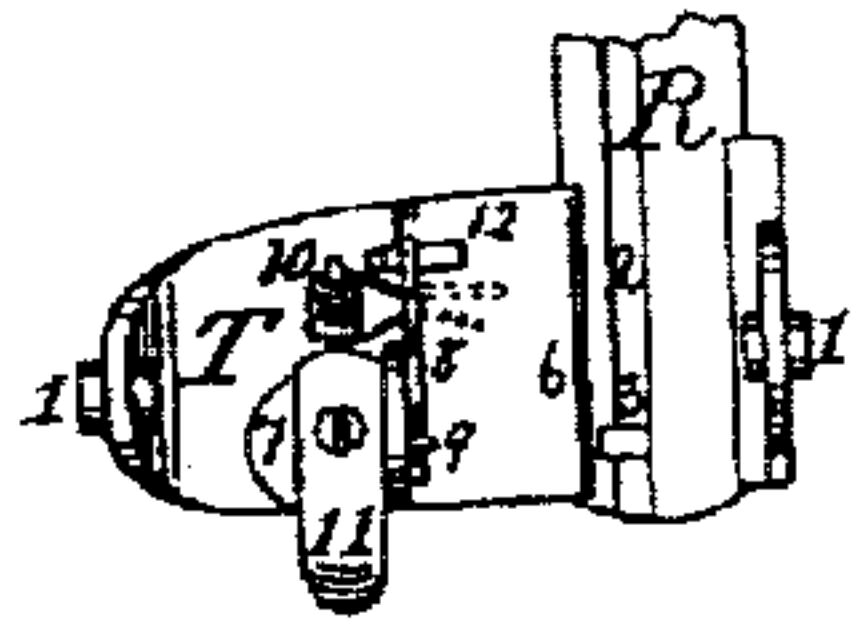
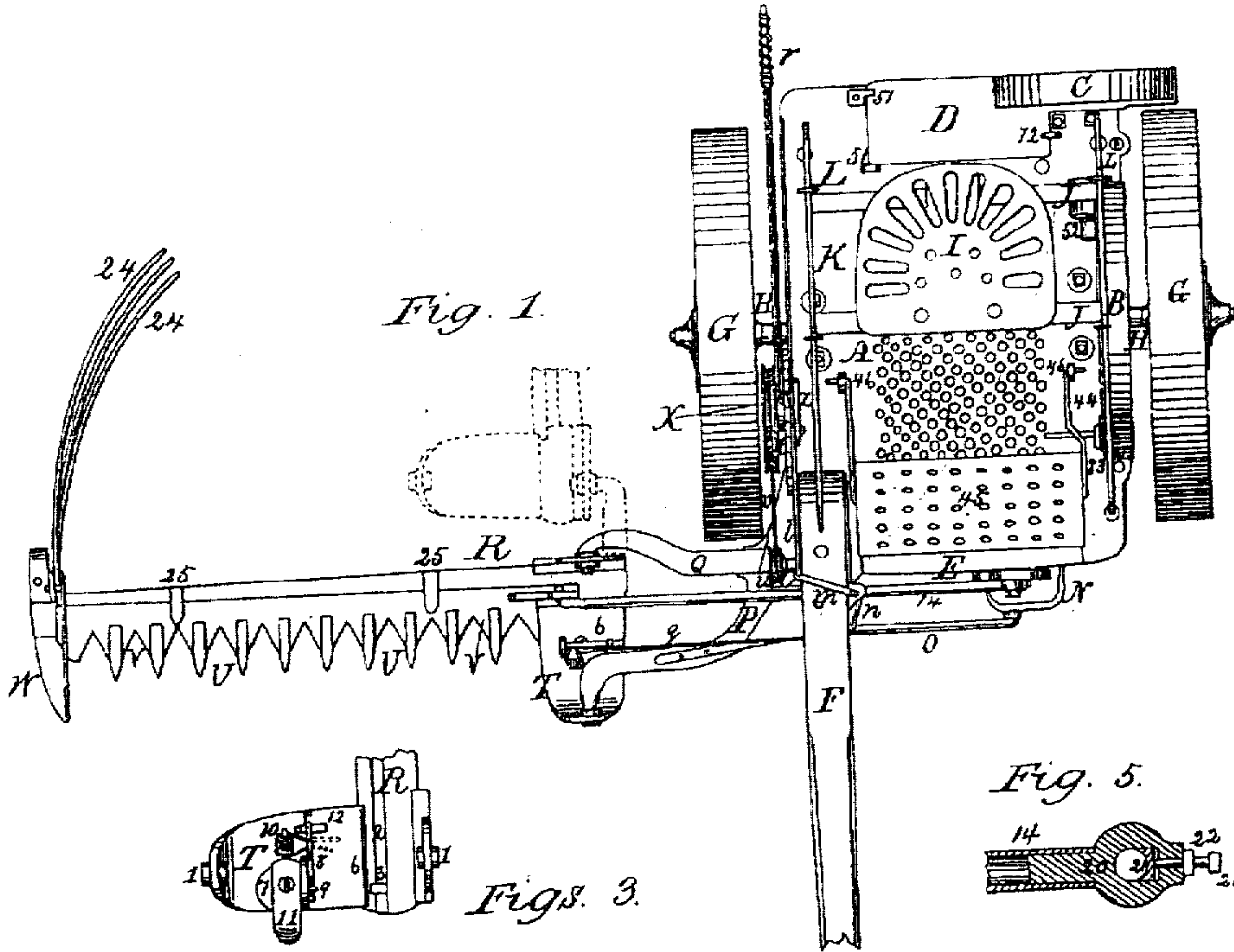


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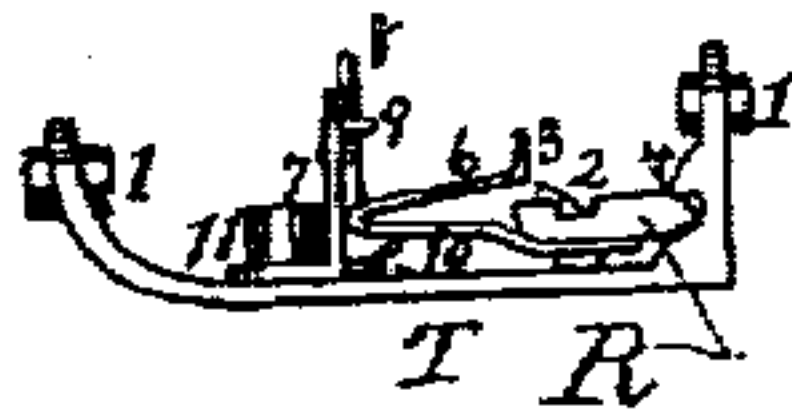
Harvester.

No 112,530.

Patented Mar. 14, 1871.



Figs. 3.



Figs. 4.

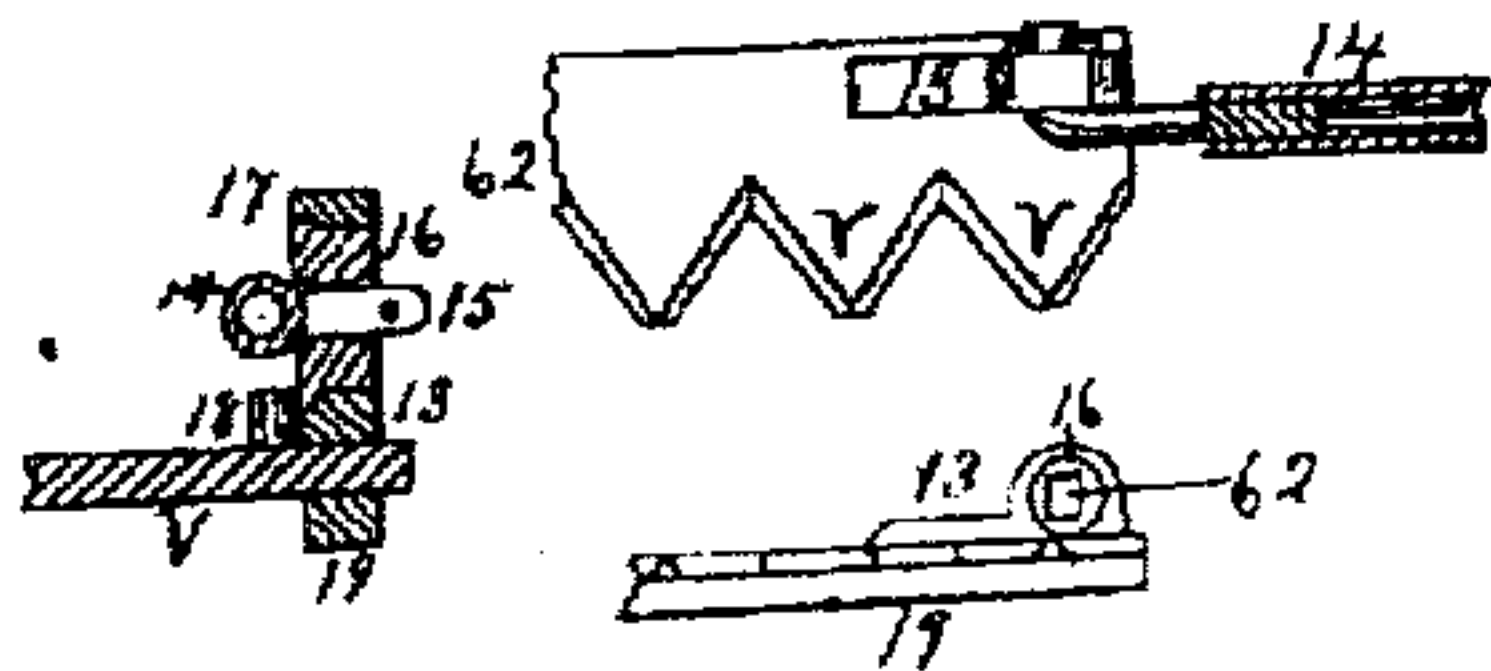
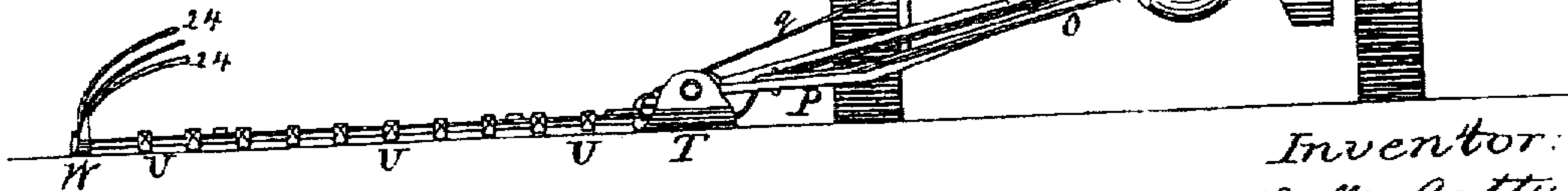


