No. 611,980. Patented Oct. 4, 1898.

D A SMITH.

SPOUT FOR GRAIN DROPPERS.

(Application filed Mar. 9, 1898.)

(No Model.)

Fig. 1.

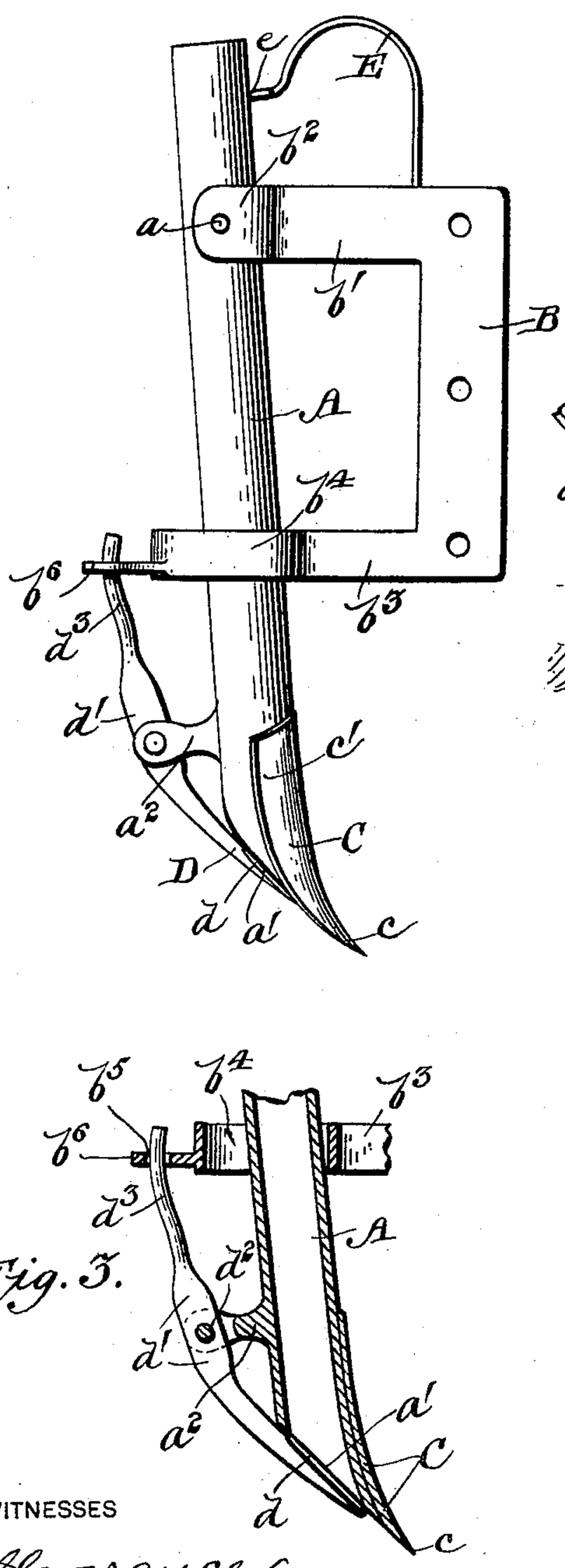


Fig. 2.

