

T. H. SMITH.

Grain Drill.

No. 103,382.

Patented May 24, 1870.

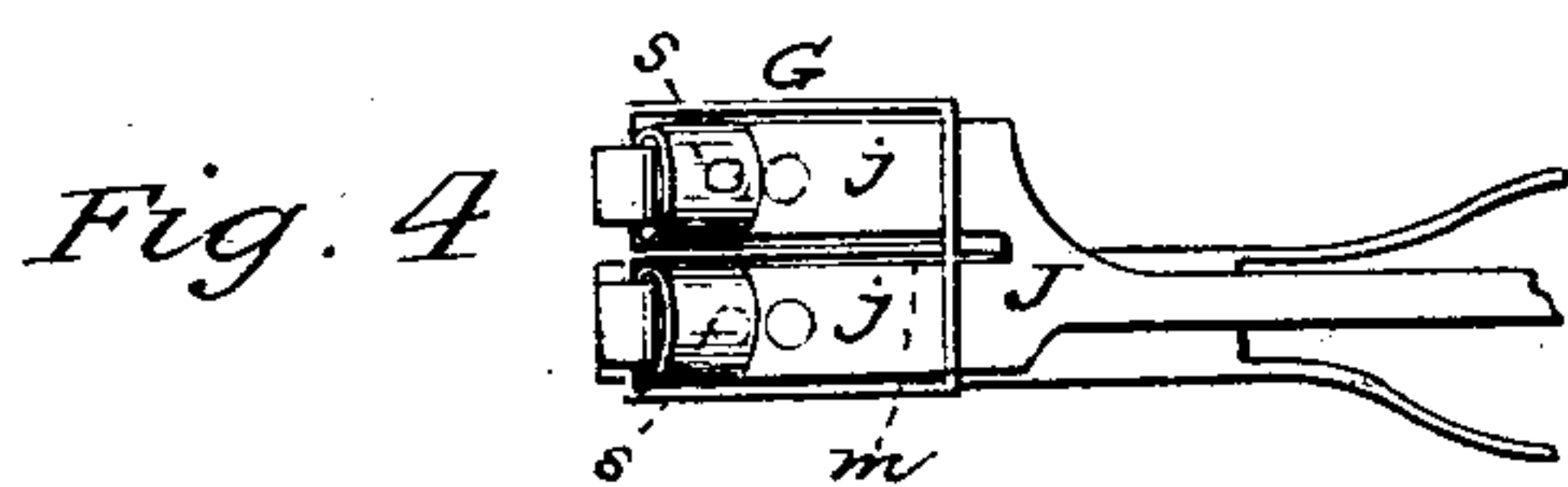
