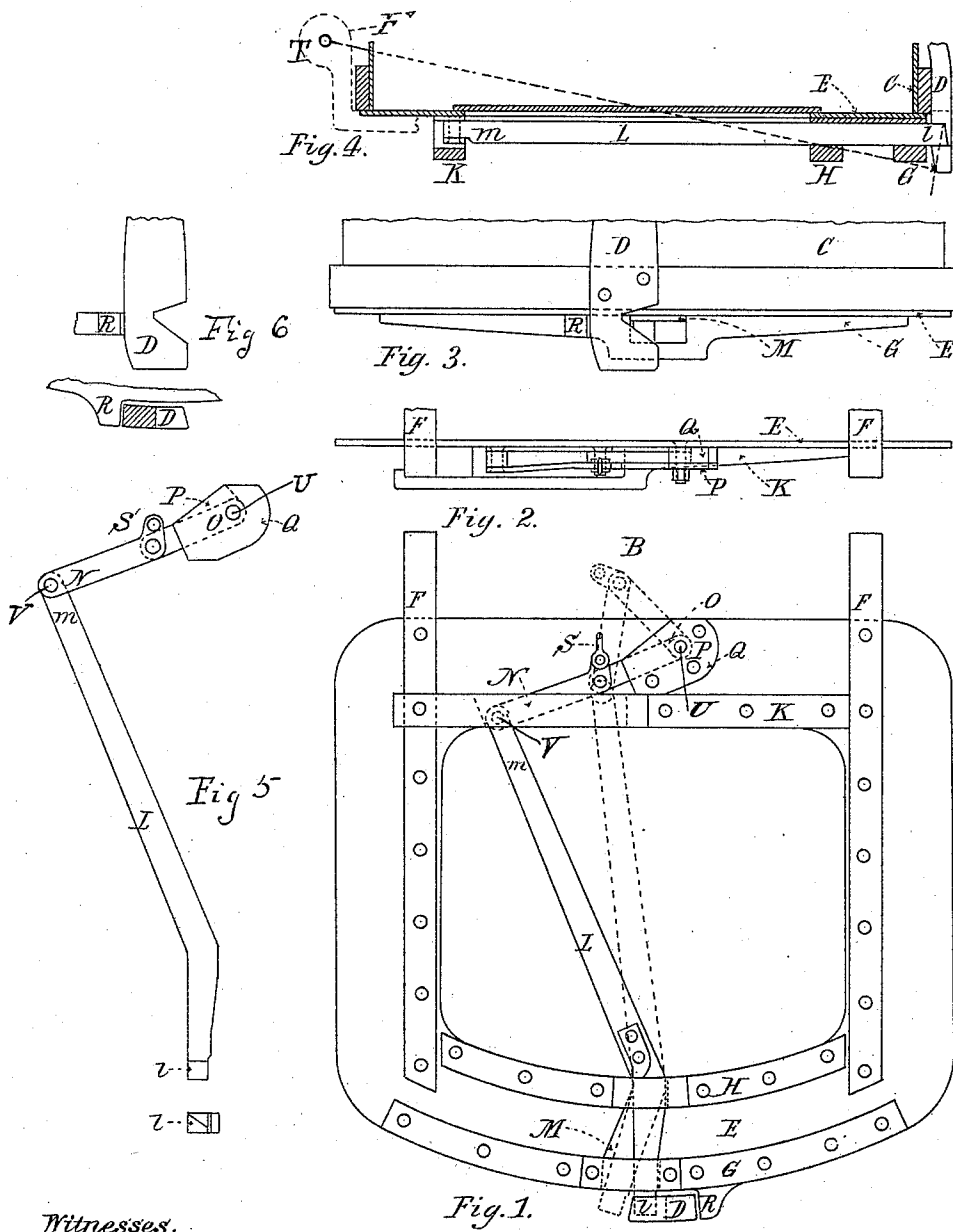


(No Model.)

W. J. SPROULE.
LATCH FOR BUCKET DOORS.

No. 465,002.

Patented Dec. 15, 1891.



Witnesses.

Wm. L. Scott

Inventor.

W. J. Sproule

UNITED STATES PATENT OFFICE.

WILLIAM J. SPROULE, OF MONTREAL, CANADA.

LATCH FOR BUCKET-DOORS.

SPECIFICATION forming part of Letters Patent No. 465,002, dated December 15, 1891.

Application filed June 8, 1891. Serial No. 395,552. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHNSTON SPROULE, civil engineer, of the city of Montreal, Province of Quebec, Canada, and a citizen of Canada, have invented a new and useful Latch for Bucket-Doors, of which the following is a specification.

My invention relates to improvements in opening the doors of buckets in order to empty their contents; and the objects of the improvements are to minimize the effort required to open said doors and to reduce the friction on the working parts, thereby increasing their efficiency and durability. These objects are attained by the mechanism illustrated in the following drawings, in which—

Figure 1 represents an underneath view of the door of a dredge-bucket fitted with the improved latch; Fig. 2, a part front elevation; Fig. 3, a part back view, and Fig. 4 a section on the line A B. Figs. 5 and 6 represent details of the construction of the latch.

C is the body of the bucket; D, the keeper fastened rigidly to the bucket; E, the door-plate; F, the door-hinges, pivoted at the center of motion indicated by T, Fig. 4, at the back of the bucket; G H K, straps to stiffen the door-plate and to support the latch; L, the latch or bolt; M, a wearing-piece under the latch; N O, the toggle-bars pivotally attached, respectively, to the latch at V and by a bolt U to the door-plate and the covering-plate P.

Q is a distance-block to support the plate P and the toggle-bar O; R, a projecting block on the strap G; S, a shackle for the attachment of a dumping rod or chain.

The uses and manner of action of the several parts are as follows: As the bucket is be-

ing lowered and the door is closing, the end *l* 40 of the latch L in revolving around the hinge-pivot T comes in contact with the sloping surface of the keeper D, and is driven endwise backward until the door is shut, when the latch falls endwise into the keeper, thus securing the door in its closed position. The 45 projecting block R serves to guide and retain it in its proper position when shut by bearing against the back of the keeper D. To open the door, tension is applied through the dump- 50 ing rod or chain to the shackle S in the direction A to B. As soon as the middle pivot of the toggle-joint is drawn from its locked position past the center line from V to U, the end *m* of the latch is released and the end *l* 55 immediately slides off the inclined surface of the keeper, thus allowing the door to open, while the end *m* travels toward U and the latch and toggle assume the position indicated by the dotted lines. From this position, 60 when the dumping rod or chain is slackened, the latch and toggle fall back into the position in which the latch is again ready to engage with the keeper when the door is closed.

What I claim as my invention, and desire 65 to secure by Letters Patent, is—

1. The latch, substantially of the form and for the uses set forth, in combination with the keeper, toggle-joint, and projecting block.

2. The inclined keeper, in combination with 70 the latch, toggle, and projecting block, substantially as and for the uses set forth.

Montreal, May 30, 1891.

W. J. SPROULE.

Witnesses:

JOHN KENNEDY,
WM. L. SCOTT.