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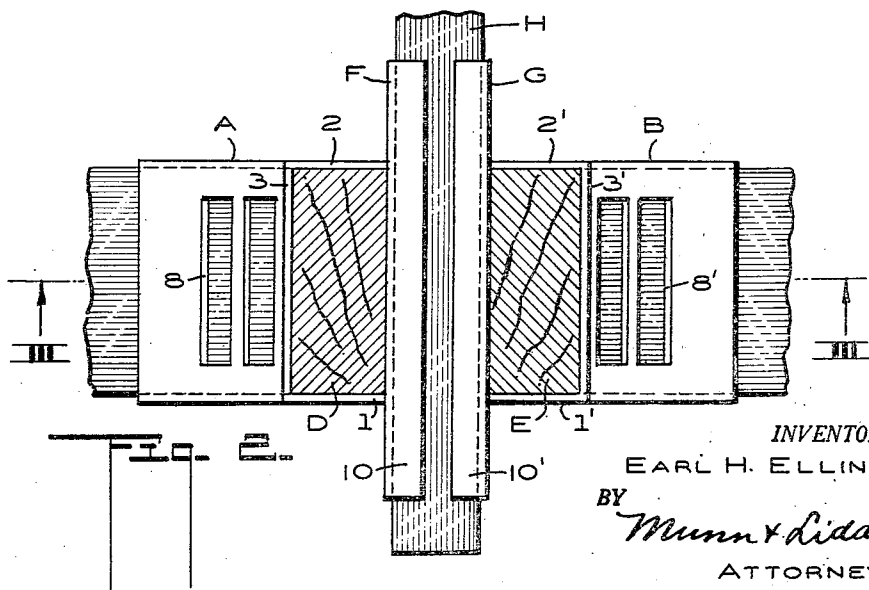
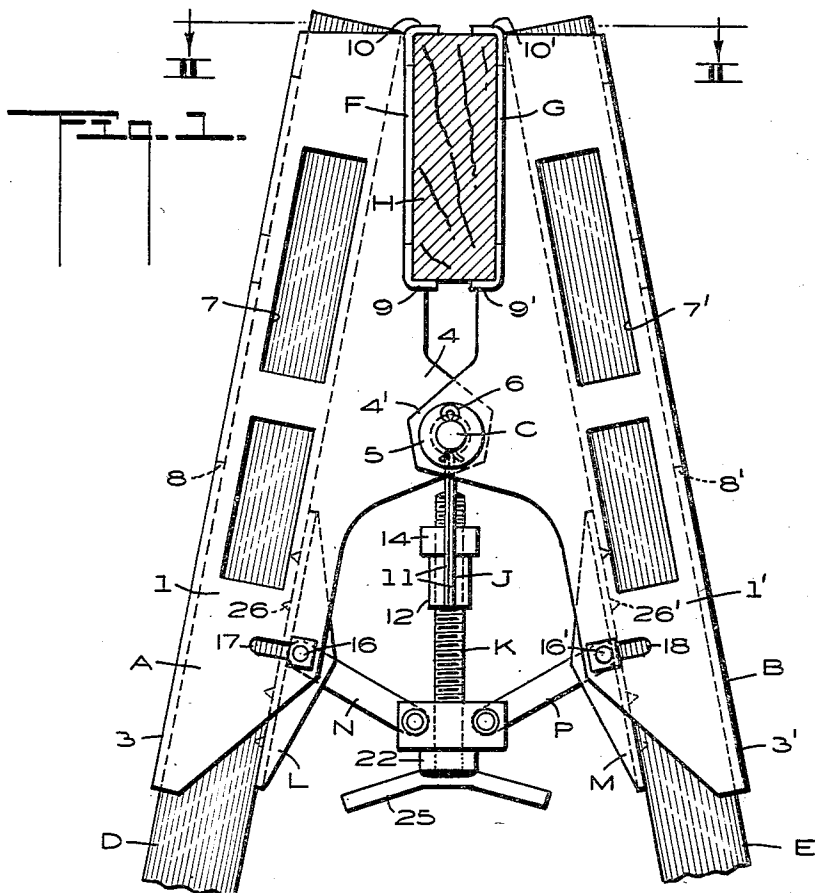
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ADJUSTABLE SCAFFOLDING