Fig. 2.



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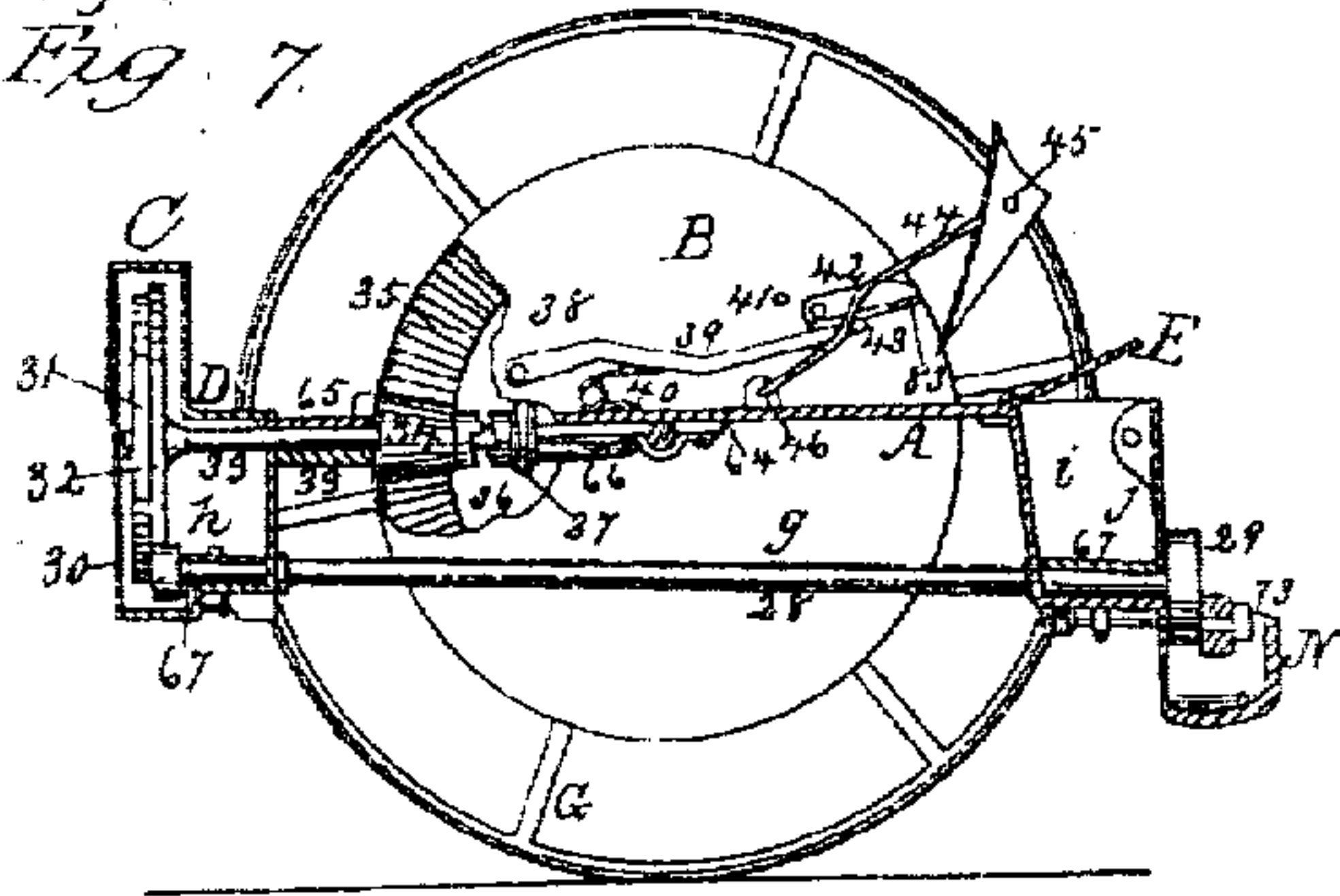
A. Q. McKinley
Ruth H. Abbott

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L. M. Batty
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L. M. Batty, 3 Sheets, Sheet 2
Harvester.

No 112,530.
Fig. 7.

Patented Mar. 14, 1871.



Figs. 10.

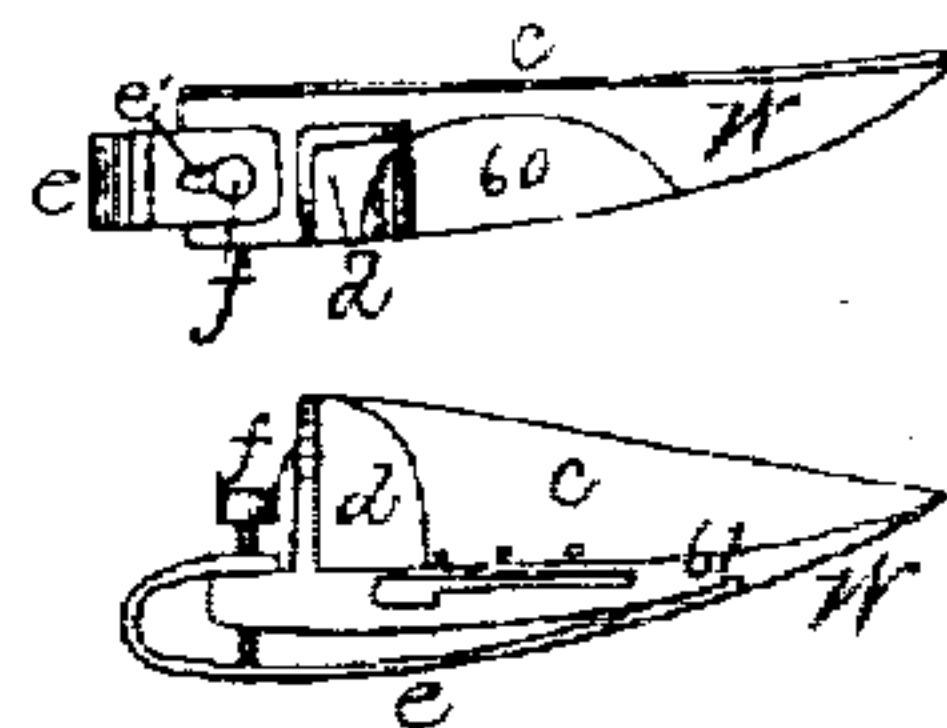
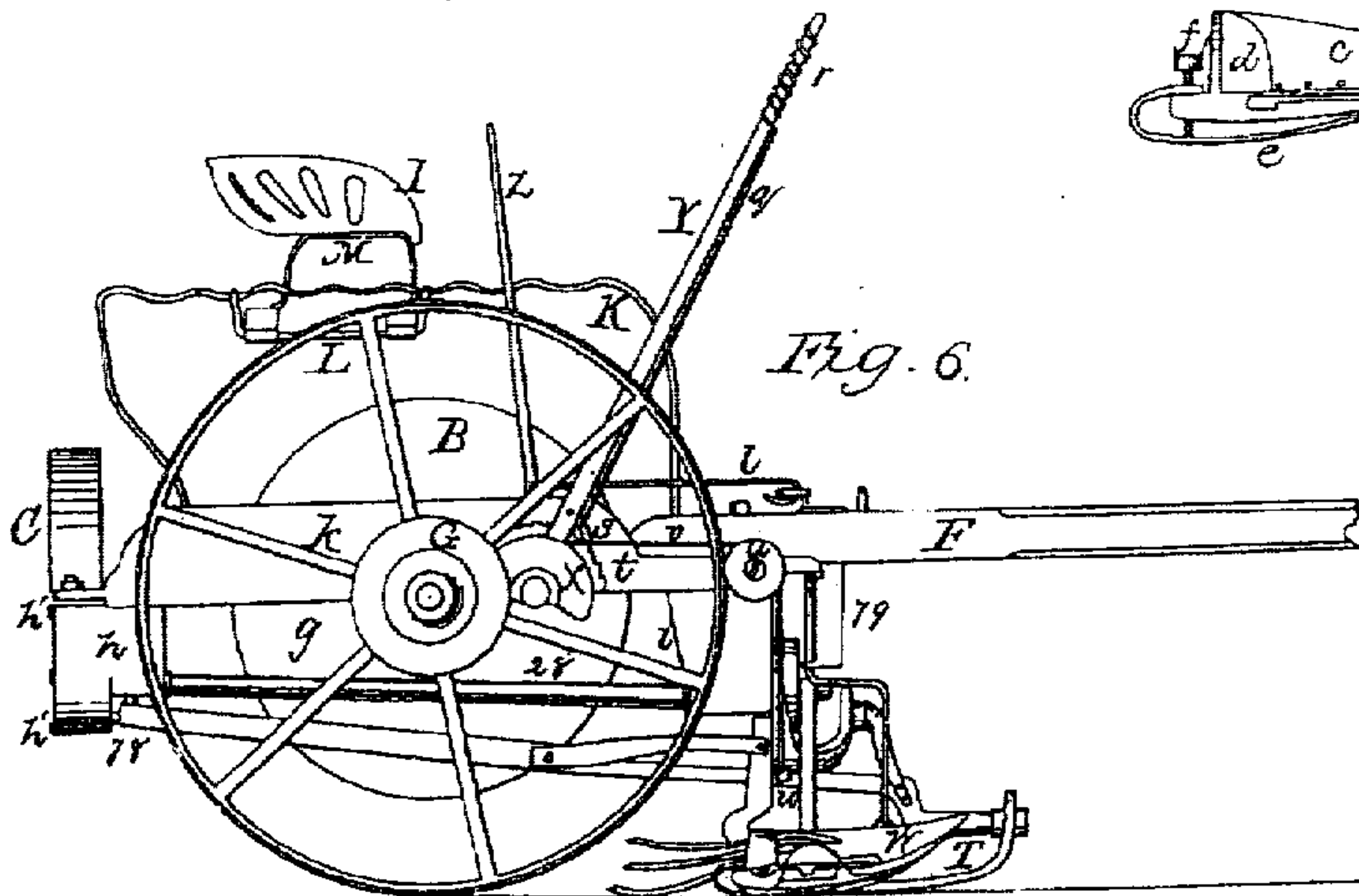


