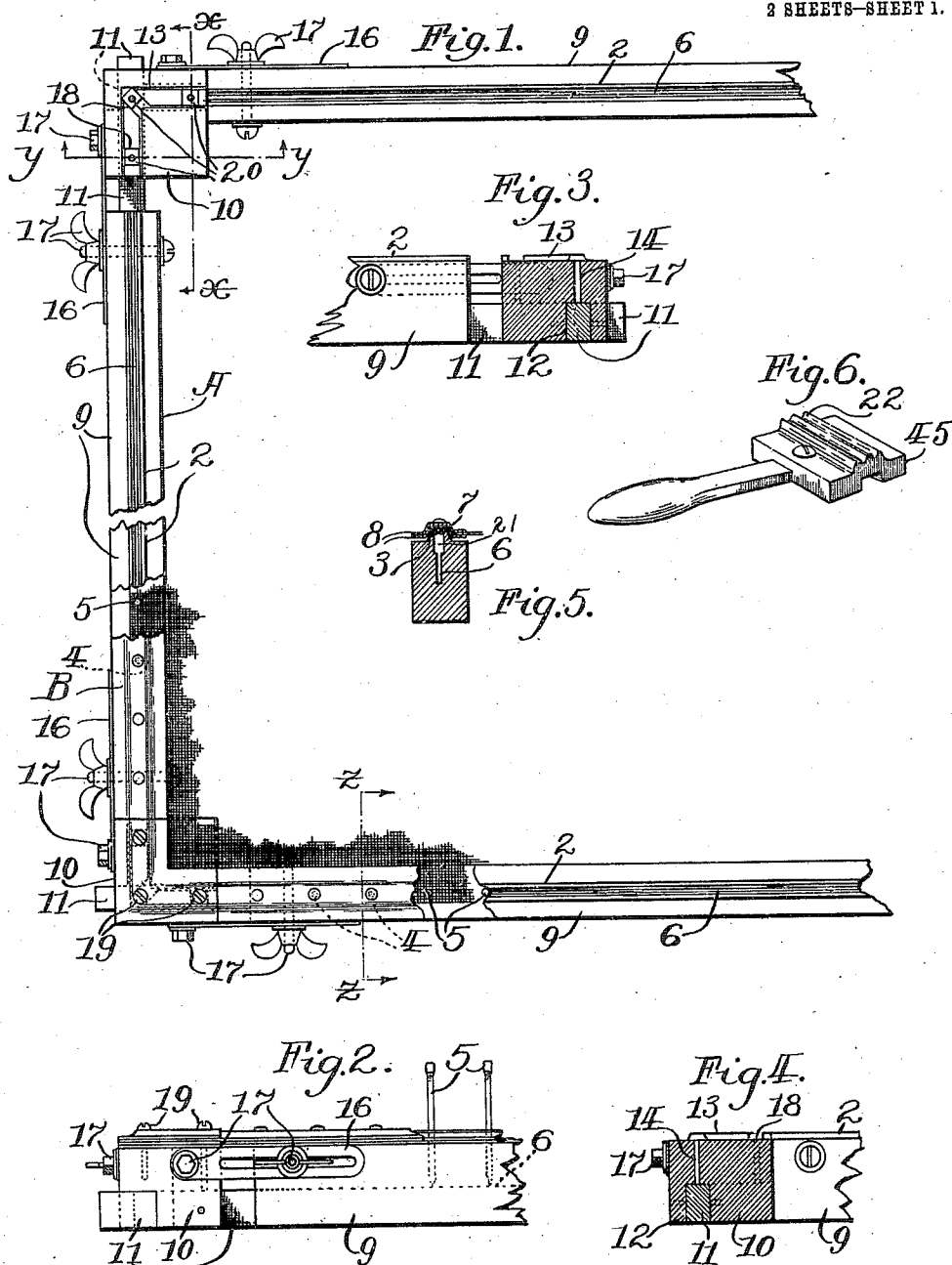


C. J. WHELLAMS.
FORM FOR MAKING WINDOW SCREEN FRAMES.
APPLICATION FILED FEB. 20, 1909.

985,959.

Patented Mar. 7, 1911.

