

(No Model.)

2 Sheets—Sheet 1.

M. W. BOWSER, W. H. SMAWLEY & P. MULLIN.
HORSE POWER.

No. 494,545.

Patented Apr. 4, 1898.

FIG. 1.

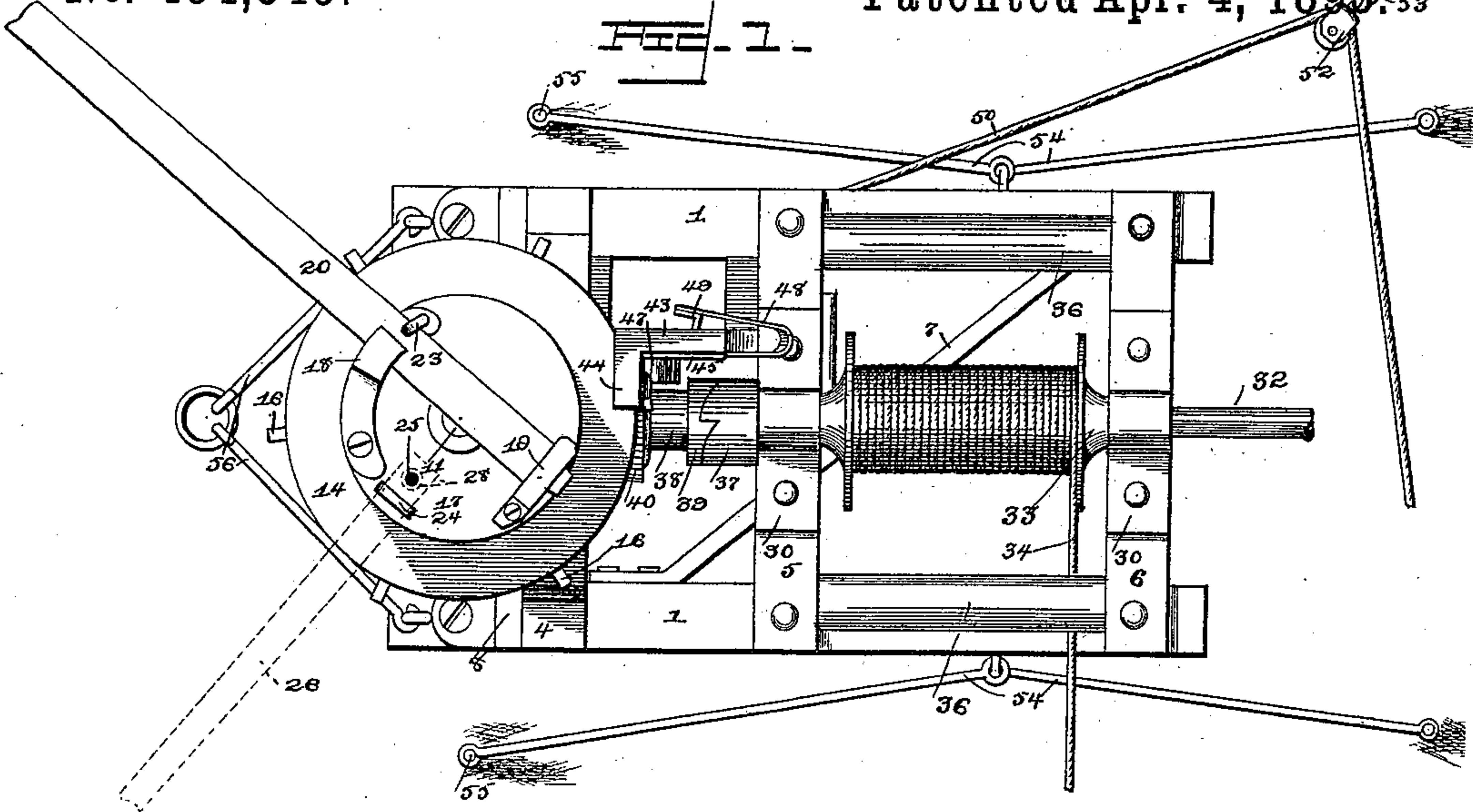


FIG. 2.

