Switch Lock

116416

A.W. Cram

*and*

W.B. Dunbar.

PATENTED JUN 27 1871

Fig. 1.

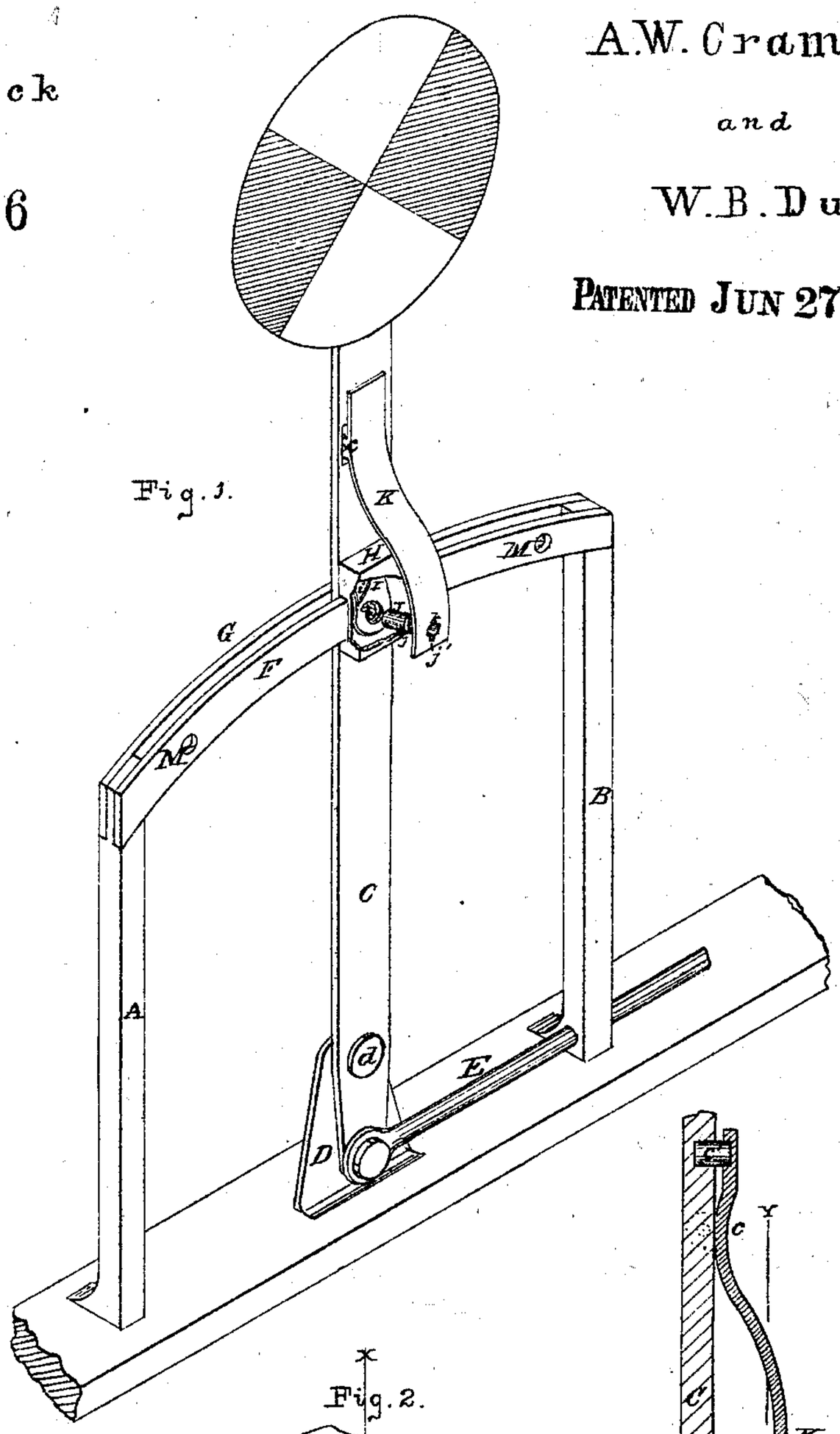



Fig. 2.

