

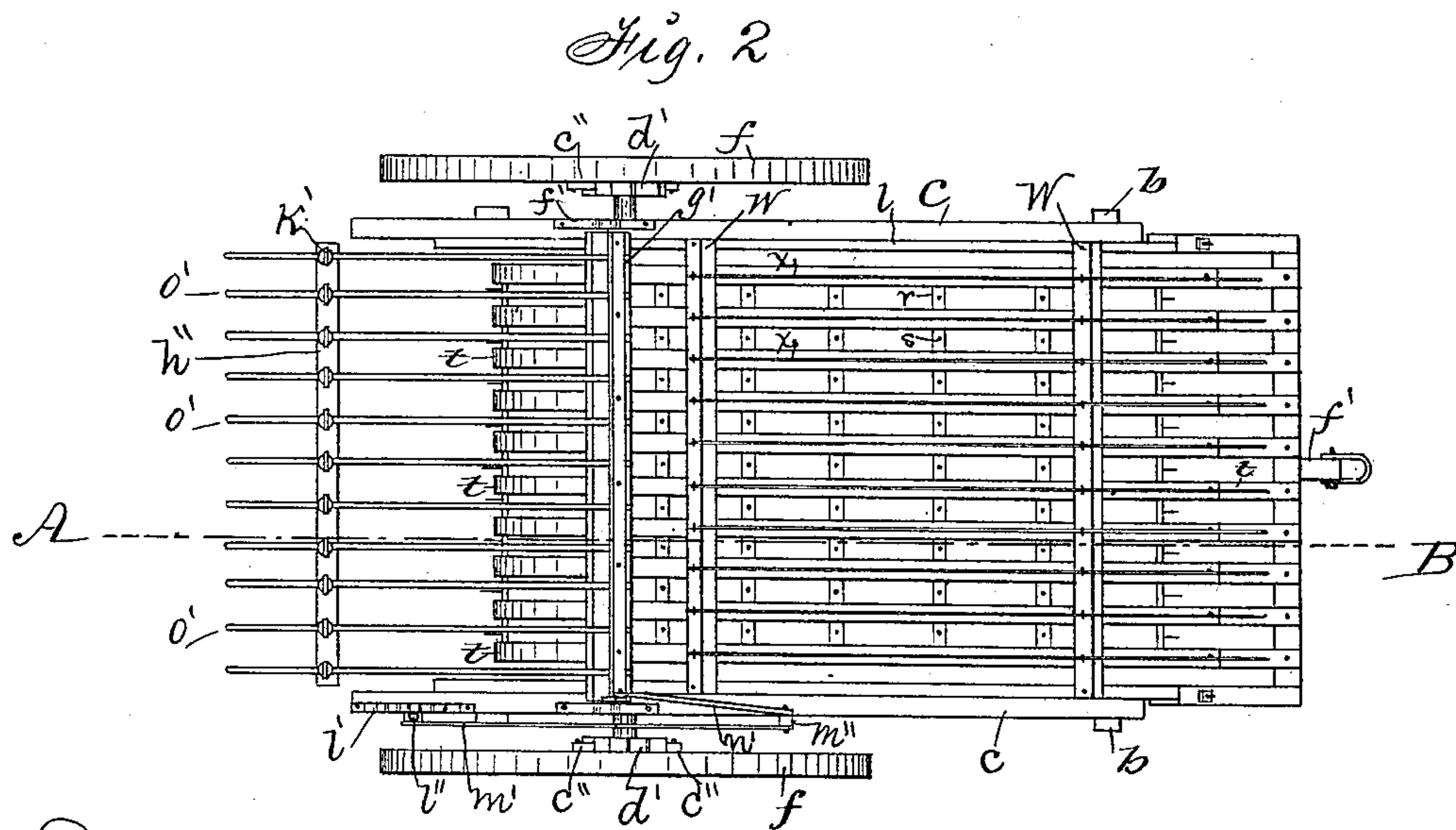
