(No Model.)

A. L. & D. L. BAUGHMAN.

DRILL ATTACHMENT FOR PLANTERS.

No. 513,664. Patented Jan. 30, 1894.

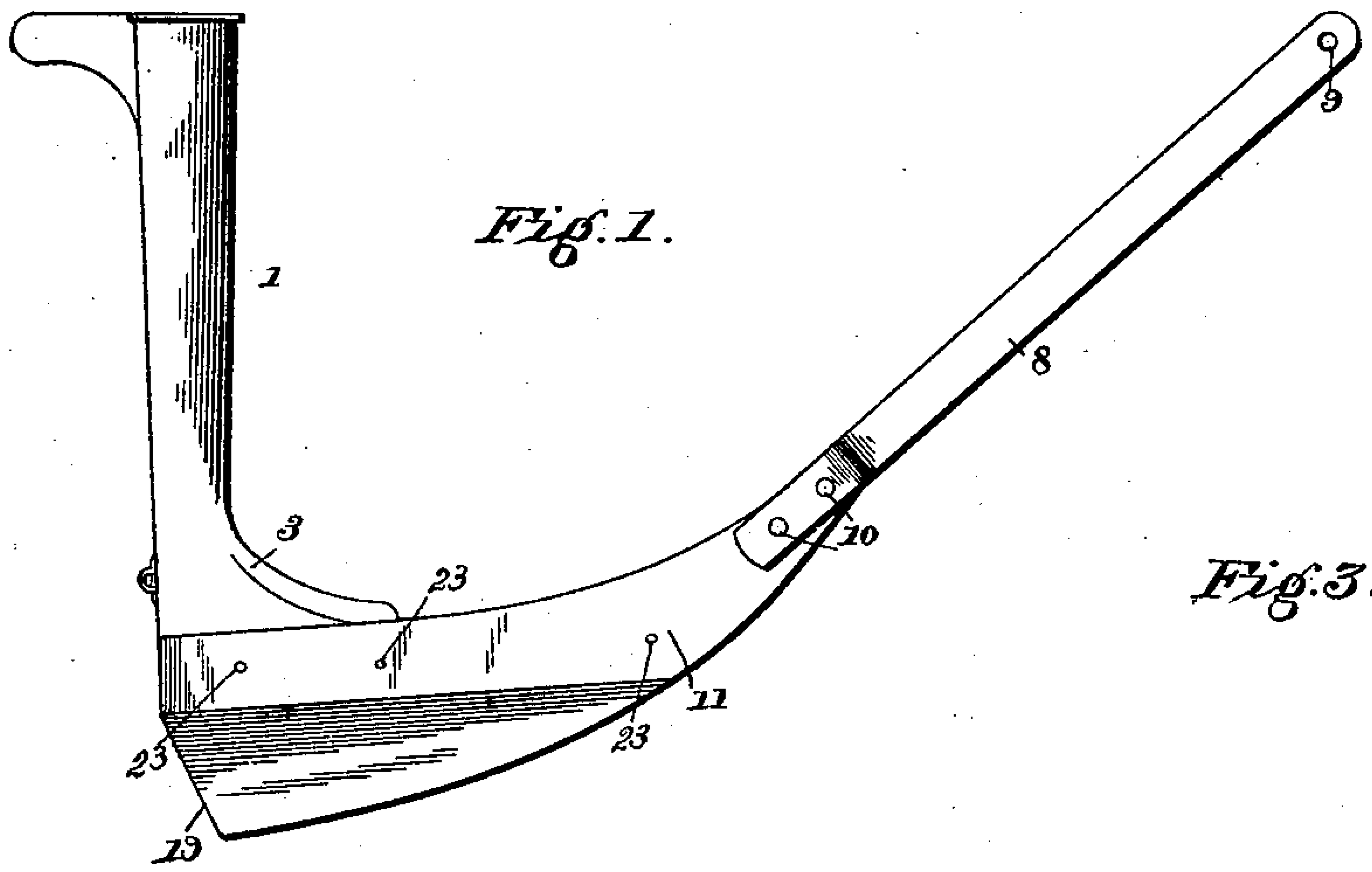

Fig. 1.