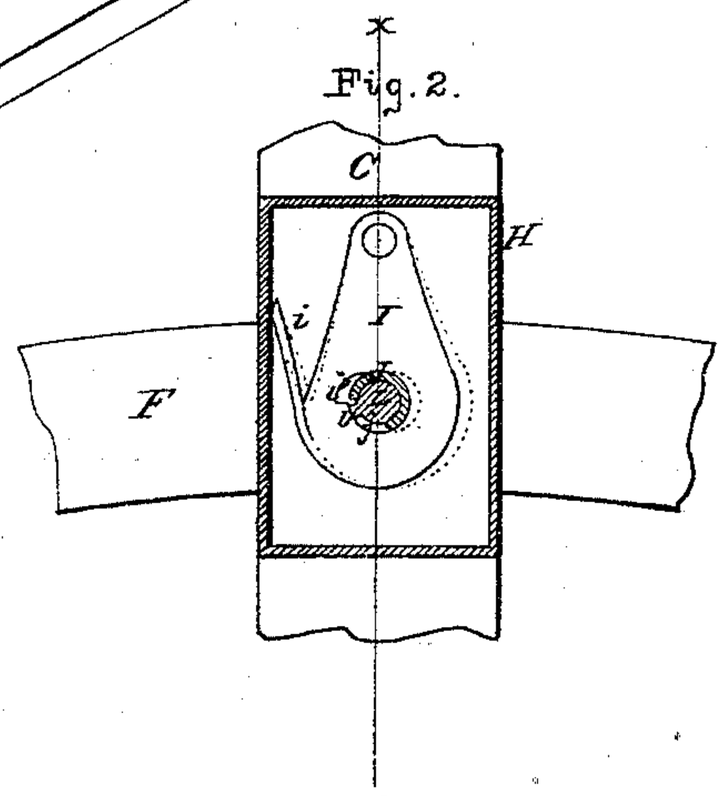
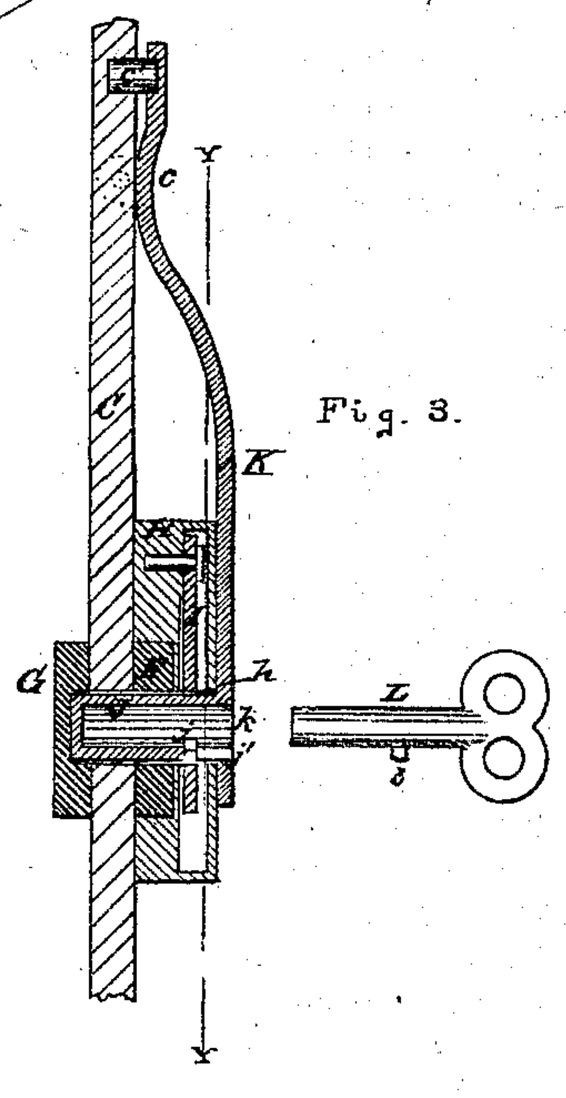



Fig. 3.




Attest

H. C. Elliott

H. Allen

Inventors

Alonzo W. Cram.

William B. Dunbar

By Knight Bros. Attorneys.

