

(No Model.)

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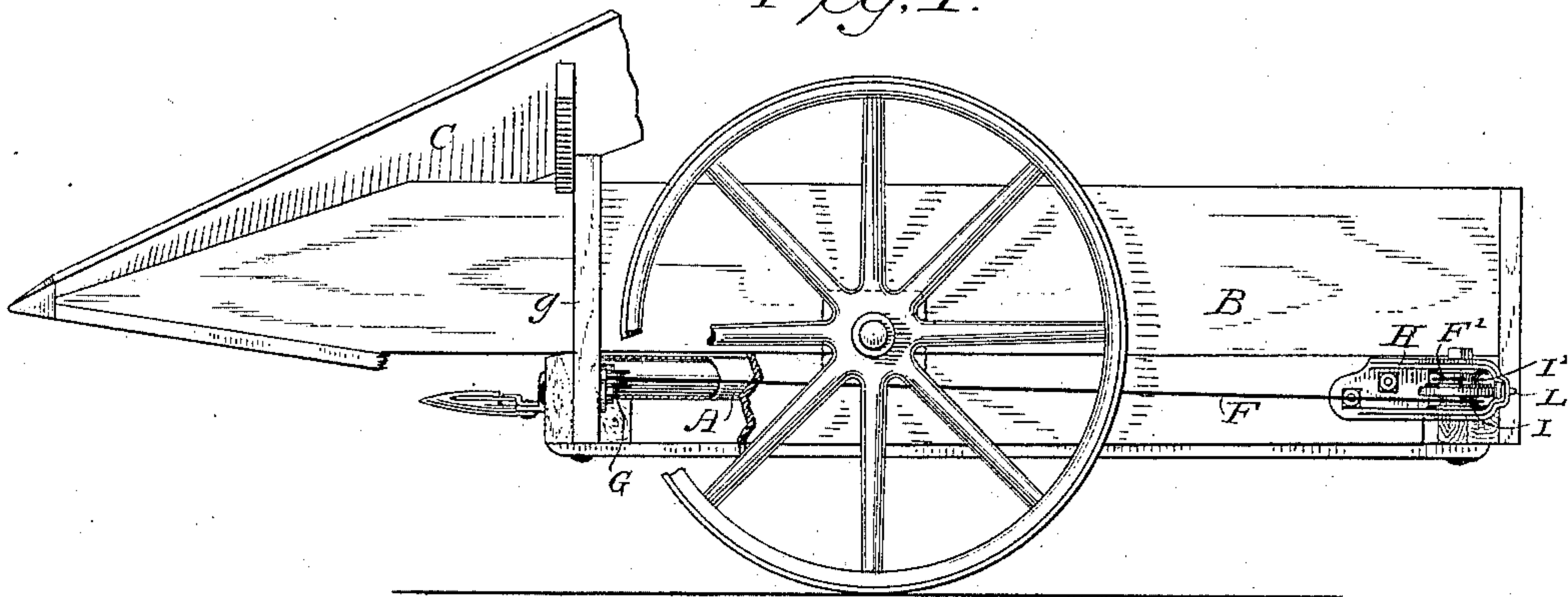
W. R. BAKER.

HARVESTER.

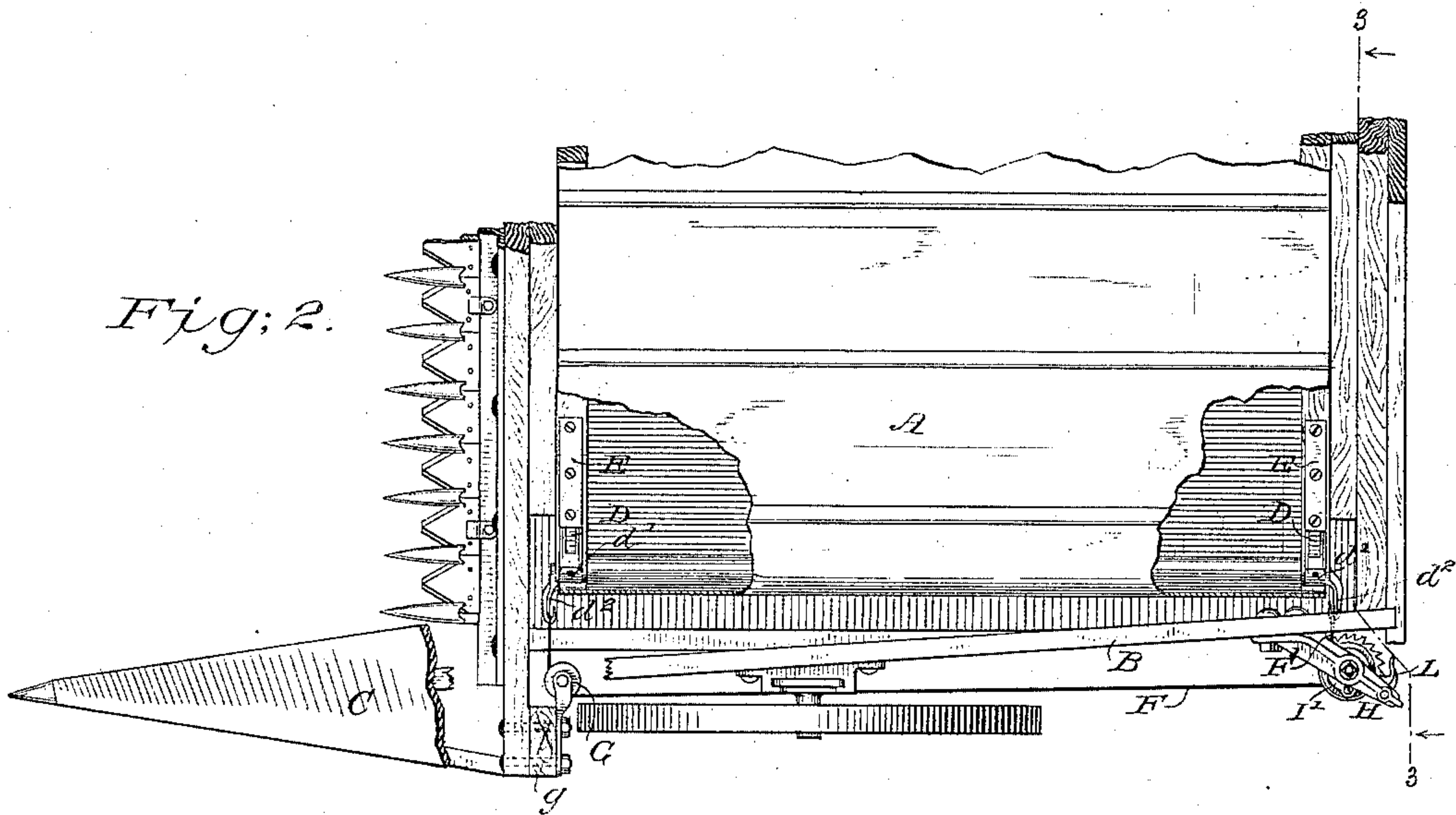
No. 324,744.