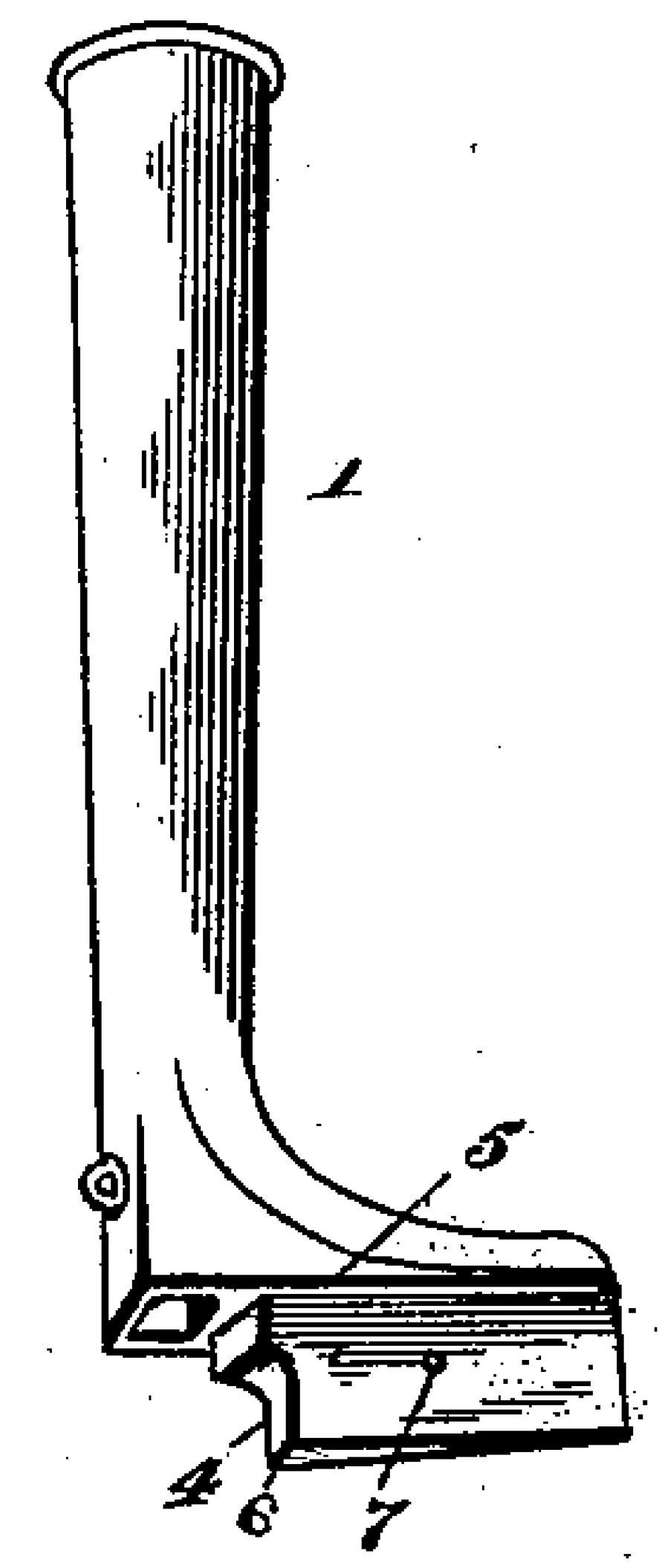

Fig. 3.