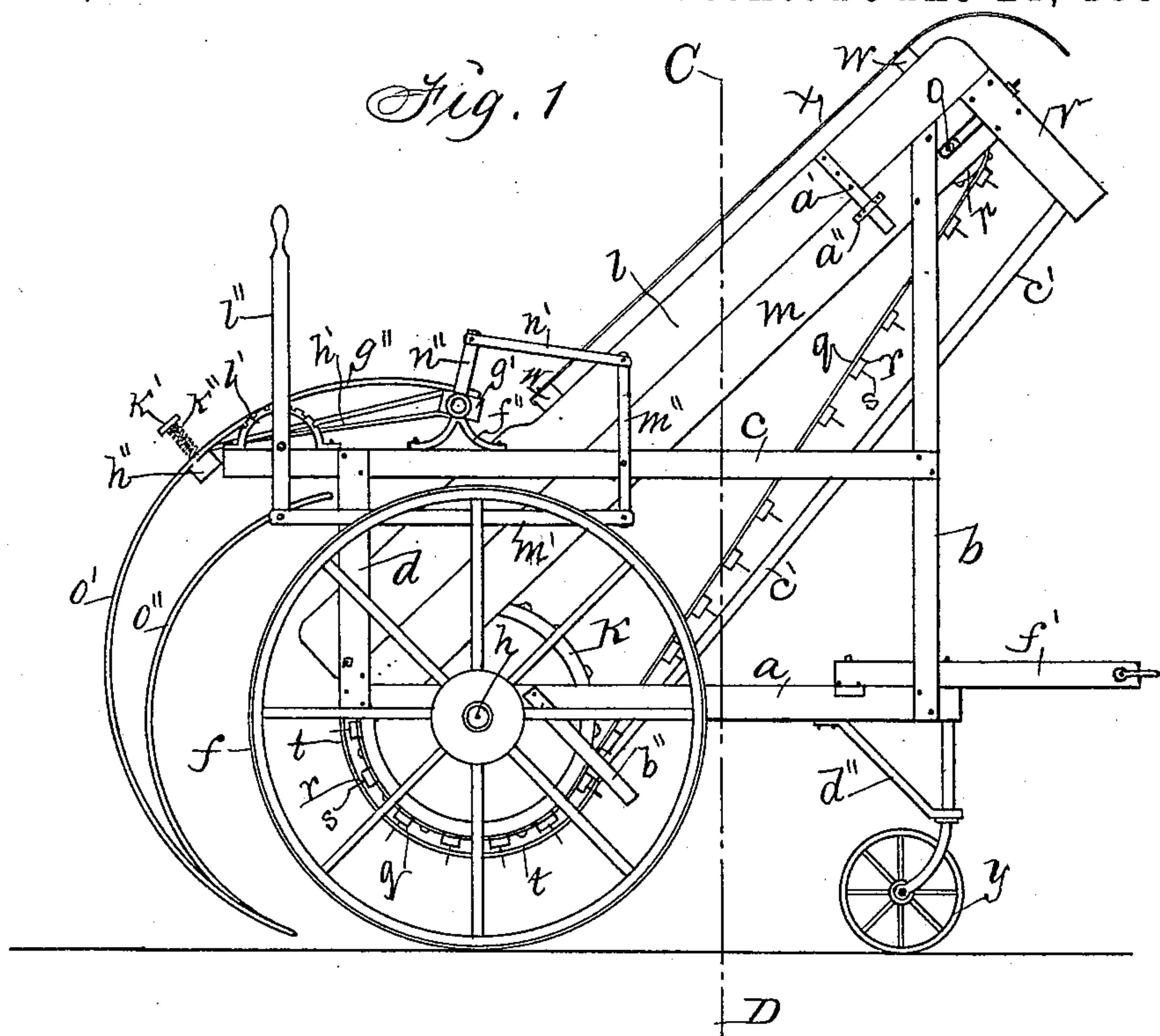
(No Model.)

