

(No Model.)

A. F. MARTEL.

SWITCH SIGNAL.

No. 385,363.

Patented July 3, 1888.

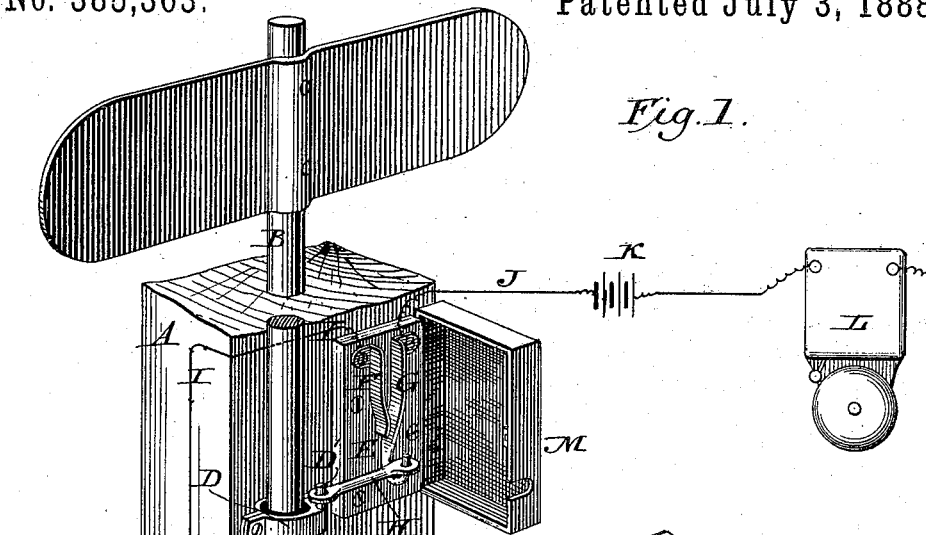


Fig. 1.

