April 4, 1944. B. HILLBERG 2,345,976

SCREED CHAIR

Filed Feb. 12, 1942

Fig. 1

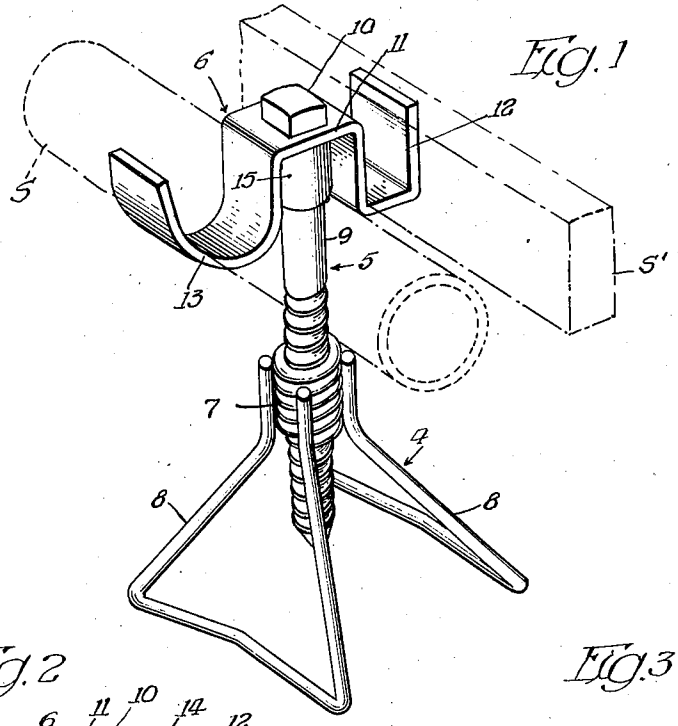


Fig. 2

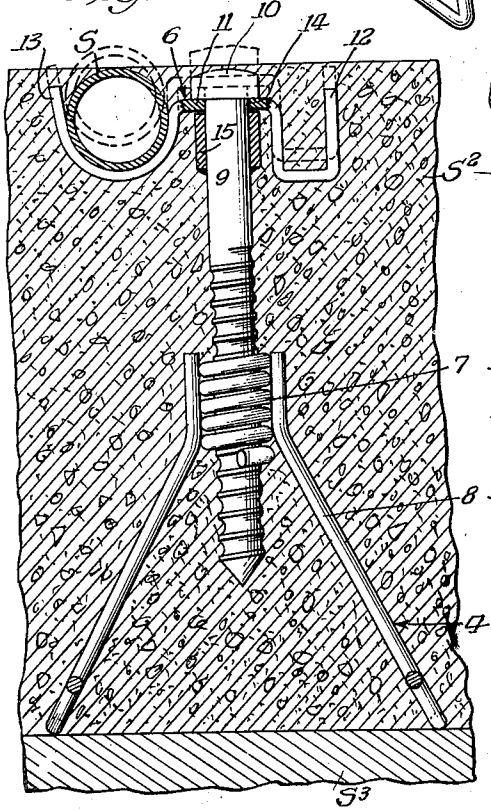
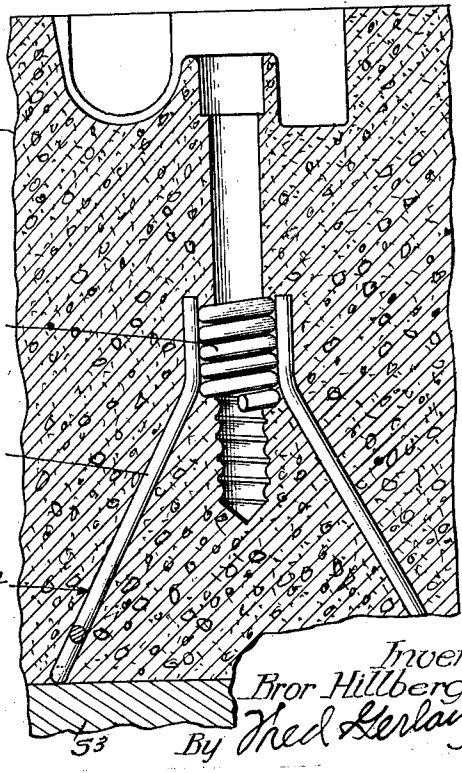


Fig. 3



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SCREED CHAIR

Bror Hillberg, Chicago, Ill., assignor to Superior Concrete Accessories, Chicago, Ill., a partnership

Application February 12, 1942, Serial No. 430,555

1 Claim. (Cl. 72—128)

The present invention relates generally to chairs for use in connection with the formation of concrete slabs. More particularly the invention relates to that type of chair which is adapted in conjunction with a series of like chairs to support a screed, comprises a base and a vertically adjustable screed-supporting bracket on the base, and is designed to become embedded in the concrete during pouring of the latter for slab forming purposes.