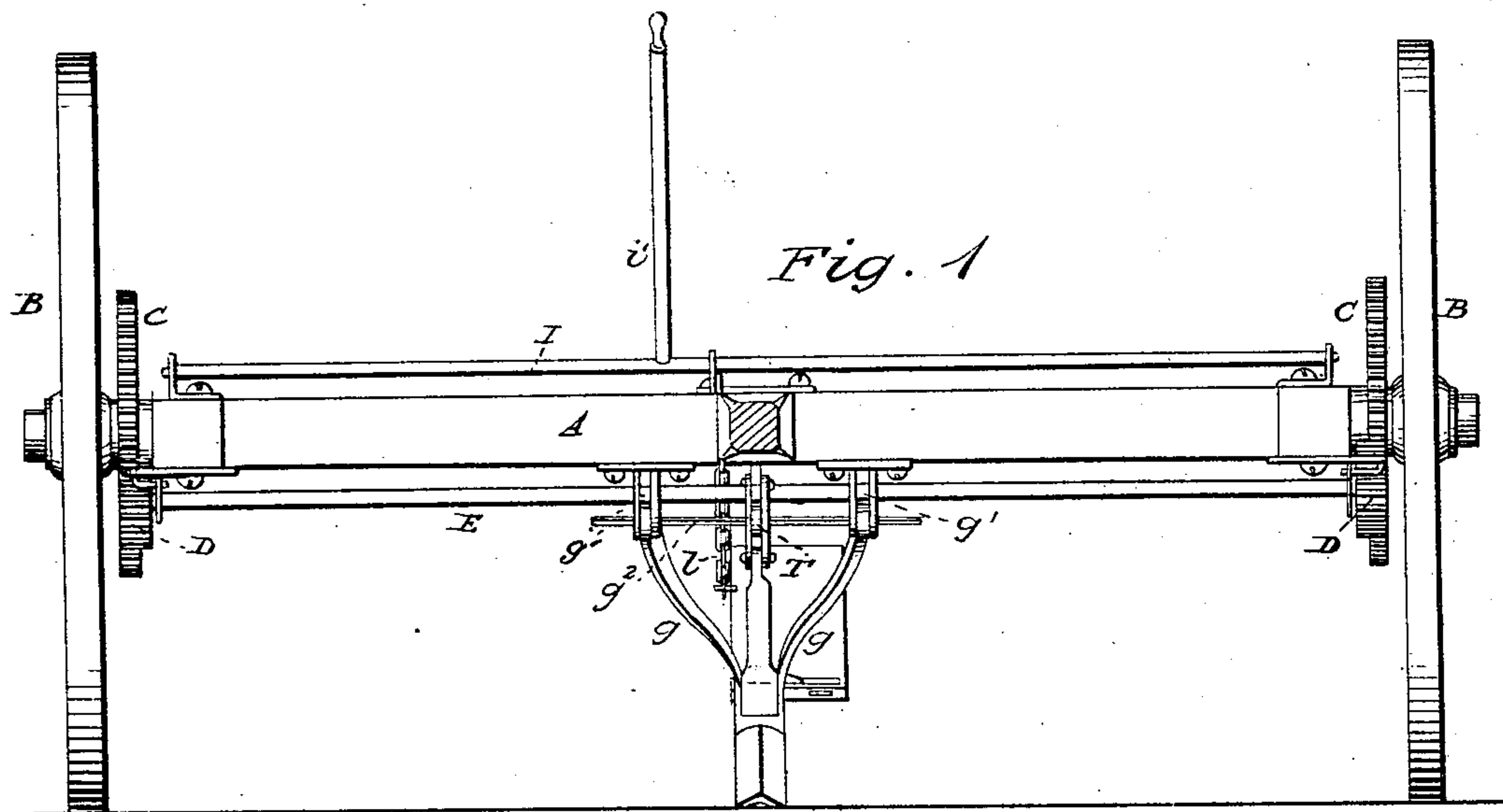
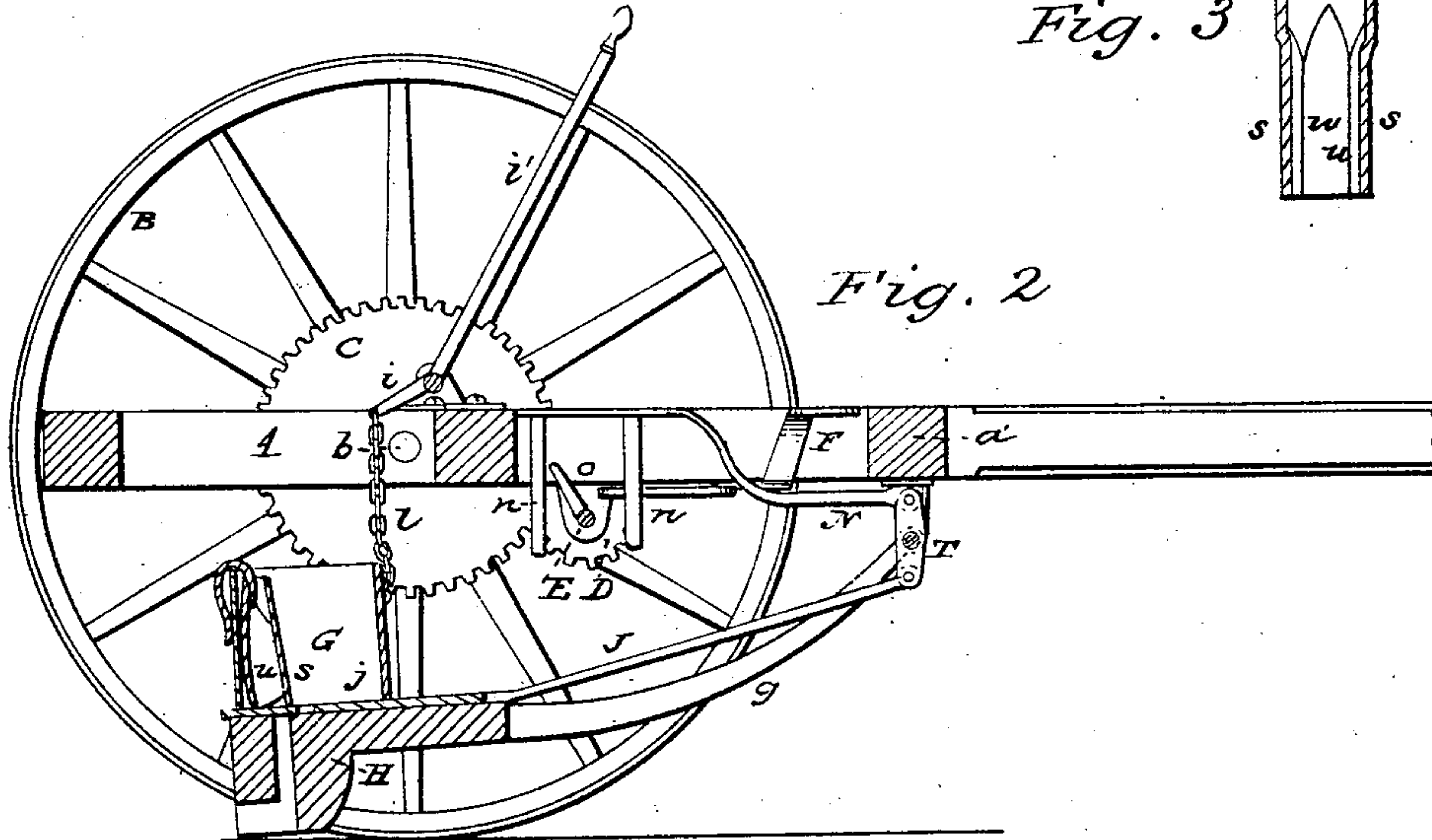


