(No Model.)

F. W. OSTROM.

SWITCH CAM AND FOLLOWER.

No. 303,317. Patented Aug. 12, 1884.

Fig. 1.

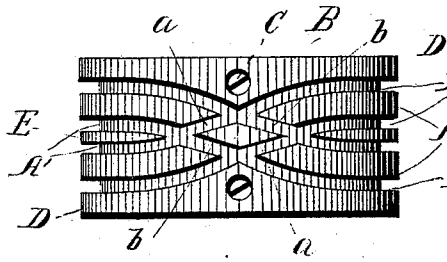


Fig. 2.

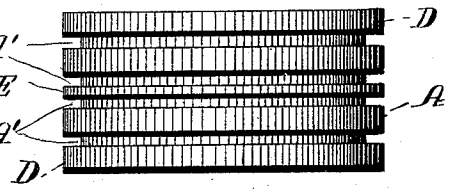


Fig. 3.

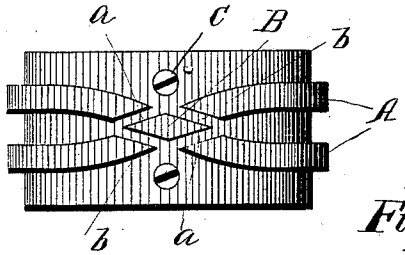


Fig. 4.

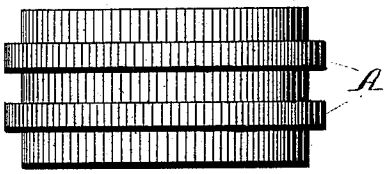


Fig. 6.

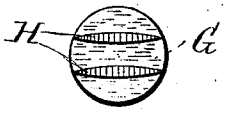


Fig. 5.

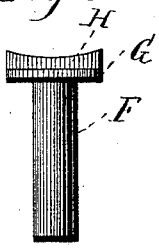


Fig. 8.

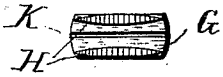
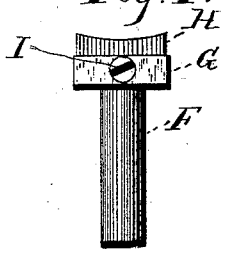


Fig. 7.



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UNITED STATES PATENT OFFICE.

FREELAND W. OSTROM, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE WHEELER & WILSON MANUFACTURING COMPANY, OF SAME PLACE.

SWITCH-CAM AND FOLLOWER.

SPECIFICATION forming part of Letters Patent No. 303,317, dated August 12, 1884.

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

To all whom it may concern:

Be it known that I, FREELAND W. OSTROM, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Switch-Cams and Followers; 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.

My invention relates to switch-cams and followers; and has for its object to produce a device which shall be simple and economical in construction, in which the amount of wear shall be reduced to the minimum, and which shall be so constructed that the reverse movement of the follower must take place with absolute certainty, while at the same time the points of the follower can, under no circumstances, come in contact with any of the points upon the threads or the frog.

With these ends in view my invention consists in a double follower so constructed as to ride upon—*i. e.*, straddle—a ridge or spline instead of traveling in a groove as heretofore.

My invention also consists in a switch-cam having ridges or splines instead of grooves for the follower, and a frog of suitable construction at the intersection of the splines.

In order that others may understand and use my improved device, I will proceed to describe the same, referring by letters to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my preferred form of switch-cam, showing the frog. Fig. 2 is a plan view of the opposite side of the cam. Fig. 3 is a plan view of a modified form of cam in position similar to Fig. 1. Fig. 4 is a reverse plan view of the modification. Fig. 5 is an elevation, and Fig. 6 a bottom plan view, of one form of follower; and Fig. 7 is an elevation, and Fig. 8 a bottom plan view, of a follower so constructed that it may be adjusted to compensate for wear.

Similar letters indicate like parts in all the figures.

A represents the spline upon which the follower rides, and B is a frog placed at the intersection of the splines. This frog is preferably diamond-shaped, and its opposite parallel sides conform, substantially, to the side lines of the splines, ample space being left between the frog and the ends of the splines to permit the passage of the wings of the follower.

C C are set-screws by which the cam is attached to the shaft.

The modified form of cam shown in Figs. 3 and 4 varies from the preferred form only in that the wings of the follower do not run in grooves, (see A′ in Figs. 1 and 2,) but all the superfluous metal is cut away from the face of the cam—as, for instance, the ridges or strips D, which lie between the outer grooves, A′, and the edge of the cam, and also the strip or ridge E, which separates the inner grooves, A′, from each other.

In Figs. 3 and 4 splines A, upon which the follower rides, stand out from the face of the cam, the only grooves about the cam being the spaces between the ends of the splines and the frog.

In practice, the form illustrated in Figs. 1 and 2 is deemed preferable; but the ridges or strips D and E, and consequent grooves A′, are not of the essence of my invention, the broad idea of which consists in avoiding the use of grooves, in using a frog, and in using a double follower, which rides on or straddles suitably-constructed splines, and also the frog.

The follower consists of a shank, F, of ordinary construction, having a head, G, from which project two wings, H, which in use lie on opposite sides of the spline.

The follower illustrated in Figs. 5 and 6 is exceedingly simple in construction. The blank may be made upon a screw-machine and the head milled down to form the wings, between which an open space is left in which the spline works.

The follower illustrated in Figs. 1 and 8 is substantially like the other one, except that the head is made thicker and is cut through longitudinally between the wings, as shown at K in Fig. 8. A set-screw, I, draws the two parts of the head, and necessarily the wings, near together, thus providing an adjustment to compensate for wear in use. The wings are preferably made thicker in the middle, with

the sides curving slightly, as shown, so that it will be impossible for the follower to come violently in contact with any of the angles of the splines or the frog, as the bearing of the follower thereon is only at the middle or thickest portion, the points of the wings never coming in contact with either splines or frog.

The operation of my invention is as follows: Suppose the follower to be upon the upper spline, A, in Figs. 2 and 4, and the cam rotating from left to right. As the rotation of the cam proceeds and it approaches the position shown in Figs. 1 and 3, the follower will follow the curve in spline A onto and across the frog, and then onto the lower spline. While crossing the frog the wings of the follower will lie in the grooves *a a*. After the follower has passed onto the lower spline, as the rotation continues, it remains on the lower spline until the revolution is completed, then following the curve it again passes onto and across the frog, and onto the upper spline again. While passing across the frog the second time, the wings of the follower lie in the grooves *b b*. (See Figs. 1 and 3.)

Having thus described my invention, I claim—

1. A switch-cam having splines upon which the follower rides, and a frog or frogs at the intersection of the splines, as described, and for the purpose set forth.

2. A switch-cam having splines upon which the follower rides, grooves both sides of the splines, and a frog or frogs at the intersection thereof, substantially as described.

3. A follower for switch-cams, having wings upon the head thereof, with an open space between them, as described, and for the purpose set forth.

4. A follower for switch-cams, having two wings upon the head thereof, and a longitudinal cut between the wings, whereby the wings are made adjustable by a set-screw to compensate for wear.

5. A switch-cam having splines upon which the follower rides, and a frog or frogs at the intersection thereof, in combination with a follower having wings upon its head, which bear upon opposite sides of the spline.

6. A switch-cam having splines A, one or more frogs, B, and grooves A′, *a*, and *b*, in combination with a follower having shank F and head G, with wings H, as described, and for the purpose set forth.

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

FREELAND W. OSTROM.

Witnesses:
A. M. WOOSTER,
A. B. FAIRCHILD.