(No Model.)

W. B. HALL.

JOINT LEVER.

No. 298,749. Patented May 20, 1884.

Fig. 1.

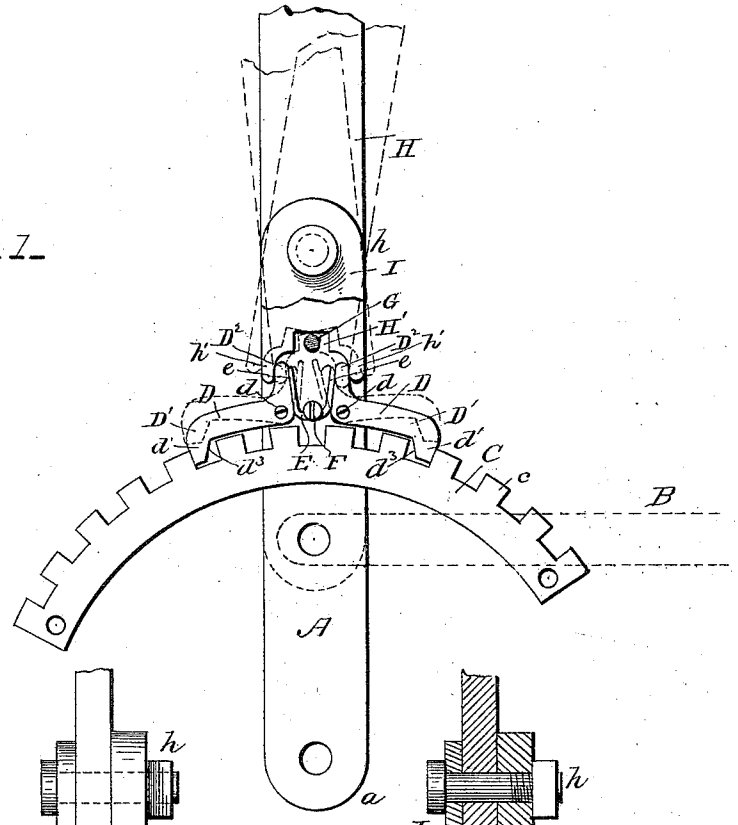


Fig. 2.

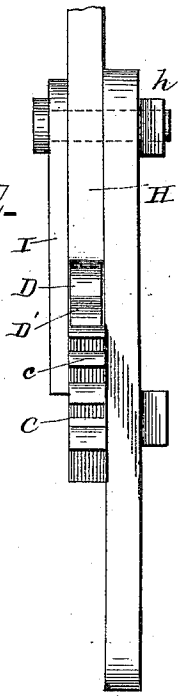


Fig. 3.

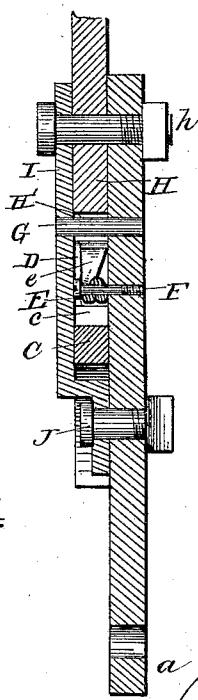
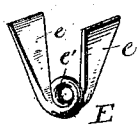


Fig. 4.



WITNESSES

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WILLIAM BUTLER HALL, OF DUQUOIN, ILLINOIS.

JOINT-LEVER.

SPECIFICATION forming part of Letters Patent No. 298,749, dated May 20, 1884.

Application filed April 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. HALL, a citizen of the United States, residing at Duquoin, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Joint-Levers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of joint or latch levers in which a supplemental operating-lever is pivoted upon the main lever, and is adapted to operate upon the pawls to disengage them from the segmental rack.

The object of my invention is to provide a simple and improved joint or latch lever for operating brakes or other mechanism, which will possess advantages in point of strength and general efficiency, and which can be readily and conveniently operated by a comparatively small expenditure of power.

In the drawings, Figure 1 is a front elevation of my improved lever, parts being broken away to show the construction, and the operation being illustrated by dotted lines. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a detail perspective view of the double-arm spring which actuates the pawls.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the main lever, to which the rod B (shown in dotted lines, Fig. 1) is pivotally connected. This main lever is fulcrumed at its lower end, *a*, and it extends vertically at the side of the segmental rack C, and projects above the latter. The teeth *c* of the rack C are formed in a continuous series on the top edge of the rack, and are preferably of rectangular form.