Patented Aug. 18, 1885.

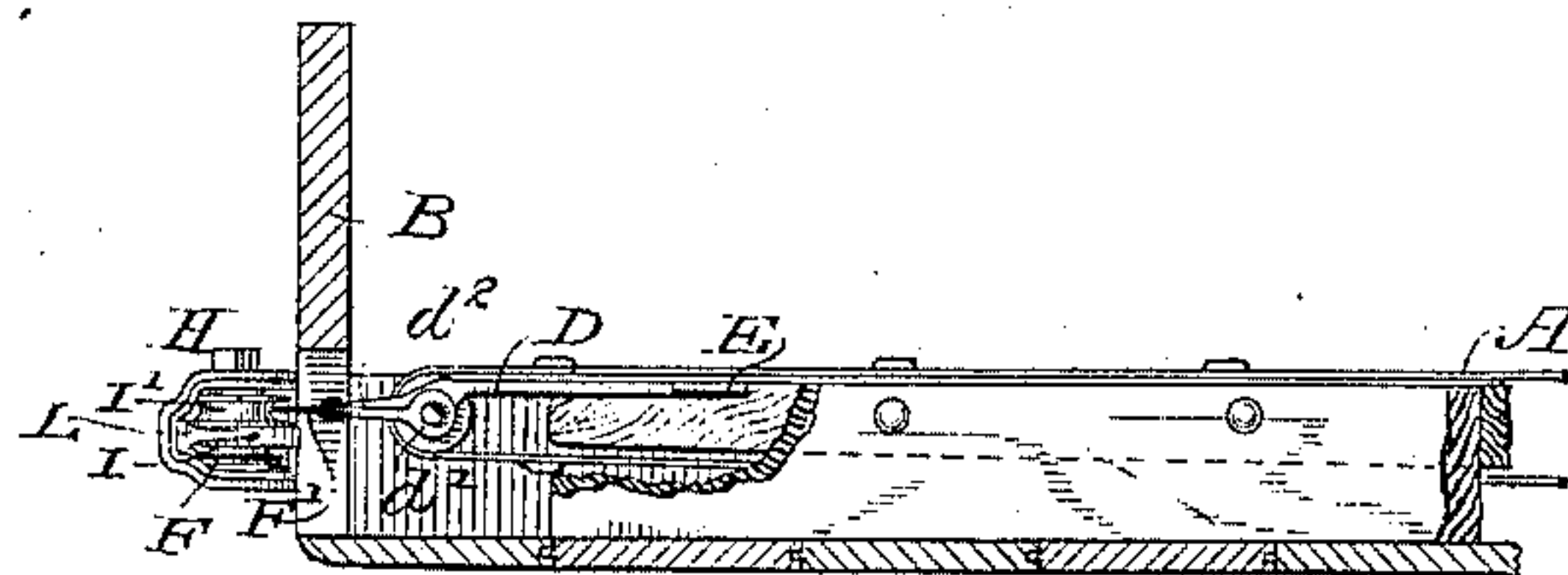
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES

*Wm A. Sinkler*

*Geo W. Young*

INVENTOR

*William R. Baker.*

By his Attorneys

*Parkinson & Parkinson*

(No Model.)