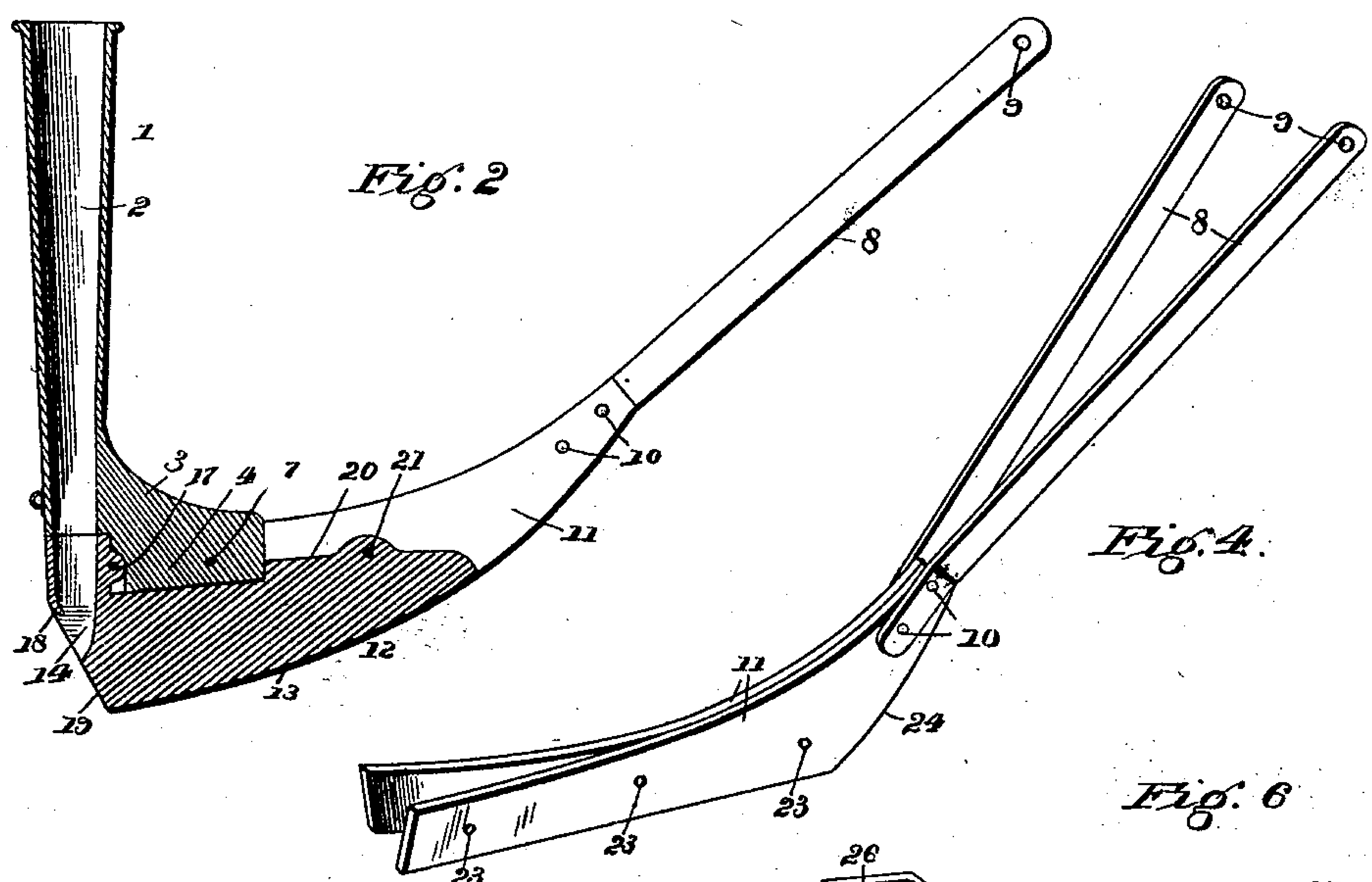

Fig. 2

Fig. 4.