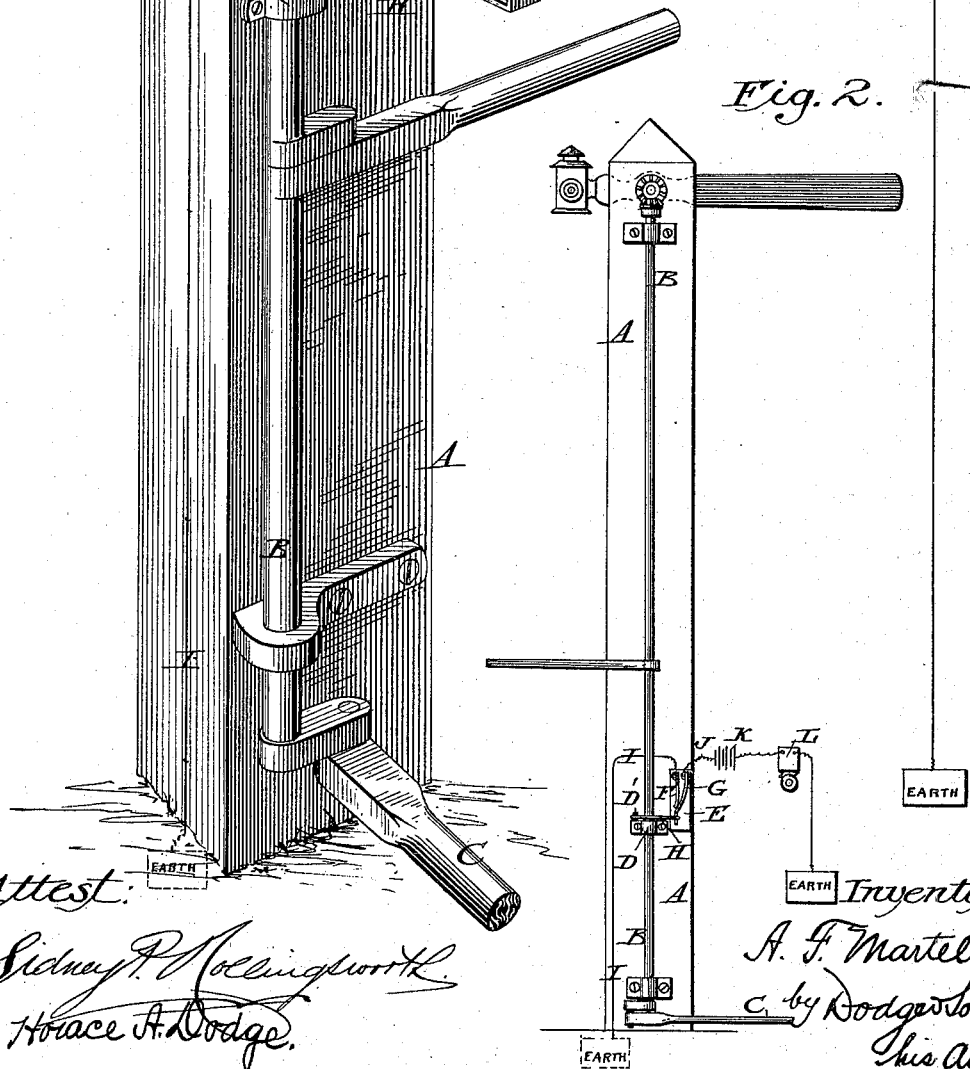


Fig. 2.

Attest:

*Sidney P. Mellingworth.*  
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Inventor.  
*A. F. Martel,*  
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*This Atty*

# UNITED STATES PATENT OFFICE.

ADELARD FRANCIS MARTEL, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR  
OF THREE-FOURTHS TO JEAN BAPTISTE AMEDE MONGENAIS, OF RIGAUD,  
AND TOUSSAINT BROUSSEAU AND MARIE M. PHILOMIENE CRAIG, BOTH  
OF MONTREAL, QUEBEC, CANADA.

## SWITCH-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 385,363, dated July 3, 1888.

Application filed October 22, 1887. Serial No. 253,101. (No model.)

*To all whom it may concern:*

Be it known that I, ADELARD FRANCIS MARTEL, of Montreal, in the county of Hochelaga and Province of Quebec, Canada, have  
5 invented certain new and useful Improvements in Switch-Signals, of which the following is a specification.

My invention relates to that class of signals known as "switch-signals;" and it consists in a  
10 novel construction and arrangement of devices whereby a bell or other signal shall be sounded so long as the switch shall remain open.

In the drawings, Figure 1 is a perspective view of a portion of a switch-stand and switch,  
15 showing my invention applied thereto; and Fig. 2, a face view of a semaphore provided with my improvements.

The object of this invention is to provide a cheap, simple, and efficient attachment for  
20 switches and semaphores, and one that may be readily applied to the various switch-stands and semaphores now in use.

A indicates a post or upright, upon which is journaled the upright shaft B, which is connected by means of a connecting-rod, C, with  
25 the switch, as is usual. The means employed for rocking or turning the shaft B to open and close the switch may be varied as desired, and it is also obvious that the construction of the  
30 switch proper and the devices connecting it with shaft B are matters that may be varied without departing from the spirit of my invention.

Secured upon the shaft B is a collar, D, which will preferably be made in two parts  
35 and bolted or otherwise secured to the shaft, the said collar being provided with a pin or lug, D', as shown in Fig. 1. Instead of making the collar in two parts, it may be made as  
40 a single casting and slipped on the shaft from one end and secured thereto in any suitable manner. I prefer, however, to make the collar separable, as it enables me to apply it to  
45 switches and signals now in use without dismantling them.

E indicates a block having two metallic spring-arms, F and G, the said arms being free at one end and electrically insulated from each other. One of the arms, G, is pivotally

attached to one end of a link or bar, H, which  
50 latter is in turn connected at its opposite end with the pin D' of the collar D, as clearly shown in Fig. 1. Extending from arm F is a wire or conductor, I, which connects with the earth at or near the foot of the post, while a wire,  
55 J, extends from arm G to a point at any suitable distance from the switch or signal, where it is provided with a battery, K, and bell L, and suitable earth-connection.

