(No Model.)

P. B. MATHIASON.

CAM.

No. 332,268. Patented Dec. 15, 1885.

Fig. 1.

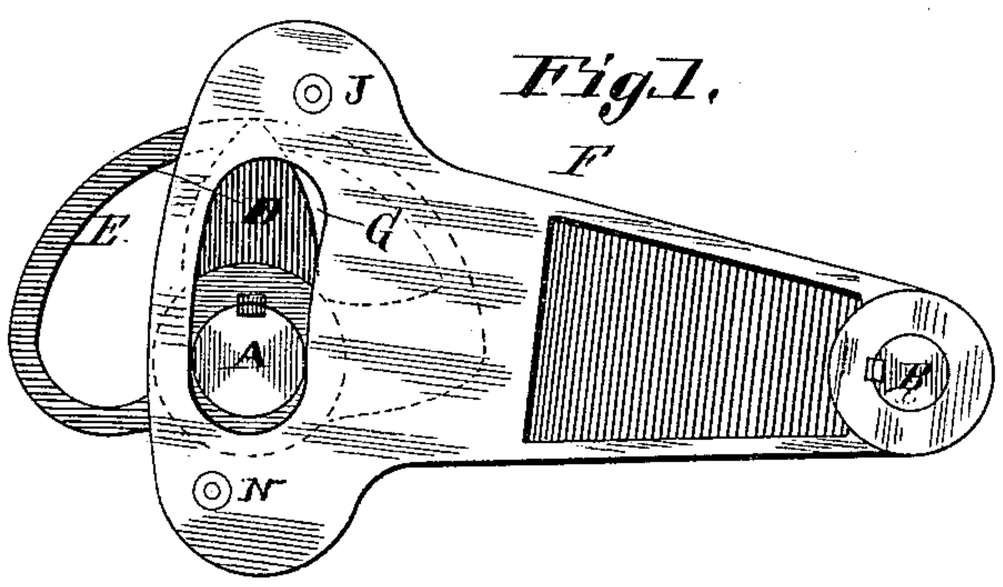


Fig. 3.

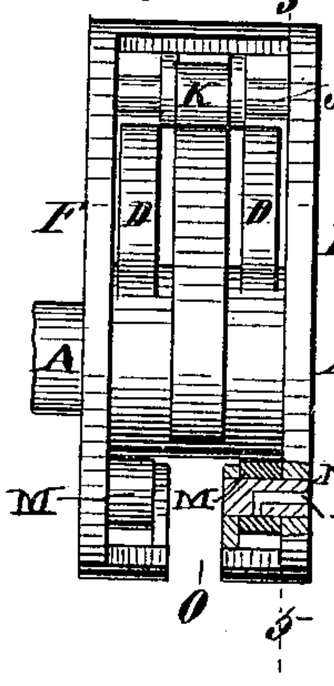


Fig. 4.

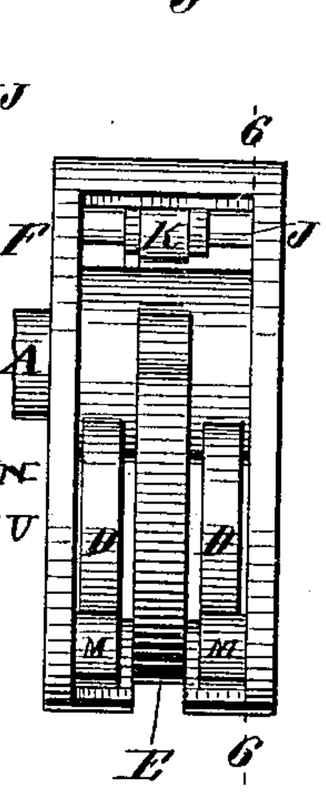


Fig. 2.

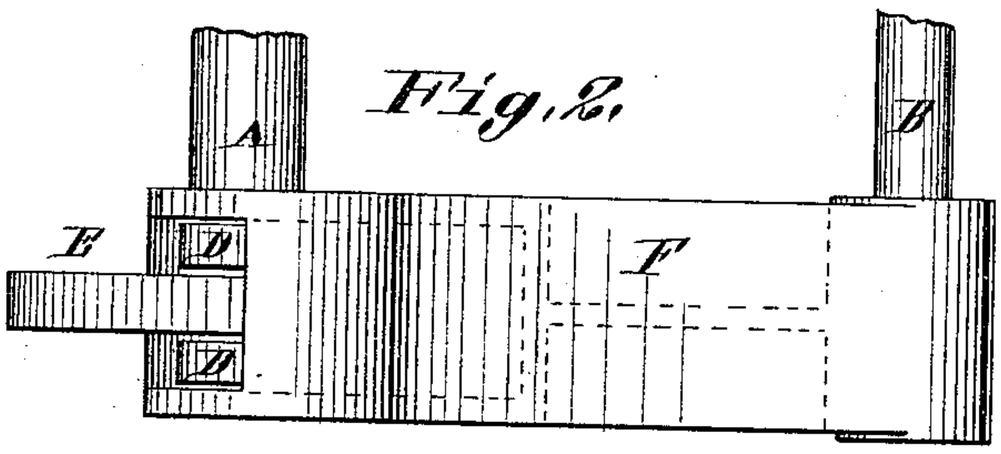


Fig. 7.