Fig. 6.



Figs. 11.

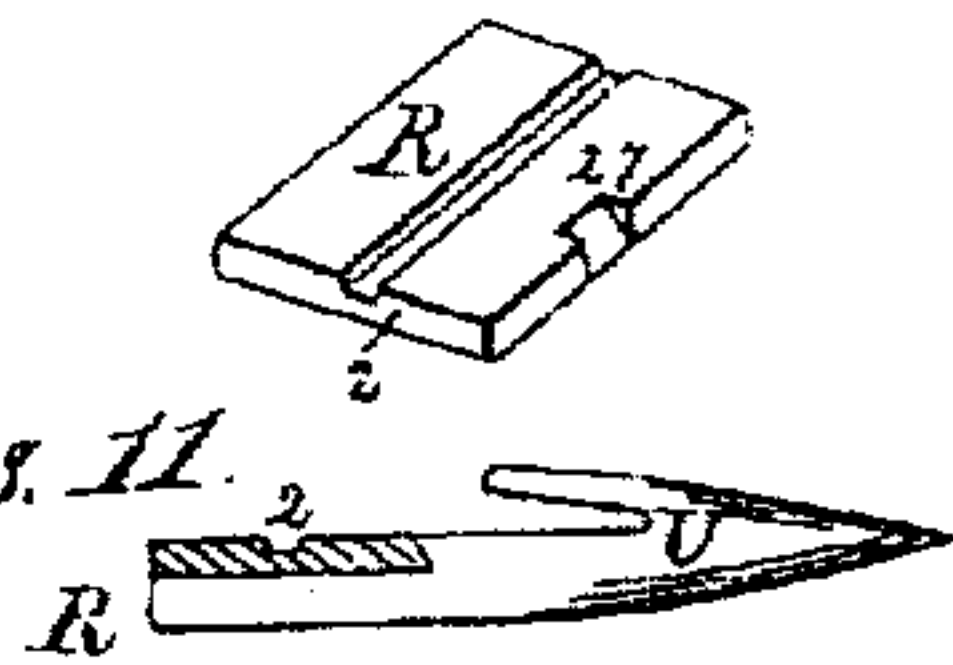
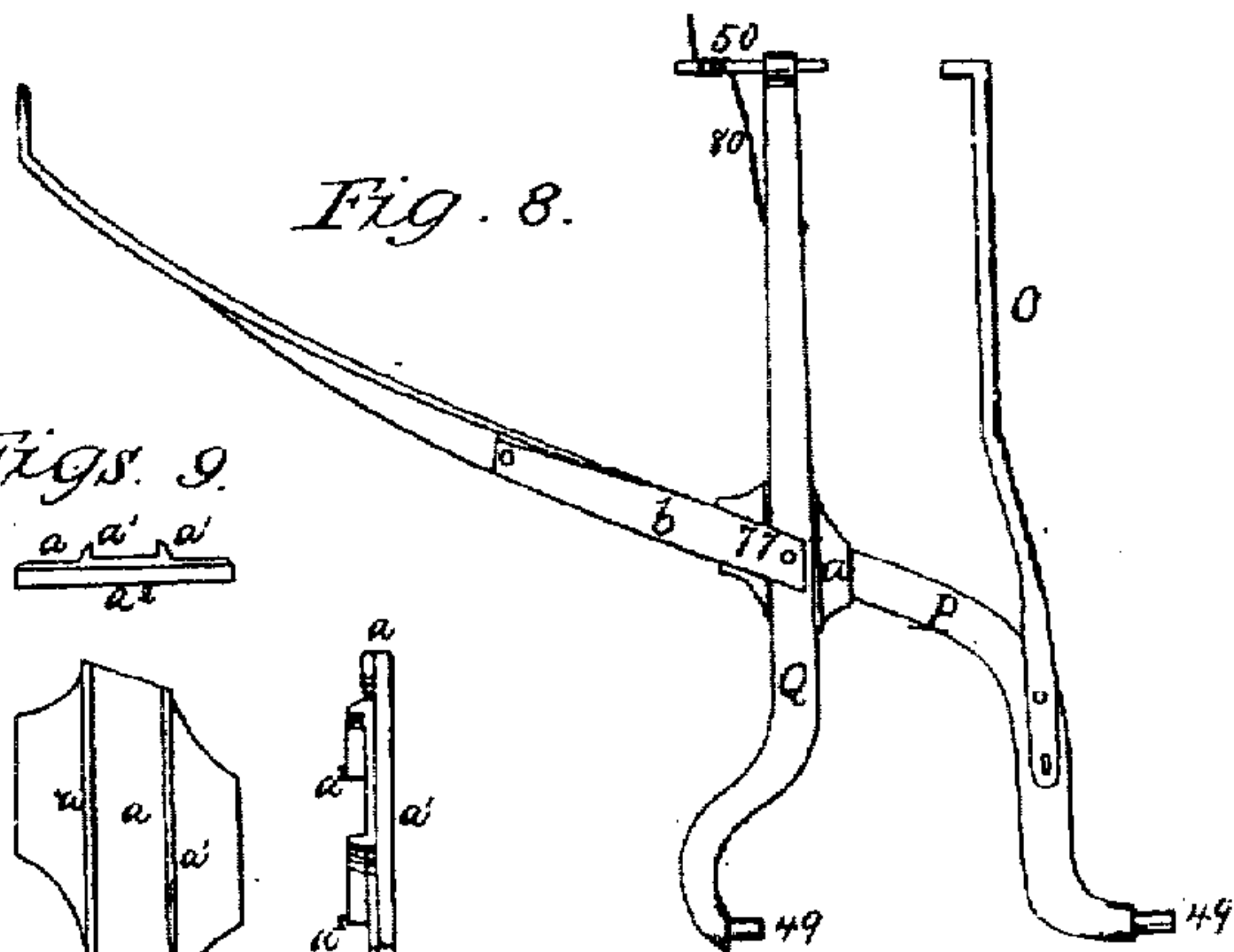
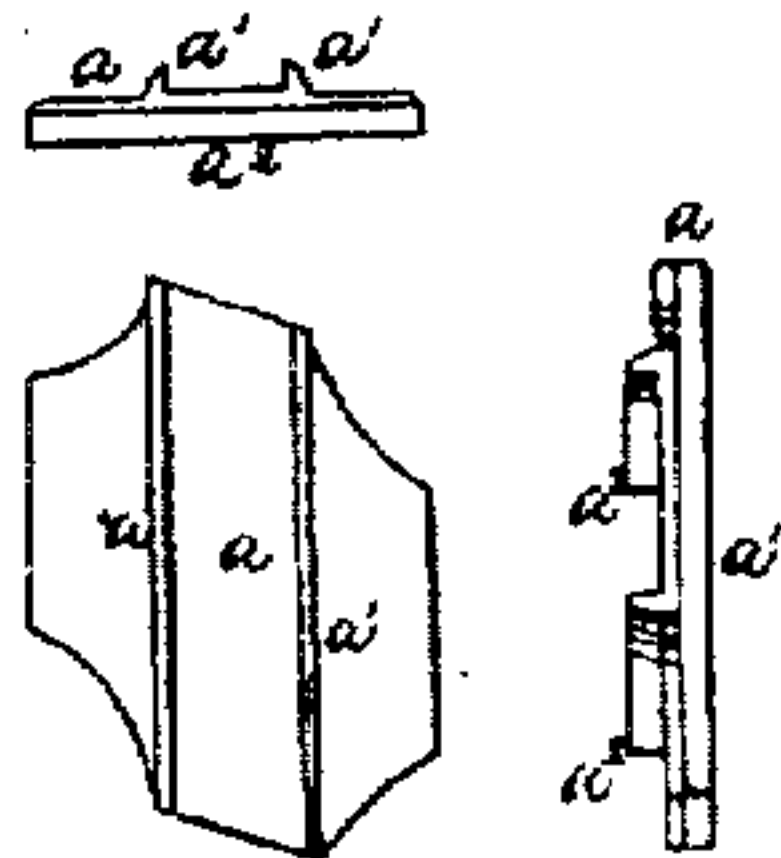


