C. G. PETERSON.

LATCH OPERATING DEVICE.

APPLICATION FILED SEPT. 30, 1908.

930,222.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

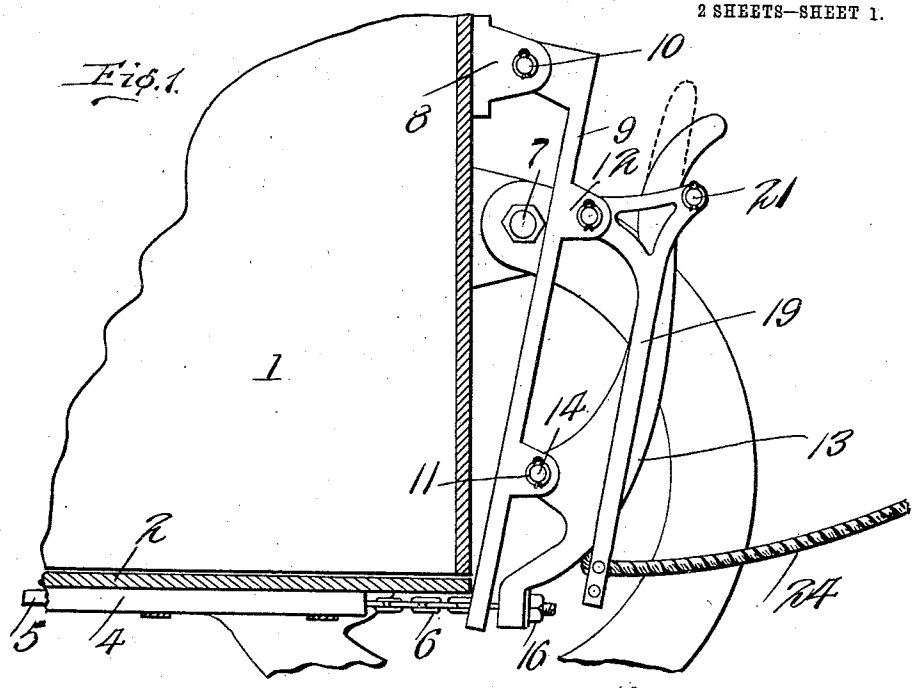
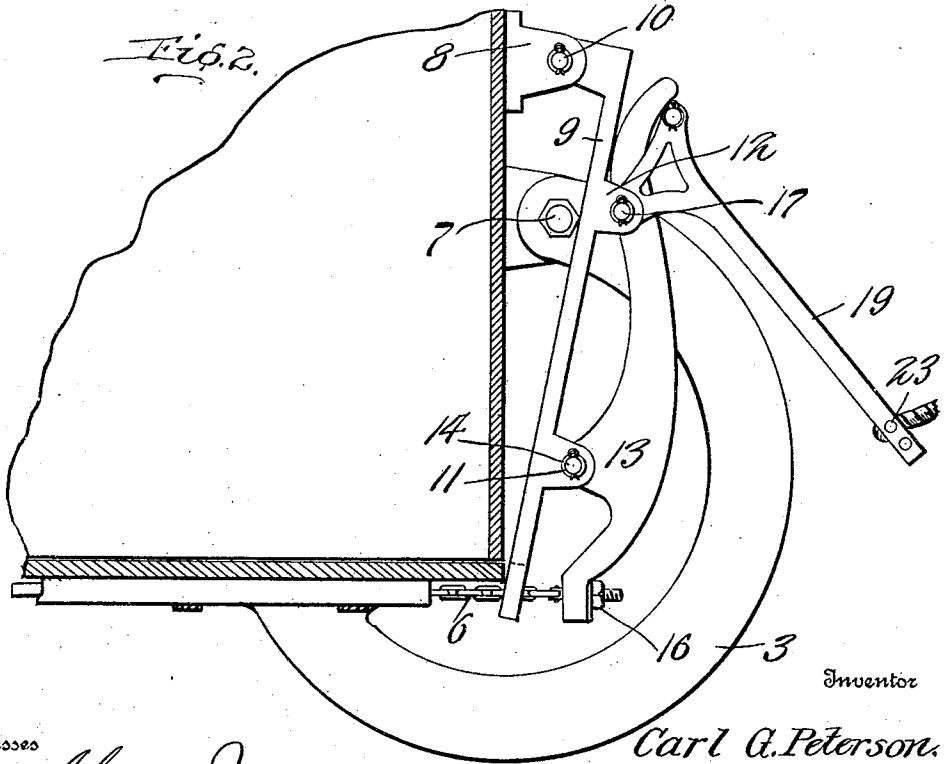


