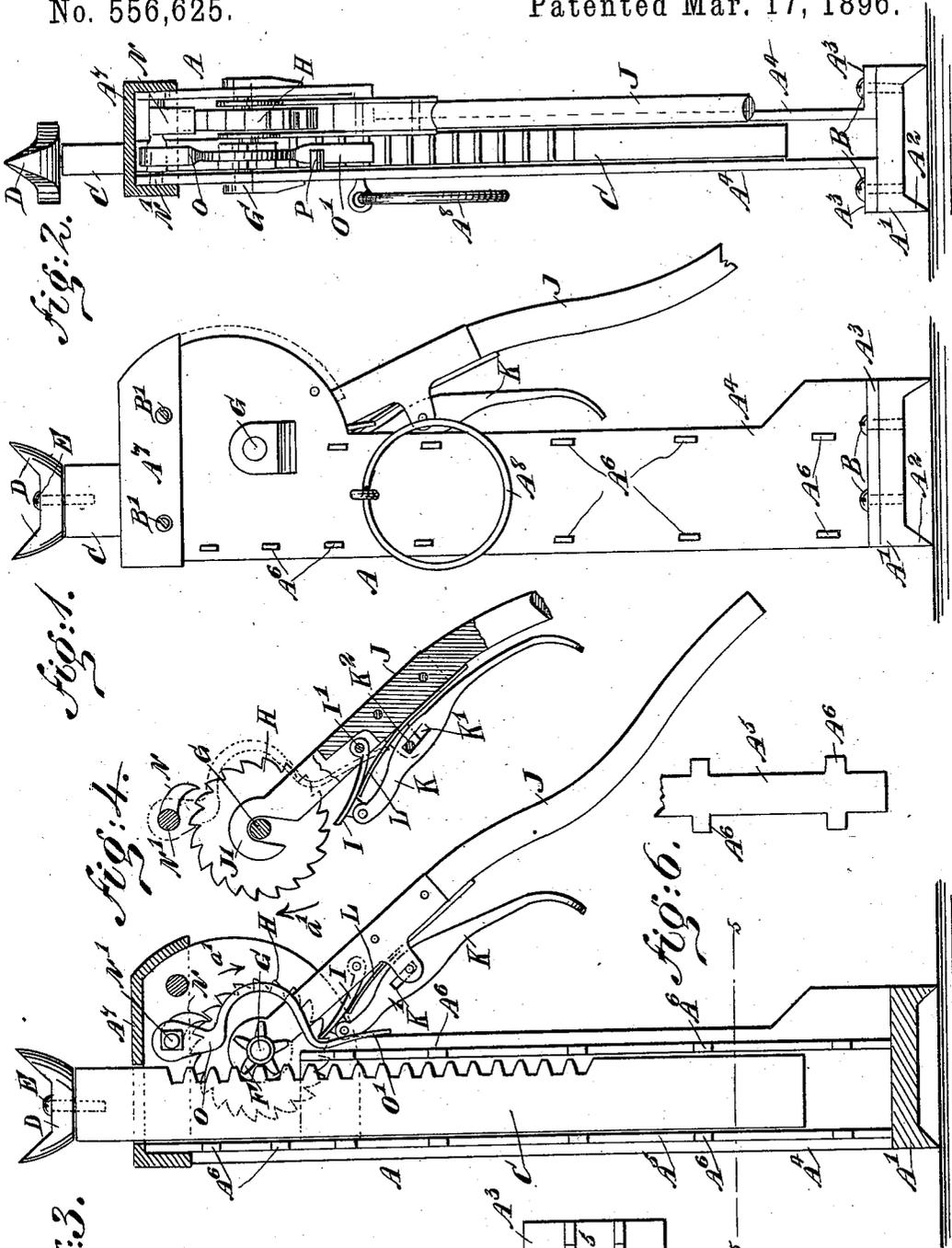


(No Model.)

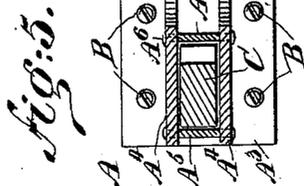
J. E. GILCHRIST.  
LOGGING JACK.

No. 556,625.

Patented Mar. 17, 1896.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JOHN E. GILCHRIST, OF SOUTH BEND, WASHINGTON.

## LOGGING-JACK.

SPECIFICATION forming part of Letters Patent No. 556,625, dated March 17, 1896.

Application filed September 26, 1895. Serial No. 563,795. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. GILCHRIST, of South Bend, in the county of Pacific and State of Washington, have invented a new and Improved Logging-Jack, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved jack which is simple and durable in construction, very effective in operation, and more especially designed for conveniently handling logs without danger to the workmen.

The invention consists principally of a steel casing, in which is fitted to slide a lifting-rack in mesh with a pinion secured on a shaft journaled in the said casing, the said shaft carrying a ratchet-wheel, and a lever having a pawl adapted to be manipulated by a hand-lever to engage or disengage the said ratchet-wheel.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is an end elevation of the same with the cap in section. Fig. 3 is a sectional side elevation of the improvement. Fig. 4 is a sectional side elevation of the levers and ratchet. Fig. 5 is a sectional plan view of the improvement on the line 5 5 of Fig. 3, and Fig. 6 is a face view of part of one side of the casing.

