

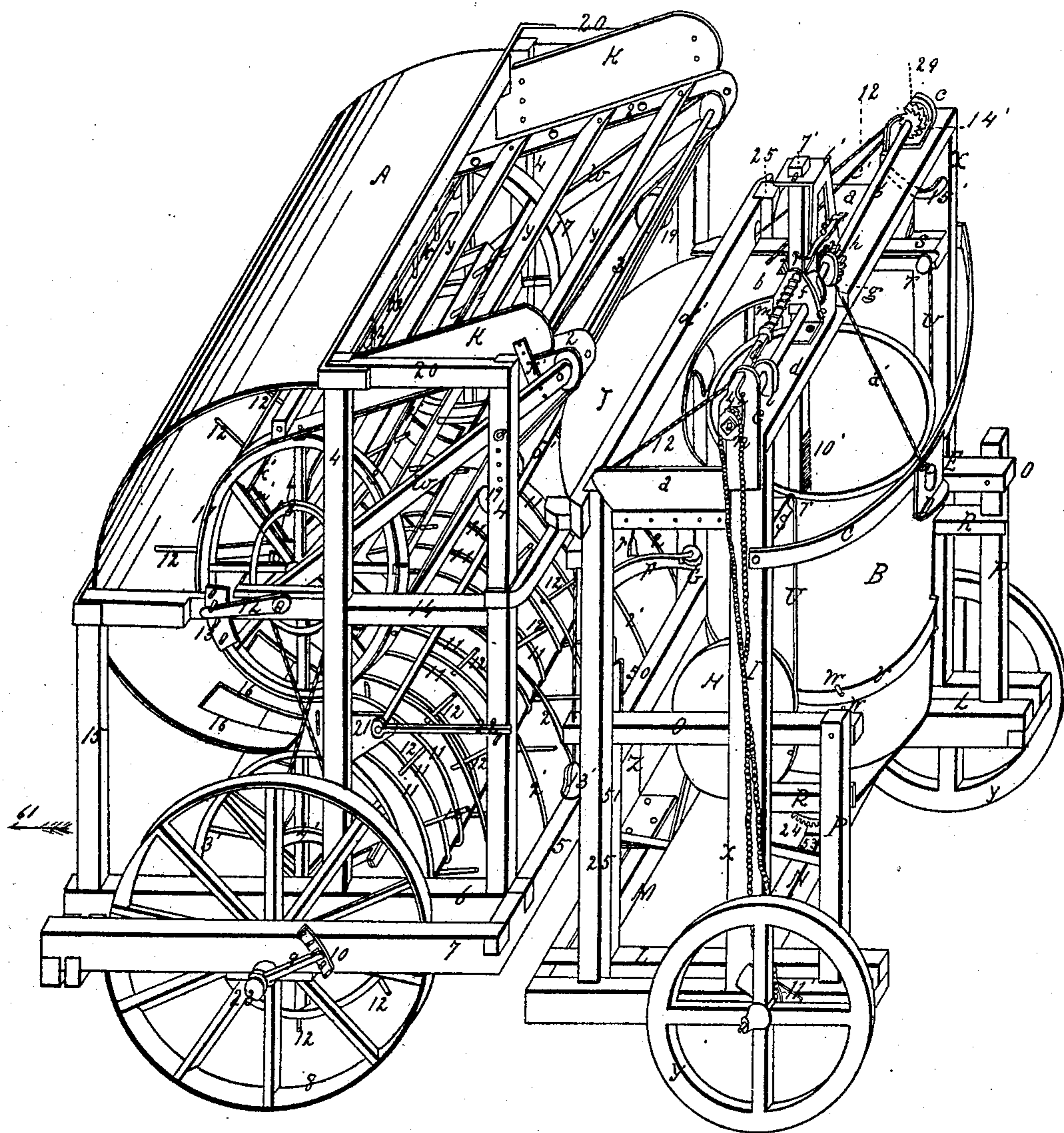
J. Wadleigh.