2 SHEETS-SHEET 1.



Witnesses:
H. Fischer
M. A. O'Leary

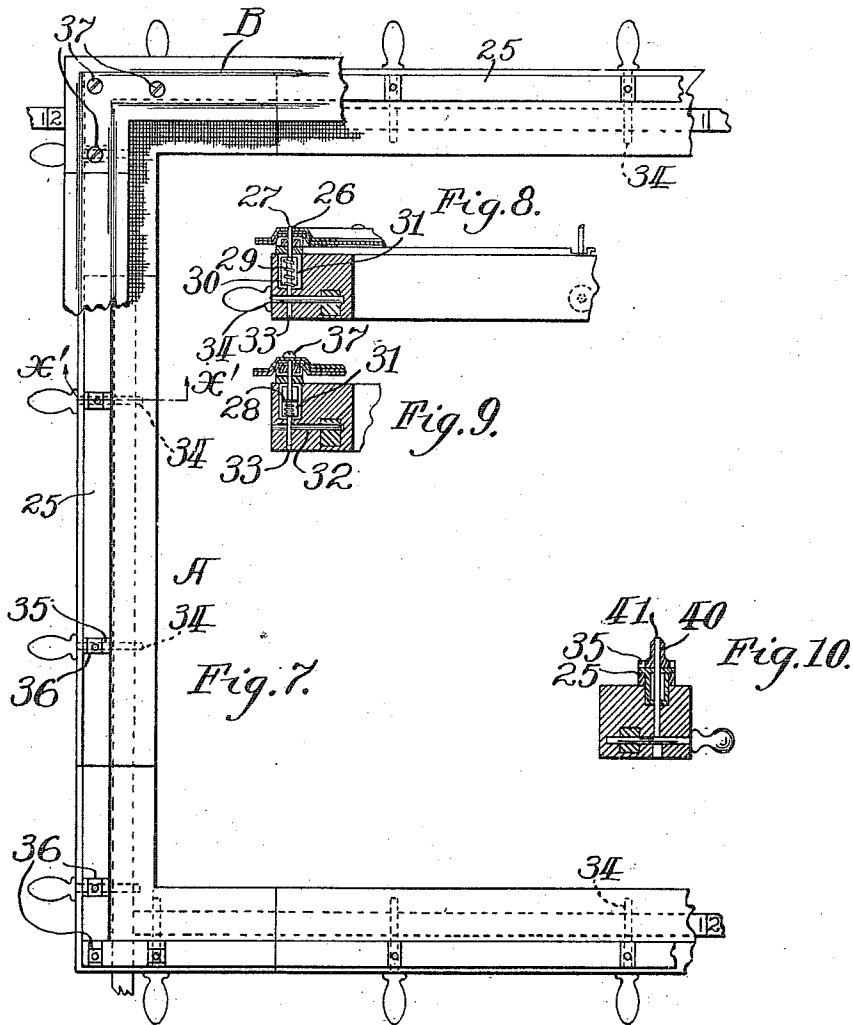
Inventor:
Creasey J. Whellams,
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Attorney.

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Witnesses:
M. A. Olsay
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Inventor:
 Creasey J. Whellams,
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 Attorney.

UNITED STATES PATENT OFFICE.

CREASEY J. WHELLAMS, OF ST. PAUL, MINNESOTA, ASSIGNOR TO THE METAL SCREEN & MANUFACTURING CO., A CORPORATION OF MINNESOTA.

FORM FOR MAKING WINDOW-SCREEN FRAMES.

985,959.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed February 20, 1909. Serial No. 479,034.

To all whom it may concern:

Be it known that I, CREASEY J. WHELLAMS, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented new and useful Improvements in Forms for Making Window-Screen Frames, of which the following is a specification.

My invention relates to improvements in forms for making window screen frames and has for its primary object to provide a device by the use of which window screen frames, such as described in Patent #822,227 granted to me on May 29, 1906, can be manufactured economically.

In the accompanying drawings forming part of this specification, Figure 1 is a plan view of part of my improved form showing a portion of a window screen frame thereon; Fig. 2 is an end view of a portion of the form illustrated in Fig. 1 and showing a detailed portion of a window screen frame thereon; Fig. 3 is a section taken upon the line X—X of Fig. 1; Fig. 4 is a section taken on the line Y—Y of Fig. 1; Fig. 5 is a section of Fig. 1 taken on the line Z—Z; Fig. 6 is a perspective view of the anvil; Fig. 7 is a plan view showing an alternate construction of my invention with a portion of a window screen frame thereon; Fig. 8 is a section taken on the line X'—X' of Fig. 7; Fig. 9 is a section taken upon the line X'—X' of Fig. 7 showing the parts of my invention when a retaining pin has been depressed and a bolt attached to the window screen frame, and Fig. 10 is a sectional view illustrating a construction of my invention which is provided for use in attaching hollow rivets to the window screen frame.

My invention consists in providing a form A corresponding in shape and dimensions to the window screen frame B. As shown the form and window screen frame are rectangular in shape. Each side of the form is provided with a raised ridge 2 on which the sections of the window screen frame rest in the groove 3. Corresponding with holes 4 (through which the rivets as shown in Fig. 1 are inserted) are upright assembling pins or nails 5. Each of these pins

is adapted to be inserted in the longitudinal and vertical slot 6 in each rib and through one of the holes 4 passing through ribs 7 of the overlying sections 8 of the window screen frame. The form is composed of side bars 9 and corner pieces 10 which are secured together by means of holding rods 11 passing through longitudinal lower channels 12 in the corner pieces and side bars. Each corner piece has upon its surface a ridge 13 as shown over which the sections of the window screen frame are assembled. Instead of providing a longitudinal slot in each corner piece 10 as with the sides, holes 14 are made for the reception of the assembling pins 5. The corner pieces are held in adjusted position upon said bars 9 and rods 11 by means of slotted clamps 16 and bolts 17. The ridge 13 in each corner piece has transverse notches 18 adjoining the openings 14 so that a nut can be placed upon the corner piece below the sections of the window screen frame, and one of the bolts 19 easily connected thereto through the sections of said frame for holding the corners of the window screen frame together.