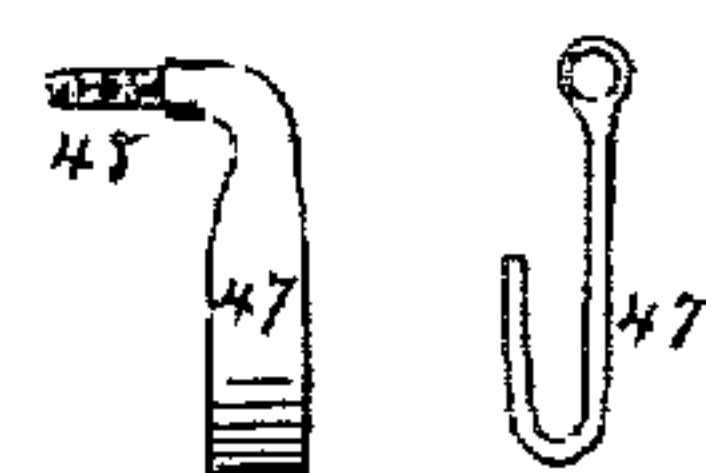
Fig. 8.



Figs. 9.



Figs. 12.



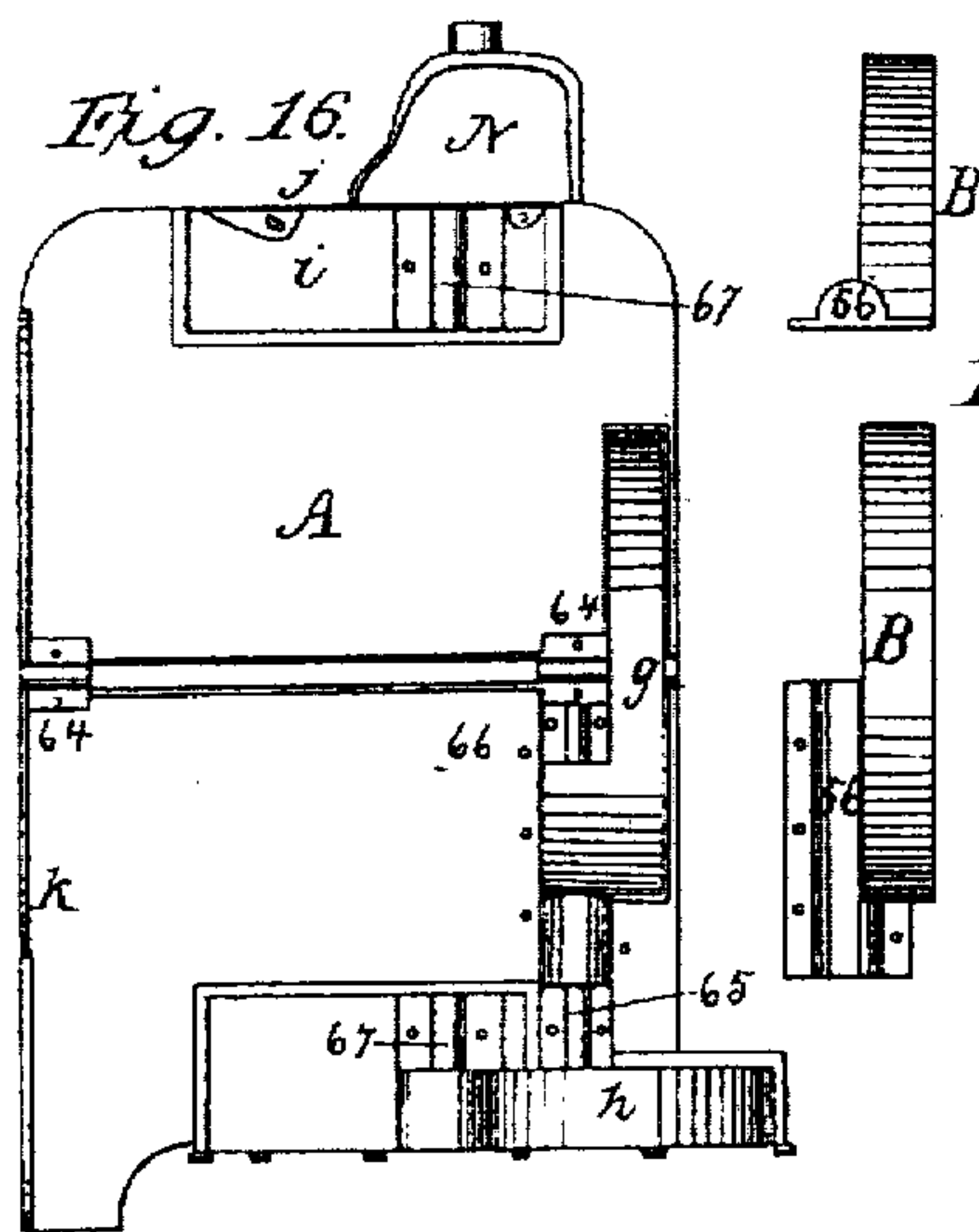
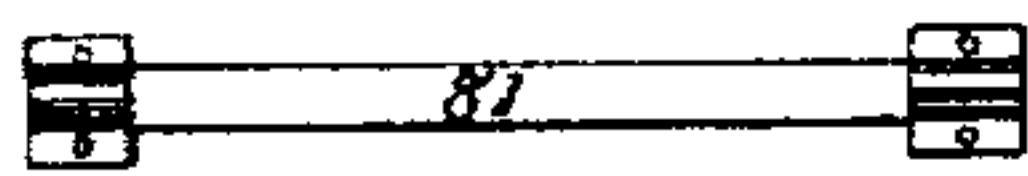
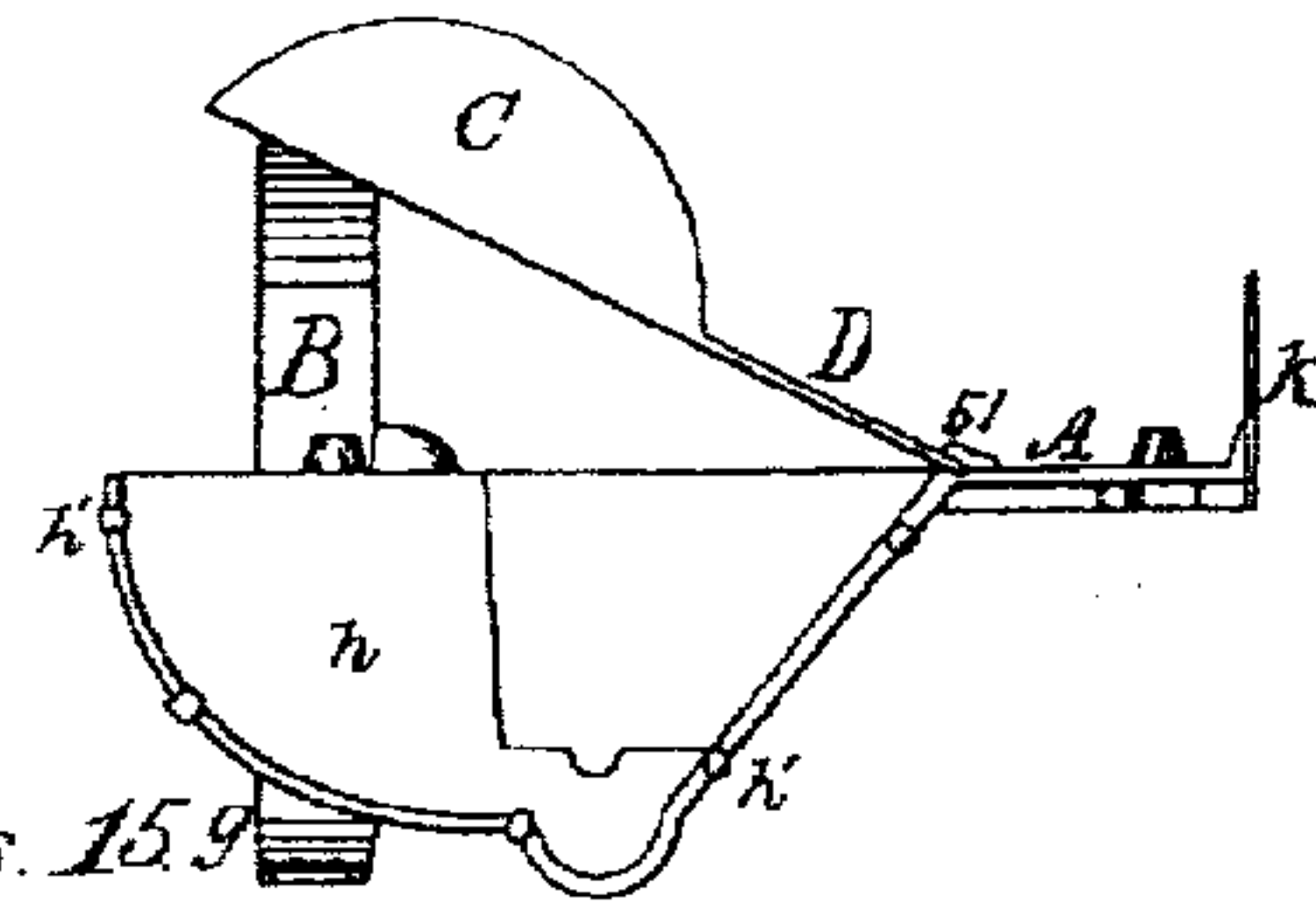