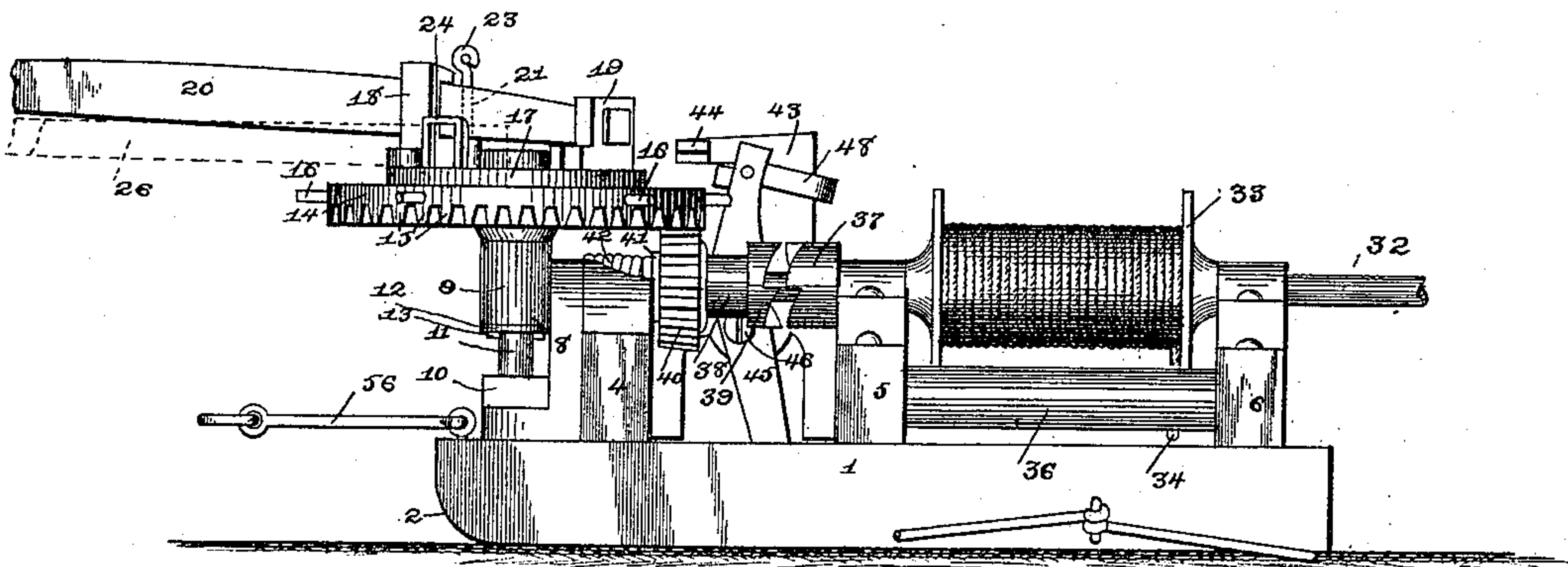
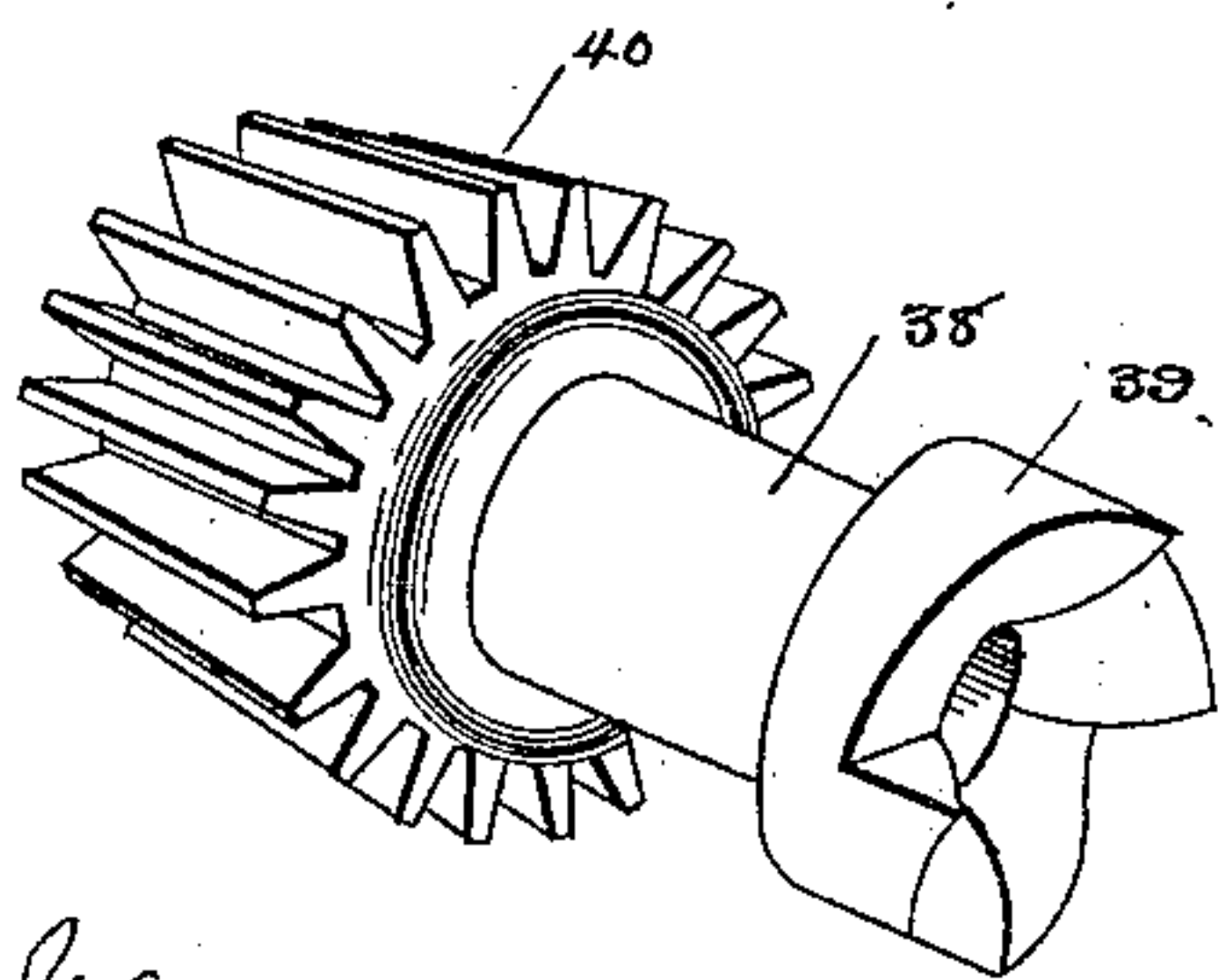


