

(No Model.)

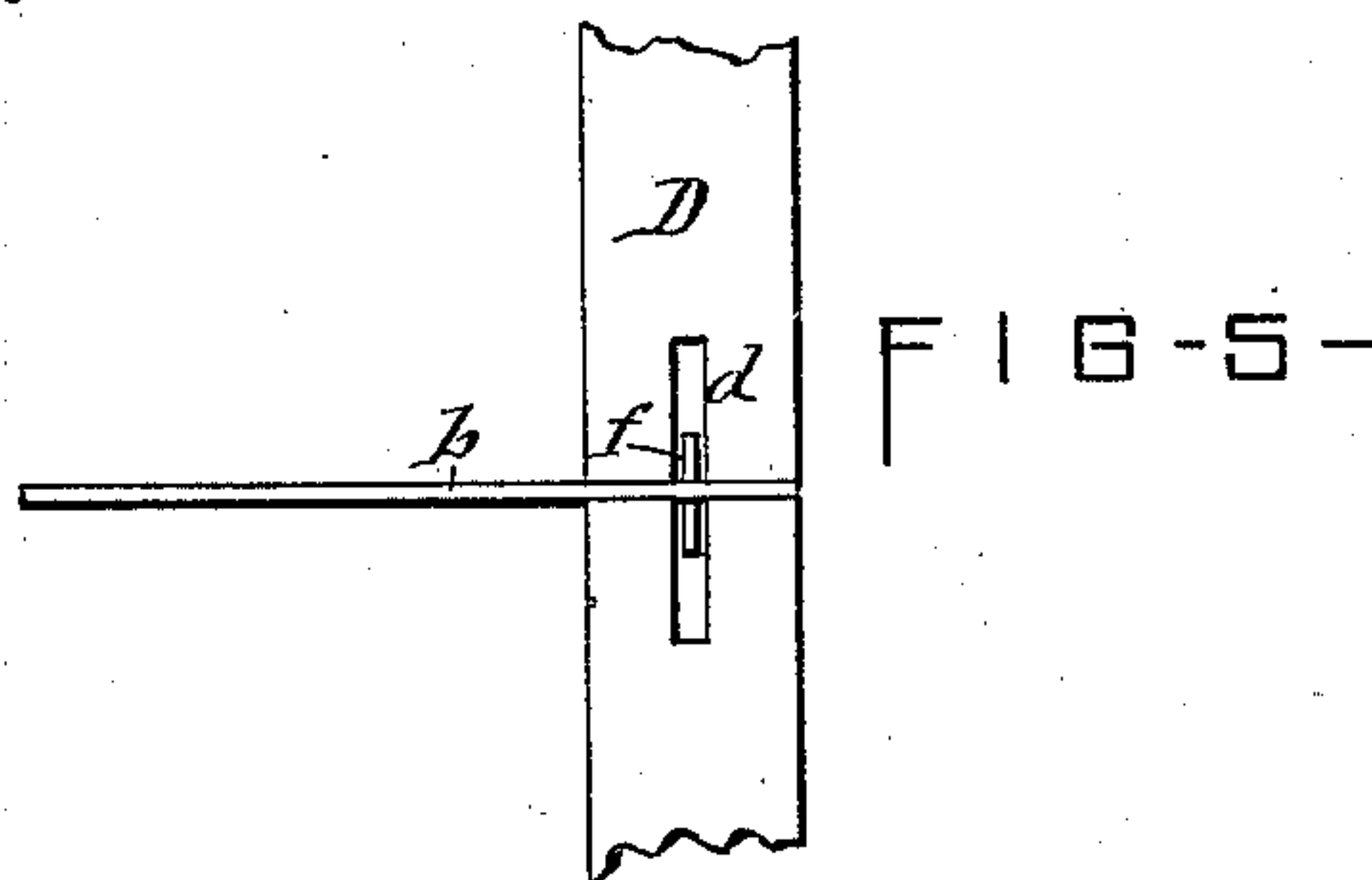