Fig. 3



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# United States Patent Office.

THOMAS H. SMITH, OF CLYDE, NEW YORK,

Letters Patent No. 103,382, dated May 24, 1870.

## IMPROVEMENT IN SEED-PLANTERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, THOMAS H. SMITH, of Clyde, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Seed-Planters, of which the following is a specification.

My present invention relates to a seed-planter for which Letters Patent of the United States were granted to me August 25th, 1868, reference being made to the schedule annexed thereto for a full description of the original machine.

My improvements consist—

First, in pivoting the beam of the combined plow and seed-box, and a short rock-lever, on the same axis, and connecting the actuating-slide and seed-slide to the two arms of said rock-lever, so as to adapt the operation of the seed-slide to the irregular movements and varying position of the seed-box as the plow to which it is attached passes over inequalities of the ground.

Second, in the peculiar construction of the brush or scraper arranged in the seed-box, and operating to regulate the dropping of the seed, said brush being composed of a tubular piece of India rubber stretched over and distended by two arms, as hereinafter fully described.

Third, in the construction and arrangement of a partitioned seed-hopper with a double slide, to enable plaster or other substance to be dropped simultaneously with the seed, so as to indicate by the color thereof the position of the hills, whereby I am enabled to dispense with the "markers" described in my said former patent.

In the drawings—

Figure I is a front view of a machine embodying my improvements.