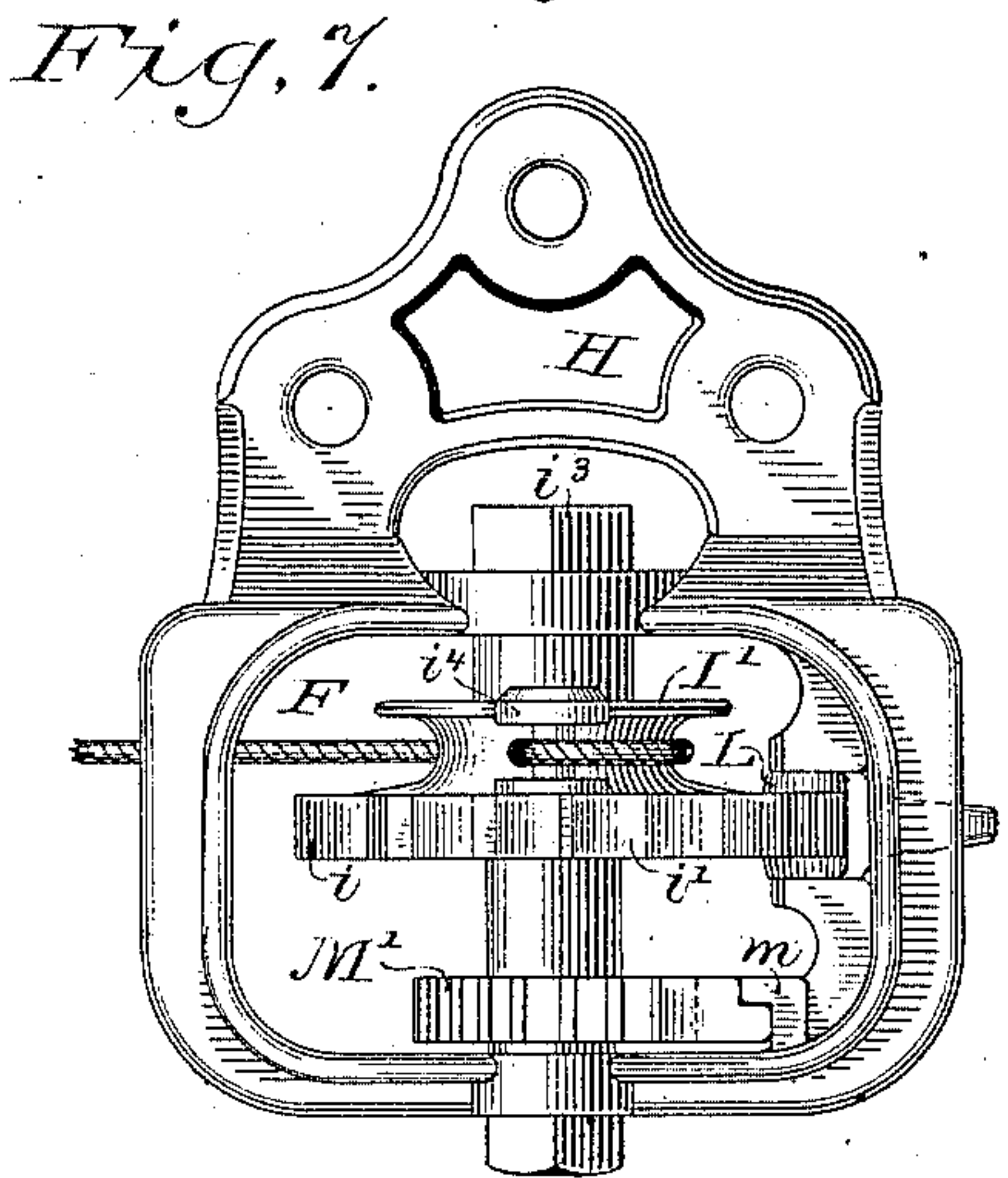
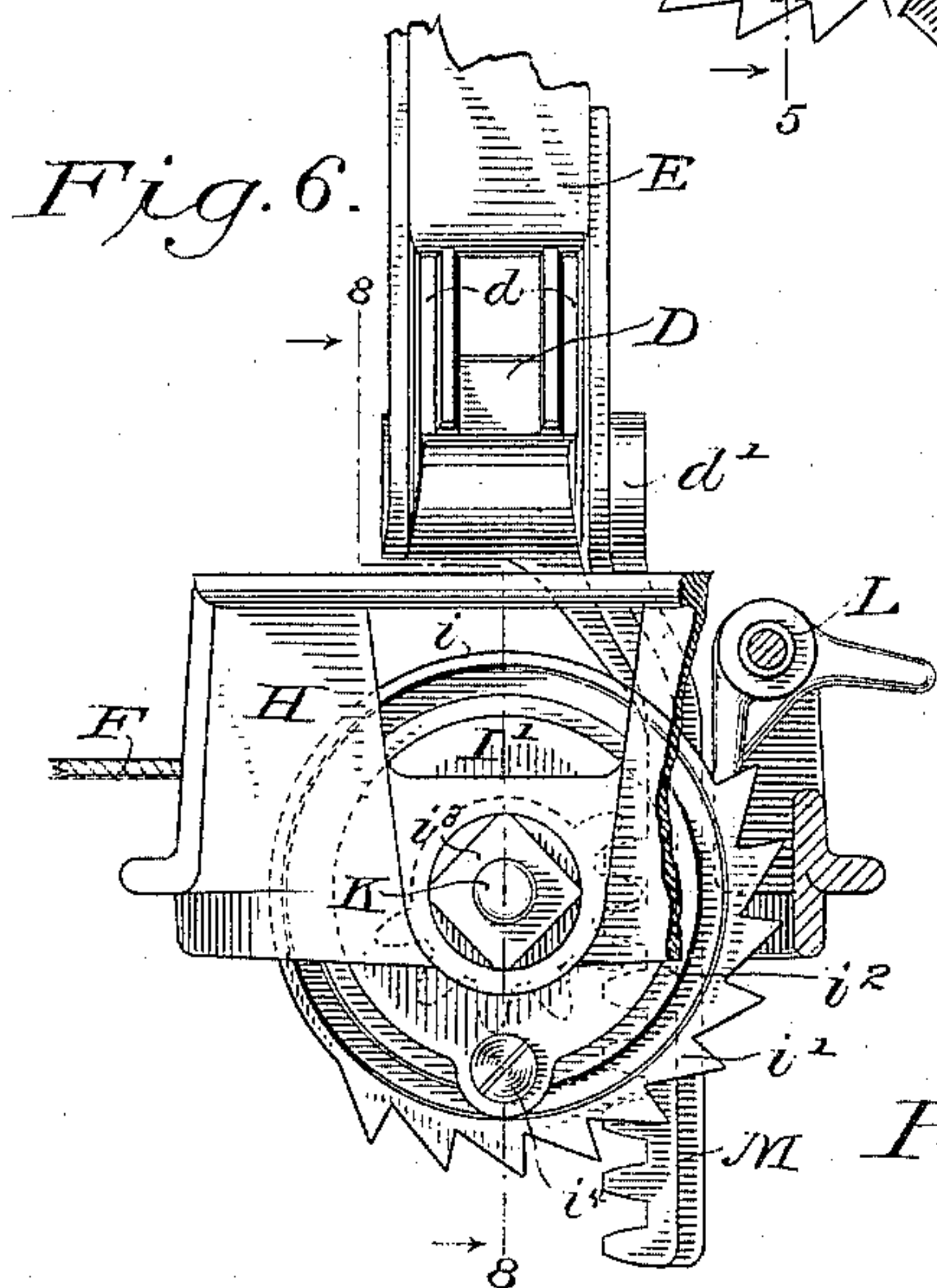
