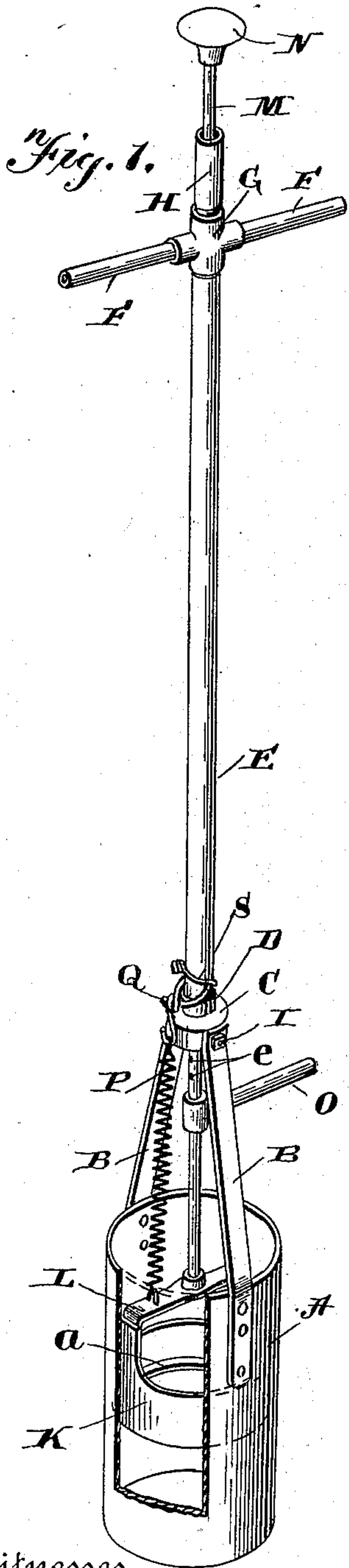


(No Model.)

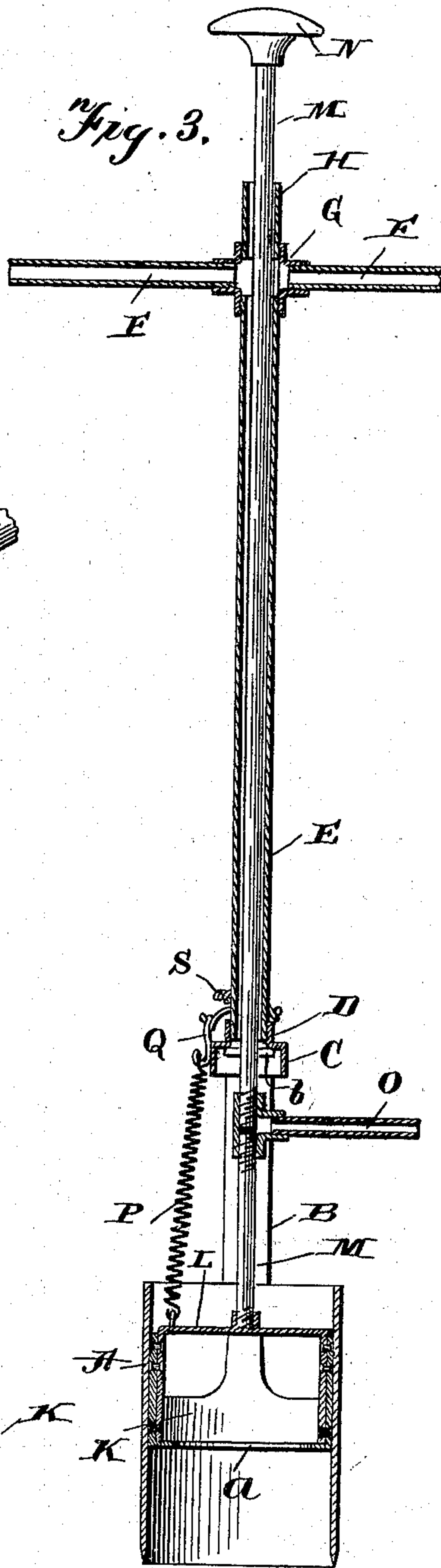
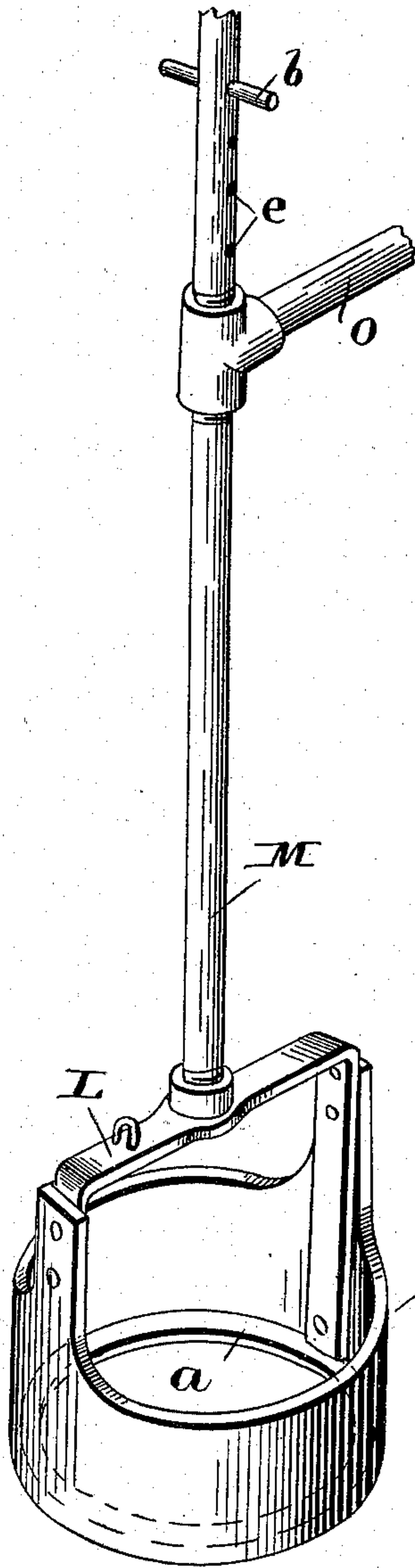
H. S. HARRIS.  
TRANSPLANTER.

