

Feb. 21, 1933.

G. C. NOROS

1,898,384

ADJUSTABLE LEG FOR WORKBENCHES AND THE LIKE

Filed Oct. 5, 1931

2 Sheets-Sheet 1

Fig. 1.

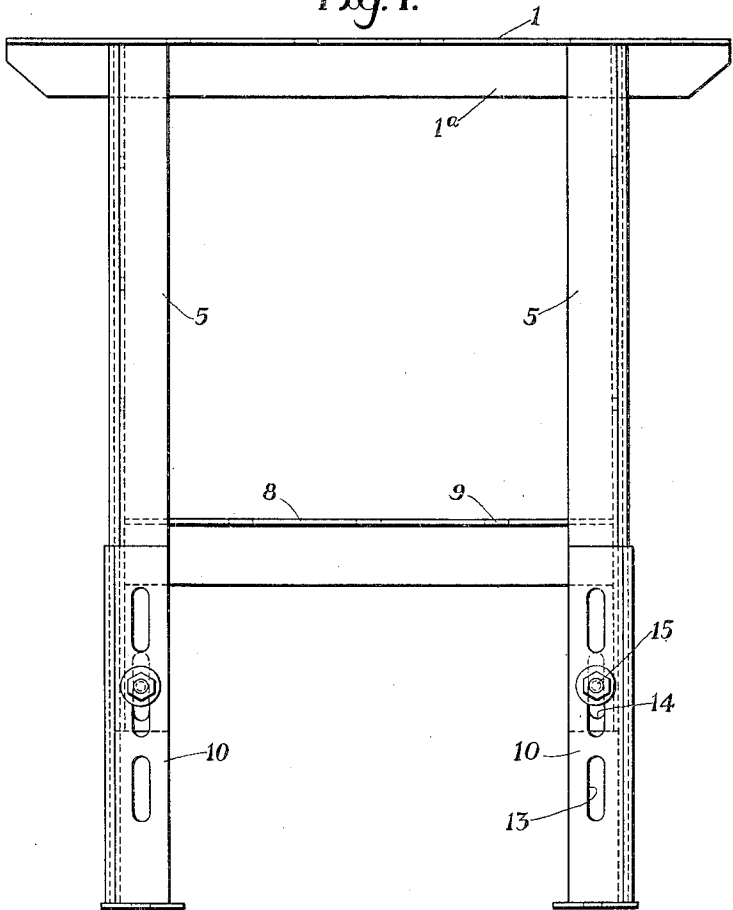


Fig. 2.

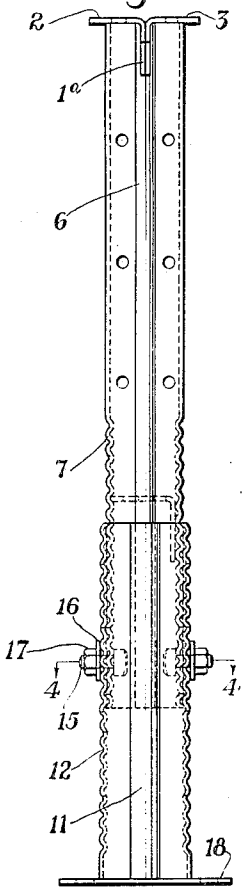


Fig. 3.

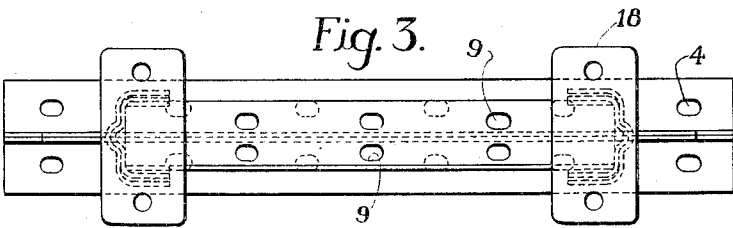


Fig. 4.

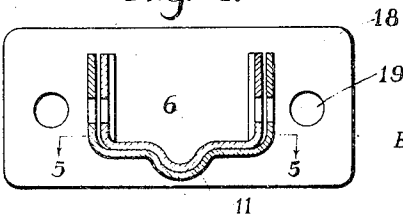
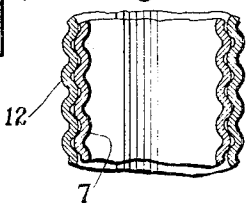


Fig. 5.



INVENTOR.
GEORGE C. NOROS

BY *Blum & Helms*
ATTORNEYS.

Feb. 21, 1933.

