

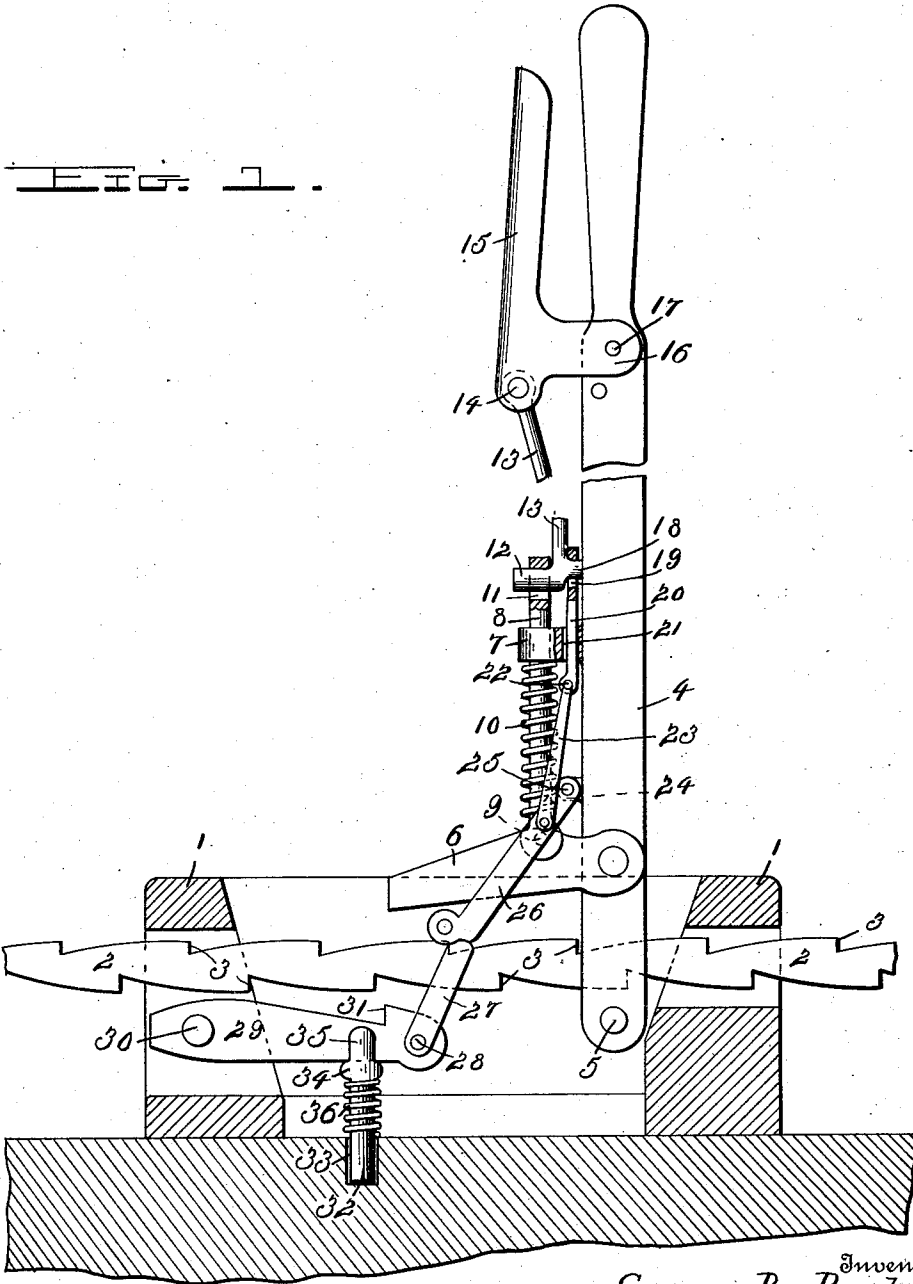
C. B. PURDY.
LEVER.

APPLICATION FILED SEPT. 13, 1911.

Patented May 28, 1912.

2 SHEETS-SHEET 1.

1,027,761.



Inventor
Cyrus B. Purdy

Witnesses
C. E. Kumpu.
Wm. J. Smith.