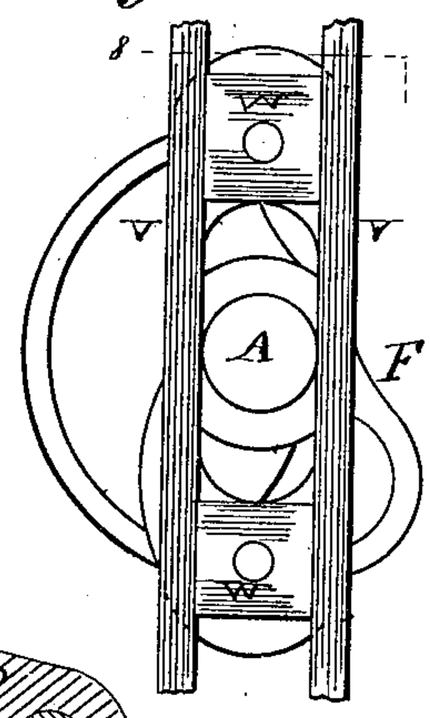


Fig. 5.

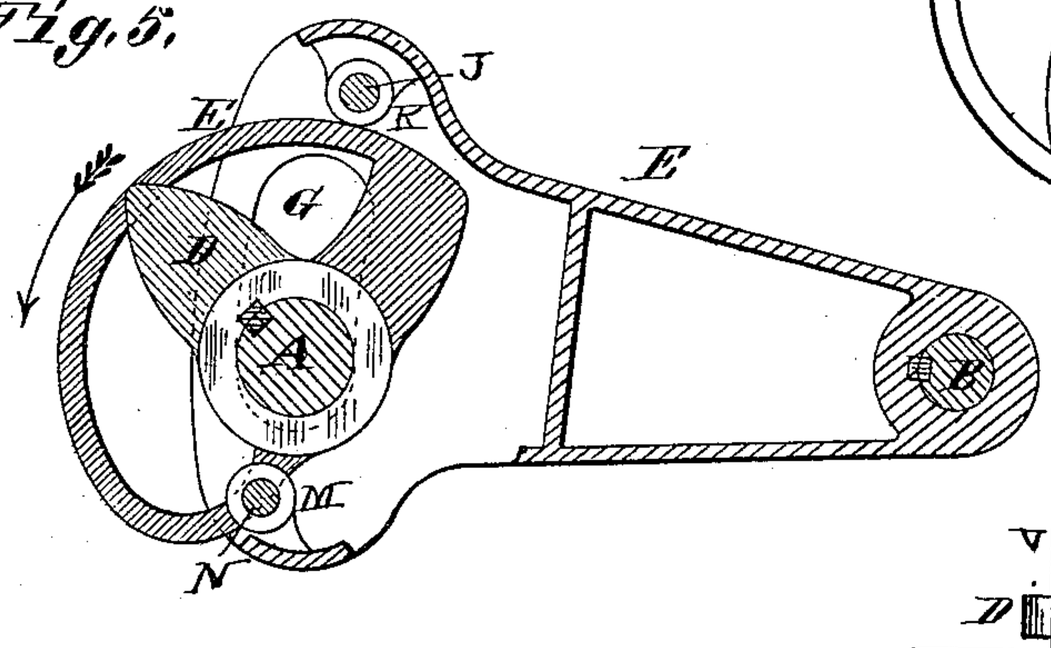


Fig. 8

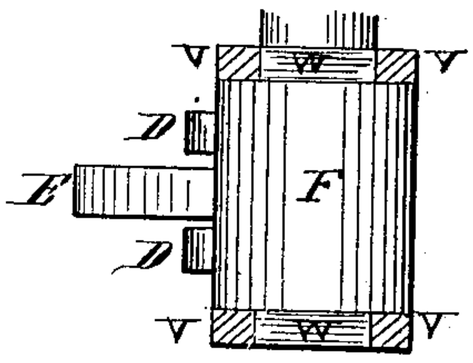
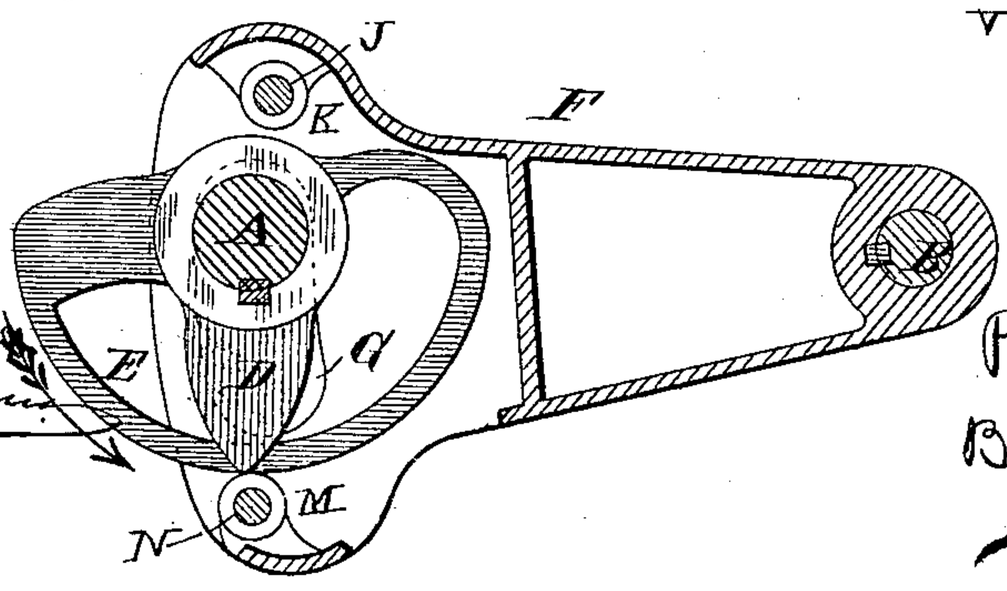


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CAM.

SPECIFICATION forming part of Letters Patent No. 332,268, dated December 15, 1885.

Application filed November 12, 1885. Serial No. 182,564. (No model.)

To all whom it may concern:

Be it known that I, PETER B. MATHIASON, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cams, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation of my improved device. Fig. 2 is a top view of the same. Fig. 3 is an end view. Fig. 4 is an end view showing the parts in different position from that shown in Fig. 3. Fig. 5 is a section taken on line 5 5, Fig. 3. Fig. 6 is a section taken on line 6 6, Fig. 4; and Figs. 7 and 8 illustrate a modification.

My invention relates to an improved form of cams for operating the parts of any kind of machinery requiring considerable force or pressure; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents a main driving-shaft operated or turned by any suitable means, and B represents a shaft rocked or moved from and through means of the shaft A. On the shaft A are cams E, rigidly secured thereto, and which are preferably semicircular in form, as shown in Figs. 5 and 6, and between these cams E is a third cam, D, which is also rigidly secured to the shaft A, and which is preferably of the shape shown in Figs. 5 and 6. These cams are located within or embraced by an arm or lever, F, rigidly secured at its other end to the shaft B. This arm is made hollow to receive the cams, and is preferably provided with a slot, G, to receive the shaft B, as shown. Projecting downwardly from its upper wall are lugs I, through which passes a pin, J, that also passes through the side walls of the arm. Journaled on this pin between the lugs I is a roller, K, against which the cam D bears, to lift the arm and rock the shaft B in one direction. Projecting upward from the lower wall of the arm are lugs L, between each of which and the side walls of the