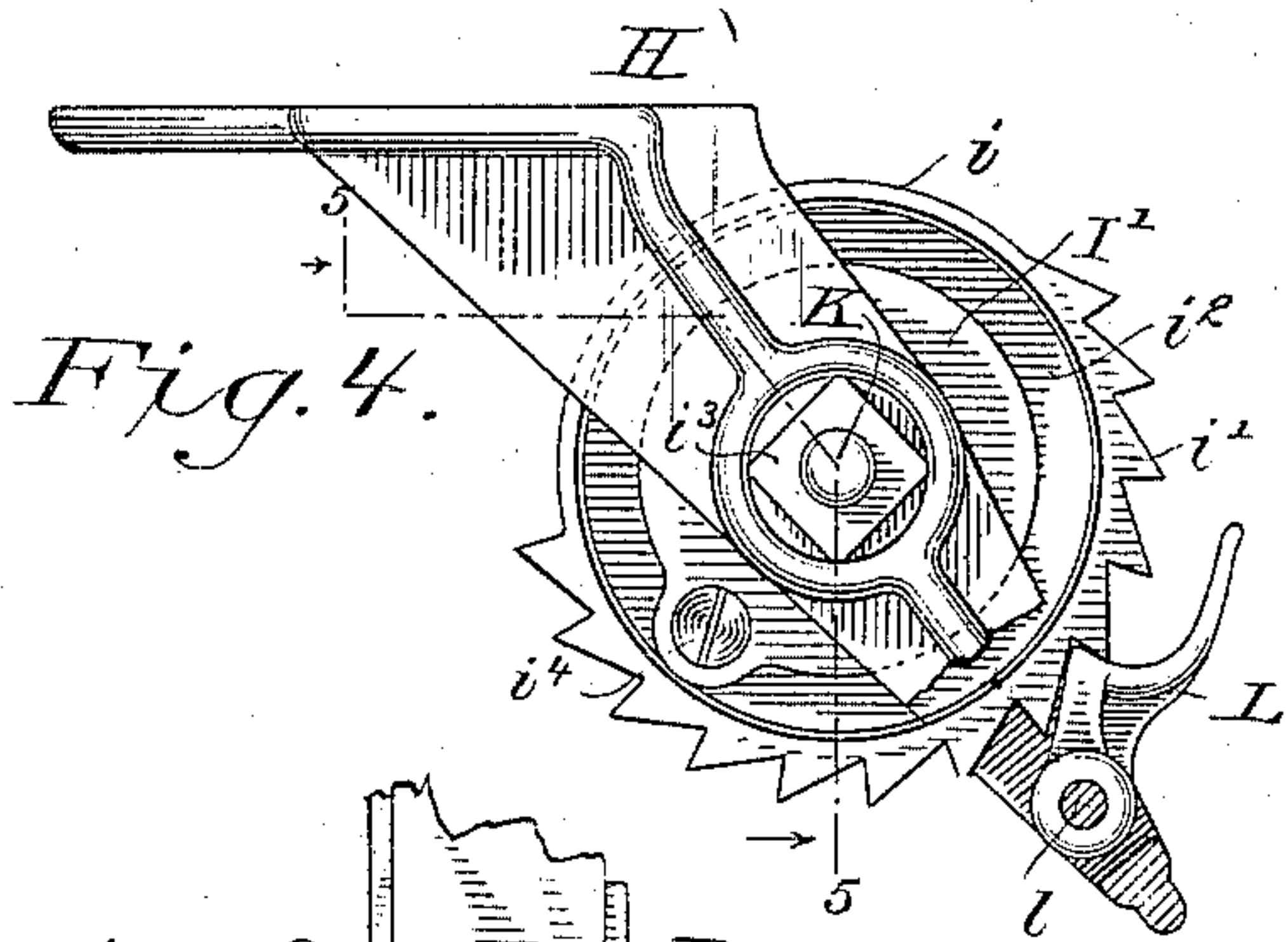
2 Sheets—Sheet 2.