3 Sheets—Sheet 1.

W. H. LYON.
HAY RAKE AND LOADER.

No. 365,082.

Patented June 21, 1887.



Witnesses:

C. S. Hurdgens,
R. H. Orrig.

Inventor:

William H. Lyon,
By Thomas G. Orrig, atty.

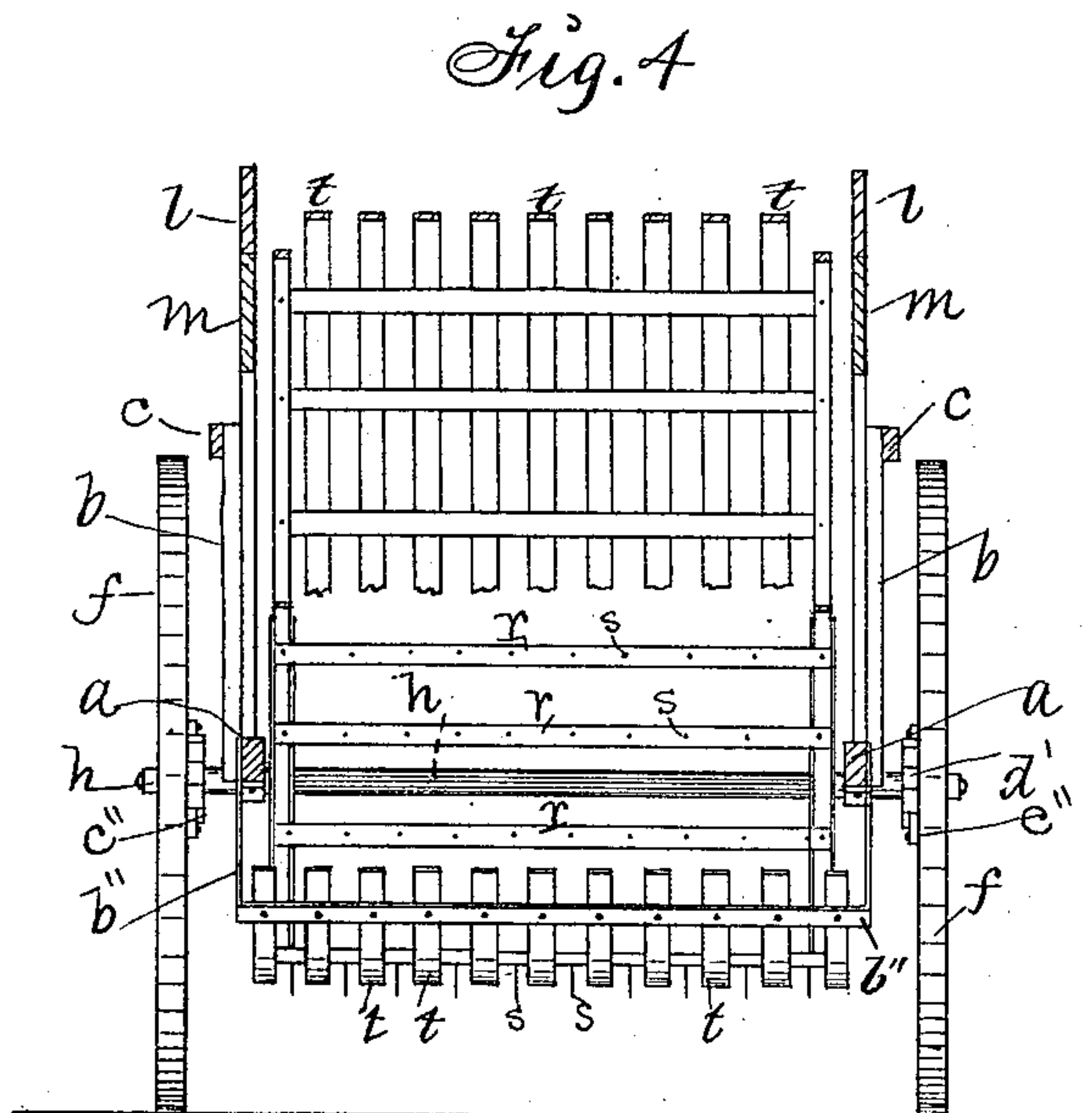
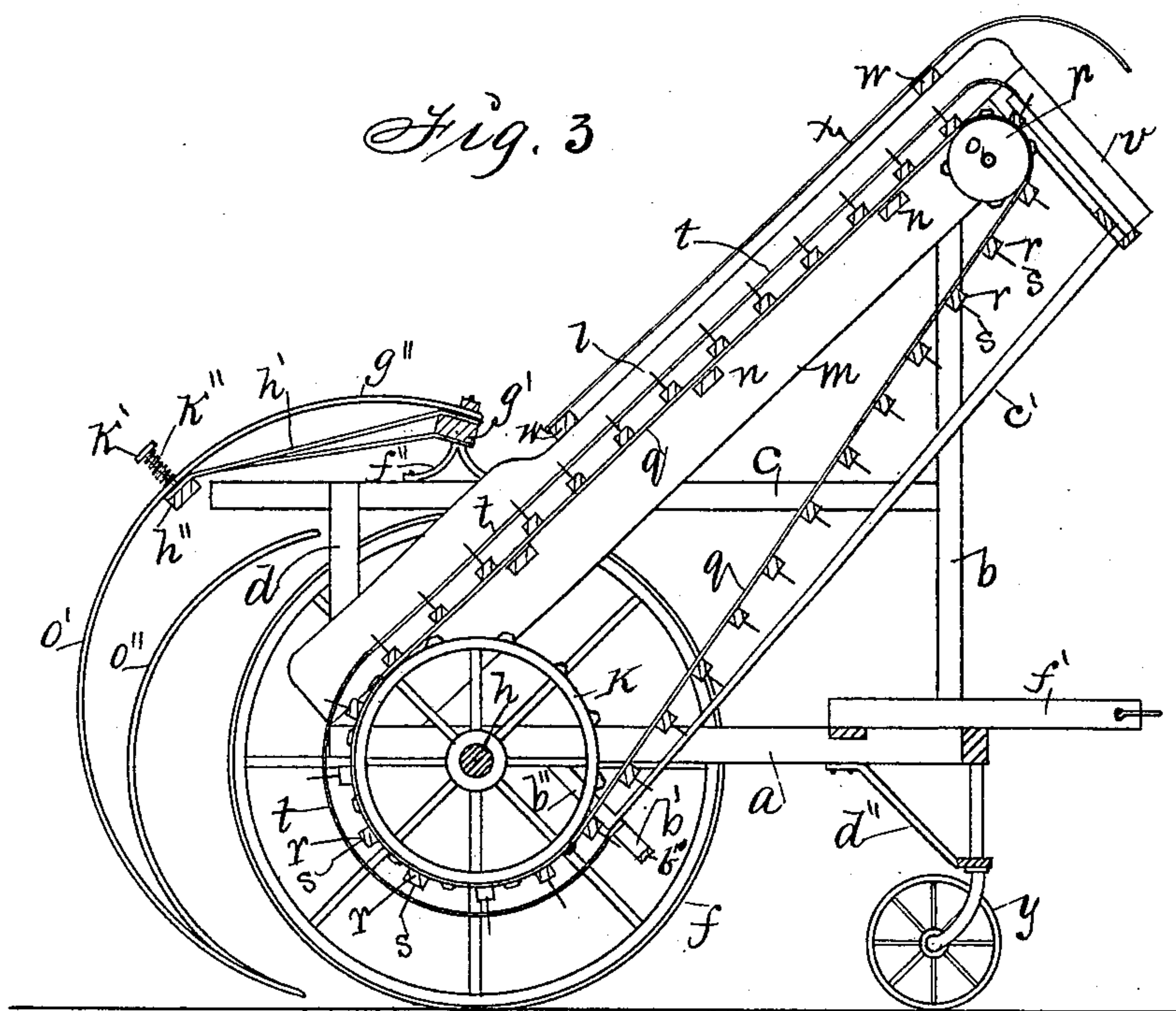
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W. H. LYON.
HAY RAKE AND LOADER.