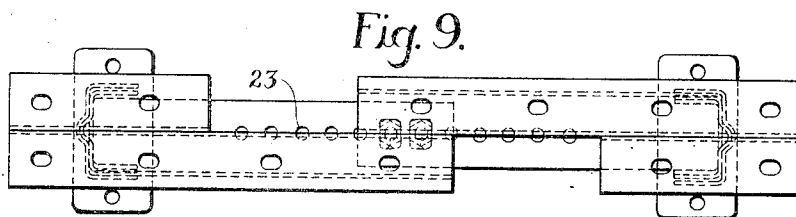
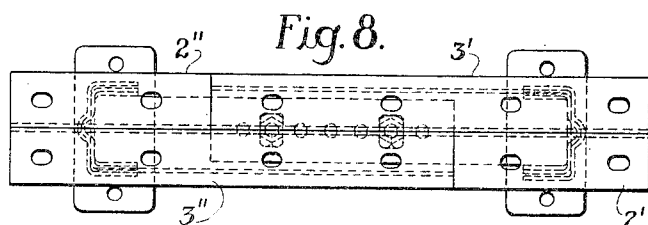
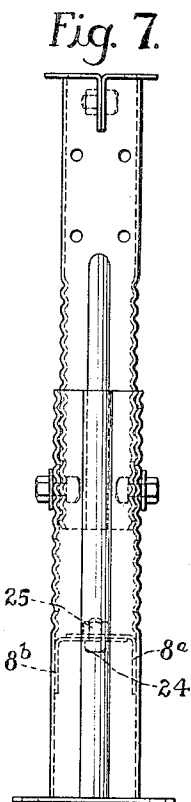
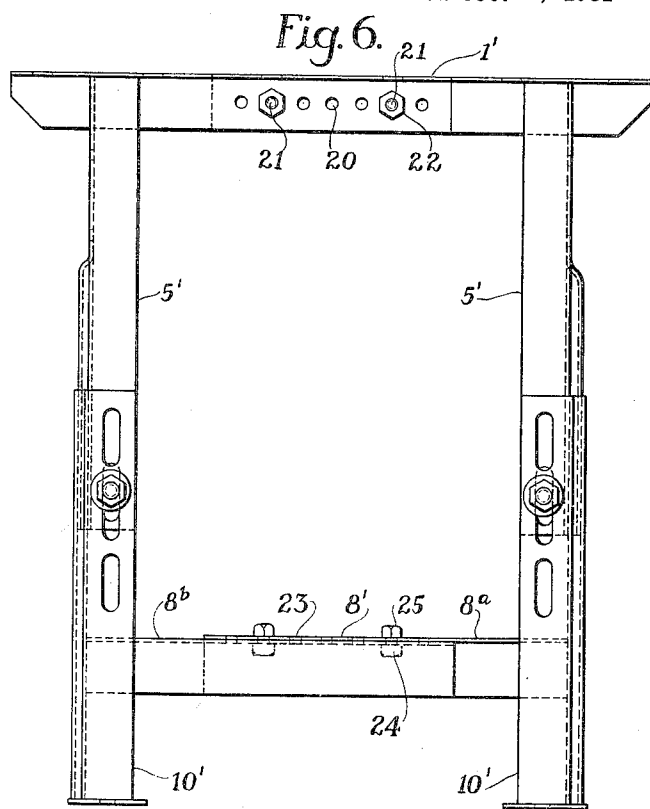
G. C. NOROS

1,898,384

ADJUSTABLE LEG FOR WORKBENCHES AND THE LIKE

Filed Oct. 5, 1931

2 Sheets-Sheet 2



INVENTOR.
GEORGE C. NOROS

BY *Blum & Hall*
ATTORNEYS.

UNITED STATES PATENT OFFICE

GEORGE C. NOROS, OF MANHEIM, PENNSYLVANIA, ASSIGNOR TO BOND FOUNDRY AND MACHINE COMPANY, OF MANHEIM, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

ADJUSTABLE LEG FOR WORKBENCHES AND THE LIKE

Application filed October 5, 1931. Serial No. 566,999.

My invention relates to supports for work shop apparatus, and more particularly to an adjustable leg for work benches, tables, stands and like articles usually employed in machine shop, mills and similar establishments.

According to the present practice, articles of the character referred to are usually provided with supports which are made either from cast or forged steel or iron, or are fabricated from rolled or pressed shapes, and formed in accordance with the dimensions required to support the bench or other article at the desired height from the floor. The height of work benches usually varies from about 30" to 36" from the floor to the top of the bench, depending somewhat upon the nature of the work, lighter work being done on higher benches and heavier work on lower ones, and for convenience such benches are therefore manufactured in several standard heights each of which requires legs of different length. It is thus apparent that the manufacture of work benches requires a plurality of different patterns or dies when the legs are cast or forged and various sizes and lengths of rolled or pressed shapes when the legs are made therefrom in order that the demand for benches of the several different standard heights may be suitably met, while, additionally, dealers are required to maintain in stock benches of each of the several different standard heights while when a bench of a height other than standard is desired by a customer, it must be manufactured specially to his order, since insofar as I am aware no satisfactory adjustable bench leg has heretofore been devised.