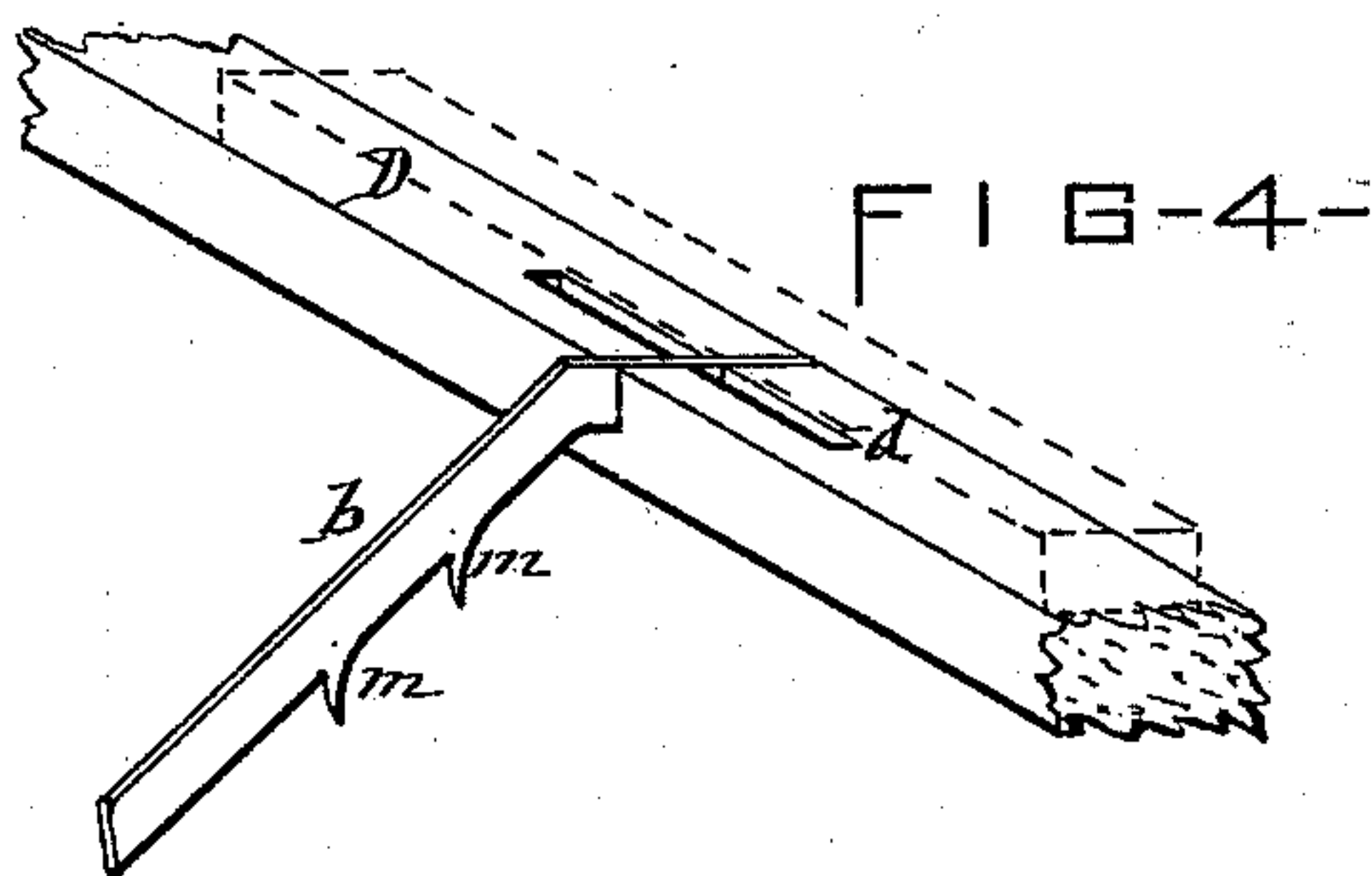
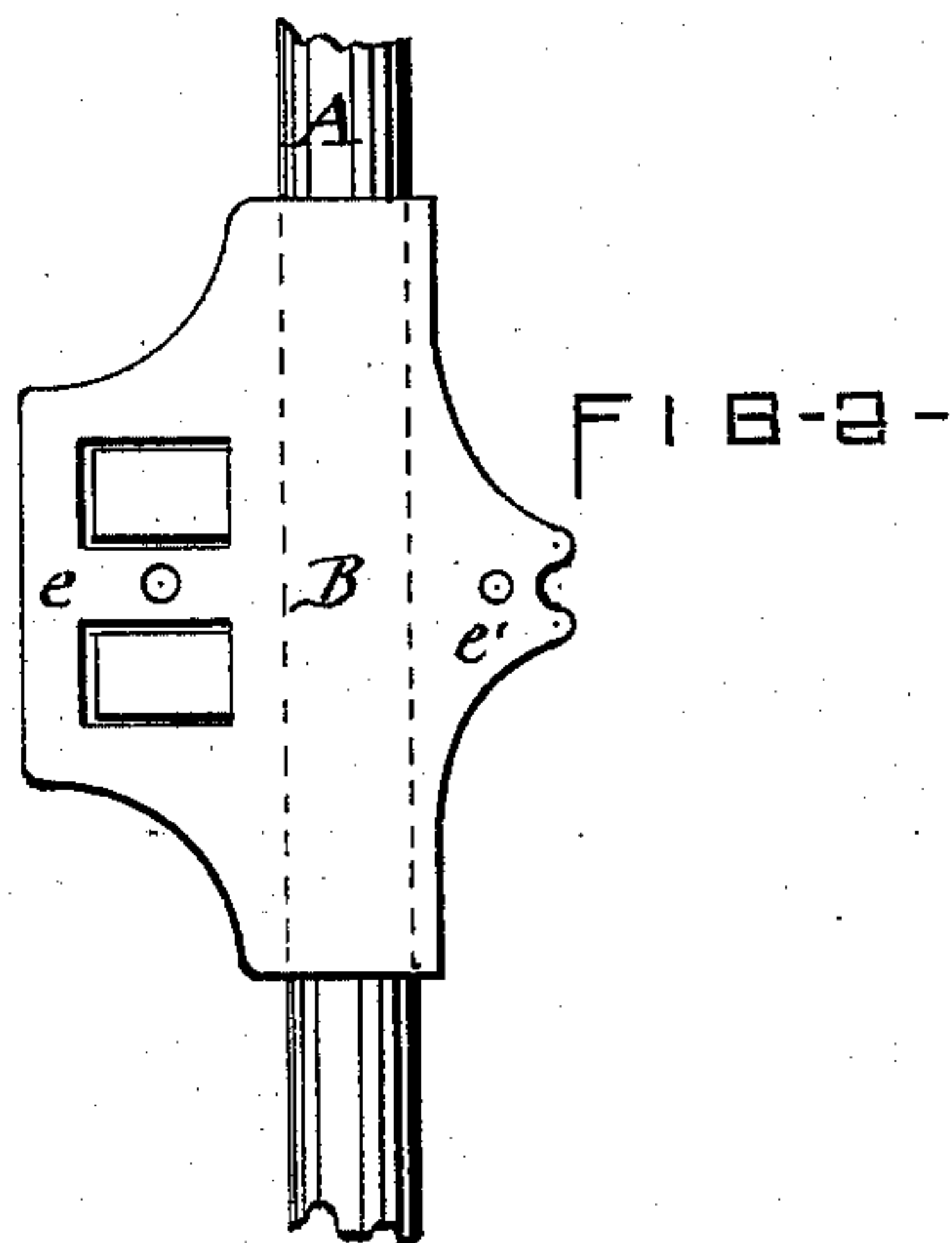
