H. S. DOOLITTLE.

Revolving Rake.

No. 4,708. Patented Aug. 22, 1846.

Fig. 1

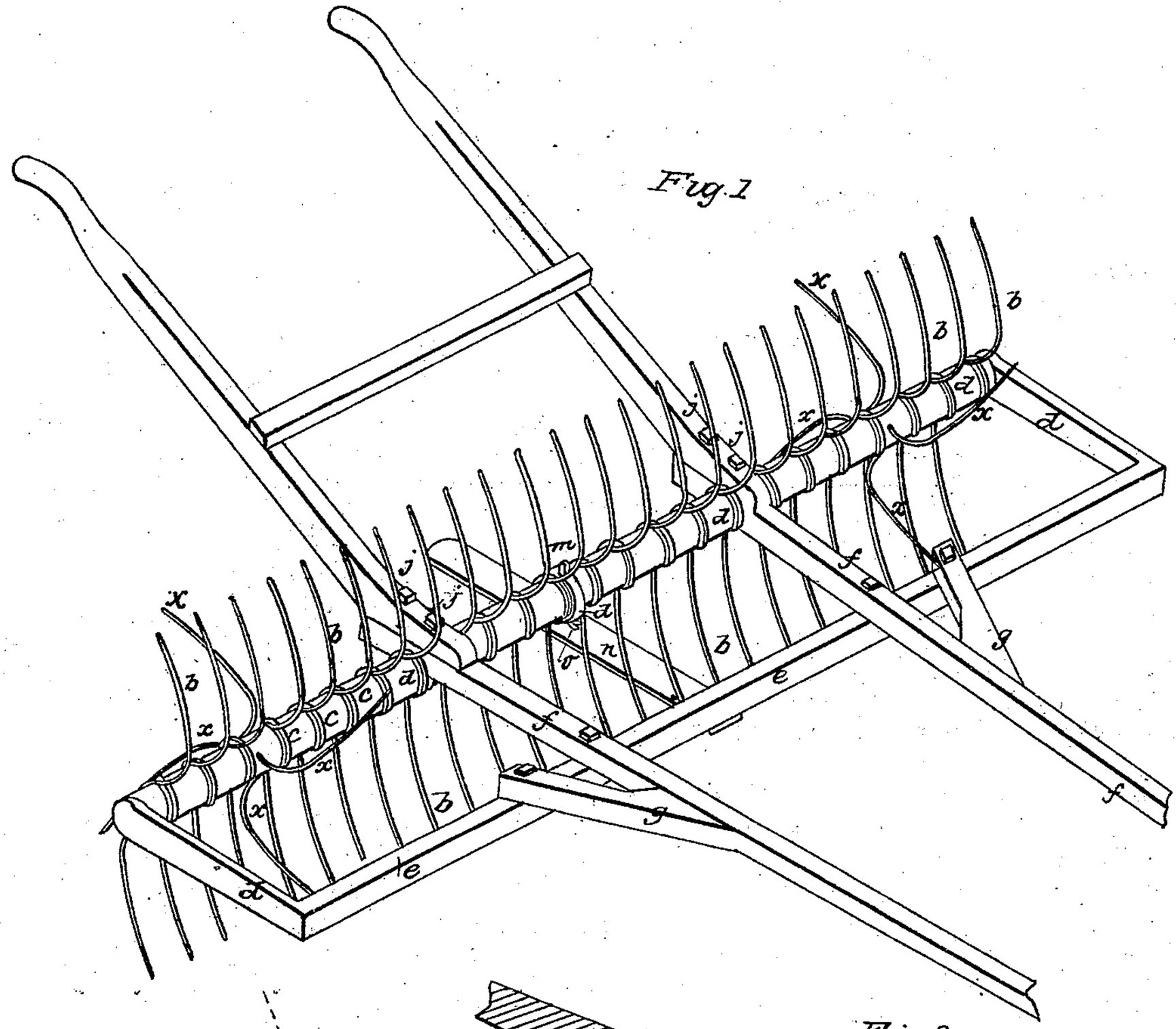


Fig. 2.

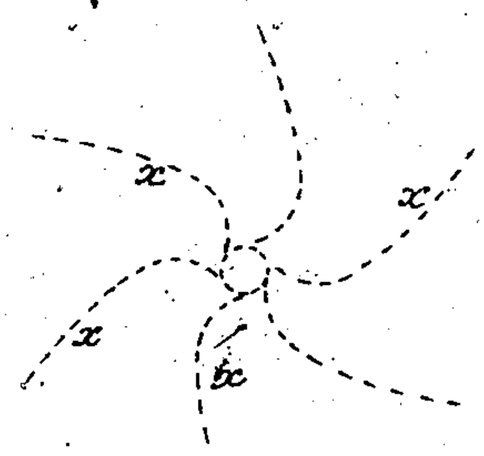


Fig. 3.