A principal object of my invention, therefore, is to provide a leg which may be readily adjusted to support a bench or like article at any desired height within the usual limits and which is of rigid and stable construction.

A further object of my invention is to provide a leg of this character which will enable the manufacturer to avoid the necessity of providing bench legs of different lengths according to several heights of the benches desired by the trade, whereby considerable manufacturing economies may be effected and

the diversity of dealers' stocks appreciably reduced.

A still further object of the invention in one of its forms is to provide a leg which is adjustable both horizontally and vertically and which may therefore be adapted for use in a bench of any desired width within limits and which may also be vertically adjusted so as to support the bench at the desired height above the floor.

Other objects, purposes and advantages of the present invention will hereinafter be more particularly referred to or will appear from the following description of certain embodiments thereof in which reference will be had to the accompanying drawings.

Referring now to the drawings, Fig. 1 is a side elevation of one of the said embodiments of my invention showing a bench leg adjustable vertically but of fixed width; Fig. 2 is an end elevation thereof; Fig. 3 a bottom plan view; Fig. 4 a horizontal section taken on the lines 4—4 in Fig. 2, and Fig. 5 a fragmentary vertical section on an enlarged scale on the lines 5—5 in Fig. 4, showing certain details of the adjusting means. Fig. 6 is a view corresponding to Fig. 1 but on a somewhat smaller scale showing another embodiment of the invention in which provision is made for lateral adjustment to accommodate a bench of any desired width within certain limits, the position indicated in Fig. 6 being that assumed by the bench leg when it is to be employed for a relatively narrow bench; Fig. 7 is an end view thereof; Fig. 8 a top plan view of the leg as shown in Fig. 6, and Fig. 9 a corresponding view showing the parts extended to accommodate a bench of relatively greater width. Like characters are used to designate the same parts in the several figures.

My improved bench leg is desirably fabricated from rolled or pressed steel shapes such, for example, as angle irons, channel rails and the like, which are welded together, preferably by electric welding, to form a strong support providing relatively great stability in the bench but of relatively light weight, since by the use of standard shapes the cost of manufacture of the legs is not substan-

tially greater than that of the usual non-adjustable bench legs formed of similar materials which have heretofore been employed, and it will be understood that for each bench

two legs will ordinarily be provided and suitably spaced longitudinally of the bench in the usual way.

Thus, the bench leg shown in Fig. 1 comprises a horizontally extending top rail 1 which may desirably be formed of a pair of steel angle irons 2, 3 welded together to form a T-section rail and provided in its top web with a plurality of holes 4 adapted to receive bolts or screws for securing the bench top thereto. The top rail 1 is supported adjacent its ends from a pair of U-section or channel uprights 5, in the upper ends of which slots are provided to receive the downwardly depending web 1a of the rail, the uprights desirably being secured to the web by electrically welding the parts together. The uprights 5 are each preferably formed with a longitudinal stiffening rib 6 disposed centrally thereof and the lateral webs are provided with a plurality of horizontal corrugations 7 adjacent their lower extremities for a purpose which will hereinafter appear. A horizontal rail 8, desirably formed from an angle iron of suitable length, is welded to the respective uprights at a suitable distance below the top rail and serves as a cross brace to enhance the stability of the bench, the rail 8 also providing a support for the usual shelf extending longitudinally beneath the bench and which, if provided, may be secured to said rail by screws or bolts extending through holes 9 in its horizontal web. Each of the uprights 5 is afforded vertical support by a foot 10, which may desirably be formed of U-section steel, the internal dimensions of which are slightly greater than the corresponding external dimensions of the upright. Each foot 10 is provided with a rib 11 corresponding to the rib 6 and has its lateral webs corrugated as at 12 to correspond to the corrugations 7, whereby the foot may be fitted over the lower extremity of the upright in such manner that the respective corrugations interlock and thus prevent the telescoping of the parts, slots 13 being provided in the side webs of the foot and slots 14 in the lower extremities of the upright to permit bolts 15 to be extended through the webs to secure them in rigid engagement by the aid of a washer 16 and nut 17. It will thus be apparent that when bolts 15 are in position in the webs of the respective uprights as shown in Fig. 2 and the nuts 17 are set up against the washers 16, the parts will be rigidly and securely held in place and, as is clearly shown in Fig. 5, when the respective corrugations are so formed that the sides, as distinguished from the tops and bottoms thereof, are in contact, the tightening of the nuts 17 on the bolts 15 exerts a wedging action be-

tween the corrugations, forcing them into intimate engagement and effectively inhibiting any looseness between the parts which might result in instability of the bench. By removing the bolts the foot 10 may be readily adjusted longitudinally with respect to the upright so as to provide support for the bench at any desired height, the bolts then being replaced to maintain such adjustment.

