Dec. 18, 1951 P. J. SCHMIDT 2,578,985

SCREEN WIRE TONGS

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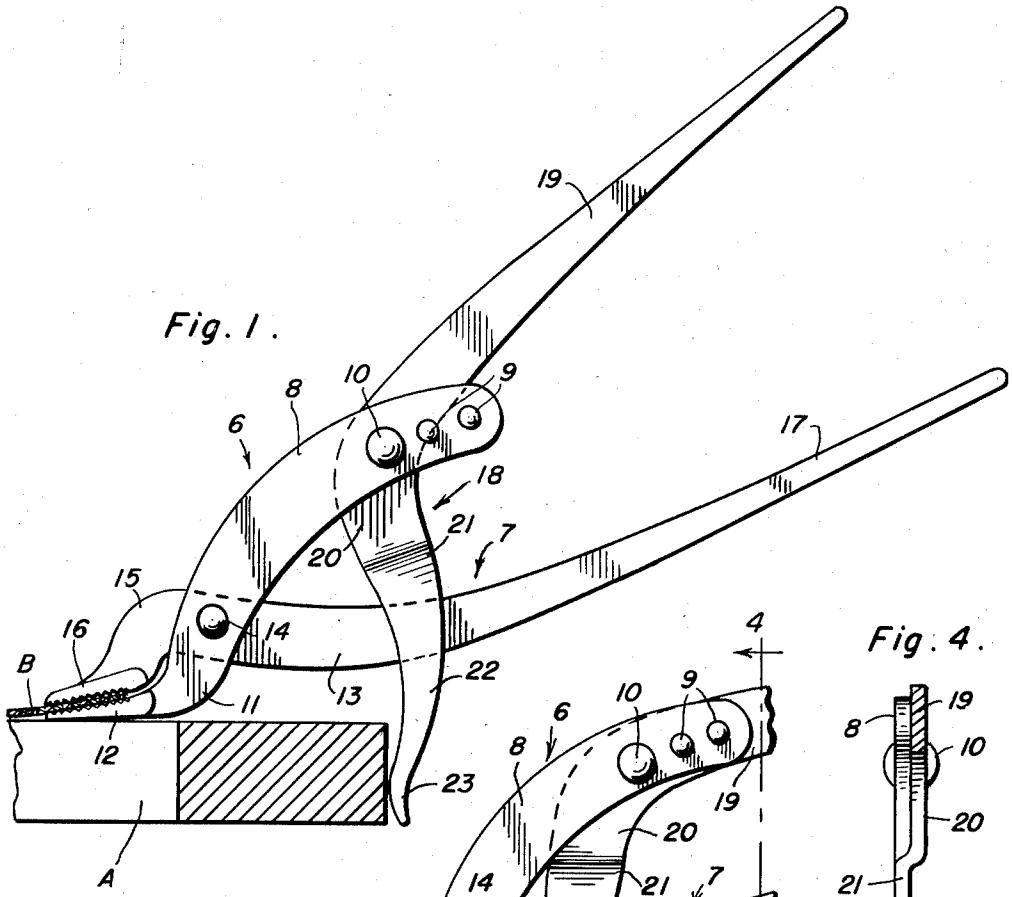


Fig. 1.