No. 565,745.

Patented Aug. 11, 1896.



*Fig. 2.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

HIRAM S. HARRIS, OF HITCHCOCK, TEXAS.

## TRANSPLANTER.

SPECIFICATION forming part of Letters Patent No. 565,745, dated August 11, 1896.

Application filed March 4, 1896. Serial No. 581,852. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM S. HARRIS, of Hitchcock, in the county of Galveston and State of Texas, have invented certain new and useful Improvements in Transplanters; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in transplanters especially designed for transplanting small plants, such as strawberry vines and similar plants.

The object of my invention is to construct a very simple, durable, and effective planter, the same being especially constructed to avoid clogging of the mud in soft soil; to provide for the combined use of the foot and hand for forcing out the plant and its adhered plug of soil; to provide for an adjustable amount of movement to the plunger for displacing the plant and its adhering earth, and to especially construct the device for the purpose intended.

In the accompanying drawings, Figure 1 is a perspective view of a planter embodying my invention, the cutting-tube being shown partly in section. Fig. 2 is a detached view of the plunger and its rod, showing the adjustable means. Fig. 3 is a vertical sectional view of the planter, taken longitudinal the supporting-arms.

Referring now to the drawings, A indicates a cutting-tube having its lower edge sharpened in the usual manner. Extending upward from opposite sides of the upper end of this cutting-tube are the arms B, and secured between the upper ends of these arms is an inverted-cup-shaped connection C. From the upper end of this cup-shaped connection is the screw-threaded flange D, which receives the lower ends of the standard E. This standard E is constructed of gas-pipe, and the cup-shaped connection is especially adapted for the use of such material, whereby cheapness is effected, and whereby material is already found upon the market suitable for the construction of this part of my invention. Below the upper end of this standard are the

laterally-extending arms F, connected to the standard through the medium of an X-shaped connection G, the upper end of this X-shaped connection carrying preferably a hollow arm H in a line with this standard. The laterally-extending arms form a handle by means of which the cutting-tube is forced into the ground and oscillated for the purpose of accelerating the cutting operation. From this description it will be seen that the device is very strong, simple, and cheaply made without the use of extra tools so far as the standard and its supporting devices are concerned. The cup-shaped covering at the upper end of the flat supporting-arms permits access for the passage of the bolts I, by means of which the connection and the arms are firmly and yet detachably connected in a very convenient manner.