To increase the area of contact of the bench leg with the floor, rectangular plates 18 may be disposed at the lower extremities of the feet 10 and secured thereto by electric welding, the plates being provided with holes 19 for the passage of screws or bolts by means of which the bench may be fastened to the floor, but it will be understood that these plates are employed for convenience only and may be modified or omitted if desired.

In the form of the invention shown in Figs. 6 to 9 inclusive, I provide means for effecting vertical adjustment of the bench leg which are substantially similar to those shown in the preceding figures. The horizontal rails employed in this form of the invention are, however, adjustable as to length to enable the bench leg to accommodate bench tops of different widths. The top rail 1' therefore comprises a pair of separable units respectively secured to the upper extremities of the uprights 5', and which are formed by welding together a pair of angle irons of unequal length. Thus, the right hand unit of the rail 1', as best shown in Figs. 8 and 9, comprises a relatively short angle iron 2' which is welded to a similar but considerably longer angle iron 3' adjacent one end thereof so that the latter projects inwardly some distance beyond the end of the former. A corresponding member comprising angle irons 2'', 3'' is similarly secured to the upper end of the left hand upright 5', so that when the parts are in assembled position the vertical webs of the angle irons 3', 3'' overlap and are in engagement throughout a greater or less extent in accordance with the lateral separation of the uprights, holes 20 being provided in the webs so that bolts 21 may be extended through such bolts in both webs as are in registry, whereby with the aid of suitable nuts 22 the webs may be rigidly held in position.

The lower rail, generally designated 8', is also formed of two separable members, 8a, 8b, preferably consisting of angle irons of suitable dimensions, one of said members being secured to each of the feet 10' at a point below the lowermost corrugations in the lateral webs thereof and extending inwardly so as to overlap the other member throughout a considerable portion of its length and enable one or more of the holes 23 in the horizontal webs thereof to be brought into registry when the uprights are disposed at the de-

sired horizontal adjustment, bolts 24 carrying nuts 25 being employed in the holes 23 to secure the respective members of the rail 8' in rigid engagement.

5 While I have herein shown and described the respective members of the rail 8' as being secured to the feet 10', it will be apparent that if desired they may be secured to the uprights 5', although I prefer the former
10 arrangement for the reason that the rail is then operative to assist in holding the feet in engagement with the uprights and to prevent the former from spreading in case the bolts used to hold them in position should
15 become dislodged under the influence of vibration in the shop or for any other reason, and in fact, it is possible to dispense with these bolts entirely, if desired, the preferred arrangement referred to being fully opera-
20 tive to hold the parts in assembled relation without their aid when the bench is to be used in work during which only relatively light stresses are to be expected.

While I have herein described my inven-
25 tion with some particularity and have specifically illustrated certain embodiments thereof, it will be understood that I do not intend thereby to limit or confine myself to the forms shown and described, as other
30 means for effecting longitudinal and/or vertical adjustment of the legs may be employed and other changes and modifications made in the design and arrangement of the several parts if desired without departing from the spirit and scope of the invention as defined
35 in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

40 1. An adjustable leg of the class described, comprising a horizontal top rail, a pair of spaced parallel channel uprights depending therefrom, secured thereto and having a plu-
45 rality of substantially horizontal corrugations adjacent their lower extremities, a pair of feet, each embracing exteriorly one of said uprights and having corrugations arranged to interlock with said first-mentioned cor-
50 rugations, means operative to releasably maintain said uprights and said feet respectively in rigid adjusted relation to thereby support said top rail, and a horizontal angle
55 iron rail connecting the lower portions of the uprights and having vertical and horizontal flanges, the vertical flange being secured to the uprights and the horizontal flange being of a width to extend across the space between the corrugated portions of the uprights to brace the same and support a shelf.

60 2. An adjustable leg of the class described comprising a horizontal top rail composed of separate units, each unit consisting of a pair of angle bars of unequal length fitted together to form a T-section, the inner ends
65 of the longer angle bars of the units over-

lapping and being secured together and the shorter angle bars of the units having their inner ends spaced apart to permit adjustment of the horizontal top rail, a pair of spaced parallel uprights supporting the
70 horizontal top rail, and a transverse rail secured to the uprights remote from the first mentioned rail and composed of overlapped angle bars.

In witness whereof, I have hereunto set my
hand this 2nd day of October, 1931.

GEORGE C. NOROS.

80

85

90

95

100

10

110

115

120

125

130