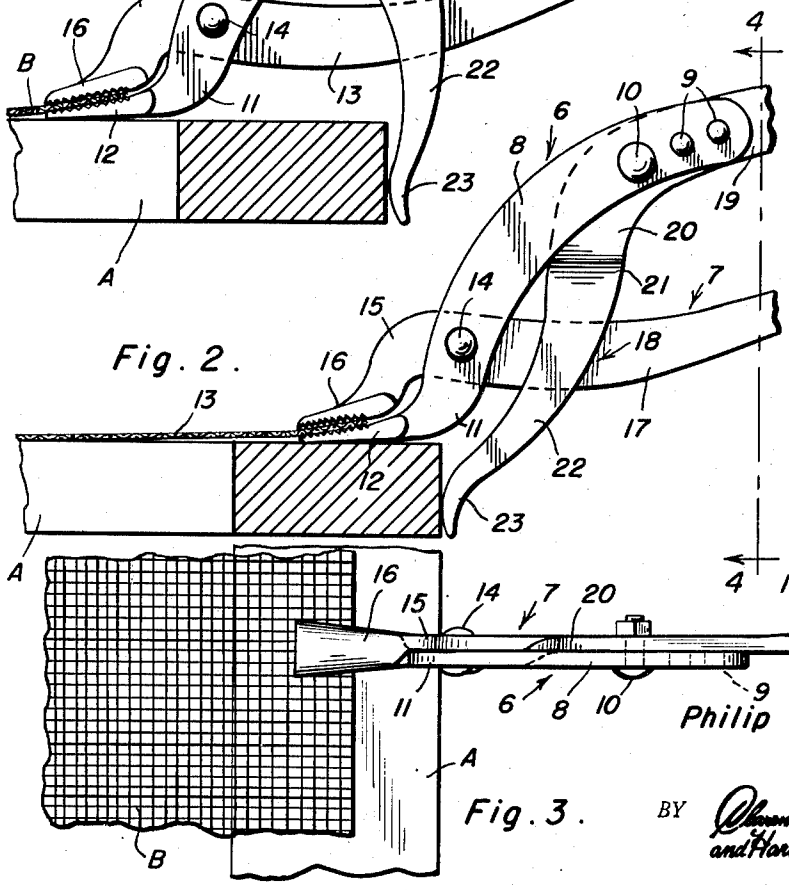


Fig. 2.

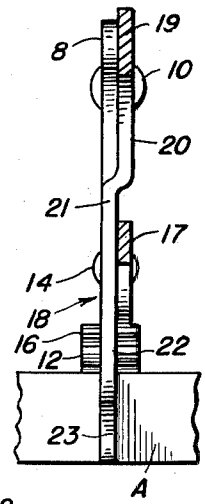


Fig. 4.

Fig. 3.

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SCREEN WIRE TONGS

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3 Claims. (Cl. 140—123)

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The present invention relates to an improved hand tool which may be conveniently and more specifically entitled screen wire tongs, the latter serving as a highly useful and practical instrumentality for grasping an edge portion of a piece of screen wire in a manner to pull and stretch same so that it may be held sufficiently taut for satisfactory tacking to a frame, for instance, the frame of a window screen or a screen door.

Needless to say, I am aware that a number of pliers-like screen wire stretching tools are already patented. Therefore, in carrying out the principles of the present invention, I contemplate the provision of a more practical and satisfactory structure which, compared to prior patents, is more aptly suited to attain the desired ends.

Briefly, and in carrying out the principles of the invention, I have evolved and produced a structurally distinct hand tool characterized by a novel coordination of levers having satisfactory screen wire gripping jaws and a pair of simple opposed handles which, when grasped and brought together, serve to simultaneously grasp and pull the wire while the tool, in turn, is shifted in relation to the frame to obtain the desired degree of tautness before the wire is fastened.

One phase of the invention has to do with a pair of primary levers, one short and one long, the levers being crossed and pivotally connected together and provided at corresponding ends with gripping jaws, the long lever providing one of the handles and the short lever providing a support for a third or slack takeup lever, the latter including the necessary second handle.

A further object of the invention is to provide a handle-equipped, L-shaped lever for slack takeup and fulcruming purposes, the same having a novel, laterally offset thrust finger to bear against the margin of the screen frame and said lever providing the shifting support for the aforementioned long and short primary levers.

Novelty is also predicated upon the L-shaped slack takeup lever as a new article of manufacture and upon the pliers-like, screen-gripping tool by itself and in conjunction with said slack takeup lever.

Other objects and advantages of the invention will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is an elevational view showing screen wire tongs constructed in accordance with the

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principles of the present invention and showing the manner in which the initial screen gripping step is accomplished;

Figure 2 is a view like Figure 1 showing the final step during which the screen wire is stretched, is made taut and ready for tacking;

Figure 3 is a top plan view of the structure seen in Figure 2; and

Figure 4 is a view at right angles, taken on the line 4—4 of Figure 3, looking in the direction of the arrows.