arm are friction-rollers M, journaled on pins N, as shown. The cams E bear against these rollers in depressing the arm or lever to rock the shaft B in the opposite direction to which it has been rocked by the upward movement of the arm or lever. This lower wall of the arm is slotted at O for the passage of the central cam, D, as shown. It will be seen that the cam E has a central bearing upon the arm, and that the cams D each have a bearing equidistant from the center of the arm, so that no strain is brought upon the arm by more pressure being brought upon one side than the other side of the center. The pins J and N may have central openings, U, to permit the journal-rollers K and M to be lubricated.

In Figs. 7 and 8 (Fig. 7 being a side view and Fig. 8 a section taken on line 8 8, Fig. 7) is shown a means for allowing both ends of the arm F to be raised and lowered, instead of the outer end being secured to a shaft, which acts as a pivot-point. In this case the outer end of the arm fits between guides V, and has lugs W to keep it from end movement, but which do not prevent it from moving vertically.

I claim as my invention—

1. The combination of two shafts, cams secured to one of the shafts and an arm secured to the other shaft and made hollow at its free end to receive the said cams and provided with friction-rollers, substantially as and for the purpose set forth.

2. The combination of the shafts A and B, arm F, and cams D and E, the arm being made hollow to receive the cam, substantially as and for the purpose set forth.

3. The combination of shafts A and B, arm F, secured to the shaft B, cams D and E, secured to the shaft A, and friction-rollers on the arm against which the cams bear, substantially as and for the purpose set forth.

4. In combination with an arm having a central bearing and bearings each side of the central bearing, a cam for pressing against the central bearing and cams for pressing against the side bearings, said cams being secured to an operating-shaft, substantially as and for the purpose set forth.

PETER B. MATHIASON.

In presence of—
GEO. H. KNIGHT,
BENJN. A. KNIGHT.