

ONE KIND OF CAM.

BY A. D. PENTZ.

In modern designing many kinds of movement are desired. The experience of one person familiarizes him with one class of motions and the means by which such motions are got, and another person's

N, and fits the mortise at four points, whatever part of the revolution it may be at. The mortise in N should be deep enough to control and guide the cam, O, without lost motion. The cam, O, may or may not have the interior spindle, P.

Then, if a tool be placed within the angle, B, A, C,

would do, should such eccentric be revolved three times as fast as this cam is revolved.

If again this cam be mounted eccentric to its mean center and at the same time at unequal distances from each of the three centers of construction, then if it were placed in the devices in Figs. 1, 2, 3, there still would be three reciprocating motions in each revolution, but each of the three would be thrown to a different distance. The cam would then be as in Fig. 6.

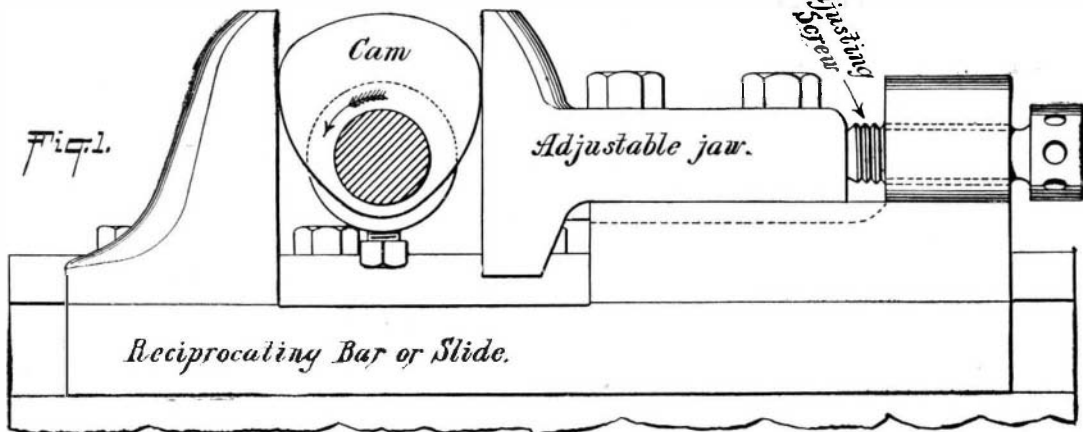
Should, at any time, the American inventor desire a rotary engine and not be able, as heretofore, to find a practical one, and get to a point where one that, while it does not exactly rotate about one center, revolves about three would satisfy him, let him perfect this. I know so little about steam, that I do not feel competent to perfect it myself. Still, I have known it some years, and had reserved it for the future—but? Thus it is in its present form, and if there is any valuable property in it, I present it to the rotary engine men, and everybody else.

A is a casting having a central opening to which the piston, B, is fitted. The corners in A fit the small arcs on the piston, B. Through these corners are the ports 1, 2, 3, 4, and valves operated by the rods, 5, 6, 7, 8. The port 1 is closed, but is about to open, 2 is open full and admitting steam, 3 is closed but is about to exhaust, 4 is open to exhaust. Of course, this valve scheme is not a practical one, but I believe this a new way to make an engine, and that it only needs to have a means to keep it tight, a valve arrangement and the connecting mechanism devised, to make it a good one. As I said before, I am not in steam.

(To be continued.)

Tattoo Marks.

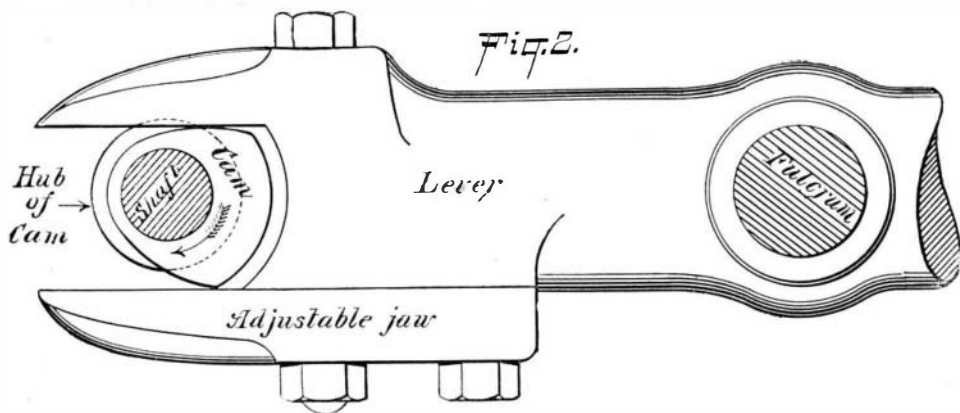
According to Variot, a French authority, the proper



line leads him to a knowledge of other classes of movement and their data. The kind of cam here demonstrated is probably the most useful irregular but positive mechanical motive, embracing as it does the eccentric cylinder, that is used in practice.