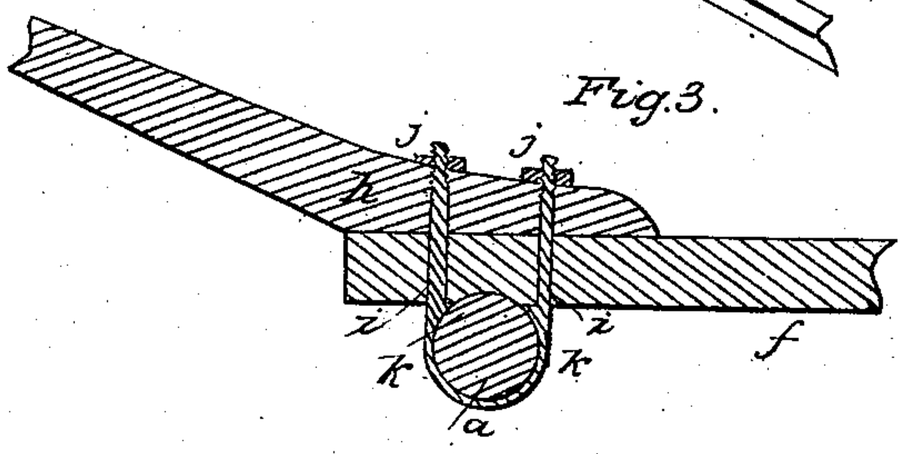


Fig. 4

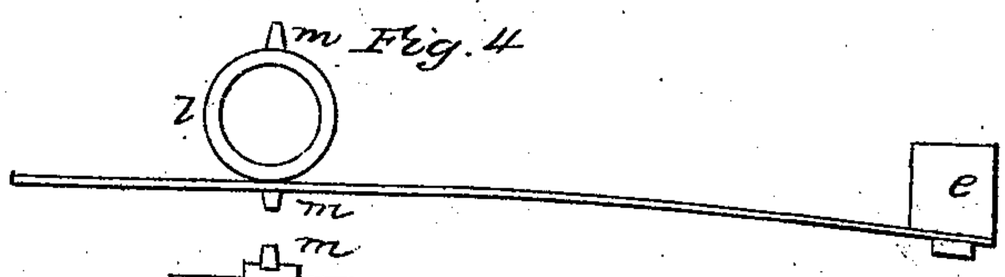
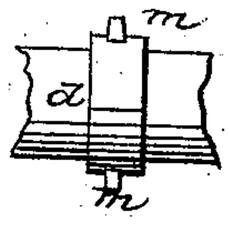


Fig. 5



N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

HIRAM S. DOOLITTLE, OF KORTRIGHT, NEW YORK.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. **4,708**, dated August 22, 1846.

To all whom it may concern:

Be it known that I, HIRAM S. DOOLITTLE, of Kortright, in the county of Delaware and State of New York, have invented a new and Improved Revolving Wire-Tooth Horse-Rake; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an isometrical view of one of my rakes, and Figs. 2, 3, 4, and 5, are detached parts.

The same letters refer to the same parts in all the figures.

a a a is the axis, of wood, into which the teeth *b b b*, &c., are set.

The mode of inserting and forming the teeth is as follows: A row of holes having been bored quite through the axis *a*, in a straight line from end to end, at a distance apart corresponding to the interval required between the teeth, a straight piece of stout iron wire, of sufficient length to form two teeth, is entered at each hole and drawn through in such manner as to have equal portions projecting upon each side of the axis. These two portions are then bent in opposite directions, entirely around the axis, thus forming a ring near the root of the tooth, which ring embraces the axis, as shown at *c c c*, &c., Fig. 1. The remaining straight portions of wire are then bent into the desired form of tooth. The form which I employ is shown in the drawings. The axis is inclosed in a frame consisting of the side pieces, *d d*, and the cross-pieces *e e*. The shafts *f f f f*, with their braces *g g*, are bolted to the cross-pieces *e e*, and extend backward over the axle, being secured thereto, as shown in Fig. 3, where *f* is a portion of one of the shafts, *a* the axle, and *h* a part of one of the handles. A staple, *i i*, embraces the axle, (being received into a circular groove, which is made around this latter to prevent the lateral motion thereof,) and passes up through the end of the shafts and the foot of the handle. Two screw-nuts, *j j*, secure the whole.

To prevent the screwing up the nuts, from bringing a pressure upon the axle, which would impede its revolution, two shoulders, *k k*, are formed upon the legs of the staple, which resist the pull of the screw by acting upon the under side of the shafts. To prevent the revolution of the axle and maintain the teeth in the proper position, an iron ring, *l*, is fixed upon the center of the former. It has a small stud, *m m*, projecting from both its upper and under side. This stud is received in a slot, *o*, made in the spring *n*. The forward end of this spring is firmly screwed to the cross-piece *e*.

It is evident that while either stud is embraced by the slot *o* the axle must be stationary. By pressing the foot, however, upon the hinder end of the spring *n*, the stud is disengaged, and the draft of the horse causes the axle to partially revolve. To continue the revolution until the opposite stud falls into the slot, and thus bring the other set of teeth into an acting position, I employ supplementary teeth *x x*, &c. (Exhibited by red lines in Fig. 2.) I shall usually insert these teeth in two sets, as shown in Fig. 1, forming two "spiders," the arms of which are arranged at intervals of sixty degrees. It is evident that during the revolution of the axle the points of these supplementary teeth will successively come in contact with the ground, and serve to support the machine and continue the revolution.

My apparatus is both simple and light, and does not require, as the common horse-rake does, to be lifted in order to revolve the teeth.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Combining with the revolving axle the ring *l*, with its studs *m m*, together with the spring *n*, containing a slot, *o*, to receive and retain the studs successively, and thus maintain the teeth in the proper position.

2. Inserting the supplementary teeth forming the spiders, operating in the manner and for the purpose herein described.

HIRAM S. DOOLITTLE.

Witnesses:

WM. S. ELLISON,

CHAS. H. HAZEN.