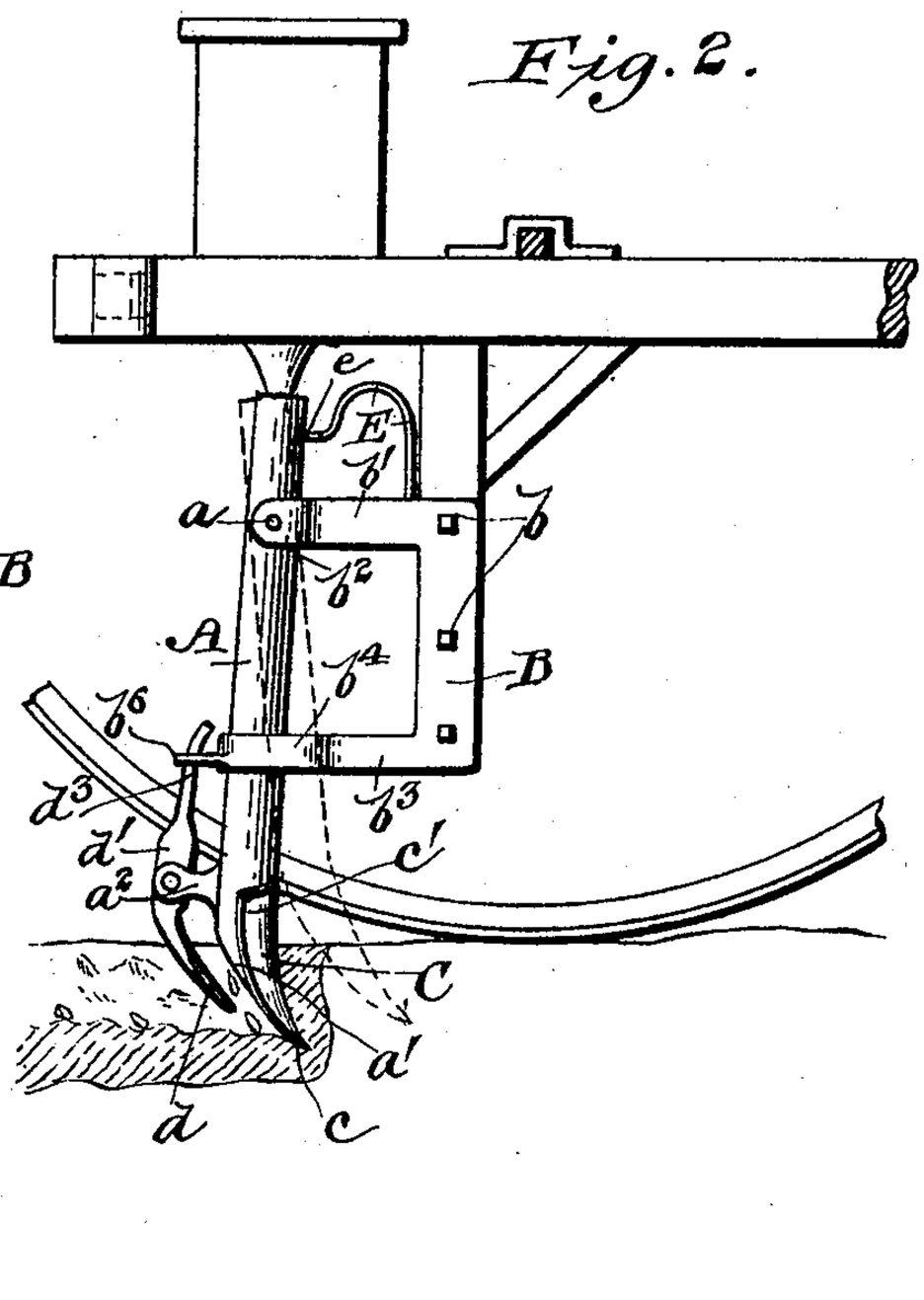
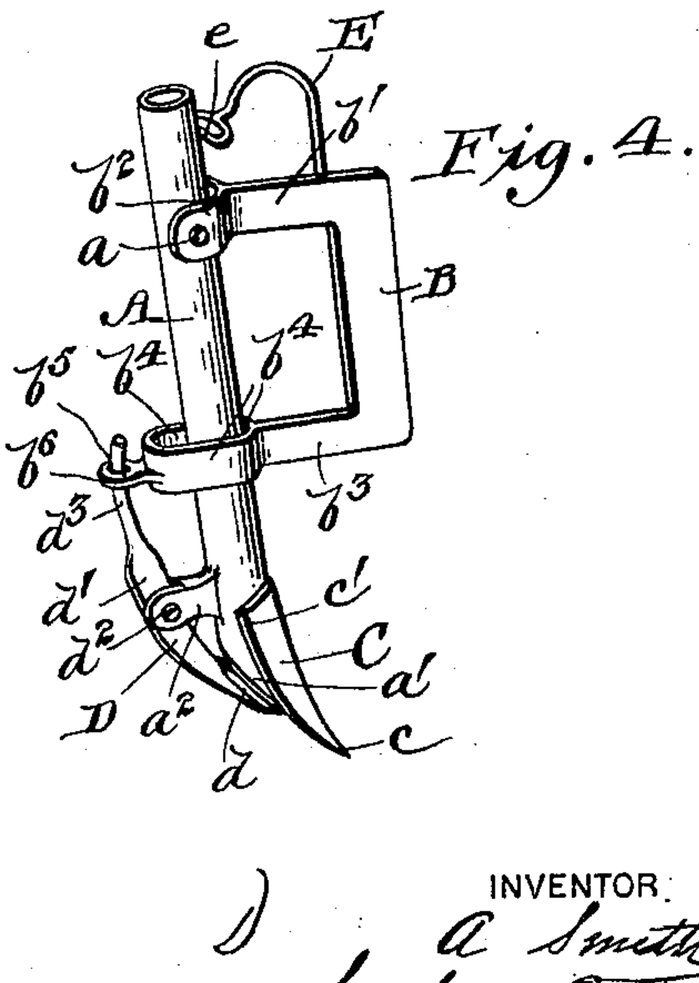


