(No Model.)

J. G. KIRKER.

CAM.

No. 413,523. Patented Oct. 22, 1889.

Fig I.

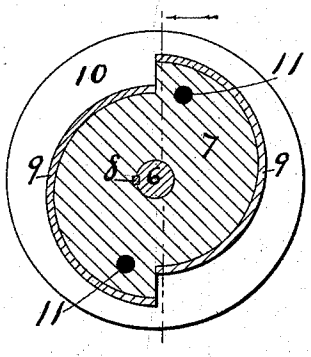


Fig II.

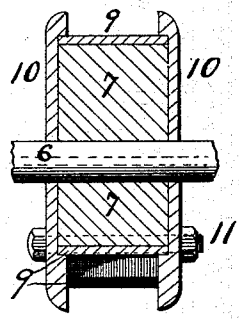


Fig III.

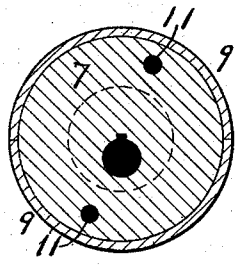
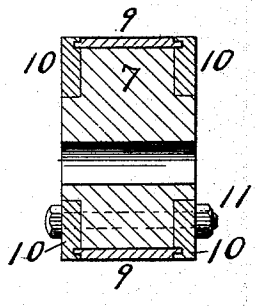


Fig IV.



WITNESSES

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CAM.

SPECIFICATION forming part of Letters Patent No. 413,523, dated October 22, 1889.

Application filed July 29, 1889. Serial No. 319,028. (No model.)

To all whom it may concern:

Be it known that I, JABEZ G. KIRKER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Cams; 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.

This invention relates to that class of cams which are fixed upon shafts to revolve therewith in rubbing contact with a lever or other part or piece acted upon thereby; and its object is, first, to reduce the friction due to such rubbing, and, second, to provide means whereby the wearing-surface may be readily renewed without the expense of a new cam when the old one becomes worn beyond profitable service.

To this end my invention consists in the construction and combination of parts forming and holding a shoe for cams, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure I represents a vertical section of one of my cams transverse to the shaft. Fig. II is a section of the same longitudinal with the shaft. Fig. III is a transverse section, and Fig. IV is a longitudinal section, of a modification of the same.

6 represents the shaft, upon which a cam 7, of any desired form of body, is secured in any usual manner—such, for example, as by the key 8.

9 represents the wearing-surface, which is the subject of this invention. It consists of one or more shoes removably fitted to cover that portion of the surface of the cam which is subjected to wear and secured thereon by means of collars 10, which are fitted upon the shaft and recessed in their adjacent faces to receive the ends of the cam and the shoes, and are so held by means of screw-bolts 11, by which means the cam, the shoes covering it, and the collars become one piece in service. The cams and collars are usually made of cast iron or steel in order that they may endure the severe usage to which they are subjected; but the shoes may be made of anti-friction metal to reduce the wear. The anti-friction metals commonly used for analogous purposes are not strong enough to make the whole cam of, and if they were their extra cost per pound would be objectionable, so I only cover the wearing-surface of the cam with anti-friction metal, and by securing such shoes with the recessed collars, as shown, I am enabled, first, to hold them rigidly in their place while they are under severe strain in service, and, second, by loosening the collars and slipping one along the shaft away from the cam the old shoes are set free to be removed and new ones may be substituted. This may be done without taking down the shafting, and it requires but a few minutes' stoppage of the machinery.

In Figs. III and IV the shoe is shown as having annular hubs to project into the collars, in order that the collars may be made flush with the face of the cam, as would be required in some cases, instead of projecting like a flange, as shown in Figs. I and II. They further show that the collars need not fit upon the shaft, but may depend wholly upon the cam to which they are bolted.

There are many mechanical devices not properly called "cams," but having surfaces exposed to wear in a manner analogous to the cams hereinbefore described, to all of which my wearing-surfaces or shoes may be readily applied by the skilled mechanic, the form of the cam and the thickness of the shoe in its various parts being only a matter of adaptation to the service required.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

A cam having a shoe or shoes removably fitted to rest upon its body as a wearing-surface therefor, and collars recessed to receive the edges of the said shoes and rigidly yet removably bound to the body, substantially as shown and described.

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

JABEZ G. KIRKER.

Witnesses:
JAMES M. KIRKER,
J. B. GWATHMEY.