By Victor J. Evans
Attorney

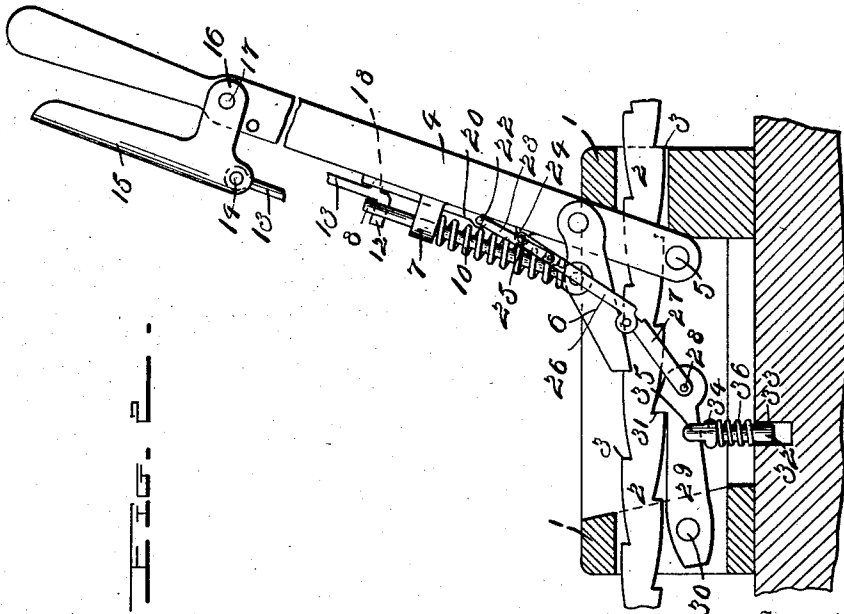
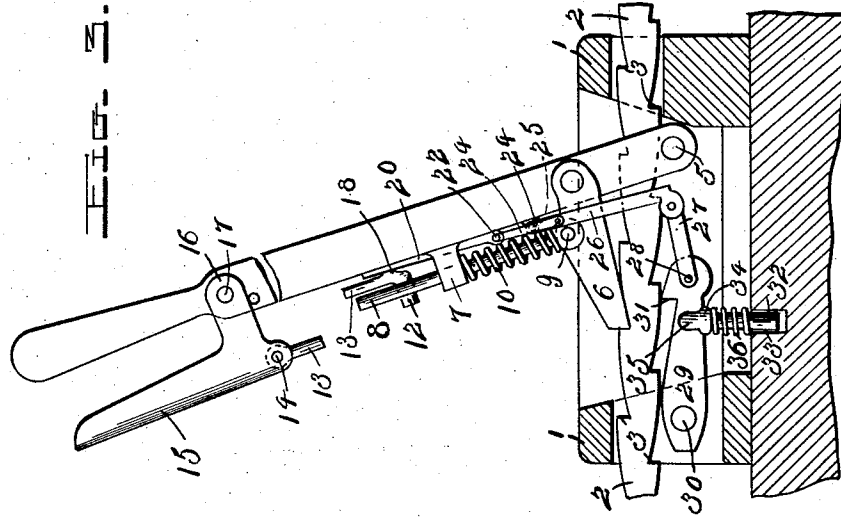
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Cyrus B. Purdy Inventor

Witnesses

C. E. Humpfer.

Wm. D. North.

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

CYRUS B. PURDY, OF MINATARE, NEBRASKA.

LEVER.

1,027,761.

Specification of Letters Patent.

Patented May 28, 1912.

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To all whom it may concern:

Be it known that I, CYRUS B. PURDY, a citizen of the United States, residing at Minatare, in the county of Scotts Bluff and State of Nebraska, have invented new and useful Improvements in Levers, of which the following is a specification.

The present invention relates to certain novel improvements in hand levers.

In carrying out my invention it is my purpose to provide a hand lever provided with pawls which are adapted to cooperate with a sliding rack bar with novel and effective means whereby one of the pawls will be brought into operation with the rack bar to sustain the same against the return movement while the opposite pawl is swung to contact with a tooth upon the opposite edge of the bar to slide the said bar as well as to provide means whereby both of the pawls may be sustained out of engagement with the rack bar when desired, to admit of a backward or return movement of the same.