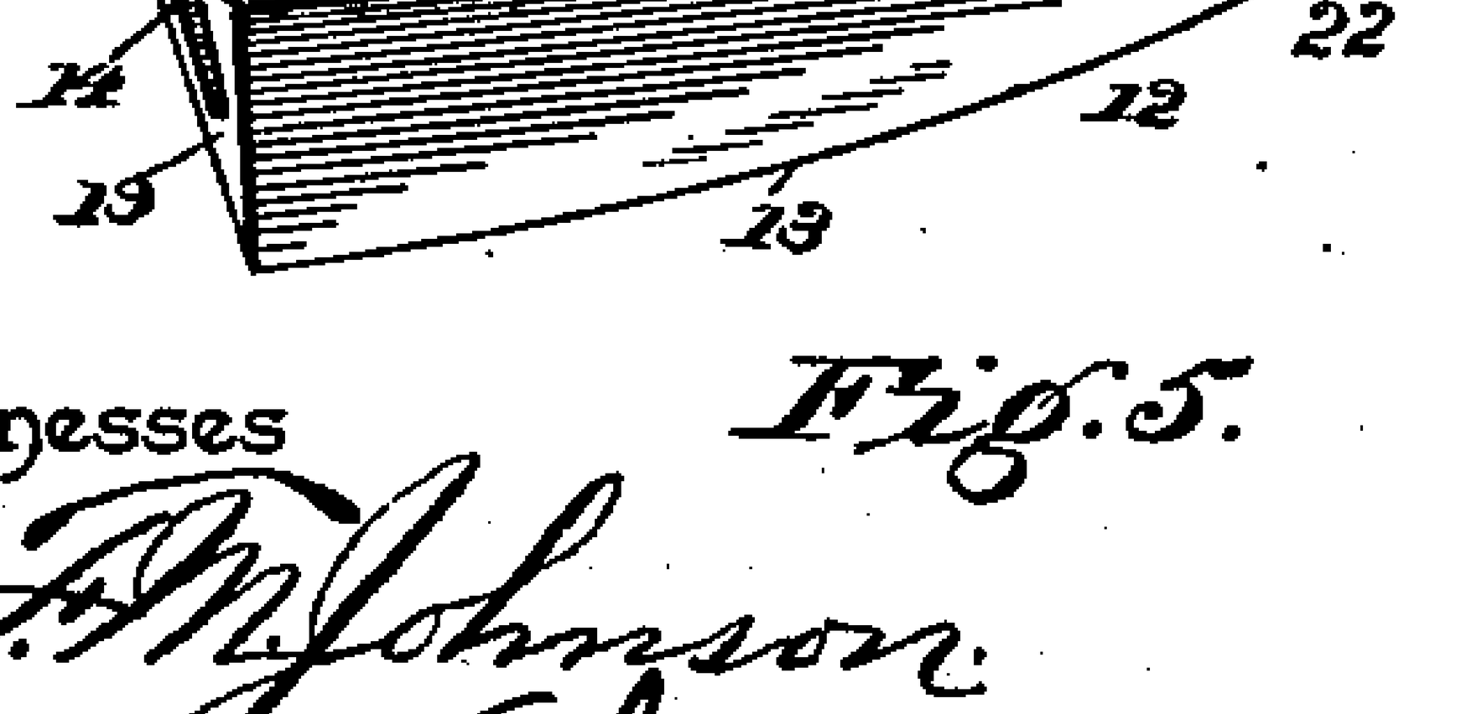

Fig. 5.