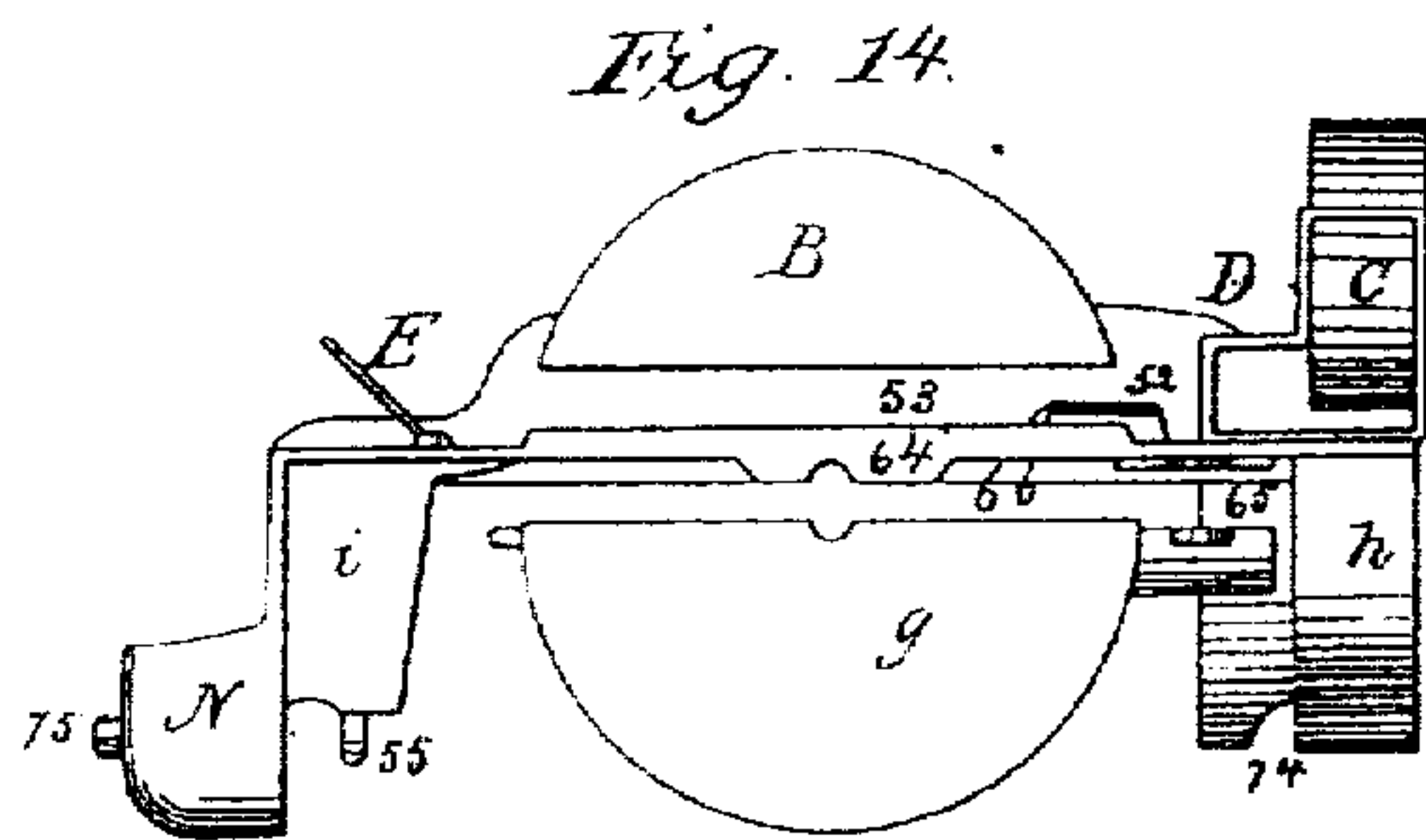
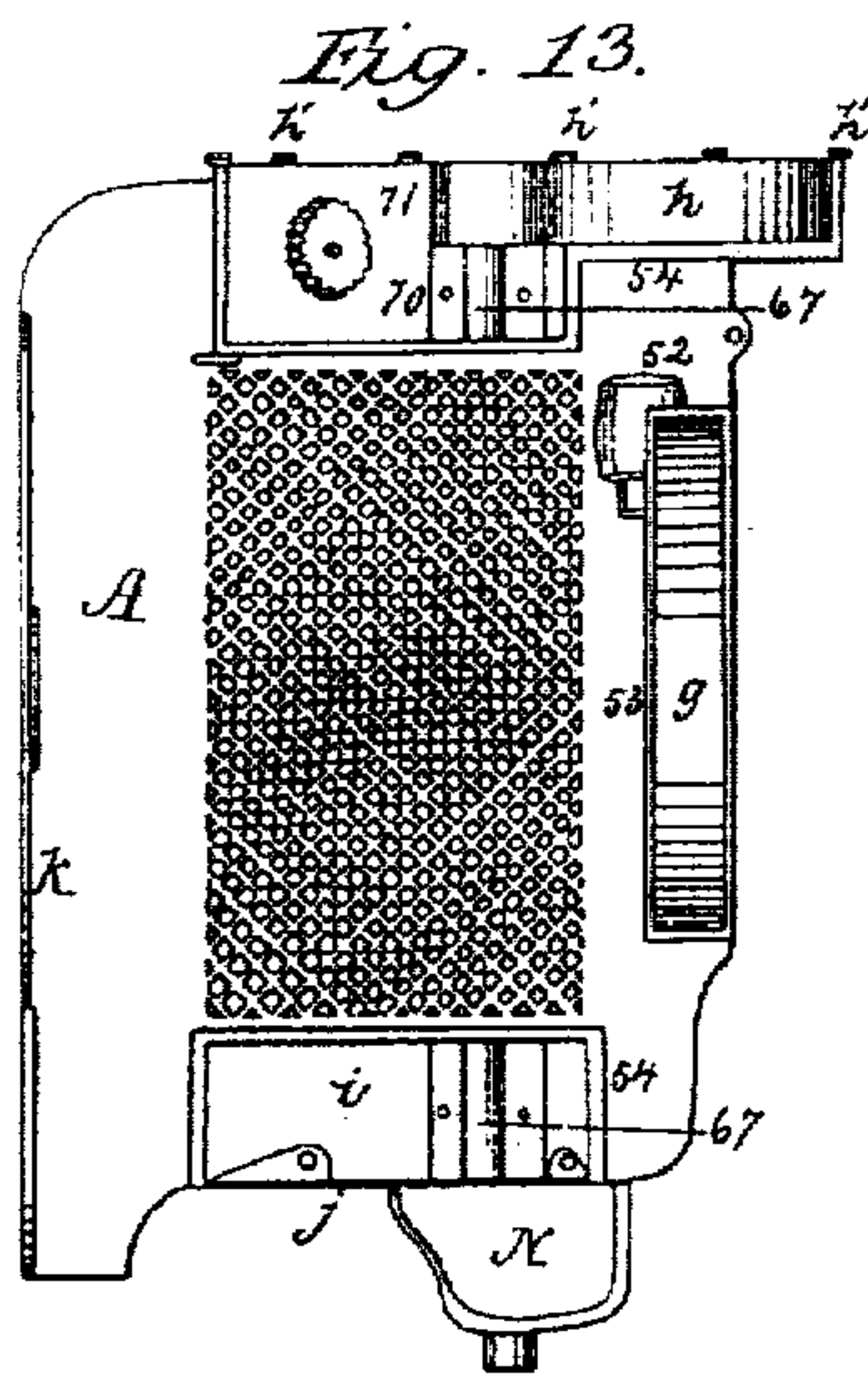
Witnesses:
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Asa McKinley

Inventor:
L. M. Batty
by Job Abbott
Attorney.