No. 365,082.

Patented June 21, 1887.



Witnesses:

C. W. Hudgens.
R. H. Orwig.

Inventor:

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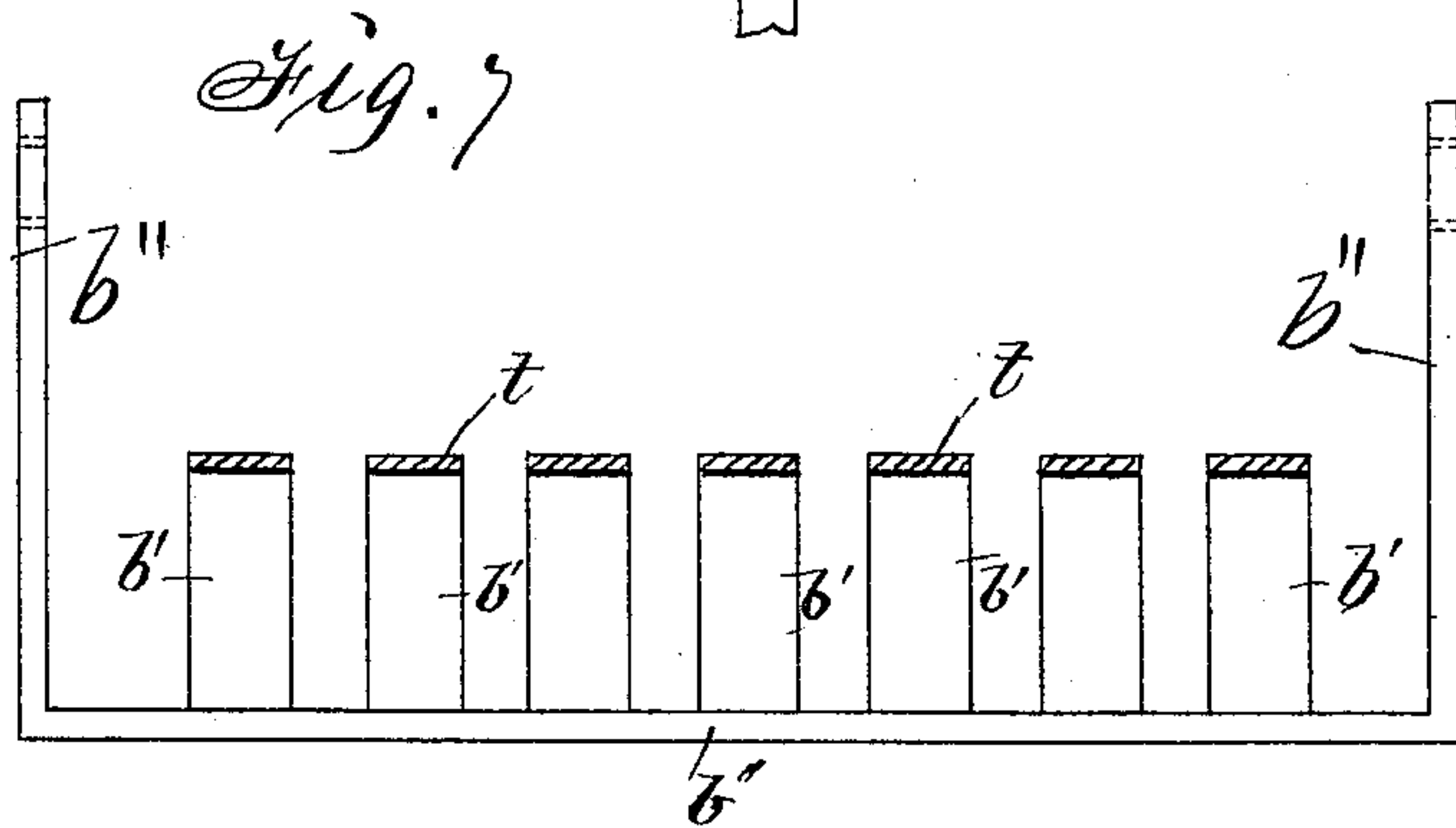
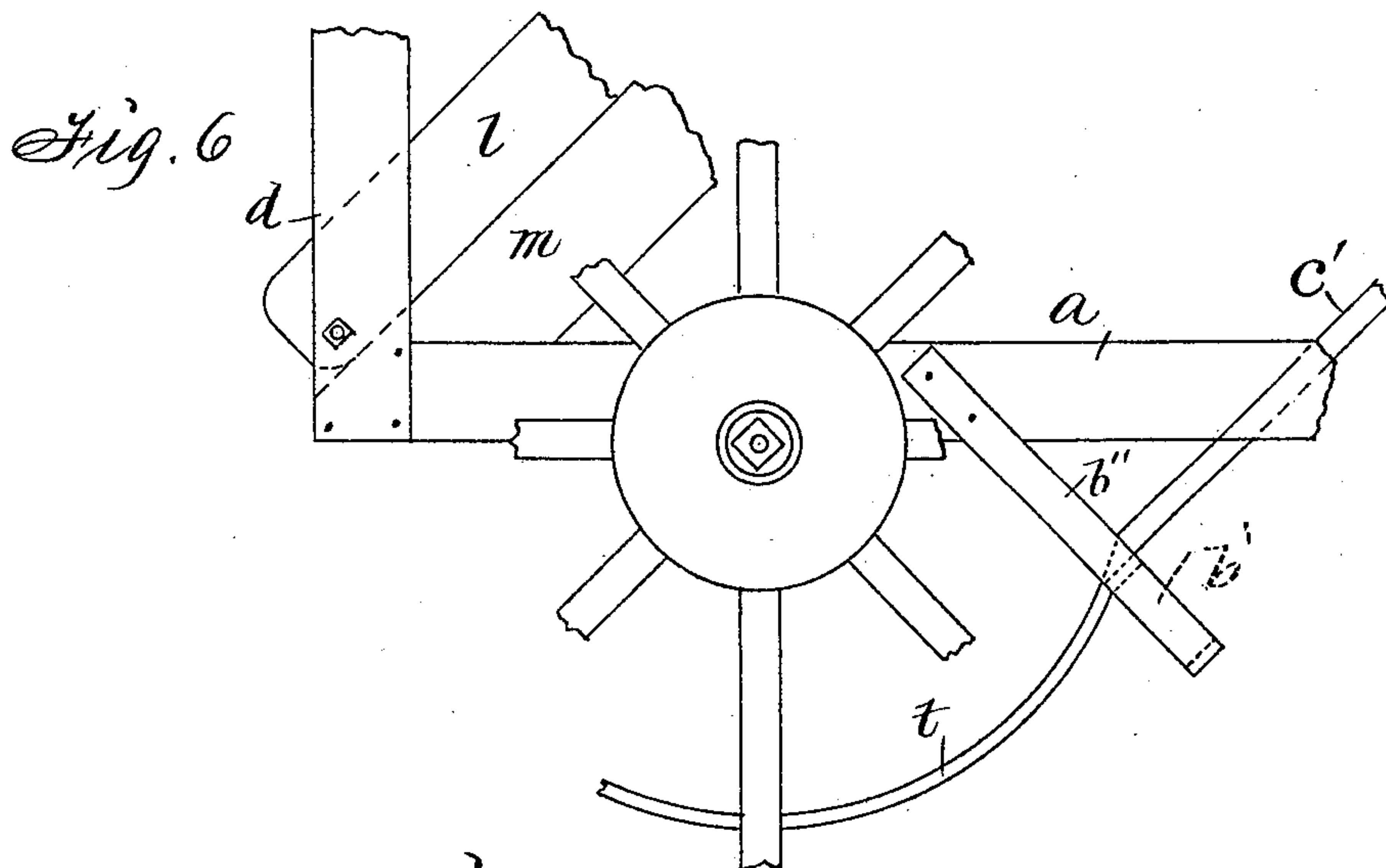
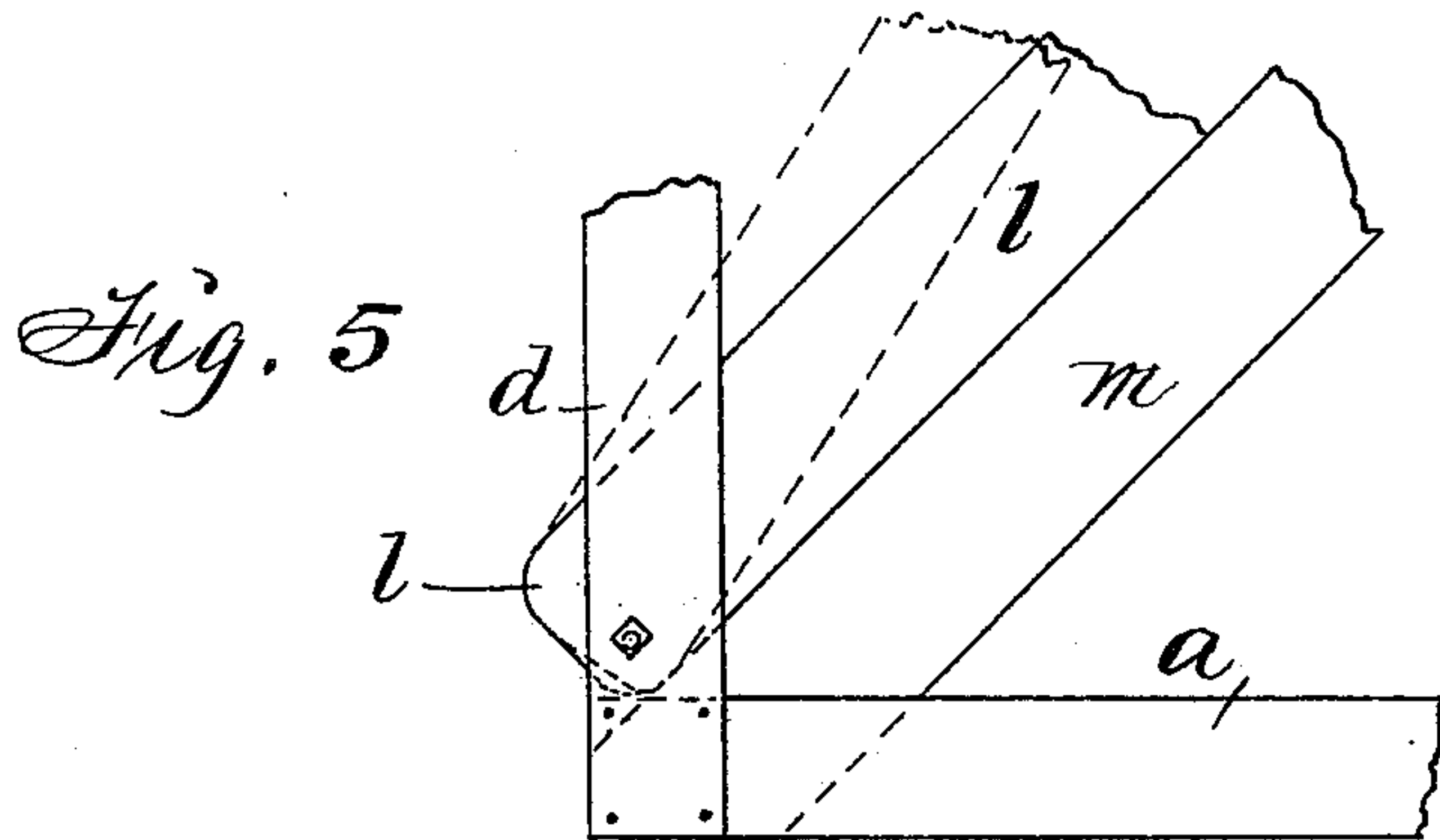
(No Model.)