In the drawings, the screen frame, which may be that of a window screen or screen door or the like, is denoted by the reference character A and the screen wire or other equivalent fabric is denoted at B.

The tool may be visualized as constituting two tools in one; namely, a pliers-like, jaw-equipped two-lever tool for gripping the screen wire and pulling it, and a slack takeup or prying tool for rendering the first tool effective and then shifting it bodily to stretch and tauten the wire.

The first-named tool comprises a short lever unit 6 and a complemental long lever unit 7, these being the aforementioned primary levers. The lever portion 8 of the unit 6 is relatively short and longitudinally bowed and provided at one end with longitudinally spaced bolt holes 9 to accommodate an adjustable assembling and pivoting bolt 10. The opposite end portion of said lever is laterally offset, as at 11, and provided with a suitably shaped jaw 12 to grip one face of the wire. The lever portion 13 of the long lever unit 7 is superimposed upon and crosses the lever 8 where it is pivotally attached to the latter, as at 14. The left hand end portion of lever 13 is offset, as at 15, and terminates in a jaw 16 which is a duplicate of the jaw 12 and is opposed thereto and adapted to grip the opposite or adjacent face of the wire. The remaining portion of the lever is in the form of an elongated handle 17.

The slack takeup lever means is denoted by the numeral 18 and this is an L-shaped unit and includes an elongated handle portion 19 which corresponds to the handle 17. This is the so-called long limb of the L-shaped lever. The short limb 20 is offset, as at 21, to provide a fulcruming finger 22 which terminates in a tapered rocker or cam 23. The latter is adapted to rest against the marginal outer edge of the screen frame in an obvious manner. The offset fulcruming finger is disposed in crossed relation with the lever 13, and in fact has swingable wiping contact therewith. The degree of offset is such that the finger 22 lies in the same plane

as the lever 8. Thus, the handles 17 and 19 are directly one above the other. The angular portion, that is, the junctural portion between the long and short limbs, is apertured and hingedly mounted on the assembling bolt 10. All of the levers are proportioned and shaped as shown to accomplish the desired ends.

In practice, the screen wire is placed between the jaws 12 and 16 and the cam terminal or tip 23 of the finger is brought to bear against the edge of the frame A, as shown in Figure 1. Now, by grasping and "squeezing" the two handles 19 and 17 together, they take the approaching positions seen in Figure 2 and this closing of the handles serves to grip the jaws and also shift the pliers-like tool bodily while the slack takeup tool or lever 18 is rocked in common crow-bar fashion.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. Screen wire tongs for single-handed use comprising a relatively long lever having a handle at one end and a jaw at its opposed end, a relatively short lever crossing and pivotally connected intermediate its ends with said first lever and having a jaw opposed to said first-named jaw, and a third L-shaped lever pivotally and adjustably connected with said short lever, having, at one end, a handle opposed to and corresponding with said first-mentioned handle, and having at its opposite end a fulcruming and thrust finger crossing and in wiping contact with said long lever.

2. A hand tool for grasping, stretching and tautening screen fabric or the like comprising a short longitudinally curved lever having a laterally offset jaw at one end and an adjustably mounted assembling and hinging bolt at its opposite end, a complemental and relatively longer lever having a laterally offset jaw at one end and an elongated handle at its opposite end, a portion of said last-named lever, adjacent to said jaw, crossing and being pivotally connected to the jaw end of said short lever, and a third lever, the latter being L-shaped and hingedly connected, at the juncture of its long and short limbs with said bolt, the long limb defining a handle opposed to said first handle and the short limb functioning as a thrust finger.

3. Screen wire gripping and stretching tongs having but two handles for single-handed operation comprising a pair of crossed pivotally connected levers terminating at corresponding ends and to one side the pivotal connection in opposed wire gripping jaws, and a third lever pivotally connected intermediate its ends to one of said first named levers, said third lever terminating at one end in a laterally directed fulcruming and thrust-applying element crossing the remaining one of said first-named levers but free of connection with the latter lever, said latter lever having a handle and said third lever also having a corresponding handle and both handles being in opposed alignment for convenient use, said fulcruming element being laterally offset, in movable wiping contact with said latter lever and in a plane with said first-named lever.

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