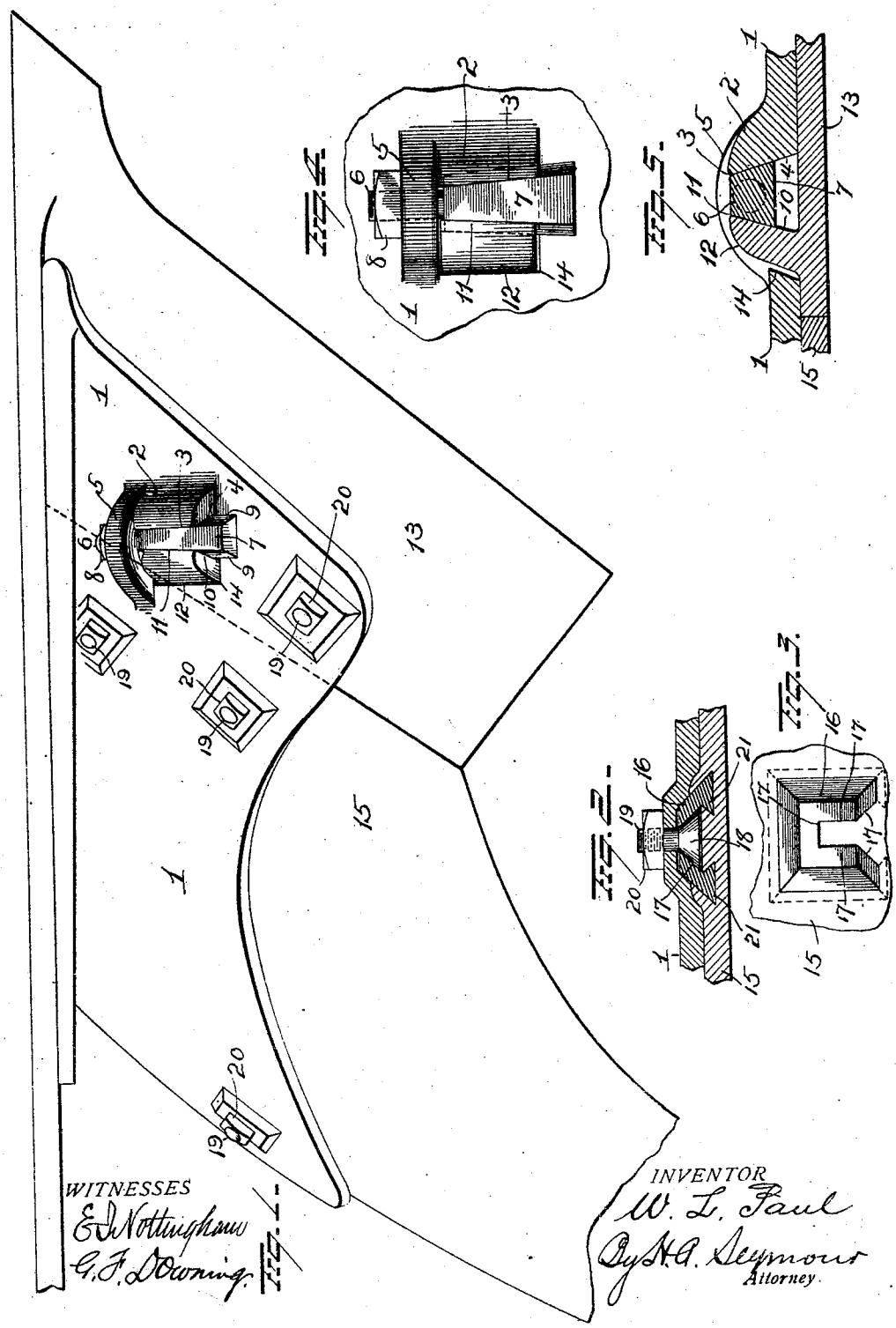
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AGRICULTURAL IMPLEMENT.

APPLICATION FILED JULY 3, 1908.

928,690. Patented July 20, 1909.



WITNESSES

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AGRICULTURAL IMPLEMENT.

No. 928,690. Specification of Letters Patent. Patented July 20, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM L. PAUL, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Agricultural Implements; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in agricultural implements, and more particularly to connecting means for parts thereof having working faces which, when in use, engage and have frictional contact with the soil.

Heretofore, it has been the common custom in connecting the mold boards and shares of plows with the frogs at the lower end of the plow standards, to employ bolts which pass through such mold boards and shares and having heads exposed in line with said engaging surfaces of these parts. Mold boards and shares are usually made with hardened faces while the bolts which secure them to the frog are necessarily of softer metal. In consequence of this, the said engaging surfaces of the plow have portions, (viz.—the bolt heads) which are softer than the remaining portions of these soil engaging surfaces. It is apparent therefore, that the comparatively soft bolt heads which form portions of the soil engaging surfaces will wear faster than the remaining portions of said surfaces and cause a retardation of the "scouring" of the plow bottom. It is important therefore, to connect the mold board and share to the frog, in a manner to avoid the appearance of bolt heads on the working or soil engaging surfaces of these parts, particularly when such surfaces consist of chilled iron or steel. It has been found when the mold board and share are provided on the rear faces with chilled or cast lugs to afford attaching means for bolts which connect these working parts to a frog, such chilled or cast lugs are not of sufficient strength to withstand the strain of the tightening bolts. Furthermore, if the lugs be made heavier, the metal at the working surfaces of the plow part would not chill satisfactorily.

One object of my present invention is to avoid all of the defects above set forth and to connect the soil engaging parts of a plow with the frog in an efficient manner and maintain the continuity of the chilled working surfaces of the plow parts so that the "scouring" qualities of said surfaces shall be highly efficient.