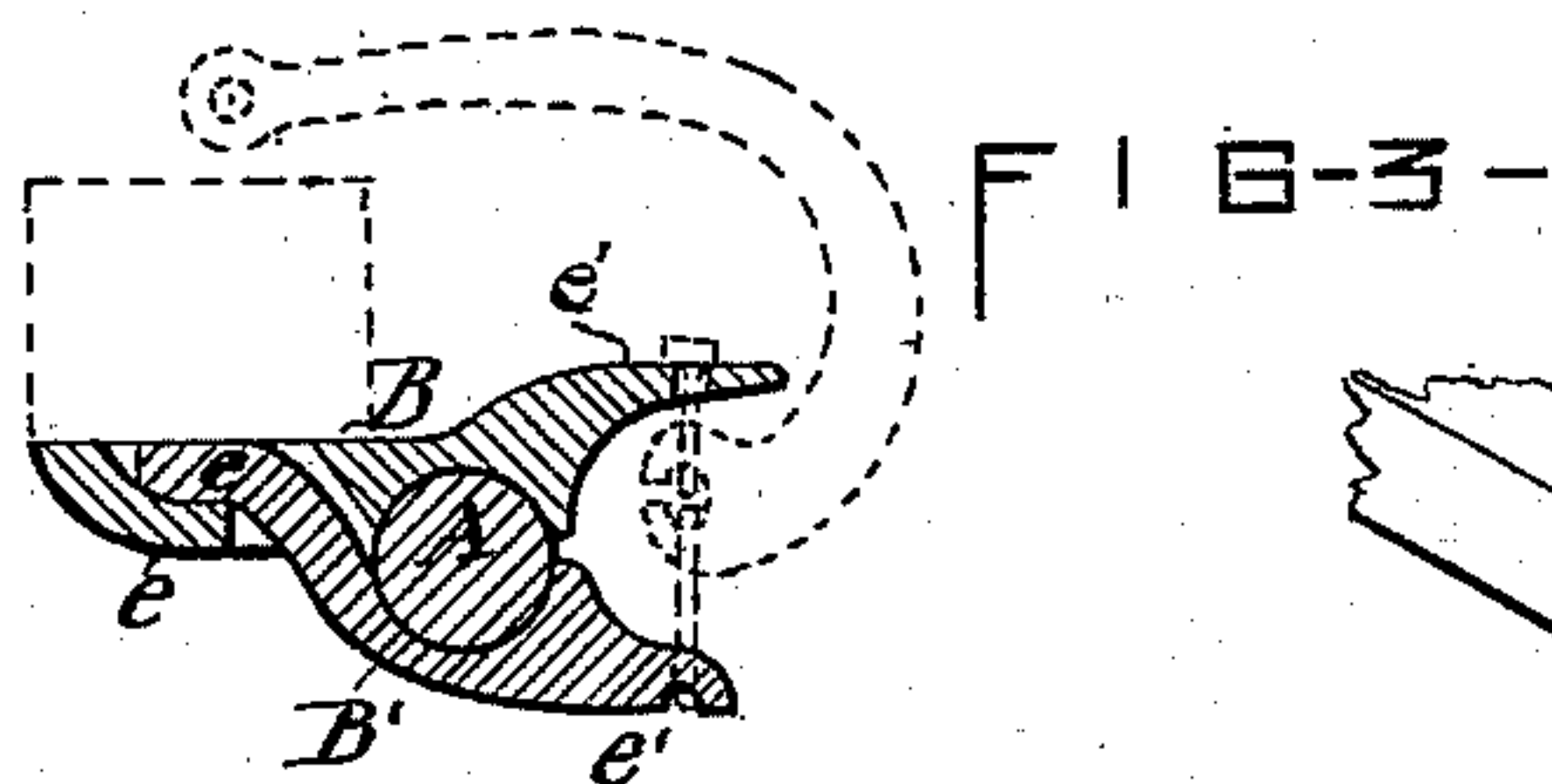