In using a screed chair of this type the chair is first positioned on the form or supporting surface over which the slab is to be formed. Thereafter the bracket is adjusted so that it will hold the screed in such position that the upper surface thereof is flush or coplaner with the desired top level of the slab to be formed. After proper adjustment of the bracket the screed is mounted on the bracket and concrete is poured over the form or supporting surface until it builds up to a point wherein the top surface thereof is level with the upper portion of the screed. While the concrete is still in a wet or plastic state a straight edge is moved across the screed so as properly to level the concrete. After the concrete levelling operation the screed and bracket are removed. Prior to setting or hardening of the concrete the cavities resulting from removal of the screed and bracket are filled so as to complete the slab. In practice it has been found that in many instances the slab, after being poured and while the concrete is in a plastic or wet state, settles or shifts downwards so that the upper surface thereof is below the desired level. This is sometimes attributable to a faulty form and necessitates an upward adjustment of the bracket so as to bring the upper portion of the screed to the proper or desired top level for the slab. It further necessitates an additional pouring of concrete in order to build the slab up to the desired or prescribed level. Previously designed screed chairs of the type under consideration are subject to the objection that when during use of the chairs it is necessary, because of sagging of the wet concrete, to adjust vertically the brackets for screed raising purposes the adjustment can only be made by removing the screed from the chair brackets.

The primary object of the invention is to provide a screed chair which is an improvement upon, and eliminates the objectionable features of, previously designed chairs of the same general design and for the same purpose and is characterized by the fact that the screed-supporting or holding bracket may be readily adjusted as to height after pouring of the slab and without the necessity of removing the screed from the bracket. In general the improved screed chair comprises a lag screw or like threaded element, the lower end of which fits within an internally threaded socket on the base and the upper end of which extends loosely through a hole in the bracket, and has above the bracket a polygonal head whereby the screw or element may be turned for adjustment purposes by a wrench or similar turning tool.

Another object of the invention is to provide a screed chair of the last mentioned character in which the bracket is held against vertical displacement with respect to the lag screw by way of a collar beneath the head of the screw and is shaped so as to receive and support either a screed of the pipe type or a bar type screed.

A further object of the invention is to provide a screed chair which is generally of new and improved construction, effectively and efficiently fulfills its intended purpose, and is so designed or constructed that it may be produced at a comparatively low cost.

Other objects of the invention and the various advantages and characteristics of the present screed chair will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by the claim at the conclusion hereof.

In the drawing which accompanies and forms a part of this specification or disclosure and in which like letters and numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a perspective of a screed chair embodying the invention;

Figure 2 is a section showing the improved chair in its operative position with respect to a screed and embedded in a freshly poured slab of concrete; and

Figure 3 is a section showing the slab after removal of the screed and the chair bracket but prior to filling of the cavities resulting from removal of the screed and bracket.

The screed chair which is shown in the drawing constitutes the preferred form or embodiment of the invention. It is designed to support either a pipe type screed S or a bar type screed S^1 in connection with formation of a concrete slab S^2 on a horizontal surface S^3. As its parts the chair comprises a base 4, a lag screw 5 and a screed supporting bracket 6.

The base 4 is adapted to rest on the supporting surface S^3 during pouring of the concrete for the

slab S^2 and is adapted to remain in the slab and form a reenforcement for the latter. It may be nailed or otherwise anchored to the supporting surface S^3 and consists of a vertical elongated internally threaded socket 7 and a pair of depending U-shaped legs 8 for supporting the socket in an elevated position with respect to the supporting surface. The socket 7 is preferably in the form of a wire helix in order to reduce to a minimum the production cost of the chair. The legs 8 are formed of wire and are disposed in opposed relation, as best shown in Figure 1 of the drawing. The side pieces of the legs are arranged in upwardly convergent fashion and have vertically extending upper extremities which are welded or otherwise fixedly secured to the internally threaded socket 7. The central portions of the cross pieces of the U-shaped legs 8 are bent upwards so that the lower corners of the legs form feet for engaging the supporting surface S^3 and maintaining the base 4 in a stable position when in place on the supporting surface. The lag screw 5 extends vertically through the internally threaded socket 7, as shown in the drawing, and comprises an elongated shank 9 and a head 10. The lower end of the shank has an external screw thread of the same size and pitch as the female or internal screw thread of the socket 7. The head 10 is located at, and formed integrally with, the upper end of the shank 9 and is polygonal in contour so that it may be gripped by a wrench or similar turning tool in connection with turning of the lag screw 5. When the lag screw 5 is turned in one direction it moves downwards with respect to the base due to the action of the screw connection between the shank of the lag screw and the socket of the base. When the screw is reversely rotated or turned it moves or feeds upwards relatively to the base.