W. R. BAKER.

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No. 324,744.

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WITNESSES

Wm A. Skinkb.  
Geo W. Young.

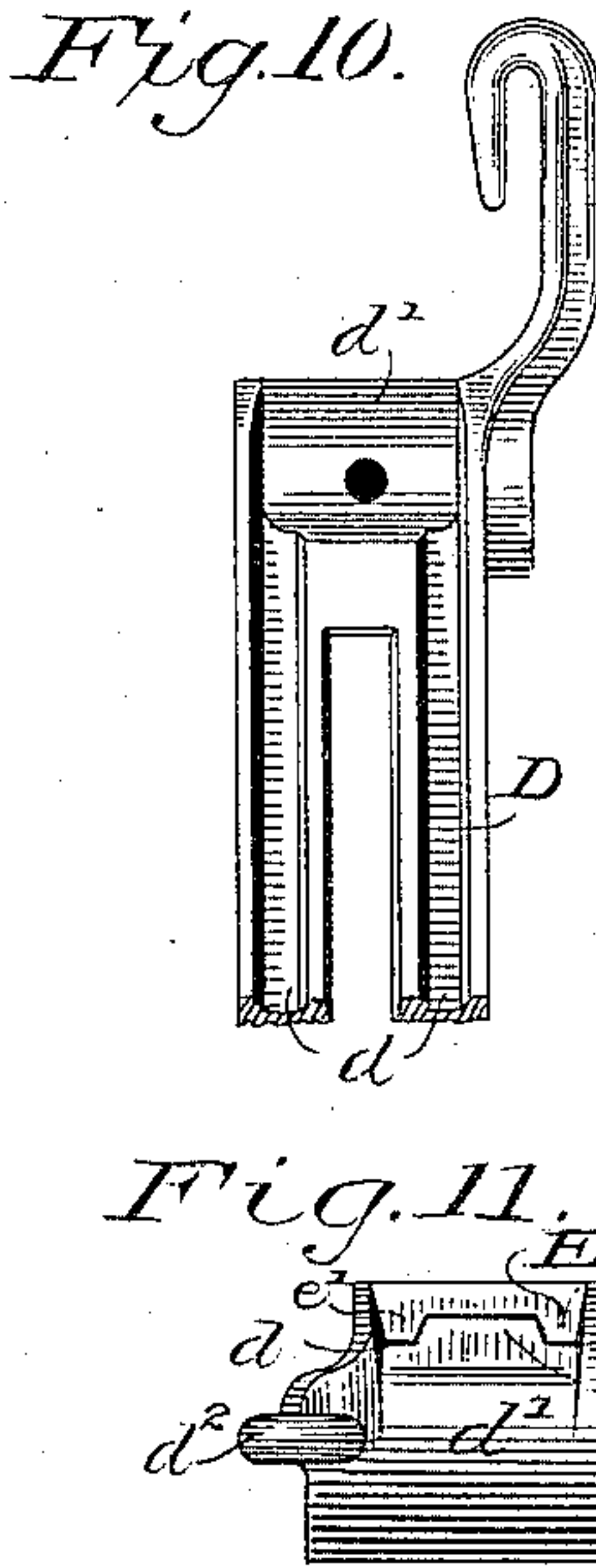
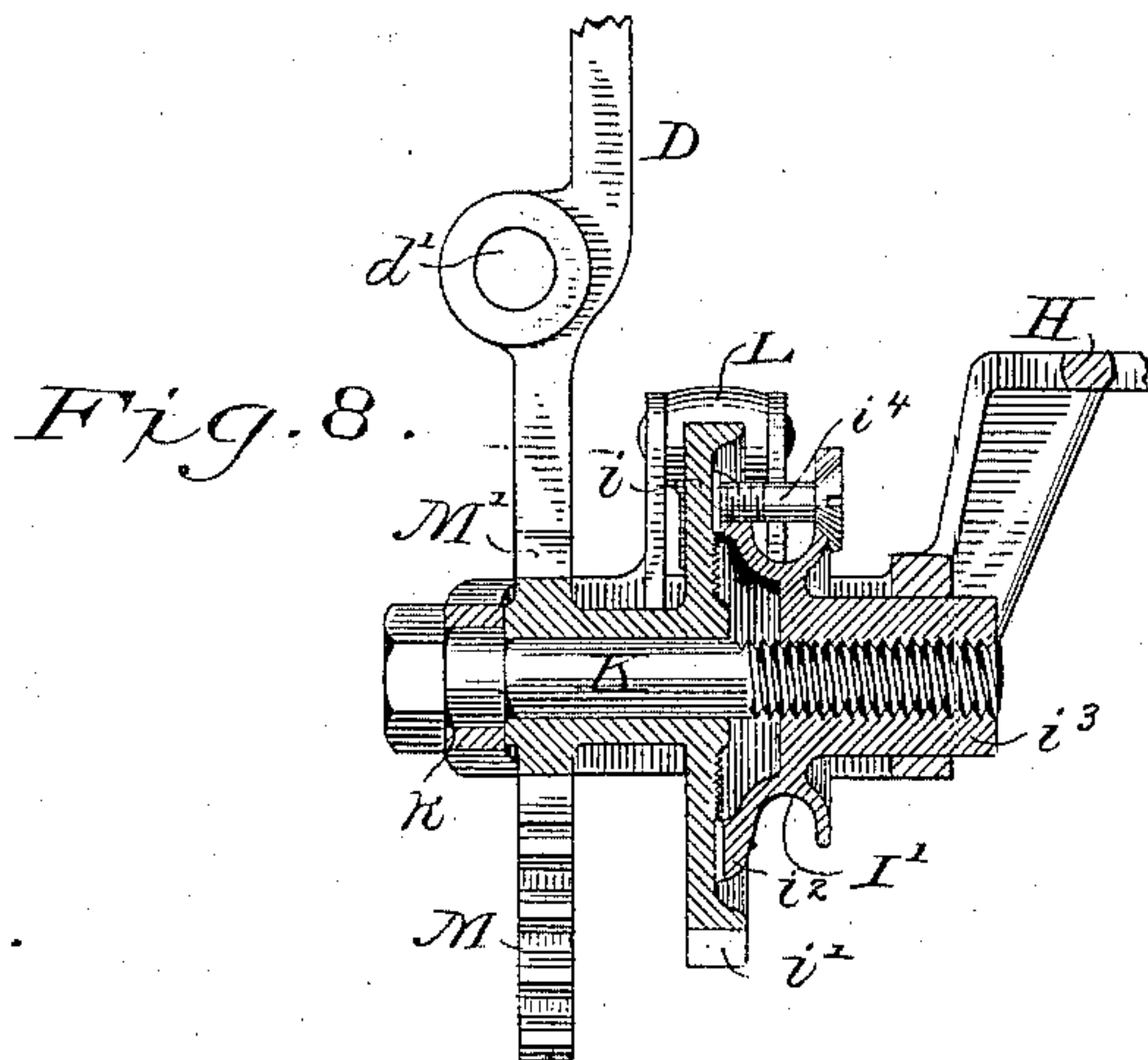
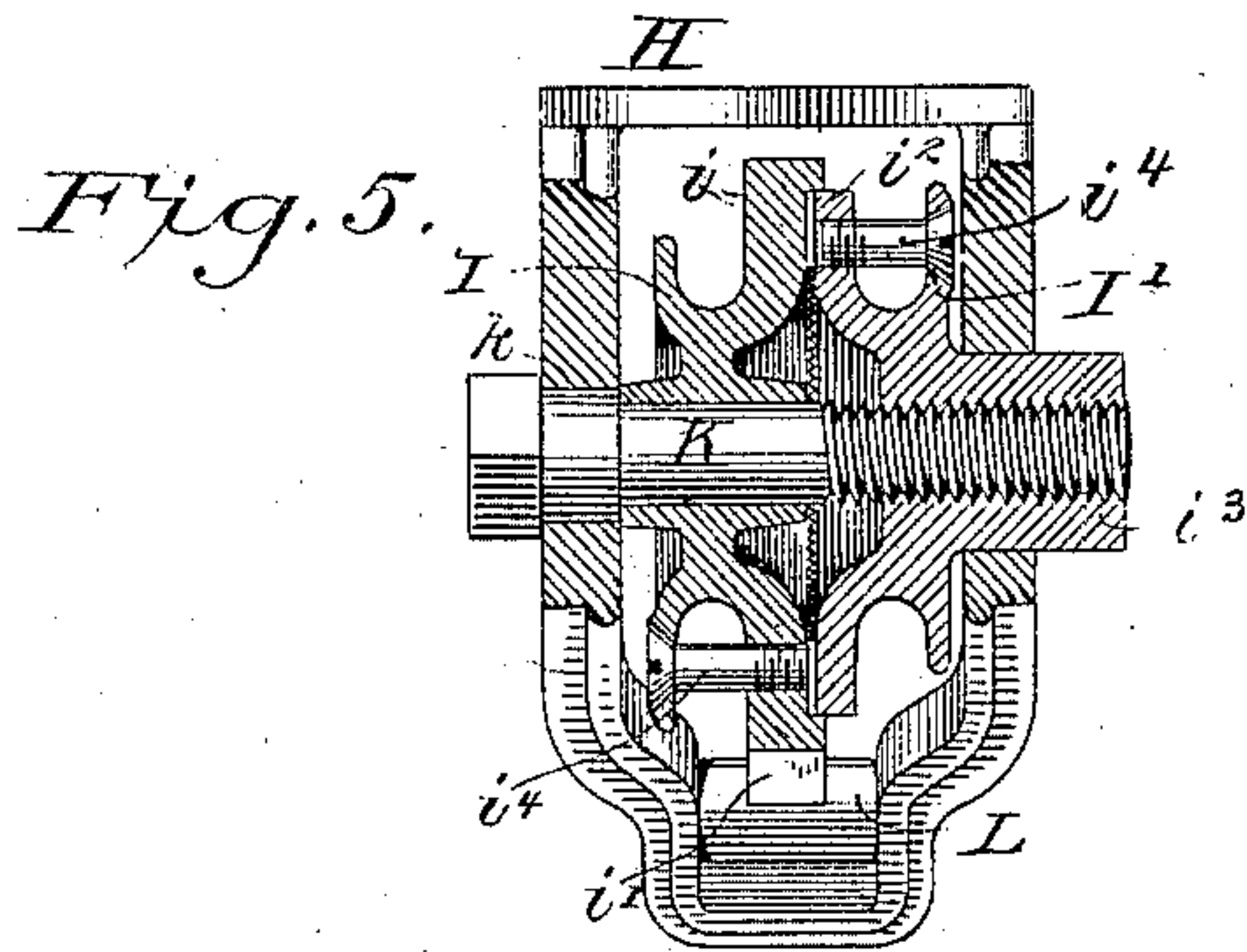
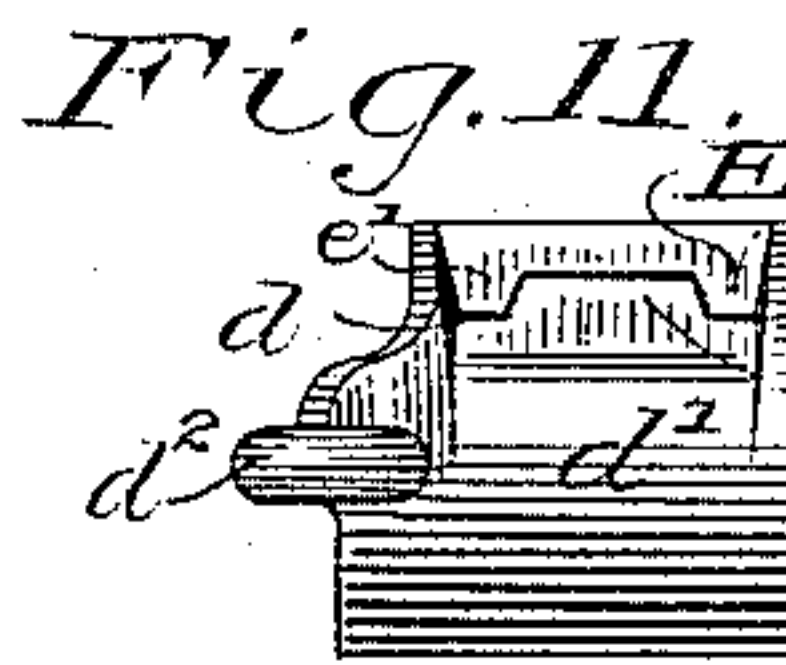
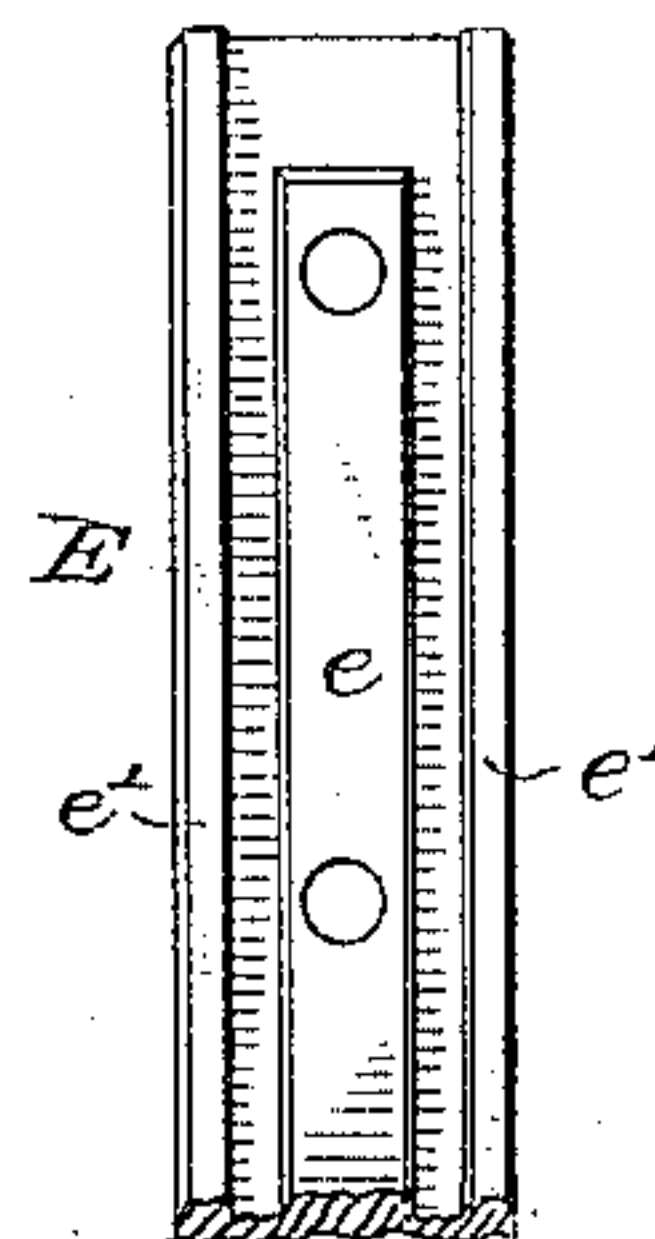