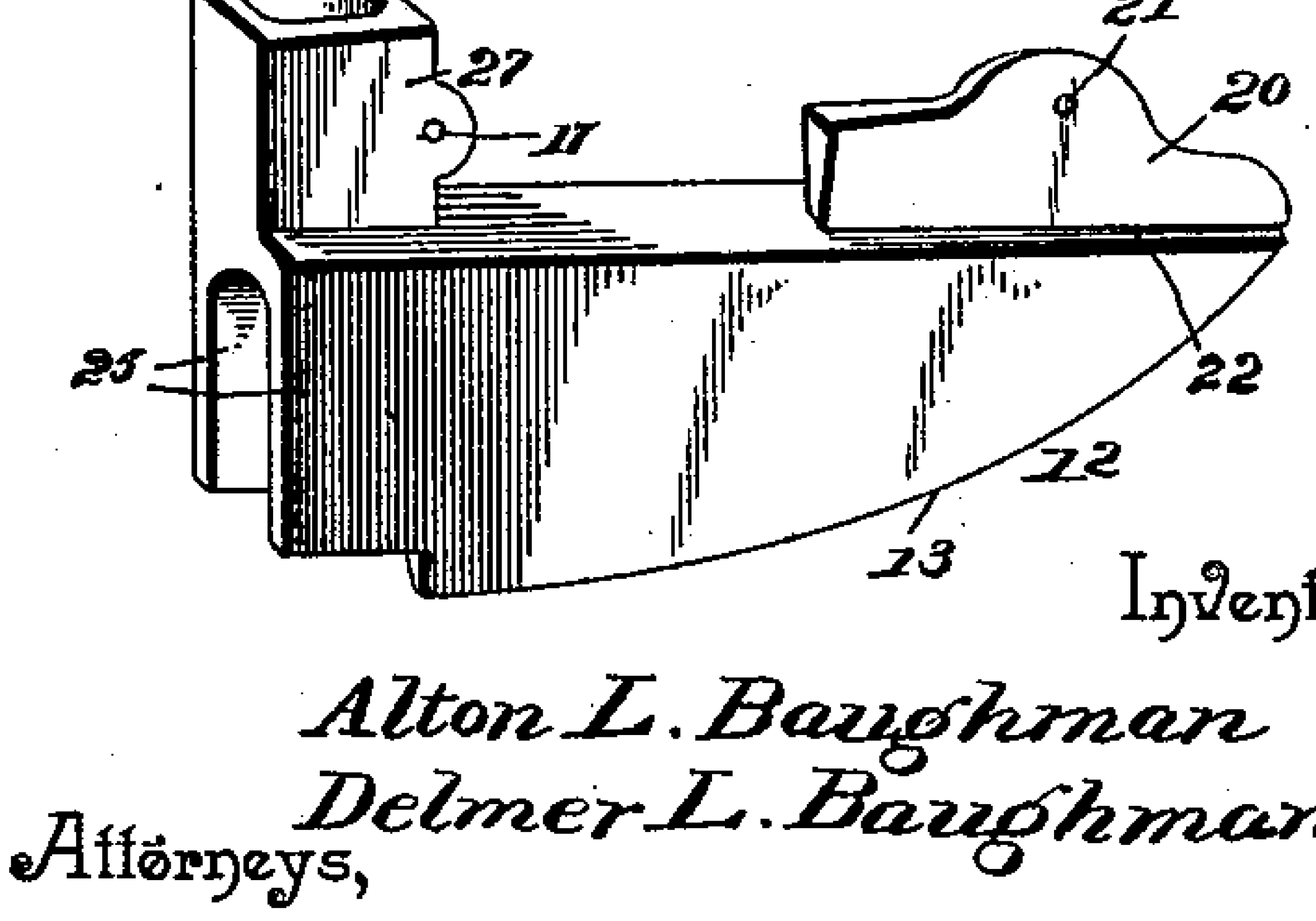

Fig. 6

Witnesses

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DRILL ATTACHMENT FOR PLANTERS.

SPECIFICATION forming part of Letters Patent No. 513,664, dated January 30, 1894.

Application filed January 25, 1893. Serial No. 459,675. (No model.)

To all whom it may concern:

Be it known that we, ALTON L. BAUGHMAN and DELMER L. BAUGHMAN, citizens of the United States, residing at Albion, in the county of Noble and State of Indiana, have invented a new and useful Drill Attachment for Planters, of which the following is a specification.

Our invention relates to improvements in attachments for shoe-drills and planters; the objects in view being to so construct the attachment as to render the same perfectly efficient for forming furrows and dropping the seed in the bottoms thereof; and furthermore, to so construct the drill-shoe as to increase its durability, whereby those parts subjected to the most wear, may when worn, be replaced at a small cost, thus obviating the necessity of removing the entire drill-shoe and replacing it by a new one.

With these objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

In the drawings:—Figure 1 is a side elevation of a drill-shoe embodying our invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a perspective view of the seed-tube. Fig. 4 is a similar view of the stationary brace portion of the drill-shoe. Fig. 5 is a detail in perspective of the runner or wearing portion of the drill-shoe. Fig. 6 is a similar view of a modified construction of runner, the same being designed to plant corn and form furrows wider than those usually employed in planting.

Like numerals of reference indicate like parts in all the figures of the drawings.

The seed-tube 1 is provided with the usual seed-passage 2, which extends from its upper end throughout its length and is at the bottom nearly rectangular in cross-section as shown. At its front lower end the seed tube is flat and extends forward to form a foot 3, and upon the under side of the same and in advance of the opening 2, the aforesaid foot is provided with a tenon 4, which tenon is preferably set within the side-edges of the foot thus forming at opposite sides thereof shoulders 5. The foot, furthermore, in cross-section is preferably tapered slightly, or in other words, its opposite faces converge toward the lower and front edges thereof. The blade extends from the front or toe of the foot 3 to a point adjacent or a slight distance in advance of the seed-passage 2, where it terminates and has its lower corner or portion provided with a curved recess 6. Between its ends the blade is also provided with one or more bolt or rivet holes 7.

8 designates a pair of converging draft-straps or braces which are provided at their upper ends with holes 9 by which they are connected through the medium of bolts or otherwise to the framework of the seeder. The lower ends of the straps 8 are securely bolted or riveted at opposite sides, as indicated at 10, to a pair of steel-plates 11, which from their point of juncture gradually diverge toward their rear ends and slightly converge toward their lower edges in the same ratio as do the sides of the tenon 4 formed on the under side of the foot 3 of the seed-tube.