Filed May 6, 1954

2 Sheets-Sheet 1



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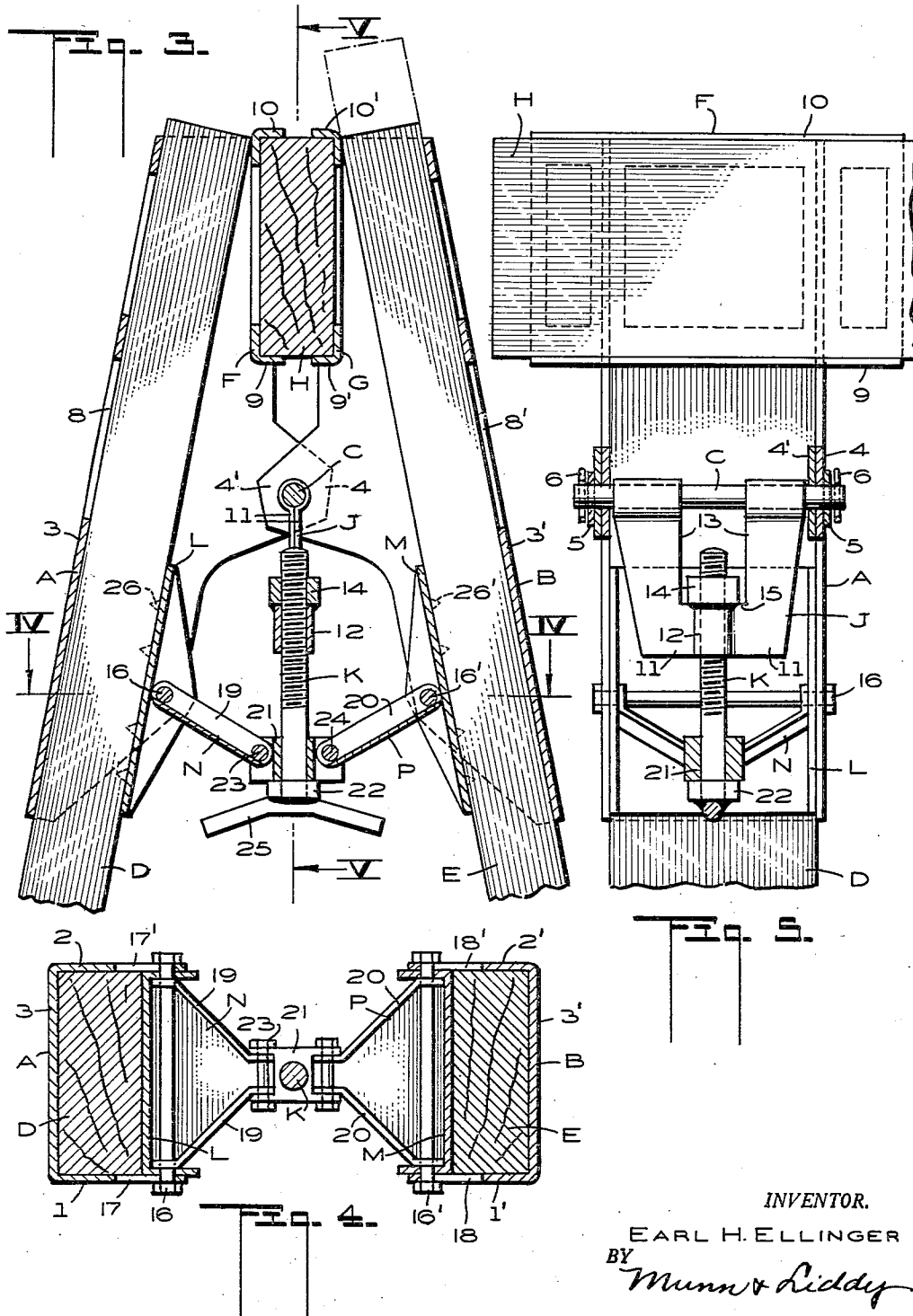
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ADJUSTABLE SCAFFOLDING

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Application May 6, 1954, Serial No. 428,039

2 Claims. (Cl. 304—5)

An object of my invention is to provide an adjustable scaffolding of the saw-horse type in which two identical leg-receiving parts are pivotally secured together and are provided with channel-shaped clamps that face each other. Novel toggle means is used for swinging the two parts about their pivot for urging the clamps toward each other into gripping relation with a ledger bar. The flanges on the channels engage both the upper and lower edges on the ledge bar and in this way the bar is rigidly secured to the device.