Placed within the cutting-tube is a removing-plunger K, which is of a tubular form, with its lower edge turned inward to form a horizontal pushing-flange a. A U-shaped connection L has its parallel arms connected with the inner side of this plunger, and to the cross portion of this plunger the plunger-rod M has its lower end suitably connected. This plunger-rod extends upward through the hollow standard and beyond its upper end a distance equal to the greatest amount of movement which is to be allowed the plunger for the purpose of removing the dirt therein and the plant carried thereby. The upper end of this plunger-rod is provided with a suitable pushing-handle N, and the plunger-rod is provided with the laterally-extending arm O, situated between the cup-shaped connection and the upper end of the cutting-tube and extending outward between the supporting-arms of the tube. This laterally-extending arm is for the purpose of permitting the use of the operator's foot for forcing the plant and its adhering dirt from the cutting-tube, which, when it is hard, is necessary, owing to the fact that sufficient force cannot be obtained for this purpose by the use of the upper end of the pusher-rod.

A spring P has its lower end connected to the U-shaped connection of the plunger and its upper end caught over a hook Q, formed by means of passing a wire around the flange of the cup-shaped connection. The function



of this spring is to always hold the plunger up within the cutting-tube, which is found to prevent the accumulation of dirt and mud within the cutting-tube, which would interfere with the operation of the device and necessitate the operator stopping and cleaning it out. The spring holds the plunger normally upward, always ready to be forced down for the purpose of forcing the plant and its adhering dirt from the cutting-tube.

The horizontal flange at the lower end of the plunger serves to force the dirt out without in any way mashing the plant, as will be readily understood, sufficient room being provided between this flange and the upper cross portion of the U-shaped connection of the plunger for that purpose.

It is very convenient and in some instances essential that the distance the cutting-tube is to be forced into the ground shall be determined, and this I do by providing an adjustable stop upon the plunger-rod above the laterally-extending arm thereof, the said stop consisting of a pin or screw *b*, passing through an opening in the rod. A series of these openings *e* are provided for the purpose of permitting the adjustment of the pin, the same being adapted to pass upward within the cup-shaped connection and engage the ceiling or upper wall and by means of which the distance the cutting-tube is to be forced in the ground can be readily and quickly adjusted, as will be understood. The laterally-extending arm is at the opposite side of the cutting-tube - supporting arms from the spring, whereby no interference between the laterally-extending foot-arm and the spring is possible, so that the spring will at all times have a free and uninterrupted action.

The hook which holds the upper end of the spring is capable of vertical adjustment upon the standard through the medium of a wire *S*, so that the tension of the spring may be increased as desired under certain conditions of the soil, it being, of course, desirable to have the spring only sufficiently strong to serve its function, so that less power is required to force the plunger from within the cutting-tube.

I am aware that transplanters have been

heretofore constructed having a plunger and a cutting-tube, but they are not of the specific construction here shown and described.

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

1. A transplanter comprising a tubular cutter, arms extending upward from opposite sides thereof, a tubular handle connected to the upper ends of the arms, the upper end of the tubular handle having laterally-extending handholds, a tubular plunger within the tubular cutter and adapted to move longitudinally thereof, the lower edge of the tubular plunger having an inwardly-extending flange, a spring for holding the plunger normally up, a plunger-rod connected with the rod and extending through the tubular handle and a laterally-extending foot-piece upon the plunger-rod extending outward between the tubular cutter-arms, substantially as described.

2. A transplanter comprising a tubular cutter, a tubular plunger movable longitudinally therein, the lower edge of the tubular plunger having an inwardly-extending flange, a yoke attached to the tubular plunger and extending considerably above the said flange thereof, upwardly-extending arms from the tubular cutter, a tubular handle attached to the upper ends of the said arms, a plunger-rod connected at its lower end to the yoke and extending through the tubular handle, to a point above the upper end thereof, laterally-extending handholds for the tubular handle, a laterally-extending foot-piece for the plunger-rod extending between the arms of the tubular cutter, a spring holding the plunger normally upward and an adjustable means connected to the plunger-rod at a point above the said foot-piece and adapted to engage the lower end of the tubular handle for limiting the upward movement of the plunger, substantially as described.

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

HIRAM S. HARRIS.

Witnesses:

J. F. WARE,

H. R. MCCAUB.