Fig. 3.

Fig. 4.



WITNESSES

Geo. C. Sullivan

INVENTOR.

D A Smith

by his Attys

Munn & Emrick & Lawrence

UNITED STATES PATENT OFFICE.

D A SMITH, OF POWEL, NEBRASKA.

SPOUT FOR GRAIN-DROPPERS.

SPECIFICATION forming part of Letters Patent No. 611,980, dated October 4, 1898.

Application filed March 9, 1898. Serial No. 673,267. (No model.)

To all whom it may concern:

Be it known that I, D A SMITH, a citizen of the United States, residing at Powel, in the county of Jefferson and State of Nebraska, have invented certain new and useful Improvements in Spouts for Grain-Droppers; 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.

My invention relates to improvements in spouts for grain-droppers, and has for its object to provide such a spout with means for preventing dirt from entering the lower end of the same when not in operation.

It consists in mounting such a spout pivotally and providing a closing means at its lower end which is adapted to be operated automatically by the movement of the spout on its pivotal points.

It also consists in a pivoted spout adapted to direct grain from a suitable holder, a cut-off or shield adapted to close its lower end automatically, and a spring for normally holding the spout in such a position that the cut-off will close the lower end thereof.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a spout constructed in accordance with my invention. Fig. 2 represents a side elevation of such a spout applied to a planter, the parts being shown in the position which they will assume when in the act of dropping the grain. Fig. 3 represents a central vertical section through the lower end of the spout, and Fig. 4 represents a perspective view of the said spout.

A spout constructed in accordance with my invention is adapted to be used upon planters or drills or other similar machines for dropping grain and is constructed so as to receive the grain from any suitable receptacle and direct it to its proper place in the earth. They are therefore adapted to be used singly, as for lister-plows, or in pairs, as for corn-planters. They may also be used in any desired number, as for use upon drills where a number of rows are planted at a time.

A in the drawings represents my improved spout; B, a supporting-frame for the same; C, a plow-point, and D a cut-off or shield.

In applying my improved spout to planters or other grain-droppers the frame B is adapted to be bolted or otherwise secured to the framework of the machine by which it is to be carried, as indicated at b in Fig. 2 of the drawings. At the upper end of the frame B a rearwardly-extending arm, as b', is formed, the rear end of which is provided with a bifurcated portion, as b^2, adapted to surround the spout A. Studs, as a, formed upon the sides of the spout A, engage corresponding openings formed in the bifurcated portion b^2 of the frame, whereby the spout is adapted to be pivotally mounted upon the rear end of the arm b'. A spring, as E, mounted upon the top of the frame B, engages with its free end the upper portion of the spout A, as at e, and normally holds the upper end of the said spout in its rearmost position. A horizontal arm b^3 is also formed upon the lower end of the frame B and is provided with an elongated socket or sleeve, as b^4, which receives the spout A and acts as a guide for the said spout in its movement upon the pivots a. The elongated sleeve b^4 will act also to limit the movement of the spout A.

