S. P. BABCOCK.
HAND-PLANTER.

No. 193,590. Patented July 31, 1877.

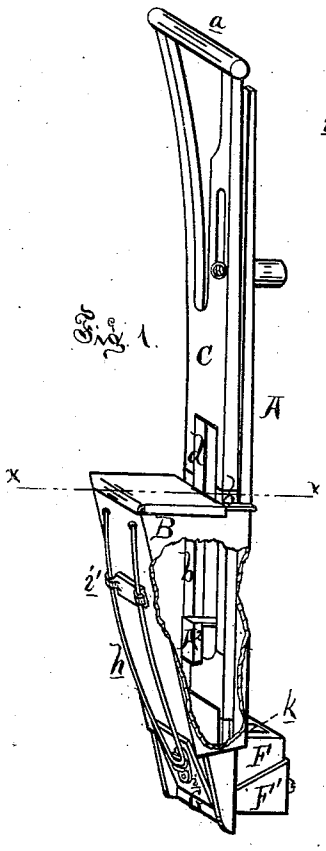



Fig. 1.

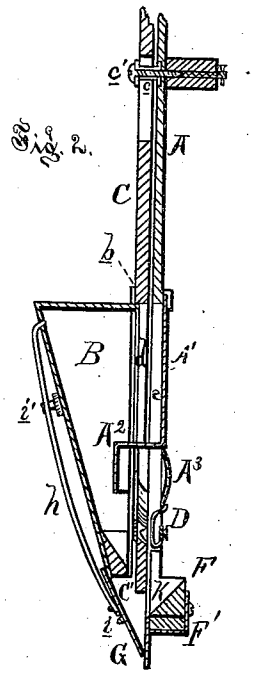



Fig. 2.

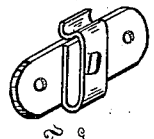



Fig. 5.

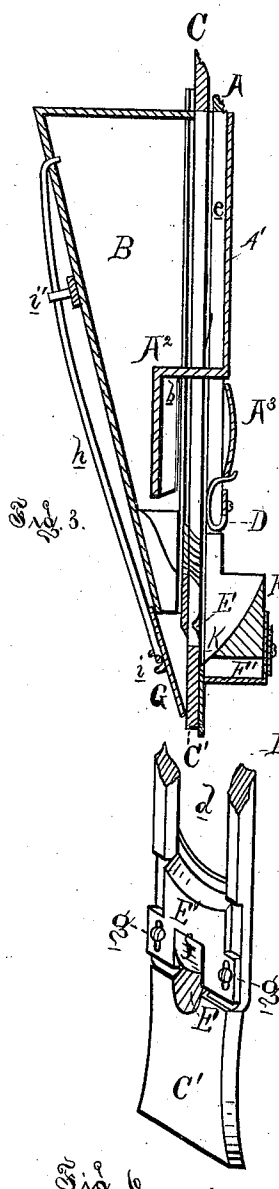



Fig. 3.

Fig. 6.

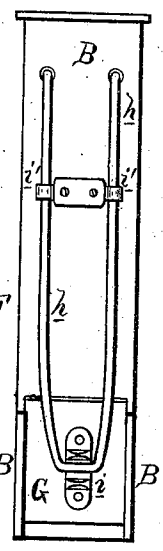



Fig. 4.

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# UNITED STATES PATENT OFFICE.

SYLVESTER P. BABCOCK, OF ADRIAN, MICHIGAN.

## IMPROVEMENT IN HAND-PLANTERS.

Specification forming part of Letters Patent No. **193,590**, dated July 31, 1877; application filed March 15, 1877.

*To all whom it may concern:*

Be it known that I, SYLVESTER P. BABCOCK, of Adrian, in the county of Lenawee and State of Michigan, have invented an Improvement in Hand-Planters, of which the following is a specification:

The nature of my invention relates to certain improvements in hand corn-planters, and more particularly upon that for which Letters Patent, No. 183,527, were issued to me October 24, 1876.

My invention consists in the peculiar stop-block and its adjustable box; in the combination of the scraper-plate and the peculiar spring for holding it in position; in the peculiar shape of the plunger-foot, to avoid clogging; in an inverted hopper or hood inside the corn-hopper, to prevent undue pressure of corn at the cut-off; in a peculiar washer for the slot in the plunger; and in the general construction and arrangement of the various parts, as more fully hereinafter set forth and described.

Figure 1 is a perspective view of the planter with a portion of the hopper broken away, with the plunger up. Fig. 2 is a longitudinal vertical section of the same at *x x* in Fig. 1. Fig. 3 is a similar section, showing the lower part in an enlarged scale, with the plunger down. Fig. 4 is an elevation of the face of the hopper, showing the removable scraper and its spring. Fig. 5 is a detached perspective view of the cut-off. Fig. 6 is a perspective view of the lower end of the plunger, showing the tapered foot and the regulator of the measuring-cup.