The bracket 6 of the chair is in the form of a one-piece stamping consisting of a horizontally extending central or intermediate part 11, a U-shaped part 12 at one end of the intermediate part and a substantially semi-circular part 13 at the other end of the intermediate part. The intermediate part 11 of the bracket has a central hole 14 which is of slightly greater diameter than the shank 9 of the lag screw 5. The upper end of the lag screw shank extends loosely through this hole with the result that the screw is permitted to rotate freely relatively to the bracket. The upper face of the intermediate part 11 of the bracket underlies the polygonal head 10 of the lag screw. The bracket is held against vertical displacement relatively to the lag screw by way of a collar 15 which underlies the intermediate part 11 of the bracket and is welded or otherwise fixedly secured to the upper end of the lag screw shank at a point directly beneath the head 10. When the lag screw is turned in connection with vertical adjustment thereof the bracket moves up or down with the screw, depending upon the direction in which the screw is rotated, while at the same time it does not rotate with the screw. The U-shaped part 12 of the bracket is adapted to receive and hold the bar type screed S^1 and the substantially semi-circular end part 13 of the bracket is adapted and designed to hold the pipe type screed S. It is contemplated that in the formation of the slab S^2 but one type of screed be used. If the bar type screed S^1 is used it is placed in the U-shaped end part 12 as shown in dotted lines in Figure 1. If the other screed is used, that is, the pipe type screed S, such screed is mounted in the substantially semi-circular end part 13. The bracket, because it embodies a U-shaped end part and a substantially semi-circular end part, is capable of supporting either type of screed. The depth of the U-shaped part 12 of the bracket is such that when a standard bar type screed is supported by it the upper face of such screed is disposed slightly above the upper face of the head 10 of the lag screw 5. The substantially semi-circular end part 13 of the bracket is adapted to receive a pipe type screed of standard size and is of such depth that when the pipe type screed is supported by it the upper portion of the screed is disposed slightly above the upper face of the screw head 10. By reason of the fact that such head is at the upper end of the screw and is disposed above the intermediate part of the bracket the screw may be turned from above in connection with vertical adjustment of the screed supporting bracket 6 and it is unnecessary to remove the screed.

In using the chair in connection with formation of the concrete slab S^2 the chair is placed on the supporting surface S^3 in alignment with a group of similar chairs. Thereafter the base 4 is nailed or otherwise secured to the supporting surface. If desired the base may be held in fixed relation with the supporting surface by way of staples around the intermediate pieces of the U-shaped legs 8. After anchoring of the base the lag screw 5 is adjusted so as to bring the bracket 6 to the proper height. After turning or adjustment of the screw a screed is placed on the bracket. If the pipe type screed S is used it is mounted in the substantially semi-circular end part 13 of the bracket, as shown in Figure 2. It is contemplated that the adjustment of the bracket will be such that the upper portion of the pipe type screed will be flush or coplaner with the desired top level of the slab. After mounting of the screed on the bracket concrete is poured onto the supporting surface S^3 until it builds up to the upper portion of the screed, as shown in Figure 2. After pouring of the concrete a straight edge is moved across the screed so as properly to surface or level the slab. In the event that the freshly poured slab should sag for any reason whatsoever the bracket 6 is raised so as to bring the upper portion of the screed to the proper or desired level for the slab by turning the lag screw 5 in the proper direction. It is to be particularly noted that raising of the bracket and screed may be effected without removing the screed from the bracket. In connection with an auxiliary or secondary raising of the bracket it is only necessary to apply a wrench to the head 10 of the lag screw and then turn the wrench in order to effect the desired adjustment. After the second or auxiliary adjustment of the bracket additional concrete is poured until it builds up to the proper or desired level. While the concrete is in a wet or plastic state the screed is first removed. Thereafter the bracket and screw are removed by turning the screw out of connected relation with the socket of the base 4. Upon removal of the screed, bracket and lag screw the resulting cavities (see Figure 3) are filled with concrete. The bracket and lag screw of the chair, as well as the screed, are reusable. Upon completion of the slab due to hardening or setting of the concrete, the base 4 is permanently embedded in the slab and serves as a metallic reenforcement for the latter.

The herein described screed chair may be manufactured at a reasonably low cost and effectively and efficiently fulfills its intended purpose. It

is characterized by the fact that it may be readily adjusted after pouring of the concrete thereabout without necessitating removal of the screed. It is further characterized by the fact that it is capable of supporting or holding either a pipe type or a bar type screed.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claim without departing from the spirit and scope of the invention.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

A chair designed to support a screed over a supporting surface in connection with formation of a concrete slab and comprising a base adapted to rest on the supporting surface and consisting of a vertical internally threaded socket and a pair of opposed depending U-shaped legs having the side pieces thereof upwardly convergent and secured at their upper extremities to the socket, a vertical lag screw embodying an externally threaded shank within the socket and a fixed polygonal head at the upper end of the shank and adapted when the head is gripped by a wrench or other tool and then turned to move relatively to the base, a bracket having a part for receiving and holding the screed and another part having a hole therein through which the upper end of the shank extends loosely, and a collar fixedly mounted on the upper end of the shank beneath the hole equipped part of the bracket and arranged so that it coacts with the head and causes the bracket to move vertically with the screw in connection with turning of the latter relatively to the base.

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