Horse Rake.

N<sup>o</sup> 89611

Patented May 4, 1869.

Fig. 1



Witnesses.

G. H. Chapin  
E. E. Gibson

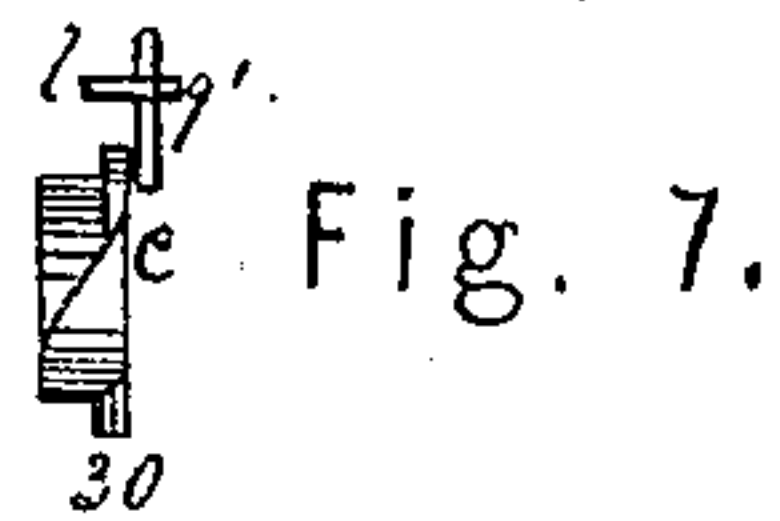
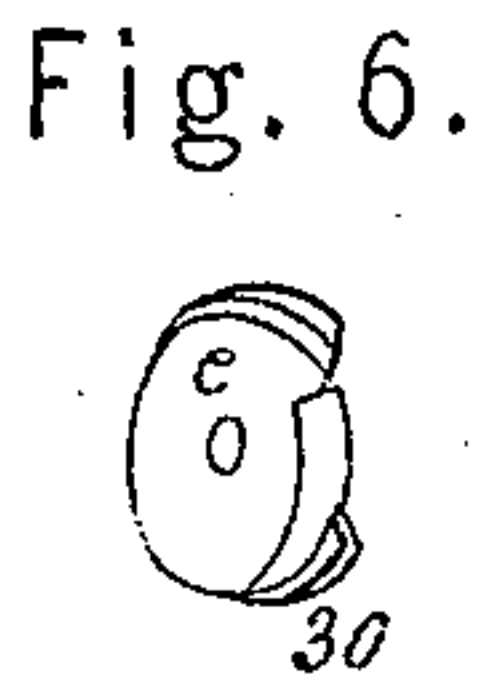