# UNITED STATES PATENT OFFICE.

ALONZO W. CRAM, OF ST. LOUIS, MISSOURI, AND WILLIAM B. DUNBAR, OF CHICAGO, ILLINOIS, ASSIGNORS TO ALONZO W. CRAM.

## IMPROVEMENT IN SWITCH-LOCKS.

Specification forming part of Letters Patent No. 116,416, dated June 27, 1871.

*To all whom it may concern:*

Be it known that we, ALONZO W. CRAM, of the city and county of St. Louis and State of Missouri, and WILLIAM B. DUNBAR, of Chicago, in the county of Cook and State of Illinois, have invented a certain Lock for Railroad Switches, of which the following is a specification:

Our invention consists of a lock which is self-engaging on the switch-lever, being brought to either of its several positions by means of a bolt attached to the lever of the switch by a spring-lever, and passing through the switch-lever and one or more of the guide-bars. The spring-bolt is tubular to admit the key, by which one or more spring-tumblers are thrown back, to allow the retraction of the locking-bolt to free the switch-lever.

Figure 1 is a perspective view of our improvement, the locking-bolt being shown drawn out to permit the movement of the switch-lever, and a portion of the face-plate of the lock being broken away to show the spring-tumbler. Fig. 2 is a section transverse to the locking-bolt at the line Y Y, Fig. 3, the key being inserted in the lock and turned so as to force the tumbler from any engagement with the locking-bolt, to permit the withdrawal of the latter. Fig. 3 is a section at right angles to Fig. 2 and at the line X X, showing also a side view of the key.

A and B are standards of the guide-frame of the switch or signal-lever C. The lever C is fulcrumed, *d*, in a standard, D, and to its lower end is pivoted the rod E, through which the railroad switch is moved when the lever C is swung to the right or left. F and G are curved bars, forming guides to the levers C. H is the outer plate of a lock attached to the lever C, having a round hole, *h*, to admit the locking-bolt. I is a tumbler within the lock, the said tumbler being pivoted to the plate, and having a spring, *i*, by which it is made to engage with the locking-bolt J, which passes through a hole, *i'*, in the tumbler. The locking-bolt is tubular, its inner end being closed, and is attached by the open end to a spring-lever, K, which has a key-hole, *k*, opposite to the cavity of the locking-bolt. The spring-lever is hinged at *c* to the lever C, and has beneath its upper end a rubber or other spring, *c'*, to force the locking-bolt inward. The key L has a stud, *l*, which travels, on entering a longitudinal slot, *j*, in the side of the locking-bolt, and enters and turns in the slot *j*, which serves to receive the tumbler to prevent the retraction of the bolt. The key in turning forces the tumbler from the slot *j* and allows the bolt to be drawn out. M are holes extending through the guide-bar F, and partly or wholly through the guide-bar G, and serving to receive the end of the lock-bolt to hold the lever in position.

The operation of the lock is as follows: Supposing the lever C to be secured in position by the bolt passing through the lever and guide-bars, the key is inserted, and its stud *l*, passing along the slot *j'*, enters the slot *j*, and, being turned to the right, the stud forces the edge of the hole *i'* of the tumbler from the slot *j* and frees the bolt, which may then be drawn outward, and the lever C is free to swing over to the right or left. The spring-bolt, on being released and brought by the moving of the lever C in conjunction with either of the holes M, will enter the latter, owing to the action of the spring *c'*, under the heel of the bolt-lever K. The tumbler will then engage the bolt and hold it in until released by the proper key. The tumblers may be increased to any desired number, and may enter the same or different slots *j*. The entering end of the bolt is beveled so as to force aside the tumbler in entering, and to pass through the hole *i'*.

We claim—

1. The tubular bolt J *j j'*, spring-tumbler or tumblers I *i i'*, and spring-lever K *c c'*, substantially as and for the purpose described.

2. The combination and arrangement of the guide-bars F G, bolt J, tumbler I, and spring-lever K with the switch-operating lever C, all substantially as described.

In testimony of which invention we hereunto set our hands.

ALONZO W. CRAM.
WILLIAM B. DUNBAR.

Witnesses as to CRAM:
SAML. KNIGHT,
B. C. BEARDSLEY.
Witnesses as to DUNBAR:
JONAS HUTCHINSON,
GILMORE C. WILLIAMS.