L. M. Batty, 3 Sheets. Sheet 3.
Harvester.

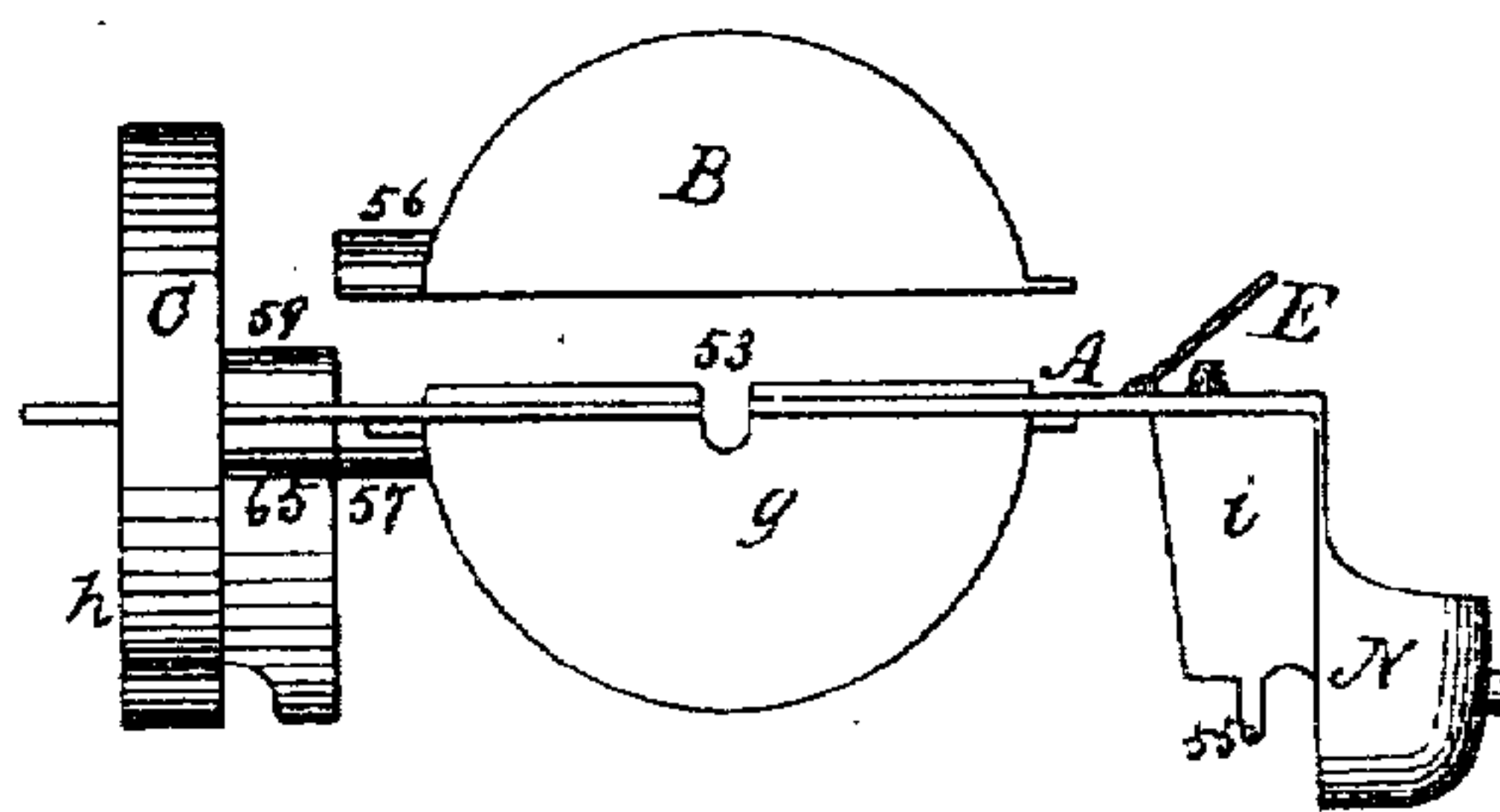
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Patented Mar. 14, 1871.



Figs. 18.

Fig. 17.



Witnesses:
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Struckinly

Inventor:
L. M. Batty
by Job Abbott
Attorney.

UNITED STATES PATENT OFFICE.

LINDLEY M. BATTY, OF CANTON, OHIO.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 112,530, dated March 14, 1871.

To all whom it may concern:

Be it known that I, LINDLEY M. BATTY, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Harvesters; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawing, which forms a part of this specification, and to the letters of reference marked thereon, of which drawing—

Figure 1 is a plan of my improved harvester. Fig. 2 is a front view of the same. Figs. 3 are detail plan and elevation of the heel-shoe for finger-bar, and detached view of lever and standard for operating finger-bar. Figs. 4 are detail plan, elevation, and cross-section of knife-bar and pitman connection. Fig. 5 is a longitudinal section of pitman-head. Fig. 6 is a side view of the complete machine. Fig. 7 is a sectional elevation of machine with front of frame cut off in the plane of the crank-shaft and in the plane of the second shaft. Fig. 8 is a plan of coupling-frame. Figs. 9 are end view, plan, and side view of clamping piece for coupling-frame. Figs. 10 are plan and elevation of grain-shoe for finger-bar. Figs. 11 are detail side view and plan, showing mode of securing finger on finger-bar. Figs. 12 are side and front views of drag-hooks for finger-bar. Fig. 13 is a plan of frame for front-cut machine. Figs. 14 and 15 are side and end views of the same. Fig. 16 is a plan of frame for rear-cut machine. Fig. 17 is a side view of the same. Figs. 18 are end view and plan of cover for master-wheel.

The nature of my invention consists, first, in certain improvements in the construction of the frames for harvesters geared with a bevel master-wheel and first pinion and a spur second wheel and pinion, said frame consisting of a cast metallic plate, having a box-shaped standard for the crank-bearing of the crank-shaft, and a partial case for the second wheel and pinion, and bearings for all the journals for the gear-shafts cast with it, and having combined with it suitable covers and plates in such a manner as to completely incase the gearing of the machine in two separate cavities, one of which contains the master-wheel and pinion and the other the second wheel and pinion, and, if desired, to form a third cavity or box for carrying tools or extra pieces,

whereby I obtain a very light, strong, and cheap cased frame for the machine, in which all the bearings and gear are well protected from dust and dirt.

My invention consists, secondly, in the use of a brace-plate and of a peculiarly-formed clamping-piece, to strengthen the connection between the brace-bar and coupling-bar in the coupling-frame, whereby the strength and stiffness of the coupling-frame are considerably increased with but little expense.

My invention consists, thirdly, in the novel mode of securing the finger-bar in the heel-shoe, and in the novel mode of controlling the rolling motion of the finger-bar, by means of which the driver can vary the angle of the teeth with the ground, as desired.

My invention, consists, fourthly, in forming notches of a V-section in the front edge of the finger-bar, and in making a backward-sloped face on the finger to fit into said notch, whereby the strength and stiffness of the connection between the finger and finger-bar are greatly increased.

My invention consists, fifthly, in the novel construction of the grain-shoe for the finger-bar, and in the novel construction of the spring-runner for the same, and in the novel mode of securing the tracker-rods in the same, whereby I lessen the cost of construction and the danger of clogging or tangling the grain or grass at the grain end of the finger-bar.

My invention consists, sixthly, in the novel construction of the connection between the pitman-rod and the knife-bar head, whereby I obtain a very cheap and solid connection, in which there is little liability to any cramping, heating, or looseness under any movement of the finger-bar or under the most rapid movement.

My invention consists, seventhly, in the novel arrangement of the shipping-lever and mechanism for throwing the machine in and out of gear, and in the use of a broad treadle-board pivoted on rods pivoted on the frame-plate, and resting on one side on the shipping-lever, and so arranged that the feet of the driver, when on his seat, press on the treadle-board, and thus hold the machine in gear, whereby I obtain an easy foot-rest for the driver, and insure the throwing of the machine out of gear in case the driver steps or is thrown from the machine, thus lessening the liability

to accident in case of stepping or being thrown in front of the finger-bar.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The construction of the frame for my machine, both for a front and rear cut machine, is shown in detail on Sheet 3.

In the frame for the front-cut machine, Figs. 13, 14, and 15, A represents the cast metallic base-plate, which constitutes the body or platform of the frame, and which may be cast solid or with an open-work, as shown in Fig. 13. At the front part of this plate is cast the box-shaped standard *i*, which carries the crank end of the crank-shaft, and which has cast at its lower end the shield N, as shown. The partial case *h* for the second wheel and pinion is cast at the rear end of the plate, and the cavity 52 for the bevel-pinion, flange 53 for the attachment of the master-wheel cover, and bearings 64 64 65 66 67 67, for the driving-shaft, second shaft, and crank-shaft, are all cast on this casting in their appropriate places, as shown. The front of the case *h* is closed up by a plate of sheet metal, 68, shown in detached view in Fig. 15, which fits in lips *h'* *h'* formed at the edges of the case, and the top is covered by the cast cover C D, which is united by hinges to the plate A. The lower part of the master-wheel, the first pinion, and the second shaft are incased by the cast cover *g*, which is bolted on the under side of the plate A, and the cast cover B is placed over the top of the master-wheel, and fits down on and is secured to the flange 53 on the plate A.

It will be seen from this description that all the bearings of the shafting are cast on the casting of which the plate A is a part; consequently there can be no derangement of the alignment of the bearings when once fitted. It is also seen that the gear will be wholly incased in two cavities; one formed by the cases *g* B and plate A, and containing the bevel master-wheel and first pinion, and the other formed by the partial case *h*, plate 68, and cover C D, and containing the second wheel and pinion.