FIG. 3.



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FIG. 3.

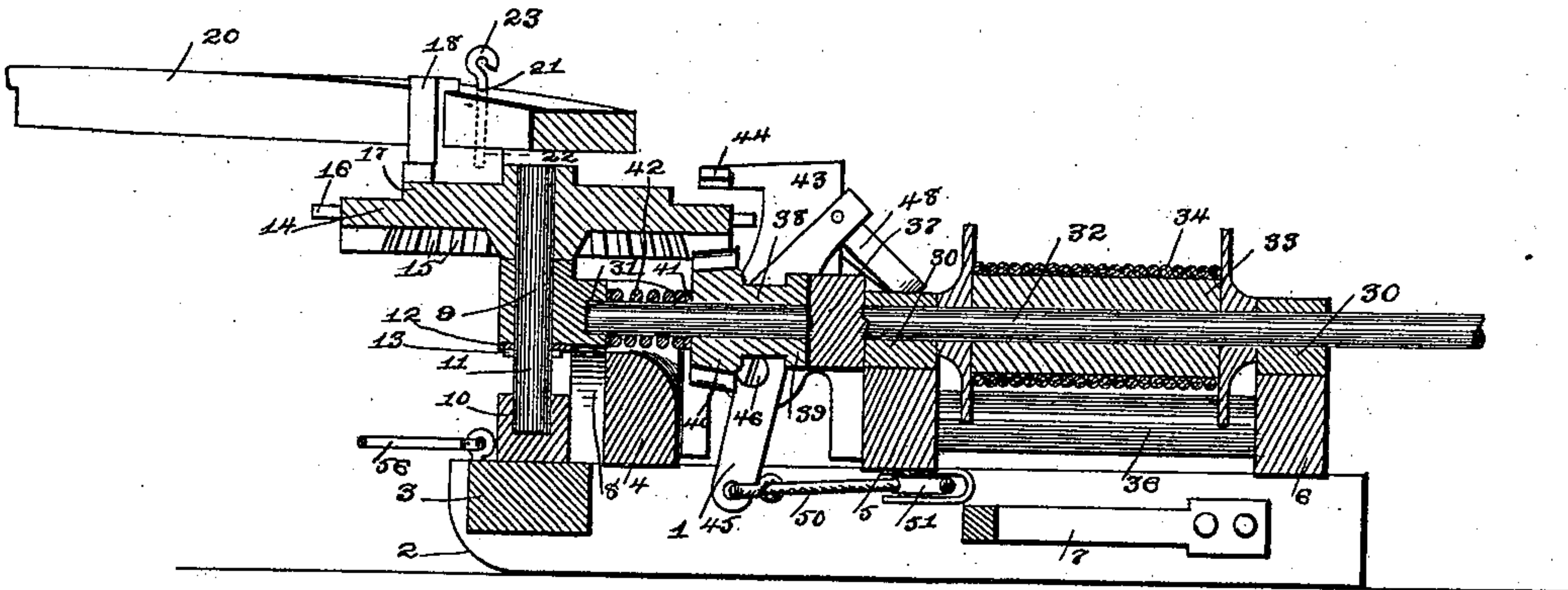


FIG. 5.