With the above object in view, and others which will be more apparent as the nature of the invention is disclosed, the improvement resides in the novel construction and arrangement of parts in operative combination as will be hereinafter more fully described and claimed.

In the drawings, accompanying this specification, I have illustrated a simple and preferred embodiment of the improvement, it being understood, however, that the showing therein is merely illustrative, and that such changes as fall within the scope of the appended claims may be made if desired.

In the accompanying drawings,—Figure 1 is a perspective view of my improved lever showing the jaws of the same in their spread position to permit of the backward or return movement of the rack bar. Fig. 2 is a side elevation of the same illustrating the holding pawl engaging a tooth of the rack bar and the working pawl swung to engage with one of the teeth upon the opposite edge of the rack bar to that engaged by the stop pawl. Fig. 3 is a similar view illustrating the working pawl in the act of moving the rack bar.

Referring now to the drawings in detail, the numeral 1 designates substantially rectangular casing, the same being provided with a partially open top and having its ends also provided with openings through which is adapted to pass a rack bar 2. The

rack bar has its opposite edges formed with teeth 3, the lower teeth being arranged intermediate of two of the upper teeth.

The numeral 4 designates a lever which is pivoted within the casing, as at 5. This lever is provided with a pivoted working pawl 6, the latter adapted to be swung into engagement with the upper teeth 3 of the rack bar 2 to move the said rack bar in one direction. The lever 4 is formed with an outwardly extending angular projection which is provided with an opening and which may be termed a sleeve 7, through which extends a rod 8. This rod has its lower extremity pivotally connected with the working pawl 6 as designated by the numeral 9. Surrounding the rod 8 and exerting pressure between the sleeve 7 and the working pawl 6 is a helical spring 10 which is adapted to normally force the pawl 6 downwardly into engagement with one of the teeth 3 of the rack bar 2. The upper extremity of the rod 8 is provided with an elongated slot or opening 11, and arranged for movement within the said slot is an angular off-set 12 provided upon a rod 13 which is pivotally connected as at 14 with the resilient handle 15 for the device. This handle 15 is of a substantially L-shaped formation in side elevation and its off-set arms 16 are pivotally connected with the lever 4, as at 17. The handle rod 13 has its rear portion formed with a stud 18, the same being arranged directly to the rear and slightly above the off-set 12. The stud 13 is adapted to engage within a slot 19 formed upon a vertically movable member 20. This member comprises a plate which passes through a suitable opening 21 formed in the sleeve 7, and the lower extremity of the said plate 20 is pivoted as at 22 to a link 23. The lever 4 is provided with a lip or projection 24, the latter being preferably integrally formed thereon and being arranged a suitable distance below the off-set forming the sleeve 7.

The numeral 25 designates a pivot whereby one of the links 26 of a pair of toggles is connected with the lever. The link 23 is pivotally connected with this member of the toggles as at 26 and the second member 27 of the said toggle is pivotally connected as at 28 with what I term a stop or halting pawl 29. This pawl is pivotally connected with the casing 1 as at 30. The links 26 and 27 forming the toggle have their meeting ends formed with joints, so that the said

toggle may be broken only in one direction. The pawl 29 is provided adjacent its pivot 28 with an enlarged head, the same having an upwardly projecting tooth 31, and the said tooth is adapted to engage with the teeth 3 upon the under face of the rack bar 2.

The numeral 32 designates a post which is mounted within a suitable opening 33, provided either in the lower portion of the casing or upon the support to which the casing may be attached. This post 33 has its upper portion formed with an enlargement 34, and extending above the said enlargement or head, the said post is bifurcated to provide spaced arms 35. These arms engage the opposite faces as well as the lower edge of the pawl 29, and serve to direct the said pawl into proper register with the teeth of the rack bar. Surrounding the post 33, and exerting an upward pressure upon the enlargement or head 34 thereof is a helical spring 36, the same tending to force the tooth 31 of the said pawl 29 into engagement with the teeth of the rack bar. When the toggle comprising the links 26 and 27 is broken as illustrated in Figs. 2 and 3 of the drawings, it is obvious that the spring pressed pawls 6 and 21 will be forced into engagement with the teeth of the rack bar and that the lever 4 may be swung upon its pivot in either direction, the swinging of the lever to the position illustrated in Fig. 2 permitting the pawl 6 to engage with one of the teeth 3 of the rack bar 2 after its stroke in the opposite direction, (see Fig. 3), has been exhausted and the opposite movement of the said lever will force the rack bar one tooth forward in the direction of the arrow. The post 33 in the meantime and through the medium of its spring 36 sustaining the tooth of the pawl 29 into engagement with the lower tooth 3 of the rack bar, but at the same time permitting of the forward movement of the said rack bar.