The toggle means performs an additional function of moving leg-gripping shoes into contact with the legs for clamping the legs to the two parts. The shoes have large flat surfaces that contact with the legs and the shoes are pivotally connected to the toggle means so that they will lie parallel to the leg surfaces they contact. I have found that if only an edge of a leg-gripping member contacts with the leg, a lateral strain placed on the scaffolding will cause the edge to form a groove in the leg of sufficient size to permit a slight play between the leg and the gripping member. The scaffolding will therefore have play develop between the legs and the gripping members which is not desirable in scaffolding where a rigid structure is necessary.

The legs in the scaffolding are adjustably mounted in the two parts and this permits the legs to be clamped in position to accommodate the device to uneven or inclined surfaces. A levelling feature is accomplished through this construction. I am aware of scaffolds that use a wedge between the two legs for securing them in position. However, the wedge must move vertically with respect to the legs in order to clamp them in place. It is difficult to produce a tight grip on the legs when the wedge must be moved vertically with respect to the legs because friction is developed between the parts and if the friction between the wedge and the leg overbalances the force necessary to move the wedge with respect to the leg, a rigid connection between the leg and the part it is connected to, is difficult to accomplish. This is aggravated where stops are provided in the parts against which the tops of the legs abut.

My device is simple in construction and durable and efficient for the purpose intended. The clamping shoes provide enough pressure on the legs for the scaffolding to carry the load. The brake or clamping shoes are direct action and non-penetrating on the legs due to the large areas of the shoes that contact with the legs. The pivoting of the shoes to the toggle mechanism results in a non-sliding wedge being applied to the legs. Small rasp-like teeth may be used on the shoes to prevent slippage between the shoes and the legs. The bearing points of the shoes on the legs and the channels on the ledger board are non-penetrating and this will prevent any loosening action developing between the legs and the shoes and the channels and the ledger board.

The scaffolding can be used on all forms of construction work and can be used by carpenters, bricklayers,

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plasterers, etc. It can be used with legs that will place the ledger board about 12 feet above the ground, giving the workmen up to 18 feet in which to operate. It can be used for lifting engines out of automobiles or for other lifting purposes.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming a part of this application, in which:

Figure 1 is a front elevation of the device;

Figure 2 is a horizontal section taken along the line II—II of Figure 1;

Figure 3 is a transverse section taken along the line III—III of Figure 2;

Figure 4 is a horizontal section taken along the line IV—IV of Figure 3; and

Figure 5 is a longitudinal section taken along the line V—V of Figure 3.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit and scope of the invention.

In carrying out my invention, I provide an adjustable scaffolding that comprises two identical parts indicated generally at A and B and that are pivoted together by a pin C, see Figures 1 and 5. Since each part A and B is identical to the other, a detail description of one will suffice for both. The same reference numerals will be applied to each except that those on the part B would be primed. The part A is preferably stamped out of sheet metal and has a channel-shaped top with front and rear walls 1 and 2, see Figure 2, and an interconnecting web 3. Reference to Figure 1 shows the front wall 1 as having an extension 4 that cooperates with an extension 4' for the part B and these two extensions lap each other and receive the pivot pin C, see also Figures 3 and 5. The rear walls 2 likewise have extensions pivoted together. Washers 5 are placed on the projecting ends of the pin C and cotter pins 6 are passed through openings in the pivot pin for holding the latter in place and permitting the parts A and B to pivot with respect to each other.

