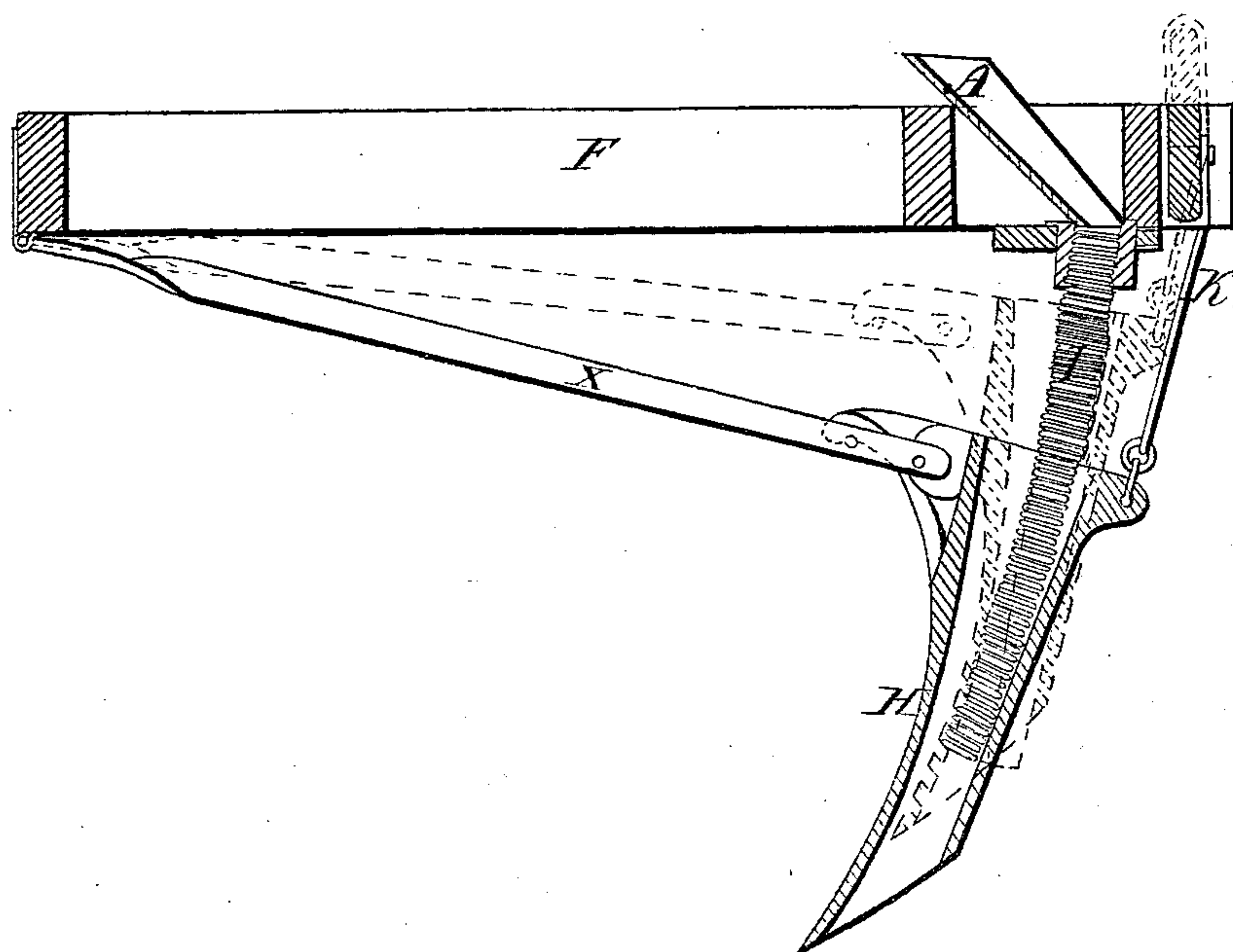


J. C. HAINES.
Seed-Drill Teeth.

No. 18,843.

Patented Dec. 15. 1857.



UNITED STATES PATENT OFFICE.

JOSEPH C. HAINES, OF DUBLIN, INDIANA.

IMPROVEMENT IN TUBES FOR SEED-PLANTERS.

Specification forming part of Letters Patent No. **18,843**, dated December 15, 1857.

To all whom it may concern:

Be it known that I, JOSEPH C. HAINES, of Dublin, Wayne county, Indiana, have invented a new and useful Improvement in Seed-Planters; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

My invention relates to a construction of the pipe leading from the feed-hopper into the tooth, and technically known as the "tube," which adapts it, while yielding easily to the motion of the tooth, to preserve for the descending grain a uniform duct or passage kept automatically free of dirt by the vibrations incident to its use. The necessary flexibility of the tubes is at present sought to be provided for by composing them of leather, vulcanized india-rubber, or painted canvas, either entire or in combination with a lower portion of tin. All these varieties are liable with use to become inefficient as grain-ducts, partly from the creasing and flattening of the tube where most subject to flexure, and partly from the lodgment and incrustation of dirt upon its inner walls, which effects are most active in a humid atmosphere. Leather and canvas tubes become permanently crimped and wrinkled, tin ones dented and battered.

In the accompanying drawing, A is the chute that conducts from the seed box or hopper through the frame F to the tube I.

H is the drill-tooth, secured by the drag-bar X and tackle K to the frame in the customary manner.

The tube I is constructed of a close and slightly-tapering coil of wire attached by its base to the frame, and depending thence in a slightly-forward direction, so as to occupy the interior of the drill-tooth H in the usual way. The wire of this tube may be round, as in the

present illustration, or may be flattened and have chamfered and overlapping edges. The extreme longitudinal flexibility of the tube causes it to adapt itself with easy curves to the motions of the tooth, while the strength of the individual coils preserves the regular continuity of its passage substantially unchanged. The frequent and sudden deflections of its axial curvatures by its contact with the tooth act to slightly open the many interstices of the coil, and thus effectually prevent the lodgment and incrustation of dirt, which is well known to be one of the most serious drawbacks to the usefulness of these important implements. At the same time the flexibility is so evenly distributed throughout the length of the tube as to avoid sudden curves, which form obstructions, and also to prevent any of the interstices opening sufficiently wide to allow of the escape of seed.

The above-described tube possesses the important economical advantages of less original cost and greater durability than any other known to me; but the most valuable of its features of usefulness is deemed to consist in its eminently effective self-cleansing property, an important element of which is the sharp jarring produced by the continual opening and closing of the numerous interstices.

I claim as new and of my invention herein—

In the described combination, with the tooth of a grain or seed drill, the tube or grain-duct I, composed of a close coil of wire, constructed and applied substantially in the manner set forth.

In testimony of which invention I hereunto set my hand.

JOSEPH C. HAINES.

Attest:

GEO. H. KNIGHT,
JAS. H. GRIDLEY.