Fig. 12.



INVENTOR

William R. Baker.

By his Attorneys

Parkinson & Parkinson



# UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER, OF CHICAGO, ILLINOIS.

## HARVESTER.

SPECIFICATION forming part of Letters Patent No. 324,744, dated August 18, 1885.

Application filed August 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. BAKER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention relates to mechanism for tightening the canvas aprons of harvesters and of other machines where endless carrier-aprons are employed in a similar manner, and particularly for tightening the platform-apron used in nearly all harvesting machines nowadays; and its general mode of employment will be sufficiently understood by a description of it in connection with such platform-apron.

In an application filed by me on the 11th day of February, 1884, Serial No. 120,370, for Letters Patent of the United States, I described a method of tightening the platform-apron, wherein the outer drum, or that one next the divider, is mounted in sliding boxes, and each box connected by a wire cord or rope suitably guided with a vertical winch at the rear outside corner of the platform, whereby, upon turning the winch, the apron-drum will be drawn toward the grain-board or end sill of the platform. In such construction the cord from the front sliding box is necessarily longer than the other and will stretch more, and, besides, at the outset it is practically impossible to so proportion the cords that when taut between the winch and drum they will hold the latter exactly parallel with the opposite drum. A take-up or tension-bridge was therefore employed, by means of which any slack in one cord over the other was drawn in, this bridge being applied to the cord itself. The same defect would exist, to perhaps a less marked degree, were the winch applied at the center of the grain-board, and it was intended to apply the same remedy in case of such arrangement.

My present invention is intended to more perfectly accomplish the objects sought in the former; and it consists, substantially, in making the winch in two sections or equal sheaves having the same axis, and circumferentially adjustable with reference to each other while rigidly held together when adjusted, so that slack in one cord may be taken up by adjust-

ing its sheaves more or less upon the axis with reference to the other.

It also consists in certain combinations and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is an elevation from the divider or stubble end of a harvester-platform embodying my invention; Fig. 2, a top plan view of so much of said platform as is necessary to illustrate the invention, the apron being broken away at the stubble end to expose the sliding boxes; Fig. 3, a rear elevation in section on the line 3 3 of the preceding figure; Fig. 4, a top plan view of the compound winch or double sheaves and supporting-bracket; Fig. 5, a section on the correspondingly-numbered line of the preceding figure; Fig. 6, a plan view of a modification of the tightening mechanism; Fig. 7, an elevation of said modification from the stubble side; Fig. 8, a section on the line 8 8 of Fig. 6; and Figs. 9, 10, 11, and 12 details of the sliding boxes or hooked bearing-bars and their clips.

A represents the platform-apron, and B the grain-board, to which is connected the outside divider, C, in the usual manner. The front and rear sills are cut down at their outer ends to receive longitudinally-slotted sliding bars D, having grooves or ways *d* on each side of the slot and boxes or bearings *d'* at their ends for the gudgeons of the apron-drum, which boxes or bearings are depressed below the ends of the bars to bring the drum in proper relation to the upper surface of the sills.

Outside of the journals, and playing through apertures in the grain-board, are hooked arms *d''*, integral with the sliding bars and boxes, one arm to each bar, and advisably arranged in such manner that the arm of each bar projects from the outer end of the box or bearing.

Guide-clips E, having tongues *e*, which enter through the longitudinal slot in the bars and rest upon the exposed surface of the sill beneath, and ribs or ways *e'*, which enter the grooves in said bars, serve to hold the bars upon the sills, and are made to abut against the shoulder where the sill is cut away so as to give a flush surface therewith to



properly support the edge of the apron. At their sides the bars themselves rise flush with the surface of the clips, so that when extended they may to an efficient degree form a continuation of such supporting-surface.

While this particular form of clip and bar is considered by me the best, any other arrangement that will hold the sliding bar parallel with the sill and brace it against lateral strains may be employed, and is within the scope of my invention.

The hooks upon the sliding boxes are intended to receive loops formed in the ends of wire cords or ropes  $F F'$ , of which the cord from the front box is led over a horizontal sheave or guide-pulley,  $G$ , mounted in a bracket bolted to a standard or upright post,  $g$ , supporting the outside divider, and from thence passes to the rear outside corner of the platform, while the cord from the back upon the rear bar is stretched directly to this outside corner.

Upon the grain-board or end sill, or any other suitable support at said corner, is a bracket-casting,  $H$ , practically in line with the rear sliding bar and the journal box or bearing which it carries.

Two sheaves or pulleys,  $I I'$ , the first of which has an enlarged disk,  $i$ , with a segment-rack,  $i'$ , on its periphery, and is cut or recessed on the exposed face of said disk, and milled or radially serrated at the bottom of cut, and the second of which is provided with a correspondingly-milled disk,  $i''$ , adapted to sit in the cut, are arranged within the bracket. One of the sheaves (herein shown as the sheave  $I'$ ) has a journal-hub,  $i^3$ , entering a bearing in said bracket, and provided with a screw-threaded bore, while the other sheave is smoothly bored in line therewith and receives a bolt,  $K$ , passed through the opposite bearing in the bracket, and enlarged at its shank to form a journal,  $k$ , within said bearing and a shoulder to brace against the side of the sheave. The end of this bolt is screw-threaded to engage with the threads in the above-mentioned hub, whereby the two pulleys or sheaves can be clamped together in any desired circumferential adjustment. A pawl or dog,  $L$ , is pivoted upon the bracket, as at  $l$ , so as to take into the ratchet-segment upon the winch thus formed and hold it against the strain of the apron, and a thumb-piece on this pawl enables it to be thrown out of engagement whenever it is desired to turn the winch.