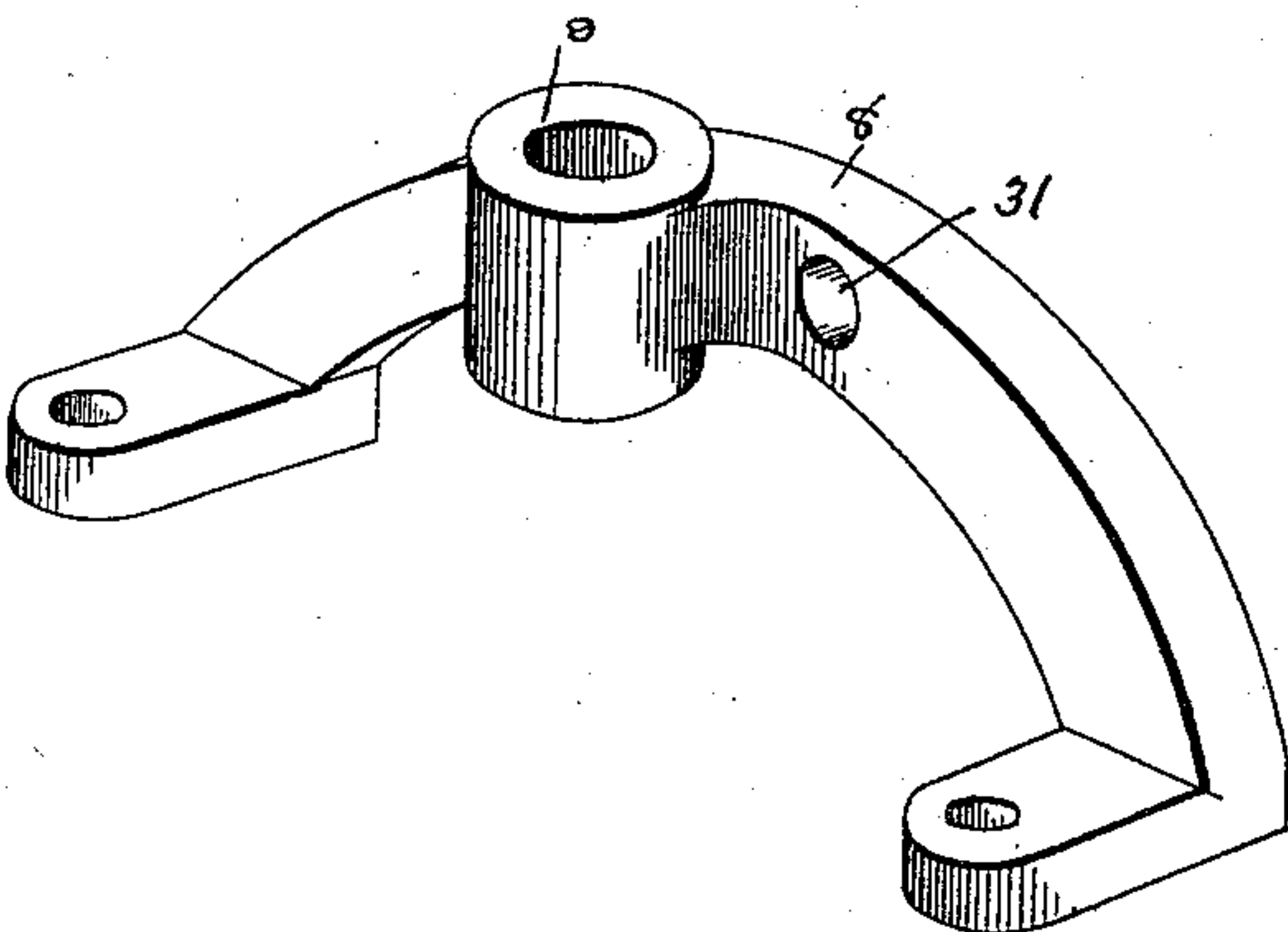