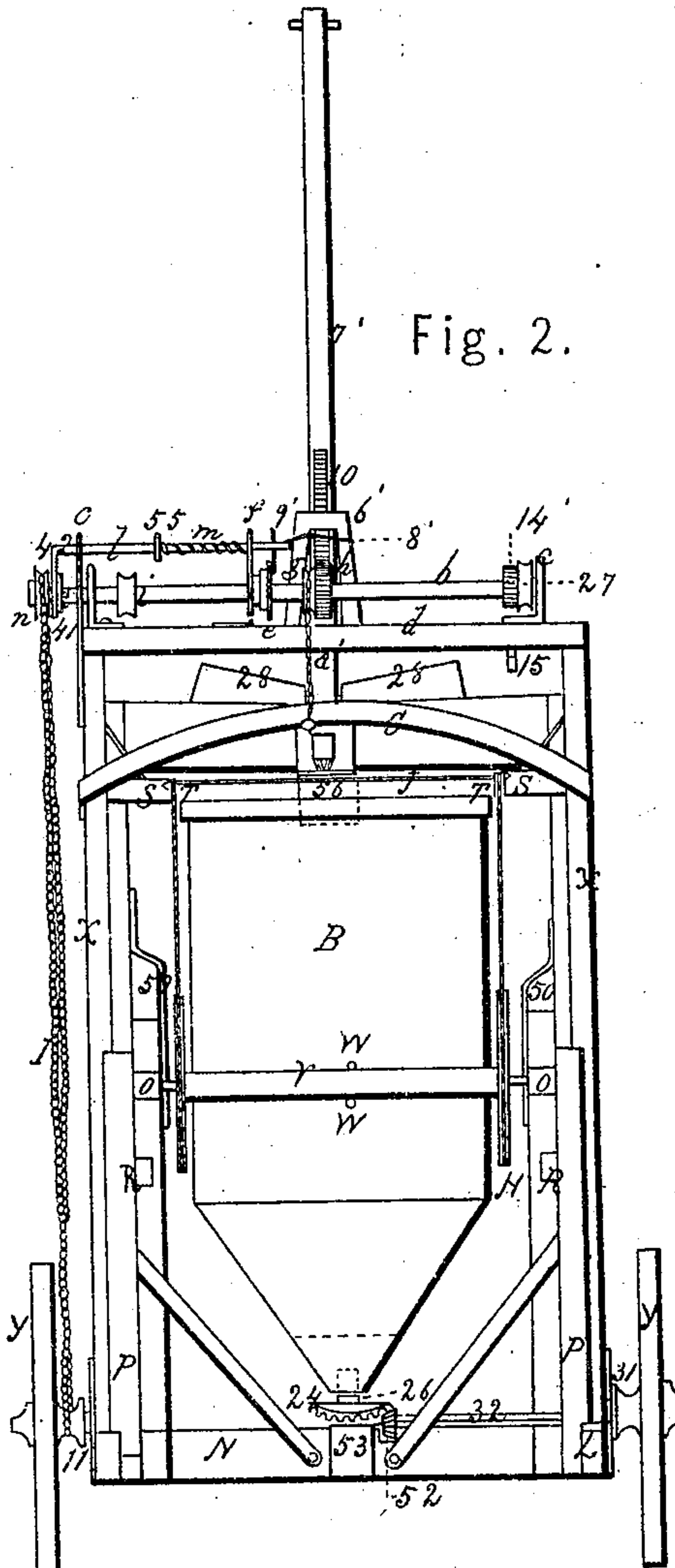
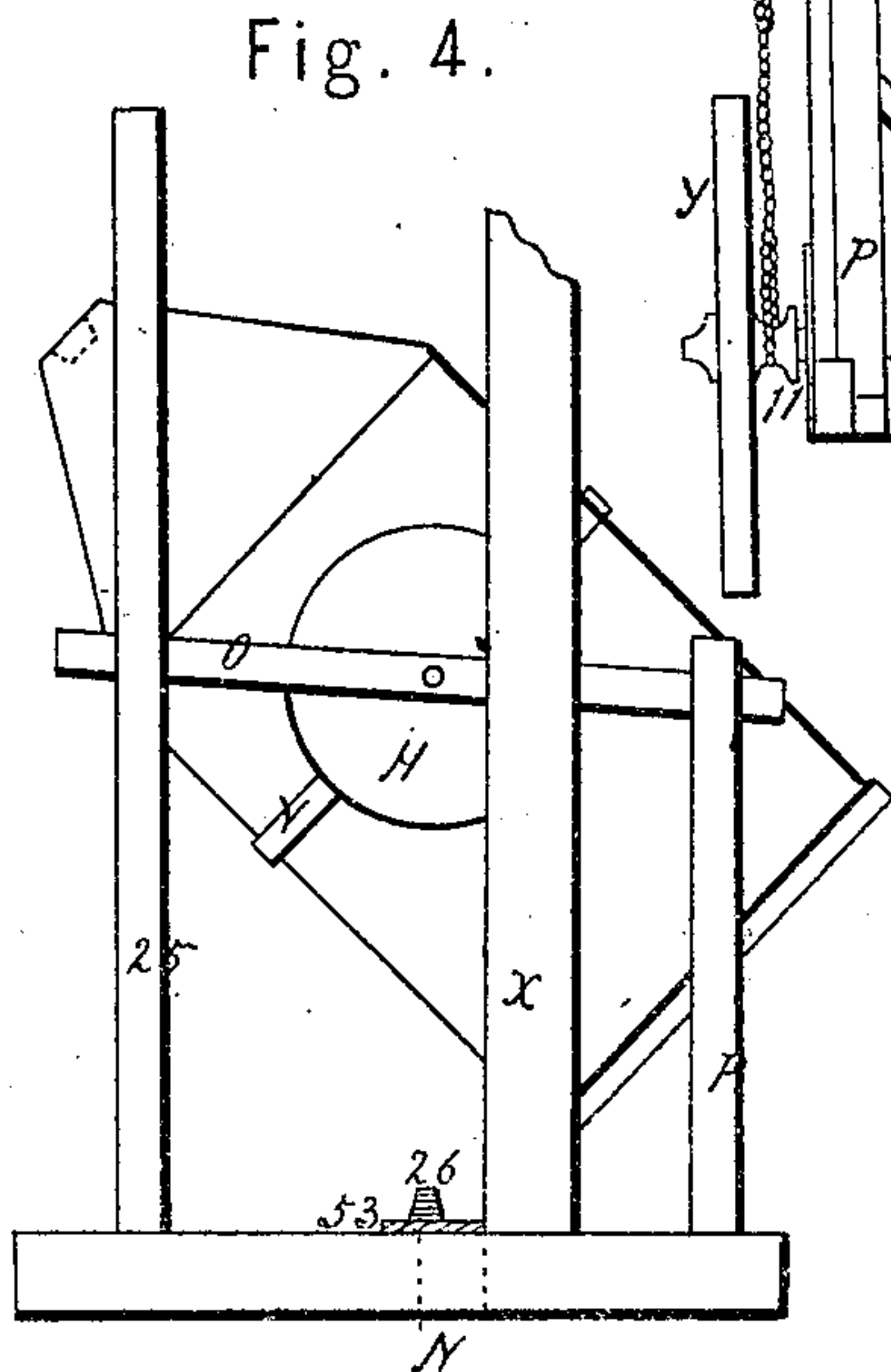
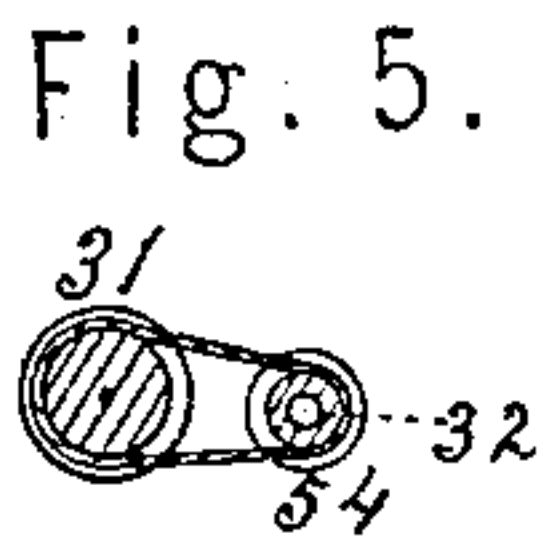