The parts A and B may be of any size desired and made of any desired material. I have shown the front walls 1 made lighter by providing openings or windows 7 therein. The rear wall 2 is likewise provided with windows, although these do not show in Figure 1. The web portion 3 may be lightened by windows 8 being formed therein, see Figure 2. The length of the parts A and B is sufficient to receive legs D and E and permit them to be clamped to the parts. In the present form of the device the wooden legs are preferably two by six inches in cross section, although I do not wish to be confined to any particular size or shape of leg.

Above the pivot pin C, the part A is provided with a channel F and the part B is provided with a channel G. The channel F has a lower flange 9 and an upper flange 10, while the channel G has a lower flange 9' and an upper flange 10'. Figure 2 illustrates the relative position of the channels F and G with respect to each other and further indicates how the top flanges 10 and 10' face each other. A ledger board H is clamped between the two channels F and G.

I provide novel means for clamping the parts A and B to the ledger board and this is clearly shown in Figures 3, 4 and 5. A saddle J is pivotally carried by the pin C and is preferably made of a strip of metal which is bent in the manner shown in Figures 1, 3 and 5. The two sides 11 and 12 of the saddle J are permanently secured

together and they are formed into a cylinder 12 that slidably receives a bolt K. The upper end of the bolt projects into a slot 13 that is formed in the saddle and a nut 14 is threaded on to the bolt and bears against the lower edge 15 of the slot 13.

The purpose of the saddle J and the bolt K is to urge two leg gripping shoes L and M against the adjustable legs D and E. Figures 1, 3 and 4 illustrate how the shoes L and M are pivotally mounted on bolts 16 and 16', respectively. These bolts are slidably received in slots provided in the parts A and B. The bolt 16 is slidably received in slots 17 and 17' in the front and rear walls 1 and 2 of the part A. In like manner the bolt 16' is received in slots 18 and 18' formed in the front and rear walls 1' and 2' of the part B. Links N and P for the shoes L and M, respectively, are made triangular in shape as shown in Figure 4 and the flanged sides 19 of the link N are pivotally secured to the bolt 16, while the flanged sides 20 of the link M are pivoted to the bolt 16'.

A thrust bearing 21 is mounted on the lower end of the bolt K and rests on the head 22 of the bolt. Figure 4 shows the thrust bearing 21 as being provided with ears that receive pivot bolts 23 and 24 and these pivot bolts are connected to the inner ends of the links N and P and are passed through openings in the flanges 19—19 of the link N and openings in the flanges 20—20 of the link P. Operating handles 25 extend radially from the head 22 of the bolt and permit the operator to rotate the bolt for advancing it in the nut 14. When the bolt is thus turned, the thrust bearing 21 will be raised by the head 22 and will force the links N and P outwardly like a toggle for moving the leg-gripping shoes L and M against the adjacent surfaces of the legs D and E, respectively. The gripping shoes therefore force the legs against the inner surfaces of the webs 3 and 3'. Small rasp teeth 26 and 26' may be provided on the surfaces of the shoes that contact with the legs D and E, and these teeth prevent slippage between the gripping shoes and the legs.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

One advantage of the device lies in the fact that the ledger board H and the legs D and E may be standard pieces of wood, two by six inches in cross section. Such pieces are usually in stock and they do not have to be changed in any manner except for cutting them in desired lengths. Figure 3 illustrates how the leg E can be adjusted so as to extend above the channel G if desired. The leg D can be likewise adjusted and it is possible to move both legs downwardly in the parts A and B so that they will have their top edges disposed close to the upper ends of the leg gripping shoes L and M. It will be seen from this that the legs can be adjustably secured in the parts A and B so as to adapt the device to be placed on an inclined surface and still support the ledger board H in a horizontal position.

It will be seen that the turning of the bolt K for moving the leg gripping shoes L and M into engagement with the legs D and E and force them against the webs 3 and 3' of the parts A and B will not only grip the legs more tightly, but the same movement will cause the parts A and B to swing about their common pivot pin C and move the channel-shaped members F and G into a tighter gripping relation with respect to the ledger board H. It will be seen from this that the bolt K and the gripping shoes L and M perform the dual function of gripping the legs D and E and further causing the channels F and G to grip the ledger H more tightly. The flanges on the channels do not contact each other.