12 designates the runner portion of the device, and the same is provided with a lower curved edge 13, produced by reason of the said section 12 being of a substantially V-shape when viewed in cross-section. The curved edge has its lowest point at the rear end of the runner-section, and above said point there is formed in said runner-section, the seed-discharge opening 14, which is continued upwardly through a lug or tenon 15, formed on the upper side and at the rear end of said runner-section. This lug or tenon 15, is formed within the opposite edges of the runner section, and is provided at its front edge or side at the juncture with the runner-section with a curved lug or extension 16, having a hole 17. The upper end of the lug 15 is flat, and is designed to fit the under side or heel of the seed-tube 1, so that the seed passages of the tube and runner-section form a continuous passage with each other. The seed-passage or opening 14 that is formed within the runner-section is curved rearwardly, and a deflecting-rib or plate 18, is formed in the seed-passage directly above the lower end of the discharge opening, so that the seed passing down the tube will be deflected by said plate and thrown to the front lower side of the tube, whereby it will be discharged at the lowest side and at the rear of the tube and not be liable to fall upon the

top of the soil, but instead will fall into the bottom of the furrow. The rear end of the runner-section is beveled or inclined as indicated at 19 which prevents the seed chamber from becoming choked or clogged while running over an obstruction. Near its front end the runner-section is provided upon its upper side with a second lug or tenon 20, and the same has formed therein at its center a hole 21. The lug 20 is gradually tapered toward the front end of the runner-section and also has its opposite sides inclined. These inclinations of the sides agree with the inclination of the sides of the lug 15, and like the latter lug, the lug or tenon 20 is formed within the upper side-edges of the runner-section, so that shoulders 22 corresponding to the shoulders 5 of the seed tube are formed.

In assembling the parts, as before stated, the lug 15 takes under the heel-portion of the seed tube, and the tenon 4 of the foot of the seed tube is of such shape and proportion as to fit snugly within the space formed between the rear end of the lug 20 and the front end or side of the lug 15 of the runner-section. When these parts are assembled they are slipped between the oppcsite steel-plates 11, and these plates are provided with holes 23, which it will be observed, align with the holes 7, 17, and 21, and through the same rivets are passed the aforesaid rivets serving to securely bind the parts together and make the shoe as rigid as if the same were formed integral. It will be seen that the forward edges of the plates 11 are curved, as at 24, and this curvature is continued by the curve 13 of the runner-section so that the lower furrow-forming edge of the device is continuous, as is usual.

In Fig. 6 we have shown a slightly modified construction of runner-section shoe, and in this instance, the difference simply consists in providing at the rear edge of said section the depending ears or wings 25, the same forming the side walls of the seed-opening 26, which is formed in the runner-section and its upper extension or tenon 27. Such a construction forms a wider furrow than would the runner section 12, and hence is better adapted for the planting of corn.

It will be seen that when the parts are assembled the shoulders 22 of the runner-section and those shoulders 5 of the seed-tube are of a width agreeing with the thickness of the steel-plates 11, so that when said plates are interposed between said shoulders, the external sides of the entire device are smooth and unbroken and hence offer no obstruction to a ready passage of the device through the soil. Furthermore, by inclining the rear ends of the runner-sections loose soil cannot accumulate therein nor can seed, and hence serve to clog the opening, so that, as will be obvious, the opening will be clear, and the seed may be readily dropped therethrough into the furrow.

The essential feature of this invention resides in the tenon connection between the seed tube and the runner section; also in the disposition of the side plates whereby they serve to secure the parts together, besides covering the tenon connection.

It is to be understood that changes in the form, proportion and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described our invention, what we claim is—

1. In a shoe drill attachment, the combination with a seed tube having a seed passage, of an independent runner section having at its rear end an upwardly extending hollow lug or tenon adapted to interlock with the lower end of the seed tube, the bore of the tenon aligning with the passage of the seed tube to form a continuation thereof, substantially as specified.

2. In a shoe drill attachment, the combination with a seed tube having a seed passage, and a tenon 4 in advance thereof, of an independent runner section having at its rear end a hollow tenon adapted to interlock with the tenon of the seed tube, the bore of the hollow tenon aligning with the passage of the seed tube to form a continuation thereof, substantially as specified.

