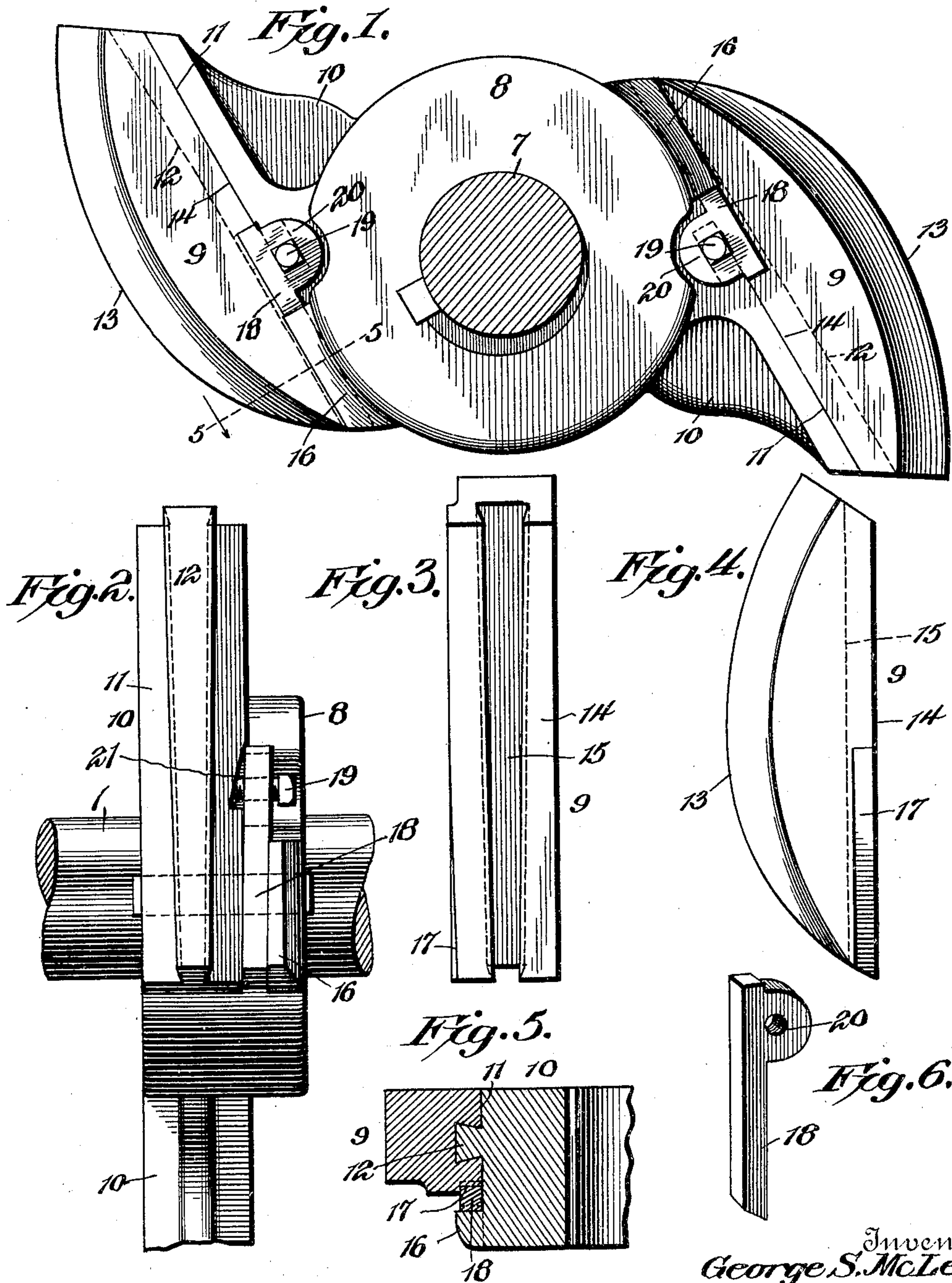


No. 791,043.

PATENTED MAY 30, 1905.

G. S. McLEOD.  
CAM.

APPLICATION FILED FEB. 17, 1904.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## CAM.

SPECIFICATION forming part of Letters Patent No. 791,043, dated May 30, 1905.

Application filed February 17, 1904. Serial No. 193,982.

*To all whom it may concern:*

Be it known that I, GEORGE STUARD McLEOD, a subject of the King of Great Britain, residing at Philipsburg, in the county of Granite and State of Montana, have invented a new and useful Cam, of which the following is a specification.

This invention relates more particularly to cams employed in stamp-mills, though useful, perhaps, in machines of various types and kinds.