In use the sections of the window screen frame are assembled over the ridges of the form, as shown with the vertical pins 5 passing through the openings 4 in the window screen frame and the nuts 20 placed in the notches 18 in the corner pieces 10. The pins are then withdrawn one at a time, and as each pin is withdrawn a rivet is inserted through the openings left in the sides of the window screen frame, and the anvil 45 illustrated in Fig. 6, placed below the frame at the point where the rivet is inserted and upset. The upper portion 21 of the slot 6 is longer than the lower portion to receive the points of the rivets. The anvil as illustrated has a center ridge 22 which is more particularly adapted for upsetting split rivets. When the pins at the corners of the window screen frame are withdrawn screws are inserted in their places and attached to the nuts lying in the notches 18 below the frame and the window screen frame is thus completed.

As illustrated in Fig. 7 the sides of the

form A are provided with a ridge 25 over which the sections of the window screen frame are assembled. Corresponding with the holes 26 (through which the screws as shown in Fig. 7 are fastened) are upwardly projecting pins 27. Each of these pins is adapted to recede into the frame and is provided with a collar 28 to limit the upward movement thereof and an expansion spring 29 bearing upon a shoulder 30 in the recess 31. The tendency of this spring is to raise the pin. A transverse opening 32 intersects each vertical opening 33 through which the pin 27 slides. A stop pin 34 which is removed from the frame by hand fits in the opening 32 below each vertical opening 26 to prevent the vertical pins from receding when in superior position. The ridge 25 has a transverse slot 35 corresponding with each vertical opening 26. A nut 36 to be attached to each screw on the back of the frame is placed in the transverse slot 35 as shown.

In use all of the parts of the window screen frame in the alternate construction are secured together by means of screws and are assembled over the ridge 25, as indicated, with the vertical pins 27 projecting through the nuts 36 and holes 26 of the window screen frame which are to receive the screws for fastening said parts together. The stop pins 34 are then removed and screws 37 inserted through each screw hole in the frame and the corresponding vertical pins 27 depressed. The screws are turned into engagement with the nuts 36 by which movements the parts of the frame are drawn into tight engagement. After all of the screws have thus been fastened through the window screen frame said frame is lifted off of the form in finished condition.

In Fig. 10 is shown a construction of form for fastening the sections of the window screen frame together by means of hollow rivets 40 as illustrated. In this construction each pin 41 over which the parts of the window screen frame are assembled slides freely in the form and is not held by a spring as illustrated in Fig. 8. The transverse slots 35 in the rib 25 receive and hold the back of the rivets instead of the nuts when screws are used.

In accordance with the patent statutes I have described the principles of operation of my invention together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those set forth, within the scope of the claims.

Having described my invention what I claim as new and desire to protect by Letters Patent is:

1. A device of the class set forth, comprising, a form having a holding rod, a side bar and a corner piece formed with a ridge and grooved to admit said rod, temporary holding pins passing into said ridge over which sections of a frame having grooves corresponding with said ridge and openings corresponding with said pins are adapted to be placed to position said parts, and means for holding said side bar and corner piece in adjusted position on said rod; said holding pins being adapted to be displaced to position permanent securing devices in said frame.

2. A form for making frames, comprising, a plurality of form sections each being provided with a rib, assembling pins in said form sections over which sections of a frame having grooves corresponding with said ridge and openings corresponding with the pins in said form sections are adapted to be placed, longitudinal holding rods on which said form sections are mounted and a plurality of clamps for holding the sections of said frame on said form sections.

3. A device of the class set forth, comprising, a form provided with a ridge and depressible assembling pins over which the sections of a frame having grooves corresponding with said ridge and openings corresponding with said pins are adapted to be placed, and means for locking said pins in superior position.

4. A form for making screen frames, comprising, a plurality of form sections each having a rib with a longitudinal groove therein, a plurality of assembling pins adapted to be inserted in the grooves in said form sections, longitudinal holding rods over which said form sections are adapted to be assembled, and means for detachably securing said form sections to said rods, said assembled form sections being adapted to receive sections of a screen frame having grooves corresponding with the ribs of said form sections and openings adapted to coincide with said pins.

5. A device of the class set forth, comprising, a sectional form, the sections thereof being provided with a longitudinal ridge, and assembling pins, means for removably fastening said sections together, and means for permitting said pins being depressed into said frame, said parts being adapted to hold a frame having grooves corresponding with said ridge and openings corresponding with said pins, for the purposes specified.

6. A form for making frames, comprising, form sections having a longitudinal rib, tem-

porary assembling pins over which sections
of a frame having grooves corresponding
with said rib and openings coinciding with
said pins are adapted to be placed, and
5 means for holding said form sections to
position said frame sections.

In testimony whereof, I have signed my

name to this specification, in the presence of
two subscribing witnesses.

CREASEY J. WHELLAMS.

Witnesses:

H. L. FISCHER,
F. G. BRADBURY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