3. In a shoe drill attachment, the combination with a seed tube having a seed passage, and a tenon 4 in advance thereof, of an independent runner section having a solid tenon at the front end and a hollow tenon at the rear end, the tenon 4 of the seed tube being adapted to fit in the space between the two tenons of the runner section and interlock therewith, substantially as specified.

4. In a shoe drill attachment, the combination with a seed tube having a seed passage, of an independent runner section having at its rear end a seed discharge opening 14, a rear beveled end 19, and a hollow tenon rising from the rear end above the opening 14 with its bore registering therewith, the tenon of the runner section being adapted to interlock with the lower end of the seed tube, the bore of the tenon aligning with the seed passage of the seed tube, substantially as specified.

5. In a shoe drill attachment, the seed tube, in combination with the independent runner section, said parts being provided with corresponding tenons interlocking with each other, and plates applied and secured to opposite sides of the tenon joint and covering the same, substantially as specified.

6. In a shoe drill attachment, the seed tube, in combination with the independent runner section, said parts being provided with corresponding tenons interlocking with each other, the tenons being of less width than the parts on which they are formed, and plates applied and secured to opposite sides of the tenon joint and covering the same, said plates being disposed flush with the outer surface of the seed tube and runner section, substantially as specified.

7. In a shoe drill attachment, the seed tube having a foot 3 provided with a depending tenon 4 having a recess 6, in combination with the runner section having a tenon formed with a lug or extension to interlock with the aforesaid recess, substantially as specified.

8. In a drill shoe attachment, the combination with a seed tube having a seed passage, and a foot 3 in advance thereof provided with a depending tenon 4 of less width than the foot thereby forming shoulders 5, of the runner section having the hollow tenon at the rear end and the solid tenon at the front end, and both tenons being of less width than the runner section, the intermediate space separating the tenons being designed to receive the tenon 4 of the seed tube, and the bore of the hollow tenon aligning with the seed passage of the seed tube and forming a continuation thereof, and plates applied and secured to the opposite sides of the tenons and covering the same and resting on the upper edge of the runner section, substantially as specified.

9. In a shoe-drill attachment, a seed-tube terminating at its lower end in a runner, and a seed-passage formed in the tube and extending into the runner, said seed-passage being curved abruptly rearward at its front lower end and provided at its upper rear side with a transverse deflecting rib for throwing the seed to the lower portion or bottom of the rearwardly curved seed-passage, substantially as specified.

10. In a shoe-drill attachment, the combination with a seed-tube, provided at its lower end with a downwardly-extending foot, and with a vertical seed-passage, the said foot having formed upon its under side, within its edges, a depending tenon having a hole, of a runner-section having a curved lower edge, and provided upon its upper side between its edges and at its ends with tenons between which the tenon of the tube is adapted to fit, the rear tenon of said runner-section having a rearwardly curved seed-passage forming a continuation of that in the tube, and both tenons of said section having holes, a pair of clamping-plates embracing the tenons of the tube and runner-section and having holes aligning with those of said tube and section, rivets passed through the same, and draft-straps connected to the front ends of the plates, substantially as specified.

11. The combination with the tube 1, having the seed-passage 2, the foot 3, and the tenon 4, formed on its under side and provided with a perforation 7, said tenon having at its rear end the curved recess 6, and being located within the opposite edges of the foot, forming the shoulders 5, of the runner-section 12, having the lower curved edges 13, the rear inclined edge 19, and provided upon its upper side between its edges with the tenons 15, and 20, the former being provided with the rearwardly curved seed-passage forming a continuation with that in the tube, and at its front end with the perforated lug 16, the said lugs 15 and 20 being located within the opposite side edges of the runner forming the shoulders 22 and adapted to fit at opposite sides of the tenons of the foot, the diverging draft-straps 8 secured together at their lower ends, the metal plates 11 secured to the straps, diverging toward their rear ends and located between the shoulders of the foot and runner-section and clamping the tenons thereof, and the rivets passed through the plates and perforations in the tenons, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ALTON L. BAUGHMAN.
DELMER L. BAUGHMAN.

Witnesses:
HOMER F. RIDDLE,
THOMAS M. EELLS.