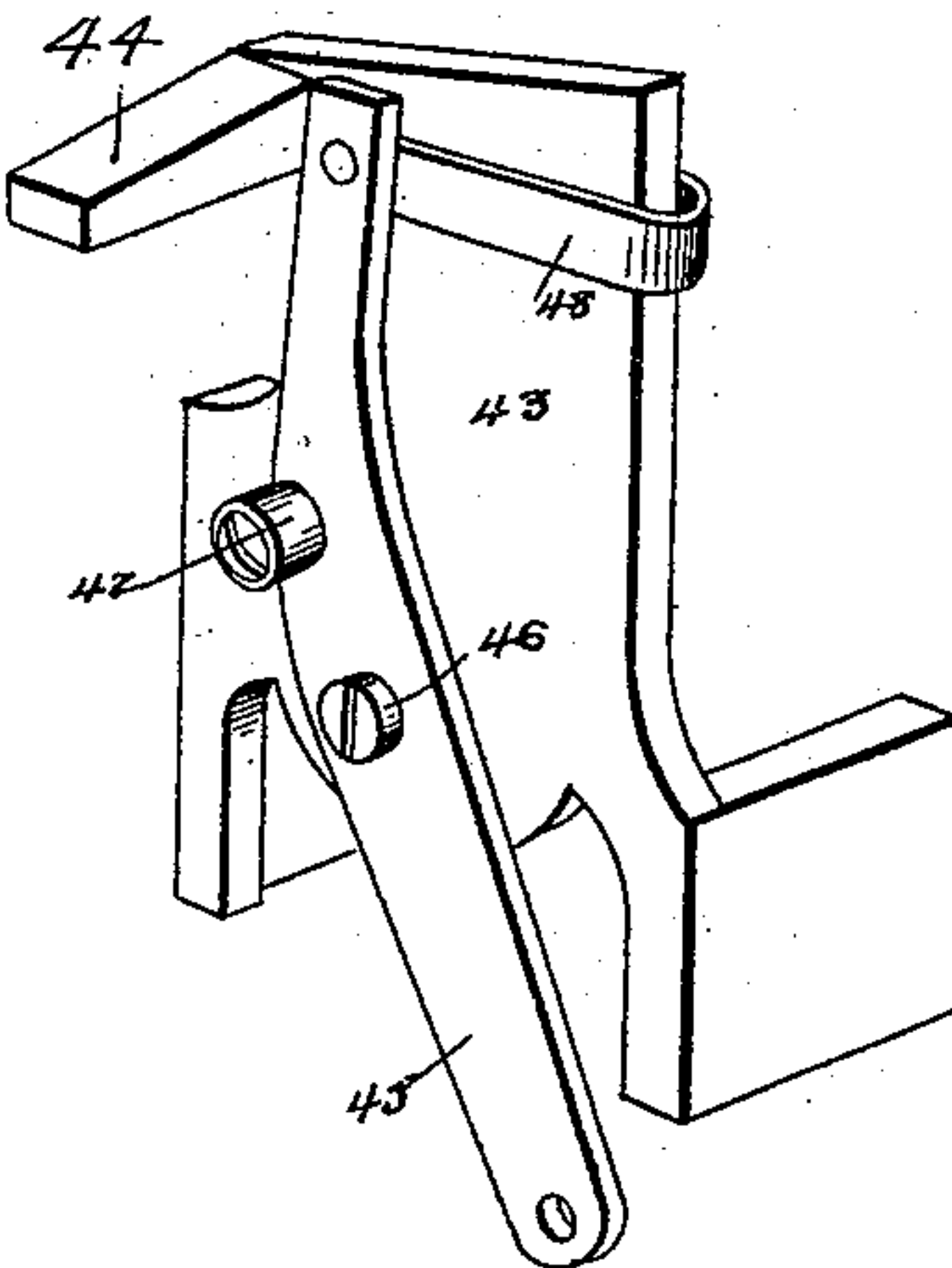