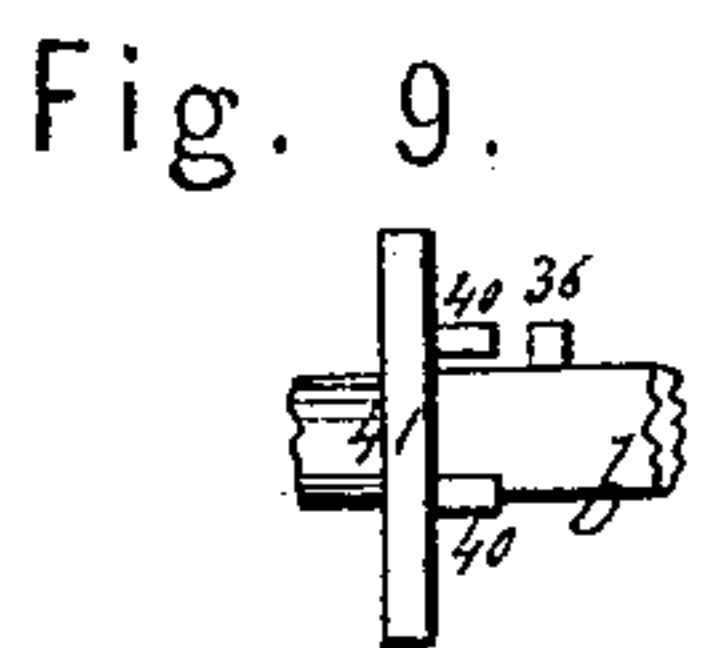
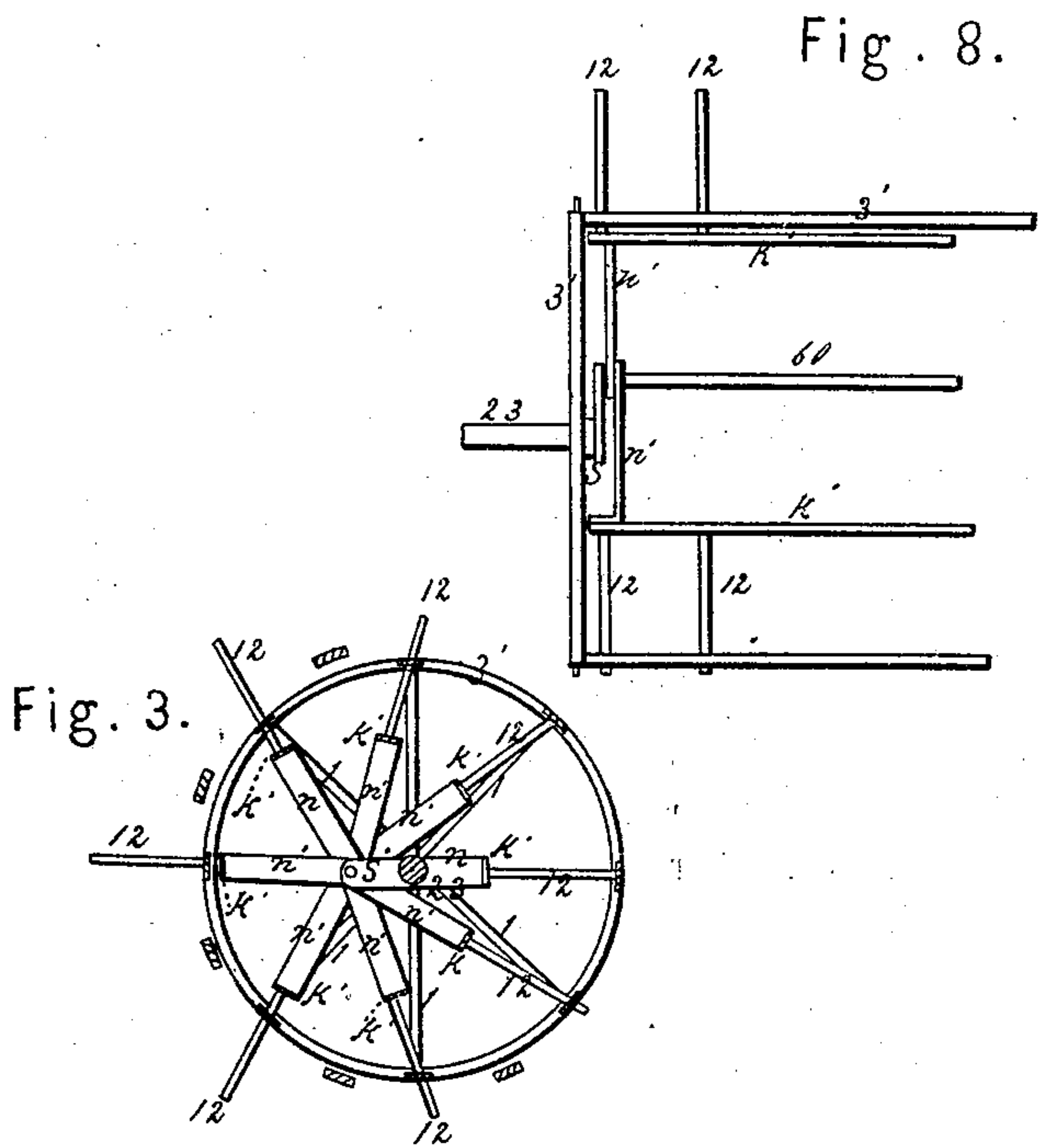
Inventor.