A further object is to provide the plow parts with bolt engaging lugs in such manner as to avoid danger of breaking; so that they will possess the requisite strength to withstand all strain to which they may be subjected, and so that the efficiency of the chilled plow parts will be enhanced.

A further object is to provide simple and efficient means for drawing the plow parts closely together and for simultaneously clamping them closely against the frog.

With these objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a bottom plan view of a plow embodying my improvements. Fig. 2 is a fragmentary sectional view showing one of the attaching devices to the frog. Fig. 3 is a face view of one of the attaching lugs. Fig. 4 is a face view illustrating the devices for drawing the plow parts together and to the frog, and Fig. 5 is a sectional view of the drawing devices.

1 represents a frog such as is employed at the lower end of a plow standard for supporting and carrying the plow parts,—viz:—the mold board and share. The frog is provided on its rear or under face with a lug 2 having an inclined side 3, and this inclined side of the lug is beveled or undercut as at 4. At one end of the lug 2, another lug 5 projects from the frog and is disposed substantially at right angles to the lug 2. The lug 5 is provided with a hole for the passage of the shank 6 of a wedge 7, and said shank is threaded for the reception of a nut 8 which bears against the lug 5. The wedge is provided with beveled side faces 9,—one of which engages the beveled face 4 of the lug 2 and the other beveled side of the wedge coöperates with a beveled face 10 on the inclined side 11 of a lug 12 projecting from the share 13 and passing through an opening 14 in the frog.

From the construction and arrangement of parts above described, it will be seen that when the mold board 15 has been secured to the frog (in the manner hereinafter de-

scribed) and the nut 5 on the shank of the wedge is screwed home, the coöperation of said wedge with the beveled, inclined sides of the lugs 2 and 12 will cause the share to be drawn up closely to the edge of the mold board and also to be drawn tightly against the frog.

The mold board and also the share, are provided on their rear faces with lugs 16, each of which is made with a groove 17 V-shape or dove-tail in cross section and receives a similarly shaped head 18 on a bolt 19. Each of the bolts 19 passes through a hole in the frog and receives a nut 20, which latter, when tightened against the rear face of the frog, will cause the mold board or share to be securely fastened to the latter, and no bolt heads will appear on the chilled working faces of the said plow parts. The lugs 16 are not cast upon the mold board and share, and it is important that they should not be, for reasons which have been hereinbefore explained. The said lugs 16 are made of some malleable material such as malleable iron or cast steel, and at their lower edges, they are made dove-tailed as shown at 21. The lugs 16 thus made, and having the form hereinbefore described and shown in Figs. 2 and 3 of the drawing, are placed in the mold and engaged by the fluid iron as the same is being poured to form the plow part, resulting in said lugs being embedded into the plow part securely. Furthermore, said lugs being cold serve rather as chills to keep the plow part hard, than masses of hot metal to anneal the same or prevent chilling. Besides the advantages above set forth, the lugs 16 when constructed and attached to the plow parts as before explained, serve as malleable or yielding bolt hangers.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is,—

1. In an agricultural implement, the combination with a soil engaging part and a support therefor, of a lug made of a different metal than that of which the soil-engaging part is made and secured to the latter, and a bolt connecting said lug with said support.

2. In an agricultural implement, the combination with a chilled soil-engaging part, and a support, of a malleable lug secured to the rear face of said soil-engaging part, and a bolt connecting said lug with the support.

3. In an agricultural implement, the combination with a soil engaging part, and a support, of a malleable lug embedded in the metal of the rear part of said soil-engaging part, and means connecting said lug with the support.

4. In an agricultural implement, the combination with a soil engaging part, and a support, of a lug having a dove-tail groove, said lug made separate from the soil engaging part and embedded in the metal of the latter, a bolt passing through the support and having a head disposed in the dove-tail groove of the lug, and a nut on said bolt.

5. In an agricultural implement, the combination with a soil-engaging part, and a support, of a lug having a dove-tail groove, said lug having dove-tail lower edges embedded in the metal of the soil engaging part, a bolt passing through the support and having a head disposed in the dove-tail groove of the lug, and a nut on said bolt.

6. The combination with a frog, and chilled plow parts, of malleable metal lugs embedded in the metal of the chilled plow parts and projecting from the rear faces thereof, bolts passing through the frog and having heads engaging said lugs, and nuts on said bolts.

7. The combination with a frog and plow parts, of means coöperating with said frog and plow parts to draw the edges of the latter together and simultaneously to draw one of said plow parts toward the frog.

8. The combination with a frog and plow parts, of means coöperating with said frog and plow parts to draw the edges of the latter together, and securing devices engaging the rear faces of the plow parts and connecting said plow parts to the frog.

9. The combination with a frog and a plow part, of a lug on the rear face of the frog, a lug on the plow part and passing through an opening in the frog, said lugs having oppositely disposed inclined, undercut side faces, a wedge disposed between said lugs and engaging their inclined undercut side faces, a shank on said wedge, a lug on the frog through which said shank passes, and a nut on the free end of the shank of the wedge.

10. A soil-engaging part for an agricultural implement provided on its rear with a lug made of a different metal than that of which the soil-engaging part is made and secured to the latter, for the reception of a fastening device to secure said soil-engaging part to a support.

11. A chilled soil-engaging part for an agricultural implement provided with a rearwardly projecting lug made separate from said soil-engaging part and secured to it, said lug being made of ductile metal and adapted for the reception of a fastening device.

12. The combination with the soil-engaging part of an agricultural implement, of a lug of ductile metal made separate from said soil-engaging part and embedded in its rear face, said lug adapted for the reception of a fastening device.

13. The combination with the soil engaging part of an agricultural implement, of a lug having a dove-tail groove, said lug being made of a different metal than that of