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

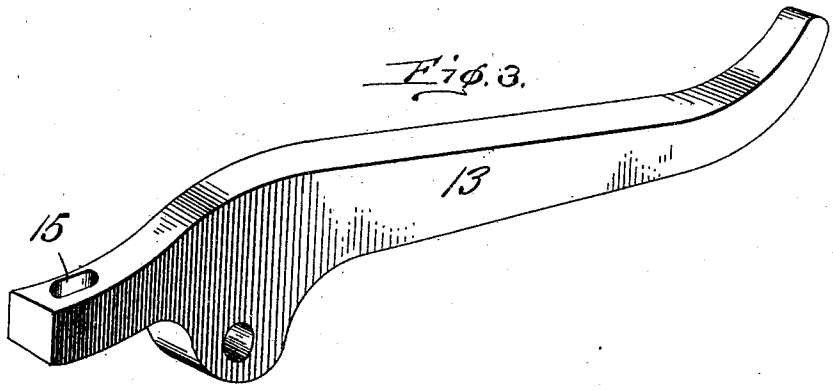


Fig. 4.

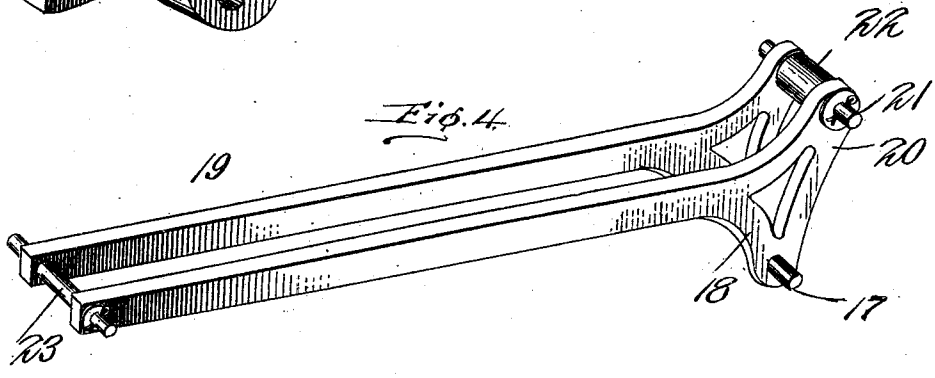
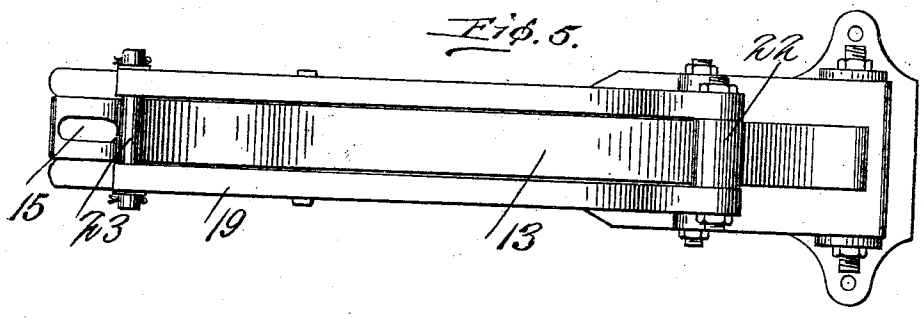


Fig. 5.



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UNITED STATES PATENT OFFICE.

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LATCH-OPERATING DEVICE.

No. 930,222. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed September 30, 1908. Serial No. 455,572.

To all whom it may concern:

Be it known that I, CARL G. PETERSON, a citizen of the United States, residing at West Duluth, in the county of St. Louis and State of Minnesota, have invented new and useful Improvements in Latch-Operating Devices, of which the following is a specification.

This invention relates to latch operating devices, primarily intended for use in connection with "dippers" or earth excavating buckets, and the object of the invention is to provide an attachment whereby a great amount of leverage is obtained in operating the latch and whereby the danger of the latch sticking or refusing to operate is entirely obviated.