Joseph Wadleigh

*J. Wadleigh.*  
*Horse Rake.*

Nº 89611

*Patented May 4, 1869.*



Witnesses.

Geo. d. Chapin  
E. E. gibson

Inventor.

Joseph Wadleigh



# UNITED STATES PATENT OFFICE.

JOSEPH WADLEIGH, OF CHEBANSE, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR RAKING AND COCKING HAY.

Specification forming part of Letters Patent No. 89,611, dated May 4, 1869.

*To all whom it may concern:*

Be it known that I, JOSEPH WADLEIGH, of Chebanse, in the county of Iroquois and State of Illinois, have invented a new and Improved Machine for Raking and Cocking Hay; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings and letters marked thereon, making a part of this description, in which—

Figure 1 is a perspective representation of my machine; Fig. 2, an end elevation of the rear part of the same; Fig. 3, a transverse sectional elevation of one of the reels for elevating the hay. Fig. 4 shows the position of the pressing-box when dumping a cock of hay; Fig. 5, an elevation of the wheels for driving the shaft which rotates the pressing-box; Fig. 6, a perspective view of the cam-wheel which carries into gear the devices for raising the packers when the cock is to be dumped; Fig. 7, an elevation of the same; Fig. 8, a broken sectional elevation of one of the reels, with the elevators in position for use.

The present invention relates to a machine for raking and cocking hay; and its nature, in general terms, consists in the novel construction of the reels which operate the prongs or elevators, and the arrangement whereby the hay is raked, carried to the pressing-box, and so packed and dumped, as the machine moves along, as to form conical cocks suitable for shedding water and curing hay, as hereinafter fully shown.

M N L, Fig. 1, Drawing 1, and Figs. 2, 4, Drawing 2, represent the sills and cross-ties, which are supported by wheels Y, and to which posts X 25 P are rigidly fastened, said posts being held together at their tops by means of beams or cross-ties *d' d*.

Nothing is claimed in the construction of the frame, as other forms of frames may be used, the one shown, however, being very conveniently arranged to support the working parts of the rear of the machine.

The upper parts of the posts P are supported by ties R, bolted to the posts X X, and to their upper ends are pivoted bars O, which support the shafts of wheels H, Figs. 1 and 2, the opposite ends of the bars being so supported by struts 51, Fig. 1, and guide-plates 50 as to

occupy horizontal positions when not in use, and to rise up when a cock is to be dumped from the box B. The inner ends of the shafts of the pulleys H are rigidly fastened to a hoop, V, which fits loosely around the box B, and by means of pins W, projecting out from said box, raises it up preparatory to dumping a cock, when the ends of the bars O are elevated by means of weighted ropes 12' 13', Fig. 1, passing over pulleys *i* 29, Figs. 1 and 2.