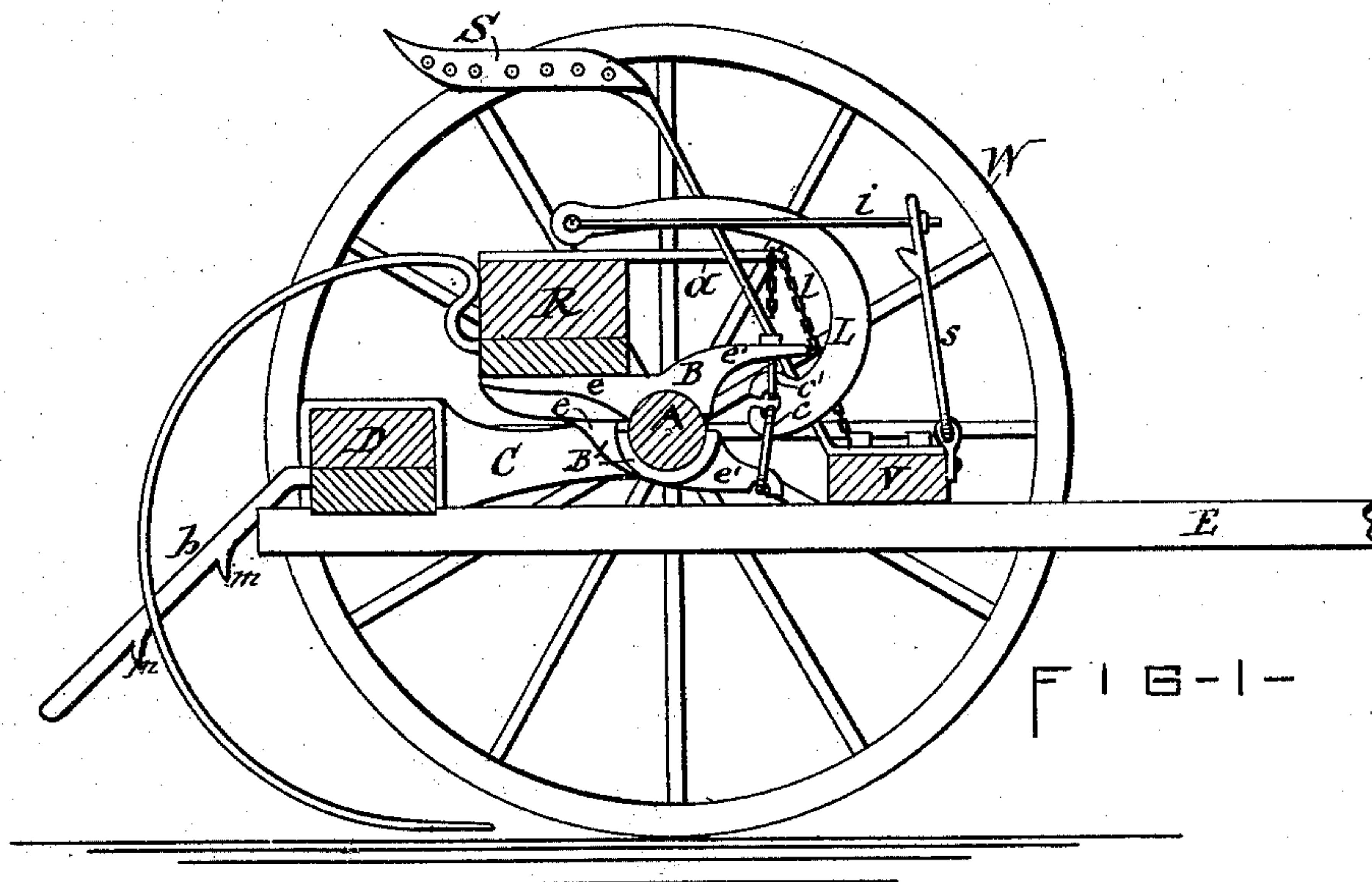
2 Sheets—Sheet 1.