With these objects in view the invention resides in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a partial sectional view of an excavating dipper showing the improvement in applied position thereon, the latch being closed to secure the door of the dipper. Fig. 2 is a similar view, the operating device being illustrated in a position for withdrawing the latch. Fig. 3 is a perspective view of the releasing arm. Fig. 4 is a similar view of the operating yoke. Fig. 5 is a top plan view of the operating device removed from the dipper.

In the accompanying drawings the numeral 1 indicates the excavating dipper; 2, the door; 3, the hinge for the door; 4, the latch casing secured to the door; 5, the latch and 6 the chain secured to the latch. The hinge 3 is of the usual circular formation and is hinged to the rear portion of the dipper as at 7, and whereby the door is given a swing away from the dipper when the latch is operated to release the door.

Secured to the rear face of the dipper 1, above the pivot 7 are the ears 8, adapted to receive an upper inwardly projecting portion of a fulcrum bar 9. The fulcrum bar 9 is pivotally secured between the ears 8, as indicated by the numeral 10, and the bar is adapted to extend downwardly and have its lower portion bifurcated so as to clear the chain 6 of the latch bar 5. The fulcrum bar 9 has its outer face provided with a pair of spaced projecting ears 11 and 12. The ears 11 are positioned near the lower portion of the fulcrum bar and are adapted for the reception of an offset portion of a releasing member. This releasing member 13 is pivotally connected with the ears 11 as indicated by the numeral 14, and has its outer face preferably rounded as clearly indicated by the figures of the drawings and its lower portion provided with a slot 15 adapted for the reception of the chain 6.

The chain 6 may be provided with a threaded extending member adapted to be inserted within the opening 15 and to be secured thereto through the medium of a suitable nut 16. The upper ears 12 of the fulcrum bar 9 are adapted for pivotal engagement with trunnions 17 provided upon the offset portions 18 of a yoke shaped operating member 19. As illustrated in Fig. 4 of the drawings, this operating member 19 comprises a pair of sections suitably spaced apart and provided with an offset portion 20, opposite the offset portions 18, and this projection 20 is adapted for the reception of a shaft 21 which also receives a roller 22 positioned between the members of the yoke and adapted for a purpose hereinafter to be described.

The lower portion of the members comprising the yoke 19 may be provided with a spacing bar 23, which is also adapted for the reception of a rope or cable 24, by which the yoke 19 is rotated upon its trunnions 17. The members comprising the yoke 19 are spaced a distance slightly greater than the width of the releasing member 13, and the roller 22 is adapted to engage with the rounded outer face of the said releasing member.

By the construction of elements above described, it will be noted that when the flexible element 24 is pulled to release the latch 5, the operating yoke 19 will be swung outwardly causing the roller 22 to travel upon the outer face of the releasing member 13, thus causing this member to swing upon its pivot 14 and drawing the lower portion thereof outwardly to act upon the chain 6 and withdraw the latch 5. As the door 2 swings downwardly upon its hinge 3, the members comprising the operating device will also swing outwardly from the pivot 10, thus entirely escaping the door, and at the same time return themselves to operative position when the door is swung closed.

From the above description, taken in connection with the accompanying drawings it will be noted that I have provided an extremely simple and effective device for op-

erating the latches of doors upon excavating dippers or the like, one which may be readily and easily applied, one in which the parts are interchangeable so that the device may be easily repaired should accidents occur, and one which requires the minimum of physical amount of exertion to operate.

While I have illustrated and described the preferred embodiment of the invention, as it now appears to me, it is to be understood that minor details of construction, within the scope of the following claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the device.

Having thus fully described the invention what is claimed as new is:

The combination with an excavating dipper having a door hingedly connected therewith, and a sliding latch for normally securing the door in closed position, of a latch operating device, said device comprising a fulcrum bar pivotally connected with the dipper, a releasing bar hingedly secured to the fulcrum bar near its lower end and having a flexible connection with the sliding latch, and an operating yoke pivotally connected with the fulcrum bar near its upper end, said yoke being provided with a roller adapted to be brought in contact with the outer face of the releasing member when the yoke is swung to press the upper portion of the releasing member inwardly and to draw the latch outwardly to release the same.

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

CARL G. PETERSON.

Witnesses:
D. E. SEASHORE,
J. E. WESTERLUND.