I have found that in adjustable scaffolding where large teeth are used to engage with the legs, or with the ledger member, or where a single edge of a clamping member is used for engaging with the leg, lateral stress or movement on the scaffolding will cause such large teeth or straight edge to dig into the wood of the leg and form a groove

that is larger than the cross sectional area of the tooth or edge. The result is that such tooth or edge will then become loose in the leg and there will be freedom of movement of the large tooth or edge in the enlarged groove and very likely the leg will be free to move slightly within the scaffolding and thus present an unstable support for the ledger which would be a hazard. I have found that where a flat hinged shoe has its flat surface move against the leg in parallel relation thereto for forcing the leg into a binding relation with the part A or the part B, any lateral strain or movement on the scaffold will not result in the large flat area of the shoe making any groove in the leg that will permit the leg to become loose in the scaffolding. I may provide small rasp teeth 26 and 26' to prevent slight creeping of the shoes with respect to the legs after the shoes have once been forced into contact with the legs.

It is further possible to obtain almost any desired gripping force on the legs that are disposed between the shoes L and M and the parts A and B. It is also possible to apply a real gripping force between the channels F and G and the ledger H, and this is accomplished by merely rotating the bolt K to the desired extent. As the gripping pressure of the channels is increased on the ledger H, the gripping force of the shoes L and M is likewise increased. Six gripping surfaces on the legs and ledger are effected by the turning of the single bolt K.

The shoes L and M have side flanges that are slidably received between the front and rear walls of the parts A and B and therefore the shoes are guided in their movement toward and away from the webs 3 and 3'. The front and rear walls 1 and 2 of the part A and the front and rear walls 1' and 2' of the part B also act as guides for the legs D and E and adjustably hold them in position where the large flat areas of the shoes can force the legs against the flat inner surfaces of the webs 3 and 3'.

I claim:

1. An adjustable scaffolding comprising two channel-shaped members that have their sides pivoted together with the channel portions facing each other; said members having sides interconnected by web portions, with the webs of the channels being inclined with respect to each other; a leg adjustably received in each member and adapted to contact with the web; the members having open tops through which the legs can extend; a ledger board gripping channel carried by each member and extending at right angles to the lengths of the channel-shaped portions of the members; said ledger board gripping channels having large flat webs and flanges extending in a horizontal direction and facing each other and adapted to engage with the upper and lower edges of a ledger board; the ledger board gripping channels being disposed above the pivotal connection between the two members and being spaced from the web portions so as to provide a passage between the channel and web, large enough for a leg of uniform cross section, to pass therethrough; a toggle mechanism disposed below the pivotal connection and being supported thereby and including two links; a flat leg-gripping shoe pivotally connected to each link and having a large flat rectangular area adapted to frictionally engage with the surface of a leg that parallels the leg surface contacting with the web of the channel-shaped member; and means for operating the toggle mechanism for causing the links to force the shoes against the legs to hold them in adjusted position against the webs for rigidly securing the legs to the members; and for causing each link to move the shoe associated therewith, the leg contacted by the shoe, and the leg-receiving member, as a unit for swinging the two members about their pivots and moving the ledger board gripping channels so their large rectangular flat portions will engage with the sides of the ledger board in a vise-like grip.

2. The apparatus of claim 1 wherein said means for operating said toggle mechanism comprises a saddle pivotally connected to said two channel shaped members and

suspended therefrom, a bolt received in said saddle extending vertically therethrough, a nut supported on said saddle and threadingly engaged with said bolt, a sleeve rotatably mounted on said bolt below said saddle, each of said links being pivotally connected to said sleeve and extending outwardly therefrom toward their respective channel shaped members, a head on said bolt, said sleeve resting on said head, said bolt being rotatable with respect to said nut to raise said sleeve toward said saddle and thus raise the point of pivotal connection of said links to said sleeve, said links normally extending at an acute angle upwardly from the horizontal with respect to said

sleeve with said shoes each being pivotally connected to its respective link at a point spaced vertically above the pivotal connection of the links to said sleeve.

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