H. H. HATHAWAY.

HORSE HAY RAKE.

No. 270,218.

Patented Jan. 9, 1883.



WITNESSES—
Cony G. Raymond
F. H. Gibbs

INVENTOR—
Henry Horace Hathaway
— per Duell, Laasett & Co.
— Attorneys —

(No Model.)

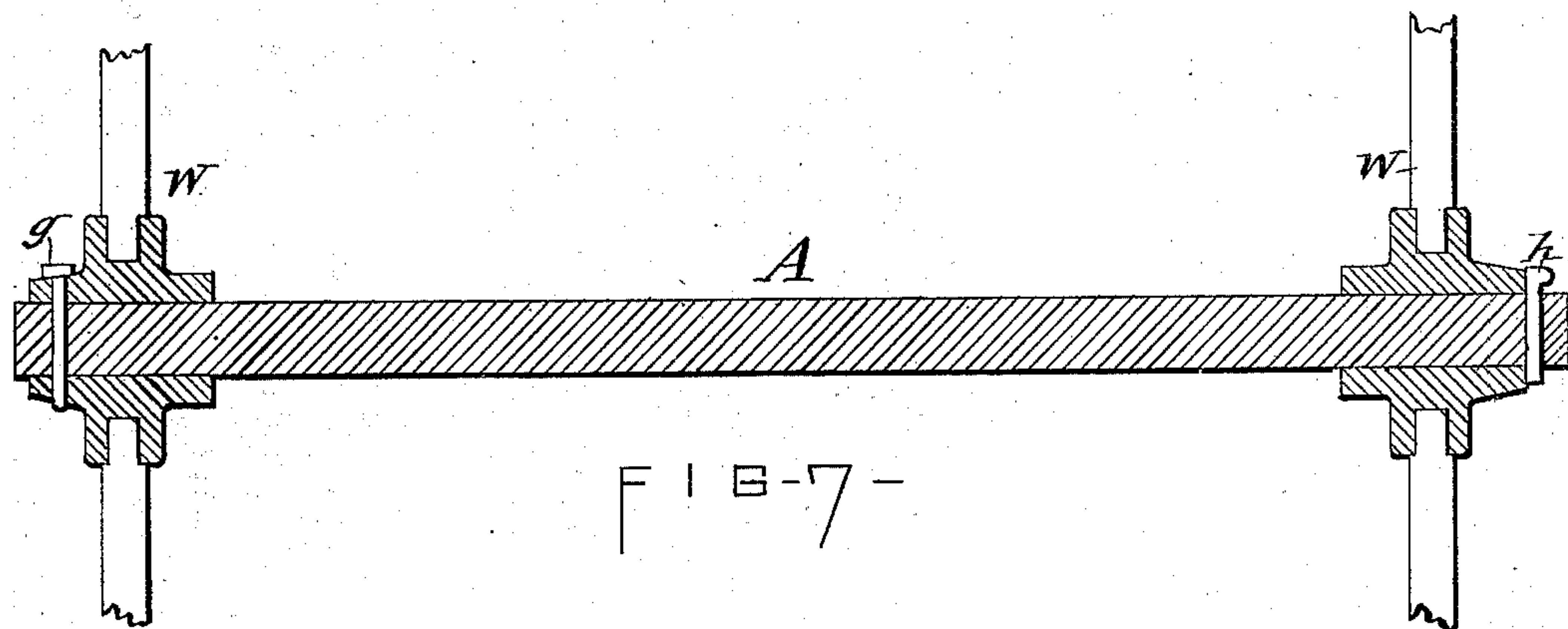
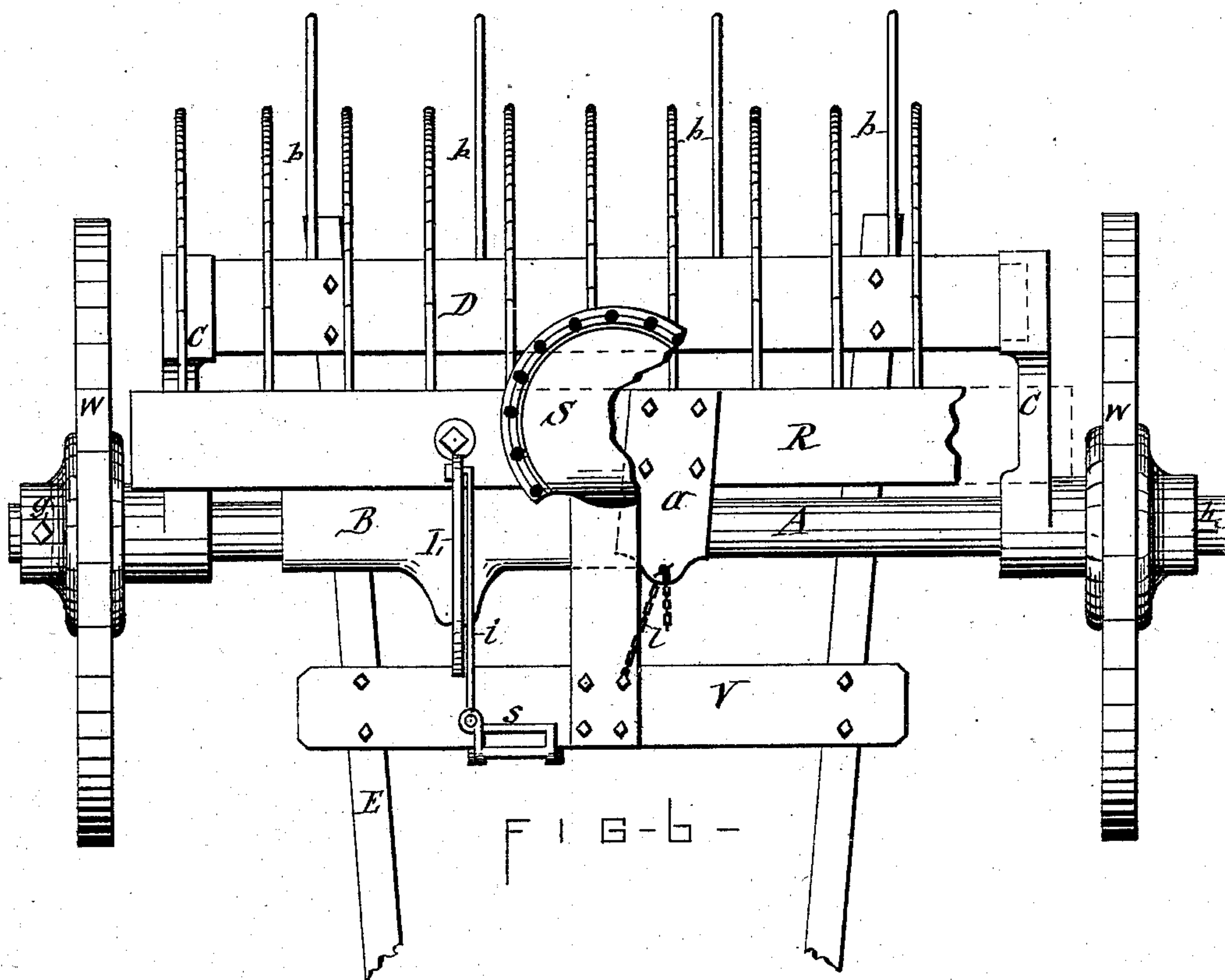
2 Sheets—Sheet 2.