3 Sheets—Sheet 3.

W. H. LYON.
HAY RAKE AND LOADER.

No. 365,082.

Patented June 21, 1887.



Witnesses:

Charles
A. H. Orwig.

Inventor:

William H. Lyon,
By Thomas G. Orwig, Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. LYON, OF MILO, IOWA.

HAY RAKE AND LOADER.

SPECIFICATION forming part of Letters Patent No. 365,082, dated June 21, 1887.

Application filed September 20, 1886. Serial No. 214,060. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. LYON, a citizen of the United States, residing at Milo, in the county of Warren and State of Iowa, have invented a new and useful Hay Rake and Loader, of which the following is a specification.

The object of my invention is to provide a machine for raking hay from the swath and loading it directly to the wagon; and it consists of an ordinary frame-work mounted on wheels and provided with an elevator or carrier, and with doubled spring rake-teeth for gathering the hay and pressing it upon the carrier.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the complete machine; Fig. 2, a top view of the same; Fig. 3, a transverse section of side elevation on line A B, and Fig. 4 a cross-section of front view on the line C D. Fig. 5 shows a section of the carriage-frame, a fixed section, and also a hinged or pivoted section of the carrier-frame combined. Fig. 6 shows the parts in Fig. 5, a section of a wheel upon which the carriage-frame is supported, and a frame that supports a series of blocks, between which the fingers of the carrier pass. Fig. 7 is a top view of said frame and blocks.