Now, it will be seen that as soon as the shaft  
60 B is rocked or turned sufficiently to open the switch, even to the slightest degree, the shaft, acting through pin D' and link H, will draw the arm G toward the shaft into contact with  
65 arm F, thereby establishing or completing the electrical circuit and causing the alarm or bell L to ring. Just as long as the arms F and G remain in contact the bell will continue to ring, thereby showing that the switch has not  
70 been closed. When the shaft is rocked or turned to close the switch, the link H carries the arm G away from or out of contact with the arm F, thereby breaking the circuit and stopping the ringing of the bell.

It will be advisable to place within the collar  
75 D where it encircles the shaft B a ring of rubber or equivalent insulating material.

It is apparent that instead of using a ground-circuit a complete line or wire circuit may be employed, if found desirable.  
80

The block or plate E may be made of wood or metal; but when made of the latter material the arms F and G should be properly insulated therefrom.

In order to prevent injury to the arms F G,  
85 they will advisably be covered or protected by a box or cover, M, as shown in Fig. 1, which may be hinged to the base-plate E and locked in position.

From the foregoing it will be seen that the  
90 plate E, with the circuit-closer attached thereto, may be readily applied to the posts of any of the switches or signals now in use. After the plate, with attendant devices, is secured to the post, it is only necessary to make  
95 a connection between the shaft and the arm G, which can be done easily and without much expense.

Where metallic switch-stands are employed, there are usually no upwardly-projecting posts to which to secure or attach the plate E, and in such case the collar D would be applied near the lower end of the shaft and the plate E, with attendant parts, secured to the metallic frame of the switch-stand opposite the collar.

In Fig. 2 the invention is shown applied to a semaphore; but, as the operation is precisely the same as with the switch, no further or detail description is deemed necessary.

I am aware of the patents to Gary, No. 266,027, and Brown, No. 368,066, in which the generation or completion of the circuit and the exhibition of a signal are dependent solely upon the train, and such arrangements I hereby disclaim.

I am further aware of the patent to Hall, No. 62,414, in which the switch-rail is caused to actuate the circuit-closer, and such an arrangement I also disclaim. An advantage of my construction lies in the fact that an alarm will be sounded and the target or semaphore-arm, as the case may be, will be displayed even though, as before stated, the shaft B be turned or rotated to the slightest degree. Inasmuch as the contact-arms F G are placed so near together as to almost touch, it will of course follow that if the switch be opened, say, a quarter of an inch, the arm G, being connected directly with and operated positively by the shaft B, will by the slight rotation of the latter be brought into contact with the arm F, and the circuit thereby completed through the arms F and G. This result is accomplished without the aid of the train, as I do not wish to depend upon the generation of a current or completion of the circuit for each separate train by the action or travel of the latter. The construction herein shown and described indicates the position of the switch

by visual or audible signals, or both, whether or not there is a train upon the track, thereby enabling the condition of the track to be ascertained before starting the train. Such result is not attainable under the Gary and Brown constructions, to which I have heretofore referred.

Having thus described my invention, what I claim is—

1. In combination with post A and shaft B, a collar, D, provided with pin D' and secured to the shaft, contact-arms F G, mounted upon the post or a plate thereon and included in an electric circuit, a link, H, connected at opposite ends with the pin D' and arm G, and a bell or signal also located in the circuit.

2. In combination with post A, a shaft, B, provided with a two-part collar, D, having a pin, D', an electrical circuit, contact-arms F and G, secured to the post and included in the circuit, a link connecting the pin D' and the arm G, and a bell or signal included in the circuit.

3. In combination with a switch stand and its operating-shaft, the devices herein described for electrically indicating whether the switch is open or closed, comprising a plate with suitable contact-fingers, a collar provided with a pin or stud and secured to the operating-shaft, a link connecting the pin or stud with one of the contact-arms, wires I and J, connected with the contact-arms and with the earth, and a battery and an alarm or signal also included in the circuit formed by the wires and the contact-fingers.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ADELARD FRANCIS MARTEL.

Witnesses:

WALTER S. DODGE,  
ANDREW PARKER.