H. H. HATHAWAY.

HORSE HAY RAKE.

No. 270,218.

Patented Jan. 9, 1883.



WITNESSES—
C. W. Raymond.
F. H. Gibbs

INVENTOR—
Henry Horace Hathaway.
J. D. Dull, L. A. & Co.
Attorneys

UNITED STATES PATENT OFFICE.

HENRY H. HATHAWAY, OF CLOCKVILLE, NEW YORK.

HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 270,218, dated January 9, 1883. •

Application filed September 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY HORACE HATHAWAY, of Clockville, in the county of Madison, in the State of New York, have invented new and
5 useful Improvements in Horse Hay-Rakes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction and combination of the constituent parts
10 of a horse hay-rake and auxiliary devices connected therewith, whereby the cost of the manufacture of the machine is reduced and the operation of the same is rendered more effective
15 and convenient, all as hereinafter more fully described, and specifically set forth in the claims.

The invention is fully illustrated in the annexed drawings, wherein Figure 1 is a longitudinal vertical section of my improved hay-rake. Fig. 2 is a detached plan view of the
20 box by which the rake-head is sustained on the axle. Fig. 3 is a transverse section of the same. Figs. 4 and 5 are detail views, illustrating the attachment of the so-called "cleaner" to the
25 cleaner-head. Fig. 6 is a top view of the machine, with portions broken away to better illustrate the combination and arrangement of its component parts; and Fig. 7 is a longitudinal
30 section of the axle and wheel-hubs, illustrating the connections of said parts.

Similar letters of reference indicate corresponding parts.

W denotes the carrying or traction wheels
35 of the machine, and A the axle, which I connect with said wheels by a pin or bolt, *g*, passing through the hub of one of the wheels, and through the axle, and a pin or bolt, *h*, passing through the opposite end of the axle, outside
40 of the adjacent wheel-hub, as shown in Fig. 7 of the drawings.

By the before-described connection of the axle with the wheels the former is caused to rotate with the latter, and the detachment of
45 said parts, when desired, is readily effected by simply removing one of the said pins or bolts.

On the axle A is mounted a friction-clutch in the form of two boxes, B B', having rearward and forward extensions, *e e'*, by the former of which said boxes are hinged together,
50 as illustrated in Fig. 3 of the drawings.