Upon the journal-hub of the sheave  $I'$  is formed a square or polygonal head to receive a wrench, or some other suitable device is attached thereto or connected therewith, whereby the two sheaves clamped together as stated may be turned as if integral whenever it is desired to stretch the belt.

Each sheave has a pin,  $i^4$ , to receive a loop at the end of the cord led to it from one of the sliding bars or boxes. One of the sheaves receives the long cord from the front box over the guide-pulley, as above described, and the

other sheave receives the short cord from the rear box stretched directly to it, its outer periphery being in line with the hook on said box. Now when the cords have been attached to the sheaves and hooks, respectively, they may be adjusted until the tension on each is the same and the movable drum in exact parallelism with the opposite drum at the other end of the apron simply by loosening the pivot-bolt and turning one sheave upon the other. When this adjustment has been perfected, the bolt will be screwed home again, clamping the two sheaves rigidly together, so that each must necessarily partake of the movement of the other, and the apron-drum will, by any such movement, be co-ordinately adjusted at each end. Should one of the cords stretch, its slack will be taken up by a fresh adjustment of the sheaves in their peripheral relations.

As a modification, the rear sliding box may be provided with a straight rack,  $M$ , in place of the hooked arm, and the sheave receiving the cord from said box will be replaced by a spur-pinion,  $M'$ , which will take into said rack. This pinion will be axially adjustable with reference to the sheave which receives the cord from the front sliding box in practically the same manner as before described, and will be so proportioned relatively to that sheave that the movement of the rear box will take place co-ordinately with the movement of the front box. A guideway or a keeper,  $m$ , will be provided upon the bracket to hold the rack in engagement with the pinion and insure steadiness.

While I have described the sheaves and their bracket in the preferable form of my invention as located at the rear corner of the platform or other apron bearing frame, it is evident that it is a mere matter of convenience which corner they shall be located at, and that they may even be located centrally between such corners, and both cords made of equal length and led to them over guide-pulleys. With the modifications, however, it is obvious that the pinion must be in line, or nearly in line, with one of the boxes to receive the rack therefrom, and the position of the bracket will accordingly be determined by this necessity.

The sheaves themselves have been described as formed, respectively, with a cupped disk and an infitting disk with serrated contacting-faces; but the cup may be dispensed with, and the two disks or serrated contacting surfaces made flat or otherwise constructed, so that the proper interlocking at any desired adjustment is secured.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of the apron, its laterally-movable drum, the sliding boxes in which said drum is journaled, the winch formed in two sections peripherally adjustable with reference to each other, and the intermediate connections between the sliding boxes and the winch.
2. The combination, substantially as herein-



before set forth, of the apron, its laterally-movable drum, sliding boxes in which said drum is journaled, the two sheaves mounted upon the same axis and adjustable thereabout to change their peripheral relation, and the cords leading from the sliding boxes to said sheaves.

3. The combination, substantially as hereinbefore set forth, of the apron, its laterally-movable drum, the slotted sliding bars mounted upon the front and rear sills and carrying the boxes or bearings for said drum, the hooks projecting from said boxes, the wire ropes attached to said hooks, the guide-pulley for the rope from the front box, and the winch formed of two sheaves clamped together and independently adjustable about their axis, one of which sheaves receives the cord from the front and the other from the rear box.

4. The combination, substantially as hereinbefore set forth, to form a winch, of the two sheaves constructed to interlock upon their contiguous faces, and the bolt passing axially through said sheaves and clamping one against the other.

5. The combination, substantially as hereinbefore set forth, to form a winch, of the two sheaves milled or radially serrated upon their contiguous faces, and the screw-threaded journal-bolt passing axially through a smooth bore in one sheave and screwing into a threaded central bore in the other.

6. The combination, substantially as hereinbefore set forth, of the bracket for the winch, the dog pivoted therein, the sheave mounted in said bracket, having a series of ratchet-teeth upon an enlargement or disk, and milled or radially ribbed on the face of said disk, a second sheave milled or radially ribbed or serrated on the face opposing said disk and formed with a hub which extends into a bearing in the bracket, and a journal-bolt passing through the opposite bearing and axially through both sheaves and screwed into said hub to clamp the sheaves together in any relative peripheral adjustment.

7. The combination, substantially as hereinbefore set forth, with the winch made in two sections independently adjustable about the same axis, and one of which has a journal-hub, of the clamping-bolt enlarged and shouldered at the end away from said hub to form the opposite journal and to sit against the face of the sheave at that end.

8. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable apron-drum, of the longitudinally-slotted sliding bars having bearings cast therewith, and the guide-clips having tongues passing through the slots in said bars to rest upon the underlying sill, and their upper surfaces flush with the main surface of the sill to support the edge of the belt.

9. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable apron-drum, of the longitudinally-slotted sliding bars having bearings cast therewith, and having their sides turned up to come flush with the main surface of the sill, and the guide-clips for said bars having tongues which pass through the longitudinal slots and rest upon the underlying body of the sill, and their upper surfaces flush with the main surface of the sill and with the sides of the sliding bars.

10. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable drum, of the longitudinally-slotted sliding bars having grooves on each side of the slots, and having bearings for the drum, and the guide-clips having tongues to pass through the longitudinal slots and rest upon the body of the sill, and ribs to enter the parallel grooves.

11. The sliding bearing-bars constructed, as described, with longitudinal slots, depressed bearings, and hooks outside of said bearings.

WILLIAM R. BAKER.

Witnesses:

JOHN V. A. HASBROOK,  
PAUL ARNOLD.