a , b , c , and d are parts of the main frame of the machine, mounted on the wheels f and g . On the axle h are firmly attached the two large sprocket-wheels k , which are set just inside of the pieces a of the frame. From the rear ends of the pieces a of the frame project upward and forward the pieces l and m , with cross bars or stays n , supporting the wooden or metallic strips t , together constituting an elevator or carrier. At the upper end of the pieces or side-boards m is supported a shaft, o , bearing the small sprocket-wheels p on the inside of the side-boards m . The sprocket-wheels k and p carry endless chains q , having cross-slats r , with fingers or spikes s projecting outward from their faces at regular intervals, which pass between the strips t of the elevator, and, catching the hay, carry it upward with it until at the upper end it is released from the fingers s and falls to the wagon, guided by the short projection v of the elevator, extending downward and outward at right angles from

the upper ends of l and m . The pieces l support on their upper edges two cross-bars, w , which also support the rods or strips x , bent downward at their upper ends. The object of these rods x is to prevent wind from blowing the hay from the carrier. The pieces l are hinged at their lower ends in the pieces d of the frame, and near their upper ends are provided with the pieces a' which are admitted freely into the staples a'' , and allow the pieces l , together with bars w and rods x , to lift whenever a bunch or wad of hay passes up the elevator. The strips t from the lower end of the elevator curve around concentric with and form a sheath for the sprocket-wheels k , terminating at the upper ends of the blocks b' . (Shown in Figs. 3 and 4.) These blocks b' are supported upon the bar b'' , which is bent upward at its ends and suspended to the pieces a of the frame. The bar b'' , with blocks b' , is supported or braced from before by the pieces c' , extending upward to the lower end of the drop v of the elevator.

I wish to call particular attention to my method of carrying the strips t entirely around beneath the sprockets k , and endless chains q , and slats r , and terminating in the blocks b' , thus forming a sheath for the chains and sprocket-wheels, which will keep the hay from getting inside of the elevating-apron of chains q and slats r and winding on the sprockets k and shaft h . The blocks b' allow the spikes or fingers s to pass between them, and are of just sufficient length for that purpose. The wheels f play idly on the axle h , but are provided with pawls c'' , which may be thrown in contact with the ratchet-wheel d' , which is firm with the axle, whenever it is desired to throw the mechanism in gear.

g is a castor-wheel braced by the bars d'' , and carries the front end of the machine, which is attached to the rear end of the wagon by the short tongue f' .

On the pieces c of the frame, and nearly above the main axle h , are the standards f'' , which support the rake-head g' , to which are attached the rake-teeth g'' .

Extending rearward from the rake-head g' are braces h' , which carry the bar h'' , the object of which is to steady and keep the teeth separated at equal intervals from each other, and upon which are the slotted bolts k' ,

through which the teeth g'' pass, and are pressed downward by the spiral springs k'' ; which encircle the bolts k' . The rake-head g' and teeth g'' are elevated and lowered by the
 5 combination, with the rack l' , of the arms and levers l'' , m' , m'' , n' , and n'' .

Special importance is attached to the form of the rake-tooth g'' in its combination with the other parts. It is a doubled spring-tooth with
 10 the two parts o' and o'' made eccentric with each other and tangent at the tooth's point, where the tooth is doubled and welded and drawn to a point. The more rapid curvature of the under portion, o'' , is calculated to press
 15 the hay, as gathered, over against the strips t and into contact with the spikes s . As the hay gathers in and reaches the upper ends of o'' , its downward curvature is so great that it presses the hay down in close contact with the
 20 elevator. The part o'' will furthermore yield backward to permit the passage of a wad or clog of hay, and is of sufficient length to reach the pieces h'' , which will prevent its being packed clear through and broken.

I claim as my invention—

1. The combination of the rake-tooth g'' , with parts o' and o'' , the bolts k' , springs k'' , the bar h'' , brace h' , rake-head g' , strips t , sprocket-wheels k and p , chains q , slats r , fingers s , pieces l and m , bars w , and rods x , arms and
 25 levers l'' , m' , m'' , n' , n'' , and rack l' , substantially as and for purposes stated. 30

2. The rake-tooth g'' , with parts o' and o'' , the bolts k' , springs k'' , the bar h'' , brace h' , rake-head g' , strips t , sprocket-wheels k and p ,
 35 chains q , slats r , fingers s , bar b'' , and blocks b' , arranged and combined substantially as set forth, for purposes stated.

3. The combination of the strips t , sprocket-wheels k and p , chains q , slats r , fingers s , bent
 40 bar b'' , blocks b' , and braces c' , substantially as set forth, for purposes stated.

WILLIAM H. LYON.

Witnesses:

J. F. SCHEE,
 L. W. BARLETT.