Figure II is a sectional elevation thereof.

Figure III is a detached view of my rubber brush.

Figure IV is a detached plan view of the partitioned seed-box.

Like letters of reference designate like parts in each of the figures.

A is the frame of the machine supported by two wheels B B, mounted on short axles *b b* projecting from the frame.

C C are gear-wheels attached to the inner ends of the hubs of wheels B, and meshing with pinions D D mounted on a countershaft, E.

F is a foot-lever connected with the movable bearings of shaft E for the purpose of throwing the pinions D D in and out of gear.

G is a seed-box of suitable form divided into two compartments by a partition, *m*.

H is the drill-tube or plow attached to the underside of the box, so as to open up into the seed-compartment, as shown in fig. II.

The bottom of the compartment designed for the plaster or other marking substance may be provided with a short conducting tube or not, as desired.

This combined plow seed-box H G, of which there may be several, if desired, is located below the frame A of the machine, and is attached to the front of the same by means of a bifurcated beam, *g*, which is hinged in brackets *g*<sup>1</sup> attached to the underside of cross-beam *a*' of the frame, by a rod, *g*<sup>2</sup>, passing through said brackets and the forks of the beam.

I is a rod mounted longitudinally in suitable bearings on top of the frame, and is provided with a short arm, *i*, and a hand-lever, *i*', for each plow and hopper employed.

The plows or seed-boxes are each connected to their arms *i* by means of a chain, *l*, whereby all of the plows can be raised from contact with the ground by a movement of the hand-lever *i*', when required in travelling to and from the field, and in turning around.

T is a short rock-lever pivoted on the rod *g*<sup>2</sup>.

The seed-slide J connects with the lower arm of this lever.

This slide is widened out, and divided at the free end into two portions *j j*, one for each of the compartments of the box G, as shown in fig. IV.

The rock-lever T is actuated by a slide-bar, N, provided with two prongs *n n*, which enclose the shaft E, to which is attached an arm or cam, *o*, which engages with the prongs *n* as the shaft revolves, and imparts the required reciprocating motion to the slide, as shown and described in the patent before mentioned.

*s* represents the portion of rubber tube, and *u u* two arms arranged therein, so as to distend the tube, which together form my improved brush or scraper. It is arranged in the seed-boxes as shown, in which it may be secured by an extension of the united arms *u* hooked over the upper edge of the box, as represented, or in any other suitable manner.

This construction of brush I have found to be much superior in durability and efficiency to the ordinary brush in use; the rubber, by its tension, being made sufficiently stiff for the purpose required, while it also possesses the necessary elasticity to prevent it from wedging the seed in the hole of the slide.

With seed-planters in which the seed-boxes are arranged on top of the frame the distance through which the seed has to fall after it is discharged from the box is such, when considered in connection with the vibrating movement of the seed-tube, as to cause some of the kernels designed for a hill to descend more slowly than the others, producing a scattering of the grain from one hill to another. The arrangement of the seed-box with the plow, as before described, remedies this defect; the few inches the grain has to fall after

it leaves the hopper not being sufficient to prevent the seed from being deposited together, as required to form a hill.

The use of the divided box G, with its double slide, enables me to dispense with other marking devices, and furnishes a distinct and reliable means for indicating the position of the hills.

The operation of the machine is in other respects similar of that of the original machine, as described in my aforesaid previous patent.

What I claim as my invention is—

1. The arrangement with the combined seed-box and plow G H, of the slides N J, rock-lever T, and pivot-rod  $g^2$ , operating substantially as hereinbefore set forth.

2. The brush or scraper, consisting of the tubular rubber s, and distending arms  $u u$ , constructed and arranged within the seed-box G, in the manner hereinbefore set forth.

3. The seed-box G, divided into two compartments, and arranged with the plow H, and the divided ends  $jj$  of the slide J, for dropping plaster or other hill-indicating substance simultaneously with the seed, substantially as hereinbefore set forth.

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Witnesses:

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