The pressing-box B has a cylindrical form, with an inverted conical bottom, and it is made to have a rotary motion by means of a bevel-pinion, 24, fastened to its lower end and driven by a bevel-pinion, 52, which has a bearing in a step-plate, 53, fastened to the tie N, and a bearing in one of the sills, L. The said shaft, supporting a pulley, 54, at its outer end, Fig. 5, is put in motion by means of a band passing over a pulley, 31, fixed to the hub of one of the wheels Y, Fig. 2, Drawing 2. The box B is held in position, when rotating, by means of two pulleys, G, pivoted to arms F, which are bolted fast to posts 25, and a conical pinion, E, pivoted to a plate, D, which is fastened to a curved bar, C. This bar is pivoted to the posts X X, and is so arranged as to be raised up out of the way, when the box B is to dump a cock, by means hereinafter described.

Bridges *c c f* are bolted fast to the beam *d*, Figs. 1 and 2, and support a shaft, *b*, to which the pulleys *i* 29, for raising the bars O, and the pulley *g*, for raising the curved bar C, are attached. This shaft also supports a pinion, *h*, for so elevating the shaft 7' as to bring the conical rollers 28, Fig. 2, above the box B when the latter is to be dumped, a cam, *e*, Fig. 1, Drawing 1, and Figs. 2, 6, 7, Drawing 2, which has a flange on one end so cut away on its periphery as to catch a pin, 9', put through a bar, *l*, and carry it to the opposite side of the cam, and thereby so move the said bar *l* as to put into gear a sliding clutch-wheel, 41, Figs. 2 and 9, with pins 36 on shaft *b*. By means of this construction and arrangement a chain, I, passing under a pulley, 11, on the hub of one of the wheels Y, and over a pulley, *n*, on one end of the clutch-wheel 41, Figs. 1 and 2, rotates the shaft *b*, and consequently causes the pinion *h* to catch into a rack, 10, Fig. 2, and raise the rollers 28 high enough to allow the box B to dump.



A clutch-bar, *l*, locking over the clutch-wheel 41, between it and the pulley *n*, Fig. 2, is arranged to slide through the bridges *c f*, and it has a collar, 55, Fig. 2, between which and the bridge *f* a coil-spring, *m*, is placed, to throw the clutch-bar back and disconnect the clutch-wheel 41 when the box B is to turn back to an upright position. The bearing for the bar *l* through the bridges *f* being somewhat slotted allows the pin 9' in the bar to pass over the abrupt part of the cam *e*, and a spring, 8', being fastened to the standard 6', through which the bar 7' passes, and bearing on the clutch-bar *l*, holds the pin 9' properly to the cam.

A platform J, Figs. 1 and 2, is used to catch the hay passing over the carrier *y y*, &c., when the box is being dumped, and it is arranged to slide in grooves made in the inner sides of guide-pieces S S, which are bolted fast to the posts X 25, and it is drawn out from under the beam *d'* by means of ropes U, which are fastened to it, pass over pulleys T, pivoted to the outer ends of the guides S, and are operated by means of the wheels H, to which they are fastened.

The device for locking the shaft *b* when the bar 7' is elevated consists of a ratchet-wheel, 14', Figs. 1 and 2, attached to it, and a weighted pawl, 15', pivoted to the inside of the beam *d*, the pawl locking into the ratchet by its own weight, and being drawn back by means of a rope or cord, C', which is fastened to its upper end and to the platform J.

5 6 7, Fig. 1, represent the sills and cross-ties, and 4 4 15 the posts which support the working parts of the rake and devices for carrying hay to the pressing-box B, the whole being carried upon two wheels, 8, which run between the sills 6 7.

The rake consists of a bar, *e'*, Fig. 1, which has bearings in brackets 21, attached to the middle posts, 4, and which has spring-teeth 2' 2' of such length attached to it as will project down to a suitable point for raking hay.