It will be noted that when the lever is brought rearwardly to the position illustrated in Fig. 2, the rod 8 will be moved upwardly so that the lower wall provided by its slot 11 will contact with the off-set 12 to cause the releasing handle 15 to swing upon its pivot 17 toward the lever and to bring the said handle within easy grasp of the hand of the operator, and the said movement also brings the stud 18 into contact with the upper wall formed by the slot or opening 19 provided in the plate 20. It will be readily noted that by swinging the handle 15 farther toward the lever 17, the link 23 will be drawn upwardly which movement will force the toggle levers together so that their rule joint will lock the said levers together and sustain the pawl 29 out of engagement with the teeth of the rack bar. The said movement also causes the off-set 12 of the rod 13 to travel within the slot 11 and

to raise the rod 8 to lift the pawl 6 out of engagement with the upper teeth and the rack bar. The teeth will be sustained away from the rack bar as long as pressure is exerted between the resilient handle 15 and the lever 4. When the pressure is released the spring 10 will force the pawl 6 downwardly to cause the upper portion of the rod 8 to contact with the off-set 12 of the handle rod 13, to swing the said rod downwardly and to rotate the handle upon its pivot away from the lever. This movement also causes the stop 18 to contact with the lower wall provided by the opening 19 of the member 20 and the link 23 to exert a pressure upon the upper member 26 of the toggle and to break the joint thereof, thus permitting the lower or holding pawl 29 to return its tooth 31 into engagement with the lower teeth of the rack bar 2, this movement of course being accomplished through the medium of the spring 36.

Having thus fully described the said invention, what I claim is:—

1. In the mechanism for the purpose set forth and in combination with a slidable rack bar, of a pivoted lever, a pawl pivotally connected with the lever, means for normally forcing the pawl into contact with the rack bar, a holding pawl, means for normally forcing the said holding pawl into contact with the teeth upon the lower face of the lever, a toggle connection between the holding pawl and the lever, a resilient handle connected with the lever, and means provided between the toggle lever and the pawl pivotally connected with the lever for swinging the resilient handle toward the pawl to permit of a further movement of the pawl locking the toggle to sustain the pawl connected therewith out of engagement with the rack bar to lift the pawl pivoted to the lever also out of engagement with the rack bar, and said means also adapted to break the toggle to permit of the pawl connected therewith to return to engage the rack bar as well as to swing the pawl pivoted to the lever again into engagement with the said rack bar.

2. In a device for the purpose set forth, the combination with a casing and a rack bar having its opposite longitudinal edges provided with teeth, of a lever pivotally connected with the casing, a pawl pivotally connected with the lever and adapted to normally engage the teeth upon one of the edges of the rack bar, a rod connected with the pawl, a spring upon the rod and adapted to normally force the said pawl upon the rack bar, a holding pawl pivotally connected with the casing, a directing post for the holding pawl, spring means for normally forcing the post against the pawl to bring the latter into engagement with the lower tooth of the rack bar, toggle members

pivotally connected with the holding pawl and with the lever, the said toggle members being connected through the medium of a rule joint, a link connected with one of the
5 members of the toggle, a plate connected with the said link, said plate having its upper extremity formed with an opening, the rod connected with the lever pawl having its upper extremity also provided with an
10 opening, a resilient handle pivotally connected with the lever, a handle rod for the handle, said rod having an off-set portion adapted to engage within the opening of the rod and having a stop adapted to play within the opening of the plate, all substan- 15
tially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CYRUS B. PURDY.

Witnesses:

IRVING L. LYMAN,
M. G. WILSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."