In the drawing, A represents the standard, to the sides of which a sheet-metal hopper, B, is secured. C is the plunger, fitted with a handle, *a*, and reciprocates through the bottom of the hopper in the flanged guides *b b*, as described in said Letters Patent. The body of the plunger within the hopper has a large slot, *d*, cut in it, and a similar slot, *e*, is cut in the standard, which is closed by a back plate, $A^1$. The play of the plunger is limited by a flanged sleeve, *c*, whose base-flange is let into the face of the standard. A bolt, *c'*, passing through the sleeve and standard into the handle of the latter, suffices to secure the latter and the sleeve.

It has heretofore been very difficult to prevent the bolt-stop in ordinary use from being torn loose by the repeated heavy blows of the plunger in planting, whereas, in the present case, the broad base of the sleeve embedded in the standard cannot be wrenched off if the nut on the end of the bolt be kept screwed up snug.

Within the hopper, and near the bottom thereof, is an inverted hood or hopper, $A^2$, pendent from an inward projection of the back plate $A^1$, the purpose of which is to serve as a guard to prevent undue pressure of corn in a full, or nearly full, hopper upon the outlet, thereby equalizing the delivery, whether the hopper be full or contain but a few kernels.

It is not necessary to have the back plate extend above the guard, as the hood may be secured to the inside of the main hopper, if preferred. The lower part of the back plate is dished outwardly and slotted, as shown, so that the corn in falling will pass outside the general vertical line of the planter, and through the slots, to be visible to the operator, who can at a glance see when the corn is exhausted from the hopper. Below the plate $A^3$ the standard is slotted, and in the slot is located a spring cut-off, D, in the form of a leaf of thin flexible steel, bent nearly upon itself, and secured by lugs at one end of the face of the standards. Being long and very flexible, all along its inner leaf it will press the corn in its descent toward the measuring-cup until discharged below it. Its form will also obviate the tendency of the corn to clog at the upper side of the cup by yielding at that point, while the lower end does not yield, but rather increases its pressure, and as the pressure at the upper end is relieved by the passage down of the corn, it quickly resumes its normal position and pressure. I thus secure all the advantages of a brush cut-off without its cost, and with greater durability, and much greater flexibility, than a rubber cut-off can afford.

E is the measuring-cup, having an inwardly-turned tongue, *f*, on a plate, E', for its top part, the said plate being vertically adjustable by means of the screws *g g* passing through its slots to increase its capacity in an upward direction, which does not change the relative

position of the cup with the cut-off when the capacity is changed.

The importance of this upward adjustment will be understood by explaining the reasons for its adoption. If the plunger be raised to its upward limit the cup is drawn above the cut-off to enable the corn to enter and fill it, and the cut-off is generally so placed that the cup will only rise just far enough above it to have the corn enter. Now, if the cup be reduced to its smallest capacity, and so rises just above the cut-off, and its capacity be increased by moving down its bottom, as heretofore has been the practice, the bottom must necessarily be below the cut-off, and although it is desired to have more corn enter it there is no more cup-room or capacity exposed to the corn; whereas, if the cup be enlarged in an upward direction the corn is free to enter the increased receptacle, while the position of the bottom of the cup with relation to the cut-off is not changed. Anything that diminishes the free access of the corn to the small measuring-receptacle or its prompt filling must seriously effect the evenness of the dropping of the corn, upon which the value of all planters depends.

F is the stop-block, with its seed-passage *k*, as described in said Letters Patent, secured to the lower end of the standard, with this addition, however: a vertically-adjustable box or case, F′, is secured to the block by two screws passing through slots, with washers to prevent the entrance of dirt, giving a continuous stop several inches high, superior to the block alone, as it is not liable to be forced below the surface of the ground and lift soil on rising out; besides which it can be adjusted to plant at various depths.

The back of the hopper is cut off at the lower end, in which is laid loosely a scraper-plate, G, whose upper end overlaps said back plate, and which is held in position by the long bent wire spring *h*, whose bight rests in a saddle, *i*, on the back of said plate, and tension being given by passing said spring under-hooks *i′ i′* on the back plate of the hopper.

This construction obviates the necessity of a long spring-plate extending up the hopper, and it also enables the scraper to be readily detached, to be used as a scraper for removing any earth that will follow up the plunger in planting in wet soil. By placing the saddle *i* at the middle the scraper can be made reversible.

The foot C′, of the plunger, I make to fit the mouth of the hopper snugly, only at the extreme lower end, above which I give its sides "batter," or taper them inward. The present construction works easier, with less friction, and scrapes itself clean as it rises into the hopper.

What I claim as my invention is—

1. In a hand corn-planter, the combination, with the standard A, of the stop-block F, having the seed-passage *k* and the metal box F′ adjustably secured to the said stop-block, constructed and arranged substantially as described and shown.

2. The combination, with the hopper, of the removable scraper-plate G, having the saddle *i*, the long wire spring *h*, and hooks *i′ i′*, constructed and arranged substantially as described and shown.

3. In a hand-planter, substantially as described, the plunger, having a tapered foot, C′, as and for the purpose set forth.

4. The hood or guard $A^2$, in combination with the hopper of the hand-planter, substantially as and for the purpose set forth.

5. The flanged sleeve or washer *c*, in combination with the handle-bolt, standard, and plunger of a hand-planter, as and for the purpose set forth.

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Witnesses:

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