To the forward extension of the lower box,

B', is connected a link, *c*, and from that of the upper box, B, depends a stud or bolt, *c'*, which link and stud are coupled to a lever, L, which
55 extends forward from the boxes, and upward and back over the boxes, as shown in Fig. 1 of the drawings. The free end of said lever is connected with the free end of a hinged step, *s*, in front of the driver's seat, by a rod, *i*. By
60 a forward pressure of the driver's foot on the step *s* the lever L is swung forward, and this movement of the lever draws the boxes B B' together by the couplings *c c'*, and thus clamps the said boxes on the axle. Without the afore-
65 said pressure of the step *s* the lever L drops rearward by its own gravity and simply holds the forward portion of the boxes B B', without producing sufficient pressure to prevent them from riding loosely on the axle. Upon the rear
70 extension, *e*, of the boxes is secured the rake-head R, having attached thereto the rake-teeth in the usual manner, and being supported on the axle independently of the cleaner-head, hereinafter described. The rake-head thus
75 carried loosely on the axle is sustained in its desired position by means of a plate, *a*, attached to the rake-head and projecting forward therefrom, and a chain or other suitable adjusting tie, *l*, connecting the end of said plate with
80 the thill, or its cross-bar V. By shortening or lengthening the tie *l* the rake-head is swung upward or lowered, according to the elevation required of the rake-teeth above the ground, for either light or heavy raking.
85

The dumping of the rake is readily effected by simply pressing forward on the step *s*, which, by its connection with the lever L, clamps the boxes B B' on the axle, in the manner before described, and thus causes said
90 boxes to turn with the axle. Said action being completely under the control of the driver allows him to raise the rake to any desired extent, and lower the same gradually, and without producing jars or excessive strain on the
95 machine.

It will be observed that by the described devices I dispense with the usual pawl and ratchet, cogs, and springs hitherto applied to horse
hay-rakes for dumping the rake.
100

C C are two arms, provided at one end with a sleeve, which loosely encompasses the axle in proximity to the hubs of the wheels W W, so as to abut against the same, thus sustain-

ing said arms laterally without the aid of extra collars or other attachments on the axle, said arms extending rearward, and having secured to their rear ends a cross-bar, D, which constitutes the cleaner-head, hereinafter described.

To the under side of the cross-bar D are attached the thills E, projecting forward underneath the axle, and clear of the same. A cross-bar, V, attached to the thill in front of the axle, forms, in conjunction with the bar D, a rigid frame which braces the thill. On the cross-bar V is secured the standard of the driver's seat S, which standard rises rearward over the axle and rake-head and carries the seat S in such relative position as to become nearly or quite balanced over the axle, and thus prevents the thill from bearing heavily on the saddle of the horse.

b b designate cleaners, designed to hold the hay while withdrawing the rake-teeth from the same in dumping the rake, said cleaners consisting of flat steel bars placed edgewise, and secured to the cleaner-head, formed of the cross-bar D, which is composed of two pieces or sections placed one upon the other and bolted together. The end of the cleaner-bar *b* is straight and fitted in a groove cut across one of the cleaner-head sections, and is secured in its position by a pin, *f*, inserted in a longitudinal slot, *d*, in the cleaner-head section, and passing through a hole in the cleaner-bar, as illustrated in Figs. 4 and 5 of the drawings.

The under edge of the cleaner-bars *b*, I provide with spurs *m*, which are integral therewith, and formed by simply cutting into the edge of said bar with a cold-chisel, thus obtaining a cleaner which is easily manufactured and most durable and effective in its operation. Said spurs catch on the hay entering the rake and serve to prevent the same from rolling. The cleaner-head, being supported by the arms C C, hinged on the axle, as before described, ren-

ders the cleaners *b b* vibratory, so as to yield, to a certain extent, to the pressure of the hay entering the rake.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the axle fixed to the carrying-wheel to rotate therewith, a friction-clutch mounted loose on the axle, and having a rearward extension, the rake-head carried on the free end of said extension, a plate fixed to and projecting forward from the rake-head, and a chain or adjustable tie connecting the extremity of said plate with the thill or its cross-plate, substantially as shown and set forth.

2. In combination with the rotary axle A, the boxes B B', hinged together and provided with the rear and forward extensions, *e e'*, the couplings *c c'*, connected to the forward extension, the lever L, connected with said couplings, and the hinged steps, connected with the lever, all as shown and described.

3. The combination and arrangement of the rake-head, provided with the usual rake-teeth, and supported on the axle independently of the cleaner-head, the cleaner-head provided with the usual cleaning-bars, and supported back of the rake-head by arms loosely connected to the axle adjacent to the hub of the wheels, and the thill connected to the cleaner-head and extended under the axle, all substantially in the manner described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 1st day of September, 1882.

HENRY HORACE HATHAWAY. [L. S.]

Witnesses:

C. H. DUELL,
F. H. GIBBS.