The improved logging-jack is provided with a suitably-constructed casing A having a base A', formed on its under side with points A<sup>2</sup> for securely engaging the ground or log to hold the casing in position. On this base A' are fastened by screws, bolts, rivets or like devices the flanges A<sup>3</sup> of the front and rear plates A<sup>4</sup>, made of steel and parallel to each other, and the said front and rear plates are connected with each other by the sides A<sup>5</sup>, each formed with projections A<sup>6</sup> passing through suitable apertures in the front and rear plates A<sup>4</sup>. The upper ends of the plates A<sup>4</sup> and A<sup>5</sup> are engaged by a cap A<sup>7</sup>, secured in place on the plates A<sup>4</sup> by screws or bolts

B', as will be readily understood by reference to Fig. 1. It will be seen that as this casing is made completely of steel it is very durable and can be very cheaply manufactured. A ring A<sup>8</sup> on one side A<sup>4</sup> of the casing serves to conveniently move the jack about.

In the casing A is fitted to slide vertically the lifting-rack C, carrying at its upper end a head D, held to turn on a pivot E, secured in the upper end of the rack. The head D is provided with points adapted to engage the log or other object to be lifted to hold the said rack in place during the lifting operation. The teeth of the rack C are in mesh with a pinion F, secured on a transversely-extending shaft G, journaled in suitable bearings in the plates A<sup>4</sup> of the casing, and on this shaft G and at one side of the pinion F and rack C is secured a ratchet H, extending in the upper enlarged end of the casing A. The ratchet H is adapted to be engaged by the free end of a pawl I, fulcrumed at I' in a lever J, hooked with its hooked end J' engaging with the shaft G, as is plainly shown in Fig. 4. The pawl I is pivotally connected with a hand-lever K, extending under the working lever J, and adapted to be pressed by the operator to throw the pawl I out of engagement with the ratchet H whenever desired.

The hand-lever K is formed with a slot K', through which extends the fulcrum-pin K<sup>2</sup> for the said lever to permit the lever to slide according to the swinging movement of the pawl I. A spring L held on the working lever J presses on the back of the pawl I to normally hold the latter in engagement with the ratchet-wheel H. A dog N is in engagement with the said ratchet-wheel H to hold the load in a raised position during the up or return stroke of the working lever J, and this dog N is secured on a transversely-extending shaft N' journaled in suitable bearings in the sides A<sup>4</sup> of the casing A. A gravity-arm O is secured in this shaft N' to normally hold the dog N in position or in mesh with the ratchet-wheel H, and this arm O is adapted to be engaged at its free lower end O' by the operator to enable the latter to swing the arm upward to throw the dog N out of engagement with the ratchet-wheel H whenever desired to lower the load. A stop-pin P, secured to the front plate A<sup>4</sup> of the casing A, limits the

outward swinging motion of the gravity-arm O. (See Fig. 2.)

It will be seen that by the arrangement described the operator can readily raise the lifting-rack C by swinging the working lever J up and down, it being understood that during the upstroke of the said lever the pawl I glides over the teeth of the ratchet-wheel H without turning the latter, as the said ratchet-wheel is held in place by the dog N. On the downstroke of the working lever J the pawl I, by being in engagement with the teeth of the ratchet-wheel H, turns the latter in the direction of the arrow *a'* to cause a turning of the shaft G in the same direction and a consequent raising of the lifting-rack C by the pinion F in mesh with the teeth of the said rack.

When it is desired to lower the load the operator pulls on the gravity-arm O, so as to lift the dog N out of engagement with the ratchet-wheel H and permit a turning of the ratchet-wheel H in the inverse direction of the arrow *a'* by the load, the operator then raising the head of the lever J in an upward direction by a downward pressure upon the handle of the lever J. If it is desired to suddenly lower the load or to turn the lifting-rack C, then both the arm O and the pawl I are swung outward to disengage the jack and the said pawl I from the ratchet-wheel H.

It will be seen that by the arrangement described the working parts of the jack are under perfect control of the operator, so that there is no danger to the workmen when raising or lowering loads.

A suitable hood may be employed to cover up the working parts to prevent dirt from clogging the same. The cap A<sup>4</sup> may, how-

ever, be extended for this purpose, as will be understood by reference to dotted lines in Fig. 1.

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

1. A logging-jack or the like, comprising a casing, a lifting-rack fitted to slide in the casing, a shaft extending transversely of the casing, a pinion on the shaft engaging the rack, a ratchet-wheel on said shaft, a pawl engaging the ratchet-wheel and adapted to hold the rack in an elevated position, a working lever having a hooked end adapted to be hung on said shaft, and a pawl carried on said working lever and arranged to engage said ratchet-wheel, whereby when the said lever is operated said ratchet-wheel is turned, substantially as set forth.

2. A logging-jack or the like, comprising a casing, a lifting-rack fitted to slide therein, a shaft extending transversely of the casing, a pinion on the shaft meshing with the rack, a ratchet-wheel on the shaft, a pawl engaging said ratchet-wheel to hold the rack in an elevated position, a working lever, a spring-pawl carried on said working lever in position to engage the ratchet-wheel to turn the same when the lever is manipulated, a slotted hand-lever having one end loosely coupled to said pawl and its other end in position to be engaged by the hand of the operator, and a fulcrum-pin for said hand-lever mounted on the working lever and engaging the slot in the hand-lever, substantially as set forth.

JOHN E. GILCHRIST.

Witnesses:

JERE J. BROWN,  
EUGENE A. RUDDER.