The lower device for elevating the hay from the rake consists of a rotating drum, 3', which has a series of prongs, 12 12, &c., nearly corresponding in number to the teeth 2' of the rake, so arranged as to slide out through its periphery when passing by the rake and slide back into the drum when passing around at the opposite side or from the rake. This operation is done by means of the following devices: Short cranks S', Fig. 8, Drawing 2, are rigidly attached to the inner ends of the shaft 23, Figs. 1 and 8, of the wheels 8, and their opposite ends support a shaft, 60, running parallel with the axis of the drum 3' and passing through the inner ends of so many arms, *n' n'*, &c., at each end of the drum as there are to be rows of prongs 12 passing through it. The outer ends of these arms support bars K' K', to which the ends of the prongs 12 are attached. The shafts 23 are stationary. Consequently the cranks S' do not move, while the drum rotates with the wheels 3' by means of an ordinary ratchet-wheel attached to the inner end of the

hub of wheel 3' and spring-pawls pivoted to the end of the drum in the usual manner.

11 11, &c., represent a series of bands passing around the drum 3', and projecting outwardly from its periphery far enough, so to raise the hay as it is being elevated, as to allow the prongs 16 16, &c., formed on the lower end of the housing A to pass under it. This is an important arrangement; otherwise the hay would be carried to the front of the drum.

A lever, 9, is rigidly fastened to the shaft or axle 23 of each forward wheel, 8, Fig. 1, and used to change the points at which the prongs 12 12, &c., are to project through the drum the farthest relative to rake *e' 2'*; and to hold the levers 9 in fixed positions, plates 10 are fastened to the sills 7 and so arranged with projecting pins as to lock the lever at any desired point.

The upper wheel, 17, is constructed similarly to the one just described. It has, however, no covering, only ribs *h'*, through which the prongs slide, and is driven by a band passing over a wheel, 18, attached to its end, and over a wheel, 4', attached to the end of the drum 3', and it drives an endless carrier, *y y*, for moving hay to the box B after the prongs 12 12, &c., of the upper elevator leaves it, the upper ends of the belts 2 being supported by pulleys fastened to a rod, 3, which has bearings in braces *w*, bolted fast to the posts 4, or otherwise, as most convenient. Hay is prevented from falling off at the sides of the carrier *y* by side pieces, K, and is guided into the box B by side pieces, *a*.

Operation: The machine is to be run in the direction indicated by dart 61, Fig. 1, by horsepower. The hay is taken from the surface of the ground by the rake *e' 2'*, Fig. 1, and then carried onto the prongs 16 by means of the prongs 12, operating in the drum 3'. The prongs of the upper wheel, 17, then move it so far up that the carrier *y* will deposit it in the box B. During this operation the box B is supposed to be rotating and the conical rollers 28 packing the hay by moving over it as it is filling in and moving around with the box. After the rollers have been so raised up by the filling in of the hay as to bring the pinion *h*, Figs. 1 and 2, into mesh with the rack 10 on the bar 7', they will then be carried out of the way, as shown at Fig. 2, Drawing 2. The box B will dump the cock formed therein by rising off from its step 26, Figs. 2 and 4, with the upward movement of the bars O, and then swing back to a vertical position and onto the step 26 automatically, preparatory to forming another cock, the hay passing over the carrier *y* in the meantime falling onto the platform J, and remaining there until the box is turned upright. The turning around of the machine is done the same as with a vehicle, the two frames being pivoted together at Z, Fig. 1.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—



1. The pressing-box B, arranged to act automatically, as set forth.

2. The combination of the box B, bar 7', rollers 28, pinion *h*, shaft *d*, pulleys *g* 29 *i*, bar *l*, clutch-wheel 41, pulley *n*, springs *m* 8', ratchet 14', and pawl 15', as specified.

3. The combination of the box B, wheels H, bars O C, friction-rollers E G, hoop V, bevel-wheel 24, shaft 32, and wheels 31 54, shaft 7', pinion *h*, and pulleys *i* 29, and weighted ropes 12' 13', as set forth and shown.

4. The drum 3', provided with projecting bands 11, in combination with the housing A, provided with prongs 16, which operate between said bands, as set forth.

5. The combination of the shafts 23 60, crank S', arms *n'*, wheels 17 18 4', prongs 12, bars K', drum 3', and carrier *y*<sup>2</sup>, as specified.

JOSEPH WADLEIGH.

Witnesses:

G. L. CHAPIN,  
E. E. GIBSON.