FIG. 4.



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UNITED STATES PATENT OFFICE.

MICHAEL W. BOWSER, WILLIAM H. SMAWLEY, AND PETER MULLIN, OF
SOUTH ENGLISH, IOWA.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 494,545, dated April 4, 1893.

Application filed September 12, 1892. Serial No. 445,688. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL W. BOWSER, WILLIAM H. SMAWLEY, and PETER MULLIN, citizens of the United States, residing at South English, in the county of Keokuk and State of Iowa, have invented a new and useful Horse-Power, of which the following is a specification.

This invention relates to improvements in horse powers; and the objects in view are to provide a horse power device of cheap and simple construction, adapted to be operated by one or more horses and so constructed that the driving mechanism may be thrown out of connection with the winding mechanism, whereby it is neither actuated by nor actuates said mechanism; and to provide means for automatically making connection between the driving and winding mechanism by the movement of the horse, whereby a single attendant located at some distant point at which the power generated is applied, may be enabled to control the horse power.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a plan view of a horse power constructed in accordance with our invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a detail in perspective of the shifting lever standard. Fig. 5 is a detail in perspective of the master gear supporting standard or bridge. Fig. 6 is a detail in perspective of the clutch sleeve.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the sills of the framework and the same have their front ends rounded as at 2, whereby said sills may be employed as runners for transporting the machine. The sills are connected by a front cross bar 3 and in rear of the same by cross bars 4, 5, and 6, securely bolted to position. Below the cross bars a diagonal brace 7 is also employed.