The object is to provide a device of this character with a shoe which can be removed and replaced without disturbing the other elements of the mechanism and to provide novel means for securely fastening the said shoe in place, so that it will not be accidentally detached or deranged, being, however, easily removable by the operator for the purpose of repair or renewal.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of a cam. Fig. 2 is an end elevation of the hub member, showing the holding-key thereon. Fig. 3 is a rear elevation of the shoe. Fig. 4 is a side elevation of the same. Fig. 5 is a detail sectional view taken on the line 5 5 of Fig. 1. Fig. 6 is a detail perspective view of the retaining-key.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

In the embodiment illustrated the usual cam-shaft is shown and designated 7. Mounted thereon is a cam comprising a hub member 8 and shoe members 9. The hub member 8 is suitably keyed to the shaft and is provided on diametrically opposite sides with outstanding ears 10, having flattened outer faces 11. Projecting from these outer faces are longitudinally-disposed continuous ribs 12, extending the entire lengths of the ears, preferably tapered and continuously dovetailed, as will be evident by reference to Fig. 2. Each of the shoe members 9 has an outer curved face 13 and an inner flat face 14, adapted to rest against the face 11 of the ear. This shoe is provided in its inner side with a longitudinally-disposed

seat or recess 15, extending the entire length thereof, being continuously dovetailed and tapered to correspond with the rib 12 which it is designed to receive. It will therefore be apparent that when the shoes are slipped longitudinally upon the ears with the ribs in the recesses they will be rigidly supported throughout their lengths, and, moreover, will be rigidly secured throughout their lengths. Their movement in one direction with respect to the ears will be prevented by the tapered relation of the ribs and recesses, and for the purpose of preventing their relative movements in an opposite direction the following means has been employed: The hub member is provided at one side of each ear with an outstanding lug or projection 16, the inner side face of which constitutes a shoulder that is located at an inclination to the axis of rotation of the cam and the line of movement of the shoe when said shoe is being disengaged from the hub member. The side wall of the shoe member which is adjacent to the projection or lug is beveled to correspond to the inner side face, thereby forming a seat 17 in the shoe, the rear wall of which seat may be termed a "shoulder," coacting with but spaced from the shoulder of the lug. A key 18 is slidably engaged in the seat and bears against the inner shoulder of the lug 16. Because of the inclination of this key with respect to the line of movement of the shoe it will be apparent that it locks said shoe against said movement. The key itself is retained by a set-screw 19, threaded through an eye 20, formed upon one end of said key and having its inner end engaging in a socket 21, formed in the adjacent face of the ear, the bottom wall of this socket being preferably inclined.

A cam as thus constructed has many advantages over those made from solid casting, for the reason that if worn or damaged the shoes can be removed without disturbing the hub member, and consequently without removing the shaft from its bearings or the other cams from the shafts, an operation that often causes long and expensive delays. Further than this, the means employed for securing the shoe are worthy of note. As already shown, the shoes



are supported and fastened throughout their lengths. At the same time the key can be easily and quickly removed to permit the detachment of said shoes when desired.

5 From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood  
10 that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

15 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cam, the combination with a hub member having a flat outer face, of a shoe member  
20 having an outer curved face and an opposite flat inner face extending longitudinally of the same and substantially to the opposite ends of the curved face and adapted to rest against the face of the hub member, one of said mem-  
25 bers having a longitudinal recess in its flat face and the other member having a longitudinal rib that is arranged to engage in the recess.

2. In a cam, a hub member having an out-  
30 standing ear provided with a flat outer face, said ear also having a longitudinally-disposed outstanding rib projecting from the flat face and disposed between the side edges thereof, the rib being tapered throughout its length  
35 and continuously dovetailed, and a shoe having a curved outer face and an opposite flat inner face extending longitudinally from end to end thereof and adapted to rest against the face of the ear, the inner side of said shoe  
40 being provided with a longitudinally-disposed recess corresponding to the ear and adapted to receive the same.

3. In a cam, the combination with a hub member, of a shoe member detachably and  
45 slidably interlocked therewith, said hub member having a portion spaced from and extending longitudinally along one side of the shoe member, and a key extending longitudinally and detachably fitted in the space, said key  
50 engaging said portion and the adjacent side of the shoe member to hold the two members against disassociation.

4. In a cam, the combination with a revolvable hub member having an outstanding  
55 shoulder located at an inclination to the line

of movement of said hub member, of a shoe member detachably interlocked with the hub member and having an inclined seat, and a key detachably fitted in the seat and engaging the outstanding shoulder of the hub member. 60

5. In a cam, the combination with a revolvable member having an outstanding lug located at an inclination to the axis of movement of said member, of a shoe member detachably interlocked with the hub member  
65 and having an inclined seat in its side wall that is adjacent to but spaced from the lug, a key fitted in the seat and engaging the lug, and means for securing the key.

6. In a cam, the combination with a revolvable hub member having an outstanding ear,  
70 said ear being provided with a longitudinally-disposed dovetailed rib that is tapered, of a shoe member having a tapered dovetailed recess to receive the rib and having a seat in  
75 one of its side walls, a projection carried by the hub member and located adjacent to but spaced from the seat, a key fitted in the seat and engaging the projection, and a set-screw threaded through the key and engaging the  
80 hub member.

7. In a cam, the combination with a hub member, of a shoe member detachably associated therewith, a key for maintaining the  
85 hub and shoe members in associated relation, and a locking device engaging the key for securing said key in position.

8. In a cam, the combination with a hub member, of a shoe member detachably associated therewith, a key detachably engaging  
90 both members for maintaining the same in associated relation, and a locking device movably engaging the key for securing said key in position with respect to the members.

9. In a cam, the combination with a hub  
95 member, of a shoe member detachably associated therewith, one of said members having a socket, a key detachably engaging both members for maintaining the same in associated relation, and a set-screw threaded through the  
100 key and engaging in the socket, said screw holding the key in operative relation with respect to the members.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in  
105 the presence of two witnesses.

GEORGE STUARD McLEOD.

Witnesses:

MURDO R. McDONALD,  
CHARLES F. DONYES.