces 38 and the connecting tie rods of the front and rear legs respectively. Work performed upon the table by the workman standing upon the platform 55 will necessarily subject the frame to rearward strain, and the rear legs are disposed at the angle illustrated, or at substantially such angle, in order that these strains will be taken up without danger of injuring or twisting the frame.

In folding the frame, the tray 41 is moved upwardly upon its hinges and the braces then "broken" by being moved upwardly. The rear legs are drawn forwardly, and during this movement the table swings upwardly and forwardly at its rear end. When the rear legs have reached their limit of forward movement they will assume the position shown in Fig. 2, spaced from the front legs, and the lower ends of the front and rear legs will be disposed in substantially the same plane. The table will have passed through a movement of substantially ninety degrees, and will be disposed at a slight angle to the front and rear legs of the frame. The platform 55 will be swung upwardly into substantially the same plane with the table, in the manner above described, so that the stand will occupy a comparatively small amount of space and may be easily carried or transported.

The above is a description of the invention in its preferred embodiment, but it will be understood that variations may be made in the minor details of construction and assemblage of parts without departing from the invention as defined by the claims.

I claim:—

1. In a collapsible vise bench, a supporting frame including legs of unequal length pivotally connected at spaced points to said bench, the legs being so arranged and their connection with the bench being such that when the legs are moved into parallel planes their lower ends will be substantially even.

2. In a vise stand, a table, legs pivoted to said table in spaced relation, one pair of said legs being longer than the other pair, and a collapsible brace connecting said legs and maintaining said legs in set up position when extended with their lower ends in the same horizontal plane, and the said table in horizontal position.

3. In a vise stand, a table, legs pivoted to said table in spaced relation, one pair of said legs being longer than the other pair, a collapsible brace connecting said pairs of legs and maintaining the same in set up position when extended with their lower ends in the same horizontal plane and the said table in horizontal position, and a tray carried by the legs of one pair and cooperating with said brace to hold the latter in extended position.

4. In a holder for leg braces, the combination with relatively movable legs, of a brace connecting said legs and comprising a pair of arms pivotally connected together in overlapping relation at their inner ends and pivoted at their outer ends one each to said legs, a shoulder on one of the overlapped

ends of said arms, and a hinged member carried by one of said legs and adapted to rest upon said shoulder to maintain the brace in extended position.

5. In a vise stand, a table, projections of unequal length depending from said table, legs pivoted to said projections, means for holding said legs spaced apart, and the said legs when folded inwardly against the bottom of said table being disposed in substantially the same parallel planes.

6. In a vise stand, a table, projections depending from said table in spaced relation and at differing angles, legs pivoted to said projections, interengaging shoulders on said legs and projections, and the said shoulders of one of said legs limiting the movement of the latter in one direction beyond alinement with the projection.

7. In a vise stand, a table, legs pivoted to said table, a platform pivoted to one of said legs, and interlocking means on said leg and platform for maintaining the said leg at a proper angle with respect to the platform.

8. In a vise stand, a table, a frame supporting said table, a platform, a hinge connection between said platform and said stand, and interlocking members on said platform and said stand to lock the latter against movement in one direction when in set up position.

9. In a vise stand, a leg supporting said stand, a platform, a clevis on said platform to receive said leg, the said leg having a slot therein, a pin on said clevis engaged in said slot, a toe on said leg, a shoulder in said clevis, and the said leg when disposed at a predetermined angle to said platform having its toe engaged with said shoulder and being engaged with a wall of said clevis.

10. In a vise stand, a table, a stand supporting said table and comprising a leg, a platform, a clevis on said platform receiving said leg, a slip joint connection between said clevis and said leg, interlocking toe and shoulder elements on said leg and platform limiting the movement of the leg and platform relatively to each other in one direction, and the slip joint permitting the platform to be folded upon the leg when moved in the opposite direction.

11. In a vise stand, a table, arms depending from said table and being bifurcated at their lower ends, legs pivoted at their upper ends to said bifurcated arms, the said legs capable of moving bodily in one direction relative to said arms, and cooperating means upon said arms and legs adapted when the legs have moved to their limits in one direction to prevent pivotal movement of said legs upon said arms.

12. In a vise stand, a table, a projection on said table, spaced members at one end of said projection, a shoulder at the base of said spaced members, a leg, a cap at one end of said leg, a slotted tongue on said cap confined between said spaced members, a pin extending through said slot, a toe on said tongue adapted to engage with said shoulder, and cooperating faces on said tongue and projection adapted to engage when the toe is engaged with said shoulder.

13. In a device of the class described, a table, fixed projections depending from said table in spaced relation, legs of unequal length pivotally connected to said projections and maintaining the table in parallelism with the plane of the lower ends of the legs when the latter are spread to their limits, and the said legs when brought into parallelism with each other with their lower ends together maintaining said table in parallelism with the said legs.

In testimony whereof I affix my signature.

JAMES E. ALBINSON.