The details of construction of the frame may be somewhat varied to meet different requirements of construction without changing the general plan—as, for example, in the frame for a rear-cut machine, as shown in Figs. 16, 17, and 18; the bearings 65 66 64 64, for the second shaft and driving-shaft, are formed below the plate A, instead of in it, as shown in Fig. 14, so that the said shafts can be laid in their bearings from above, instead of being placed on below, and to conform to this change the neck 57 of the cover *g* is shortened up, so as to fit up to the bearing 65; the semicircular part 56 is cast on the cover B, to cover the second shaft and bevel-pinion, in place of casting the cavity 52 (see Fig. 14) in the plate A; the semicircular part 59 is cast on the cover C D to fit up to the part 56, and complete the cover

over the second shaft, and the cover 81 is provided to cover the driving-shaft. Flanges are cast around the part 56, to secure the cover B (which fits over the flange 53, in this case) to the plate A.

It is obvious that, under the arrangement shown in Fig. 16, the cover *g* or its equivalent could be cast with the plate A, if desired.

The sheet-metal plate *j* is secured in the standard *i* by means of inside flanges and rivets, as shown in Figs. 13 and 16, or in any other suitable manner; and the cover E is hinged on the plate A, as shown in Figs. 14 and 17, thus forming a convenient tool-box for the machine.

The tongue F is secured to the plate A, as shown, and the side plate *k* is cast at the grain side of the plate A, to strengthen the same, as well as to form a side board for the frame.

The driving-shaft H is secured on the bearings 64 64 by suitable covers, as shown in Fig. 7, and has at its ends the driving-wheels G G, which cause the rotation of the shaft H through the ordinary ratchet-and-pawl connection.

The bevel master-wheel 35 is secured on the shaft H, and meshes into the pinion 34, which is loose on the second shaft 33, which shaft is secured on the bearing 65 and 66, as shown. The end of the pinion 34 is made with a clutch-face, and a clutch-wheel, 36, is arranged to slide, but not to turn, on the shaft 33. A collar-groove is cut in the clutch-wheel 36, and in it sits the arm 37, which is fixed on the pin 38, in the cover B, and which is made in a U-form at the lower end, so as to fit in the collar-groove in the clutch-wheel 36. The lever 39 is fixed on the pin 38 on the outside of the cover B, and is supported by a spring, 40, fixed in the plate A, as shown in Fig. 7, from which it is evident that if the lever 39 be pressed down by the foot of the driver on the treadle-arm 43 at its end the clutch-wheel 36 will be forced forward to clutch with the pinion 34, thus communicating motion from the master-wheel 35 to the shaft 33; but if no pressure be exerted on the lever 39 it will be held up by spring 40, thus keeping the machine out of gear. The second wheel 32 is fixed on the shaft 33, and has two circles of cogs, 31 and 32, of different diameters, cut on its face. The crank-shaft 28 is secured in the bearings 67 67, as shown, and has secured on it one of the spur-pinions 30 or 70, depending on whether a fast or slow speed is required. The pinion 70, when not in use, is hung on a pin, 71, in the case *h*, as shown in Fig. 13, and when the driver desires to change the speed he throws up the cover C D by turning back the button 72 (see Fig. 1) and turning the cover on its hinges 51 51, when the plate 68 can be lifted out, and the pinion 30 taken off the shaft 28, and the pinion 70 put on, as is readily seen. The crank-wheel 29 is fixed on the shaft 28, and has the crank-pin 73 fixed in it, as shown in Fig. 7.

The coupling-frame O P Q, by which the finger-bar is attached to the main frame, is at

tached to the frame at the points 75, 55, and 74, (see Fig. 14,) these points of attachment being in line with each other, the forward point 75 being on the shield N, in front of the crank-wheel 29, the point 55 being in the rear of the crank-wheel on the standard *i*, and the point 74, also in the rear of the crank-wheel, being on the case *h*, as shown.

The coupling-frame consists of the coupling-bar Q, brace-bar P, and second coupling-bar O, as shown in Fig. 8.

The clamping-shoe *a*, provided with the lower flanges $a^2 a^2$, which sit on each side of the brace-bar P, and with upper flanges $a^1 a^1$, which sit on each side of the coupling-bar Q, is placed at the crossing of said bars, as shown, and the brace-plate *b* is riveted at one end to the brace-bar P, at some distance back of the clamping-piece *a*, and is fastened on top of the coupling-bar Q by a bolt or rivet, 77, which passes through the bars *b*, Q, and P, and the piece *a*, and binds them together, from which it is seen that the plate *b* and clamping-piece *a* act as braces to prevent any movement of the bar Q on the bar P. The end of the brace-bar P is fastened to the main frame by a pin, 78, (see Fig. 6,) passing through the lug 74 (see Fig. 14) and a hole in the bar into the case *h*, and the end of the bar Q is secured by the pin 50, which passes through the lug 55 into the standard *i*. (See Fig. 14.) The second coupling-bar O is riveted to the bar P, and is bent at right angles at the other end, so as to enter a hole in the bearing 75 on the shield N, as shown in Figs. 1 and 8. The spring 80 is placed around the pin 50, and has one end arranged under the coupling-bar Q, and the other end arranged against the standard *i* beyond the pin 50, and serves to sustain a portion of the weight of the coupling-frame and heel-shoe. The heel-shoe T (shown in Figs. 3) is formed from wrought-iron or steel, and has an arm upturned at each end to form points of attachment for the coupling-frame.

In order to obtain bearings of sufficient surface in said arms to afford good wearing-surfaces for the pins on the coupling-frame, the bushed bearings 1 1 are driven into said arms in the position shown, thus giving a long socket for each coupling-frame pin, and avoiding the danger of cutting into said pins by pivoting them in a thin plate, and making it very easy to remove the old bearings and replace them by new ones whenever they become worn, so as to fit badly.

The pivot-pins 49 49, on the coupling-frame P Q, are formed by bending the ends of the brace and coupling-bars forward, and drawing and shouldering down the pins on their ends, as shown in Fig. 8, so that said pins form a solid part of the coupling-frame, and there is no danger of their working loose, as is the case with a pivot-bolt in an eye in the ends of the brace or coupling bar, which was the former mode of construction, while this mode of construction is much cheaper than the old construction.

The heel-shoe T is secured on the coupling-frame P Q by bringing the bearings 1 1 in front of the pivot-pins 49 49, and then moving the shoe back in a manner similar to that of hanging a door, thus making it very easy to hang and unhang the finger-bar.

The finger-bar R is made of a broad flat bar of steel, and has the groove 2 formed in its upper face, which groove serves as a bed for the knife-bar 19 to slide in. The rear and inner end of the finger-bar R is worked off into a semicircular form, and grooves are cut in the upper and lower faces of said bar, parallel to and just in front of said rounded end, so as to form a hinge-pin, 4, on the rear edge of the finger-bar, as seen in end view in Fig. 3, said pin being of a length equal to or a little greater than the width of the shoe T.

A groove of a form corresponding with the form of the pin 4 is made along the back arm of the shoe, so that by sliding the bar R into the shoe T the pin 4 will enter the groove, and a hinge-joint be thus effected between the finger-bar and shoe. The pin 3 is fixed in the shoe T, and projects through a slot in the finger-bar R, thus serving to prevent the bar from sliding from the shoe and bracing the bar in the shoe. The end arm 6 of the finger-bar is made of sheet metal, riveted on the under side of the finger-bar, and bent over into the form shown in Figs. 3, so as to cover the end of the knife-bar from dirt or grass. The spring 10, or any equivalent therefor, is arranged under the arm 6, as shown, or back under the finger-bar, if preferred, and serves to keep said bar turned up, when not forced down by the driver, and the hook 12 is inserted in the shoe T and projects over arm 6, thus preventing the finger-bar from being thrown up too far by the spring 10. The standard 7 is secured to the shoe T directly in front of the arm 6, and has pivoted on it the lever 8, which works on the arm 6, and, when turned up and a little past a vertical position, strikes on the pin 9, thus forcing and locking down the arm 6, and consequently giving a downward pitch to the finger-bar. The arm 11 is secured, with the standard 7, to the heel-shoe T, and, when the coupling-frame is raised by the driver, it strikes under the brace-bar P, thus enabling the driver to raise the grain end of the finger-bar. The upper end of the lever 8 is connected by a rod, *p*, to the lower crank *n* of the double-crank shaft *m n*, which is arranged in a standard, 79, fixed on the tongue F.

The upper crank *m* is connected by rod *l* to the lever *z*, pivoted to the side plate *k*, and standing at the side of the driver's feet, so that by working the lever *Z* he can operate the lever 8 and vary the angle of the fingers with the ground in a manner readily seen. The knife-bar 19 has the knives *v v* (made either all from one piece of plate-steel, as shown, or in sections in the ordinary manner) riveted on its upper side, as shown. The knife-bar runs in the slot 2 in the finger-bar R, and the knives slide on the face of said bar, so that there is

no space left between the knife and knife-bar and the finger-bar to gather dirt or grass, and the top S of the knife and finger-bar is nearly smooth, and has nothing on which the butts of the grass are liable to catch. The pieces 25 keep the knife-bar down on the finger-bar, and the knife-bar shank 13 is secured on the knives *v*, as shown. A circular hole is formed in this shank, having its front end beveled, and in it is placed the circular nut 16, which has a flange, 17, to prevent it from sliding through the shank, where it is retained by the pin 18, as shown in Figs. 4.