To the lower end of the spout is attached a plow-point, as C, which is adapted to open a suitable furrow in the earth to receive the seed which it is desired to plant. Any suitable plow-point may be attached to the spout and one of any desired shape. As shown in the drawings, the point C is provided with a forwardly-extending point, as c, and flaring side portions, as c'. The lower end of the spout is preferably beveled to an angle approximately like that shown in the drawings, as at a', the opening at this point being to the rear of the point C and a little distance above the point of the same. By this construction the opening at the lower end of the spout is completely protected from the earth by the point C when the spout is being kept in use. When the operation of the device ceases, it is desirable to close the lower end

of the spout, so that the dirt may not get into the opening and clog the same. For this purpose I provide a shield or cut-off, as D, which comprises a disk or plate, as d, carried by the lower end of a lever d'. The lever d' is pivoted to the spout, as at d^2, upon a bracket or projection, as a^2, formed near the lower end of the spout A. The lever is preferably pivoted about midway of its length, the upper end thereof being somewhat reduced and preferably cylindrical in shape, as at d^3.

In order to operate the cut-off automatically with respect to the movement of the spout A, the upper rounded end d^3 of the lever d' engages an opening or passage, as b^5, formed in a projection b^6, which extends outwardly from the elongated sleeve b^4. It will be apparent from this construction that when the spout is pulled through the earth and the lower end of the spout thus kept at the rear end of the sleeve b^4 the upper end of the cut-off lever engaging the aperture b^5 will hold the cut-off a short distance away from the lower end of the spout, and thus permit the seed to pass out in their descent to the earth. When the planter or grain-dropper is in use, the cut-off will therefore be always in its open position, but when the machine is stopped or is backed for any reason the spout, assuming at once its forward position under the action of the spring E, will cause the cut-off to close the lower end of the spout and prevent the entrance of dirt or other foreign substance into the said spout. The width of the plow-point C is always sufficient to keep the dirt from clogging the lower end of the spout when it is moving forward through the ground, but when it stops of course it no longer protects the open end of the spout sufficiently, and it is then that the cut-off or shield acts to prevent such clogging. The upper end of the spout A may be connected with any seed receptacle or box, as shown in Fig. 2 of the drawings.

It will be apparent that a spout of this character can be applied to any sort of a planter or seed-dropping machine and can be connected to receptacles having dropping mechanism of any desired character. It may be necessary to change the position of the spring or the shape of the same upon different receptacles; but it will of course be apparent that such changes can be made without departing from the spirit of my invention so long as the said spring is so arranged as to keep the lower end of the spout normally forward. It will also be apparent that the lower end of the spout and the shield for closing the same may be arranged at right angles to the axis of the spout without departing in the least from the spirit of my invention. So, also, they may be arranged at any other desirable angle as may be found necessary to increase the efficiency of the device in keeping out dirt.

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

1. A spout for grain-droppers comprising a supporting-frame, means for pivotally holding the said spout therein, and means for automatically closing the lower end thereof when the spout is not in use, the construction being such that when the said spout is brought into engagement with the ground, it will be automatically opened to discharge grain or seed, substantially as described.

2. A spout for grain-droppers having a supporting-frame, means for pivotally mounting the said spout in the said frame, a spring for holding the said spout normally in its forward position, and means for automatically opening and closing the lower end of the said spout, substantially as described.

3. In a spout for grain-droppers, the combination with a frame adapted to be mounted upon a planter, the said frame having a bifurcated supporting-arm adapted to pivotally support the said spout, of an elongated slot or sleeve for limiting the swinging movement of the said spout, and means for holding the spout normally in its forward position, substantially as described.

4. In a spout for grain-droppers, the combination with a hollow cylindrical body portion, of means for pivotally mounting the same upon the grain-droppers, a plow-point attached to its lower end, means for limiting the oscillating movement of the spout, and a cut-off adapted to be operated automatically by the movement of the said spout, substantially as described.

5. In a spout for grain-droppers, the combination with a hollow body portion, of a frame for supporting the same having a bifurcated arm on its upper portion adapted to embrace the said spout, laterally-extending studs formed upon the spout and adapted to engage bearings in the said bifurcated portion to pivotally support the said spout, a laterally-extending arm also formed upon the said frame and provided with an elongated slot or guide-opening for limiting the oscillating movement of the spout, a cut-off mounted at the lower end of the spout comprising a lever having a shield at its lower end and an engaging portion at its upper end adapted to engage an aperture formed in an extension upon the said guiding-slot, the construction being such that when the spout assumes its normal, forward position the cut-off will be closed and when the spout is pushed to the rear by being forced through the ground the cut-off will open to permit the seed or grain to pass out, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

D A SMITH.

Witnesses:
J. H. DOWNEY,
ALBERT GRAFTON.