The cross bar 4 has its upper side curved, and securely bolted to the front face of the same is an arched standard or bridge 8, the ends of which are outwardly disposed, perforated, and bolted to the upper sides and near

the front ends of the sills. At its center the bridge is provided with a vertical bearing 9, and directly below the same there is bolted to the cross bar 3 a bearing block 10. A shaft 11 is stepped in the bearing block, and mounted for rotation in the bearing 9 of the arched standard 8. A washer 12 is mounted upon the shaft directly below the bearing 9, and directly below the washer a supporting pin 13 passes through the shaft, whereby the withdrawal of the shaft is rendered impossible.

Upon the upper end of the shaft 11 is a master gear 14, the under side of which is provided with an annular series of radial teeth 15 and the periphery of which is provided at intervals with radial pins 16. Upon its upper side the wheel is provided with an annular raised portion or center 17, and upon the edge of the same there is bolted an inverted L-shaped keeper 18. A similar but smaller keeper 19 is bolted to the wheel, diametrically opposite the keeper 18, and terminating in the latter and received by the former is a sweep 20, said sweep being reduced at its inner end to fit the keeper 19, and opposite the terminal of the keeper 18 being provided with a vertical groove 21, which when the lever is in position registers with a perforation 22, formed in the base of the keeper 18. A pin 23 is passed into the perforation 22 and rests in the groove 21. By removing this pin the sweep 20 may be removed from the keepers. A keeper 24 is located upon the master gear 14, and a perforation 25 is formed in said gear immediately in rear of the keeper. Through the keeper 24 is passed a leading bar 26, the same being provided with a perforation 27, through which and into the perforation 25 is passed a pin 28. In operation, a singletree is connected to the outer end of the sweep 20, while a leading string or strap is connected to the outer end of the bar 26.

Bearing boxes 30 are located upon the cross bars 5 and 6, and a bearing 31 in line with the bearings of the boxes is formed in the bridge 8. A drum shaft 32 is mounted for rotation in the bearings 30 and 31 and between the two former is provided with a drum 33 adapted to revolve with the shaft. Around this drum is passed the elevating rope 34, one end of the rope being connected to the flange of

the drum and the other end passed under either one of a pair of guide rollers 36, journaled between the cross bars 5 and 6 near the ends of the same. Between the intermediate
 5 box 30 and the bearing in the cross bar 4 the shaft is provided with a rigid clutch member 37, and mounted for sliding upon the shaft beyond the clutch member is a sleeve 38, carrying at its rear end the movable clutch member 39 and at its front end a pinion 40, engaged and driven by the teeth of the master gear. A washer 41 is located in front of and bears upon the pinion, and between the washer and the bearing 31 is interposed a coiled
 10 spring 42, which normally presses the sleeve to the rear and the movable clutch member into engagement with the fixed member.

43 designates a standard, bolted between the cross bars 4 and 5, at one side of the shaft, and at its upper end said standard is provided with a forwardly disposed keeper 44, which overlaps the master gear and retains the same in its seat. A lever 45 is pivoted as at 46 to the inner face of the standard, and above its
 20 pivot has a friction roller 47, which engages the clutch between the pinion and the rear clutch member. To the upper end of the lever is connected one terminal of a U-shaped spring 48, said spring embracing the standard and provided at its free end with an inwardly
 25 disposed shoulder or catch 49, adapted to be sprung over the front edge of the standard. When thus sprung over the standard, the clutch is disengaged in that the sleeve is
 30 forced against the tension of the coiled spring to the front or toward the master gear, and when in such position the movable member of the clutch is withdrawn from the fixed member. When in this position also, the end
 40 of the catch is directly in the path of the pins with which the periphery of the master gear is studded, so that when said gear is actuated, said pins come in contact with and disengage the latch from the standard, so that
 45 the coiled spring will throw the clutch sleeve to the rear until the clutch is in operative position.