The hole 62 in the nut 16 is made square at the center and is rounded off on the upper and lower sides, and the pin 15 of the pitman is made square, so as to just fit in the hole 62, from which it is seen that the connection between the pitman and knife-bar will adjust itself to the movements of the pitman and finger-bar, and to the rolling motion of the finger-bar around the hinge-joint 4 with the heel-shoe, without any loose joint or danger of cramping.

The pitman 14 is constructed of a tube of iron or steel, into which the knife-bar pin 15 and crank-head 20 are inserted and held by welding or riveting, the object of this construction being to obtain a stiffer and lighter pitman than could possibly be had were the pitman made solid. The pitman-head 20 is cut away at the side of the crank-pin hole, and in this space is inserted the sliding block 21, which is kept pressed against the crank-pin, so as to form a tight joint, by the screw 23 inserted through the pitman-head 20, and held in any desired position by the clamp-nut 22, as shown in Fig. 5. The notch 27 is cut in the front edge of the finger-bar R, and on the rear part of the finger-U is formed the backward-sloped face 26, which fits in the notch 27 in the finger-bar, and the finger is fastened to the finger-bar by one or more screws or rivets, as shown, which pass through the finger bar and rear part of the finger.

The grain-shoe W, shown in detail in Figs. 10, consists of the base-plate 61, which has a slot cut through it for the end of the knife-bar to play in, and the part of the plate 61 above this slot is cut away in the crescent form 60, shown in plan, so as to leave a cover for the back and front of the knives without having a large space between the upper sides of the knives and the top of the base-plate for the grain or dirt to crowd in and clog the knife-bar. The grain side *c* is arranged on the inside of the plate 61, and extends from the point of said plate, as shown in elevation, so as to commence separating the grain as soon as the point of the shoe enters it, and to keep it separated as fast as cut until received by the tracker-rods. The standard *d* is arranged on the plate 61, as shown, and serves to hold the tracker-rods 24 24, which are of the form shown, and are bent at right angles at their lower ends, so as to enter the holes in the grain side *c*, when they are secured in position by drop-

ping them one onto the other between the side *c* and standard *d*, as shown in Figs. 1 and 6.

The spring-runner *e* is attached to the front end of plate 61, as shown, and its rear end is bent into a C form, and has the slot *e'* cut in it, through which passes the adjusting-screw *f*, which screws through the back of the plate 61, and has a bearing on the spring-runner below, so that said screw serves both to adjust the height and to steady the spring-runner against side motion on the shoe.

The finger-bar and coupling-frame are raised by the lever Y, pivoted on the side piece *k*, and provided with the circular segment X, to which is attached the chain V, which passes over the pulley *u* on the side piece *k* to the staple *w* on the coupling-frame. The ratchet-segment *t* is fixed on the side plate *k*, and the pawl *s* is arranged on the lever Y, so as to lock in the ratchet *t*, and thus hold up the finger-bar. The wire *q* is attached to the pawl *s*, and extends up the side of the lever Y, around which it is coiled into a handle, *r*, which is slid up and down by the driver to operate the pawl.

The rods K K, which support the driver's seat, are fixed in the plate A, and are corrugated along their bearing-line, as shown, to prevent the driver's seat from sliding on the rods, except when desired by the driver. The seat I is attached to the standard M, each arm of which is attached to one of the springs J, which extend across the machine-frame. Eyes are formed at the ends of these springs, and through these eyes are passed the swinging supports L L, which are bent up at right angles at the sides of the springs J J, and have hooks formed at their upper ends, which hook over the rods K K, thus giving a swinging support to the seat, and lessening the shocks due to the side motions of the machine, as well as enabling the driver to readily adjust his seat on the rods so as to balance the machine, or to readily remove the seat from the machine by simply unhooking the supports L L from rods K K, if found desirable.

The rod 44 is made in a U form, and has the broad treadle-board 45 pivoted on it, the ends of the rod being hinged in lugs 46 46 on the plate A, and one side of the rod resting on the treadle-arm 43 of the shipping-lever 39. The treadle-board 45 is so situated as to form a comfortable support for the feet of the driver in the seat I, who, by placing his feet on said board, forces down the shipping-lever 39, and throws the machine in gear.

When the treadle-board is not wanted, it can be swung back under the driver's feet, and the machine can be then thrown in gear by stepping on the treadle-arm 43 of the shipping-lever.

The button 42 is pivoted on the case B, and is made with side flange 33, (see Figs. 1 and 7,) or if preferred, can be made of considerable thickness, the object being to afford a good side bearing, so that the driver with his foot can turn said button down so as to hold the

lever 39 down to hold the machine in gear, or can turn said button back onto the pin 41 when not in use.

In driving my machine on the road, when rigged as a mower, the finger-bar can be turned up over the tongue in an ordinary manner; but when a platform is attached to the finger-bar, as in reaping, I unhook the rod *p* from the lever 8, and take the pitman-pin 15 out of the knife-shank 13, and remove the nut or pin by which the finger-bar heel-shoe is held on the pivots 49, when the finger-bar can be swung around into the position shown by dotted lines in Fig. 1, where it is attached to the machine by the drag-hook 47, which has a pivot end, 48, which is secured in the bearing 1 in the heel-shoe T by the same nut or pin which was used on the pivot-bearing 49, and the hook-part 47 of which hooks over the coupling-bar Q, and is of sufficient breadth to hold the finger-bar in a horizontal position as regards its tipping around its edge, the back end of the finger-bar being supported by the caster-wheel at the grain side of the platform.

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

1. The within-described harvester-frame and casing, the same consisting of the frame-plate A, having the crank-shaft standard *i* (with or without the shield N) and the partial cavity *h* cast at its ends, and with all the shaft-bearings 64 64 65 66 67 67 cast thereon, the covers B and *g*, the hinged cover C, and the sheet-metal plate 68, the several parts being constructed and arranged substantially as is herein specified.

2. The combination, with the crank-shaft standard *i*, of the plate *j* and the cover E, for the purpose of forming a receptacle for tools, substantially as is herein specified.

3. The combination of the brace-bar P, clamping-piece *a*, with flanges *a*¹ *a*¹ *a*² *a*², arranged as shown, coupling-bar Q, and brace-plate *b*, the several parts being arranged and connected substantially as and for the purpose specified.

4. The pivot-pin 4, formed on the finger-bar R, and fitting in a corresponding circular-shaped groove in back arm of the heel-shoe T, substantially as and for the purpose herein specified.

5. The retaining-pin 3, secured in the shoe T, and working in a slot in the finger-bar R, said finger-bar having a sliding pivot-joint, 4, with said shoe, substantially as and for the purpose specified.

6. The broad end arm 6 at the heel of the finger-bar R, when said arm is constructed as shown, so as to serve both to control the rolling motion of the finger-bar and to protect the end of the knife-bar, substantially as herein specified.

7. The spring 10 or its equivalent, when used in combination with the finger-bar R,

hinged in the heel-shoe T, for the purpose of keeping the points of the fingers U elevated when not forced down by the driver, substantially as is herein specified.

8. The lever 8, pivoted on the standard 7, provided with the stop 9, and fixed on the heel-shoe T, when said lever acts in combination with the arm 6 to control the rolling motion of the finger-bar R, substantially in the manner herein described.

9. The combination of the finger-bar arm 6, lever 8, rod *p*, double-crank shaft *n m*, rod *l*, and lever Z, the several parts being arranged substantially as and for the purpose specified.

10. The combination of the finger-bar R, provided with the V-shaped notch 27 on its front edge, and the finger U, provided with the backward-sloped face 26, the several parts being arranged and operating substantially as is herein specified.

11. The grain-shoe W, consisting of the bed-plate 61, having a slot cut therein for the knife-bar, and with the upper central part cut away in the crescent form 60, grain side *c*, and standard *d*, for securing the tracker-rods, the several parts being arranged substantially as and for the purpose specified.

12. The combination of the spring-runner *e* with slot *e*¹, grain-shoe W, and adjusting-screw *f*, the rear end of said runner being of a U form, and the said adjusting-screw passing through the slot in the upper arm, and bearing on the lower arm of said runner, substantially as and for the purpose specified.

13. The method herein described of securing the tracker-rods 24 in the grain-shoe W by inserting their bent ends in holes in the grain side *c*, and dropping them between the side *c* and standard *d*, substantially as and for the purpose specified.

14. The circular nut 16, provided with the hole 62, having a square section at the center and at right angles to the axis of the hole, and with its upper and lower sides rounded off, when used in combination with the knife-bar shank 13 and the square-ended pitman-pin 15, substantially as and for the purpose specified.

15. The combination of the sliding clutch 36, forked lever 37, axle-pin 38, and horizontal shipping-lever 39, provided with the treadle-arm 43, the several parts being arranged substantially as and for the purpose specified.

16. The broad treadle-board 45, pivoted on the rods 44, hinged on the main frame A, when arranged and used in combination with the shipping-lever 39, substantially as and for the purpose specified.

As evidence that I claim the foregoing I have hereunto set my hand in presence of two witnesses this 8th day of November, 1869.

L. M. BATTY.

Witnesses:

JOB ABBOTT,

RUTH K. ABBOTT.