D D designate two pawls, which are in the form of bell-crank levers, and are fulcrumed, as shown at *d d*, to the face of the lever A just above the teeth of the rack. The main arms D′ of the pawls project laterally at opposite sides of the lever A, and are provided at their outer ends with a finger or point, *d′*, which engages with the teeth *c* of the rack, as shown. The outer face of the fingers *d′* is straight or abrupt, and engages with the corresponding face of the teeth *c*, to prevent movement of the lever A in either direction, while the inner face of the said fingers is beveled, as shown at d^3, so that it will pass over the teeth of the rack when the pawl is carried in that direction. The inner arms, D^2, of the pawls project upwardly, and are acted upon by the corresponding arms, *e e*, of a double-arm spring, E, to force the fingers of the pawls normally into engagement with the teeth of the rack. This double-arm spring E, which is clearly shown in Fig. 4, is preferably formed of a single piece of spring-plate, bent to form a central eye or loop, *e′*, from which the arms *e e* extend divergently and upwardly. The spring is secured in position by a centrally-disposed pin or screw, F, which passes through the eye *e′* and enters the lever A. Above this pin F is provided a stop-pin, G, which is disposed on the same central plane, and is arranged above the pawls. This stop-pin acts as a stop to the auxiliary or operating lever H, as will be presently described.

The operating-lever H is fulcrumed, as shown at *h*, upon the top end of the main lever A, and is provided with a recess, H′, in its lower end to receive the stop-pin G. Thus, when the lever is turned upon its fulcrum, either side of this recess engages the said pin and locks the lever H from further movement upon the lever A, when the levers become relatively rigid and move together. At each side of the central recess, H′, the operating-lever is provided with a downwardly-projecting and beveled end, *h′*, which engages with the corresponding top end of the inner arm, D^2, of the adjoining pawl, so that when the operating-lever is forced in either direction its arm acts upon the pawl against the tension of the spring, and disengages the same from the rack, to enable the main lever to be moved to operate the brake. Then, when the operating-lever is released, the spring forces the pawls into re-engagement with the teeth of the rack, to automatically lock the main lever in the position to which it has thus been adjusted.

A covering-plate, I, is provided over the pawls, spring, and other operating mechanism, and is secured in position by the pivot of the main lever and by a pin, J, arranged at its lower end and entering the lever A. The fulcrum-pins of the pawls and the pins F and G

also preferably pass through this covering-plate.

From the foregoing description and annexed drawings the operation and advantages of my invention will be readily understood. My improved lever is simple in construction, and operates easily and readily by simply forcing the operating-lever in either direction.

I claim as my invention—

1. As an improvement in joint-levers, the combination, with the double-arm pawls projecting in opposite directions, of an operating-lever having arms projecting over the inner arms of the pawls and bearing against the outer face of the same, as shown, whereby the arms of the lever are adapted to independently operate either pawl, substantially as and for the purpose set forth.

2. As an improvement in joint-levers, the combination of the main lever carrying two oppositely-projecting pawls, the segmental rack, spring mechanism secured upon the lever and acting upon the pawls, and an operating-lever having arms bearing against the outer face of the pawls, so that they will independently operate either pawl without engaging the other, substantially as set forth.

3. As an improvement in joint-levers, the combination, with the segmental rack, of the main lever carrying the bell-crank pawls having their engaging ends projecting in opposite directions, and a double-arm spring disposed between the inner arms of the pawls and acting upon the same, substantially as and for the purpose set forth.

4. As an improvement in joint-levers, the combination of the main lever, the segmental rack, two bell-crank pawls fulcrumed upon the main lever above the rack, and having their engaging arms projecting in opposite directions, the double-arm spring acting upon the pawls, the operating-lever fulcrumed upon the main lever, and provided with an arm projecting at each side and engaging the inner arms of the pawls, and a centrally-disposed stop-pin to limit the movement of the operating-lever in either direction, substantially as set forth.

5. As an improvement in joint-levers, the combination of the main lever, the segmental rack, the bell-crank pawls having their main arms projecting laterally in opposite directions, and provided with the beveled inner faces, the centrally-disposed double-arm spring acting upon the inner arms of both pawls, the centrally-disposed stop-pin arranged above the spring, and the operating-lever fulcrumed upon the main lever, having the central recess in its bottom, and the downwardly-projecting arms at each side of this recess, substantially as and for the purpose set forth.

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

WILLIAM BUTLER HALL.

Witnesses:
THOS. H. BURGESS,
H. M. HARRISS.