The under side of the cross bar 5 has secured thereto a pulley case and a rope 50 is
 50 passed between a pair of guide pulleys 51 mounted in the case and has its end connected to the lower end of the shifting lever. The opposite end of the rope is passed through a perforation formed in the sill 1, around the
 55 pulley of a sheave 52, anchored as at 53 to the ground some distance from the apparatus, and from thence passes to the point at which the attendant is engaged in connecting the hay fork or other elevating device to the elevating
 60 rope.

From opposite sides of the sills project anchoring rods 54, the same being located at suitable intervals and terminating at their outer ends in eyes, through which pass stakes
 65 55, driven in the ground and serving as means for retaining the apparatus in position. A pair of draft rods 56 extend from the front

ends of the sills 1 and are loosely connected by a draft ring, to which may be attached an ordinary singletree, and thus the apparatus
 70 slid from point to point.

In operation the horse is started and the studs of the periphery of the master gear arriving in contact with the spring pressed latch 49, disengages the same from the stand-
 75 ard and through the influence of the coiled spring the sliding clutch sleeve is thrown to the rear and as its member engages with the fixed clutch of the shaft, motion is imparted from the master gear, to the pinion and from
 80 thence to the shaft. In this manner the rope is wound around the shaft and the object to be elevated is operated upon. After the object has been elevated the attendant stationed at the same draws upon the shifting
 85 rope and swings the shifting lever as before described, so that its spring pressed latch is in engagement with the standard. The horse is stopped and the elevating rope unwound from the shaft in the usual manner, which un-
 90 winding of the shaft is not transmitted as will be observed, to the master gear. A new load is now connected to the elevating rope, and the horse started, and as he does so the spring
 95 latch is disengaged by a stud extending from the periphery of the wheel, and thus the shifting lever is released and the clutch thrown into operative position by means of the coiled spring, so that the movement of the gear will
 100 be transmitted to the winding shaft.

Having described our invention, what we claim is—

1. In a horse power, the combination with the frame-work, the vertical shaft, the master gear thereon, the drum shaft, the elevating
 105 rope leading therefrom, the fixed clutch member mounted on the shaft, the sleeve mounted on the shaft and provided at one end with a clutch member and at the opposite end with a pinion engaging the gear, of a standard lo-
 110 cated at one side of the sleeve, a lever pivoted to the standard and loosely engaging the sleeve, a rope leading from the lower end of the lever and a spring pressed latch connected to the lever and adapted to be sprung over
 115 the edge of the standard, in which latter position it is in the path of and adapted to be liberated by studs located upon the periphery of the master gear, substantially as specified.

2. In a horse power, the combination with
 120 the frame-work, comprising the transverse bars 5 and 6, having the bearings longitudinally opposite each other, and the arched standard 8 provided with the vertical and horizontal bearings the latter being in line
 125 with the bearings of the cross bars, of a vertical shaft mounted for rotation in the vertical bearings of the arched standard, the master gear thereon, and provided with draft appliances and a series of peripheral lugs or
 130 pins, a winding shaft mounted in the longitudinally opposite bearings of the cross bars and arched standard and provided with one member of a clutch, a sleeve mounted for re-

5 ciprocation upon the shaft, terminating at
one end in a gear engaging the master gear,
and at its rear end in the other member of a
clutch, a standard located at one side of the
10 sleeve and secured to the framework, a lever
pivoted to the standard and provided above
its pivot with the pin engaging the sleeve be-
tween its gear and clutch member, a U-shaped
spring secured to the upper end of the clutch
15 and embracing the standard, and having its
free end terminating in a latch for engaging
the standard and extending into the path of

the pins of the master gear, and a cord or
rope leading from the lower end of the lever,
substantially as specified. 15

In testimony that we claim the foregoing as
our own we have hereto affixed our signatures
in presence of two witnesses.

MICHAEL W. BOWSER.
WILLIAM H. SMAWLEY.
PETER MULLIN.

Witnesses:

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J. E. VAN AUKEN.