The use of this cam gives a reciprocating motion that has these peculiarities: A positive action, a rest at the ends of the strokes, which rest may be varied to suit the designer from 0° indefinitely, a quiet and

and the cam, O, be revolved, the point, A, will describe the square, A, D, E, F, but if the arc, M, be less than 90°, the corners, A, D, E, F, will be proportionately rounded. The tool in B, A, C should not exceed 45° angle at its edge, which shall be exactly at A, which is the center from which the arcs, M and L, are described. Now the arcs, J and K, are described from the centers, G and I, and inasmuch as M and L are each 90°, J and K together on one side cannot be



The four motions produced by the cam and described by the point A. It is supposed that the rod B is pivoted at an infinite distance, otherwise the outlines described by A were angles and curves.

smooth motion, a strong and lasting means to modify movement, and one having the capability of being adjusted for lost motion. This cam may either reciprocate a bar or slide (Fig. 1).

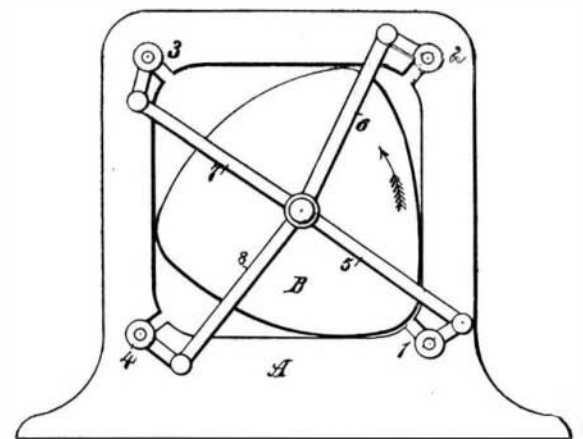
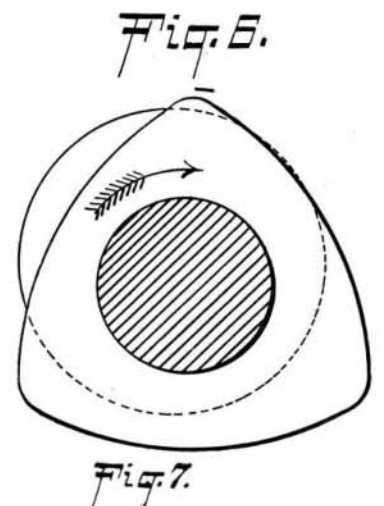
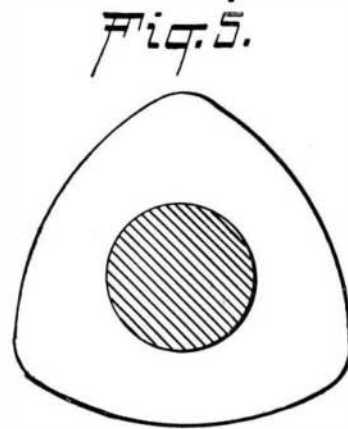
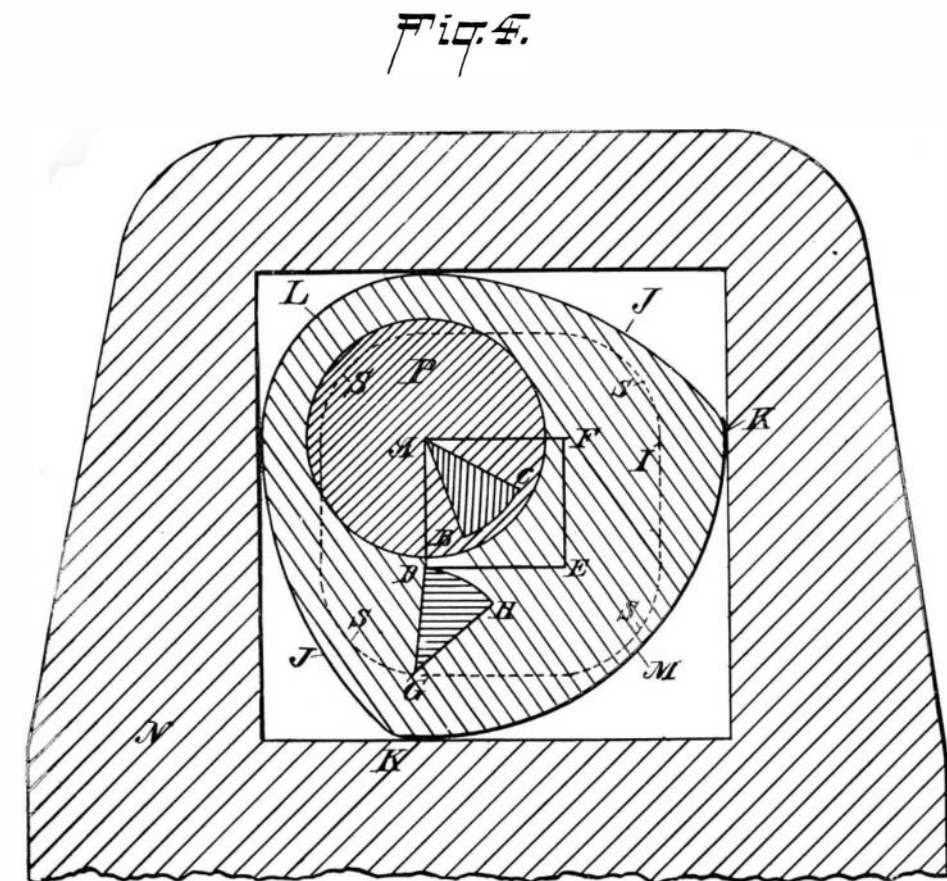
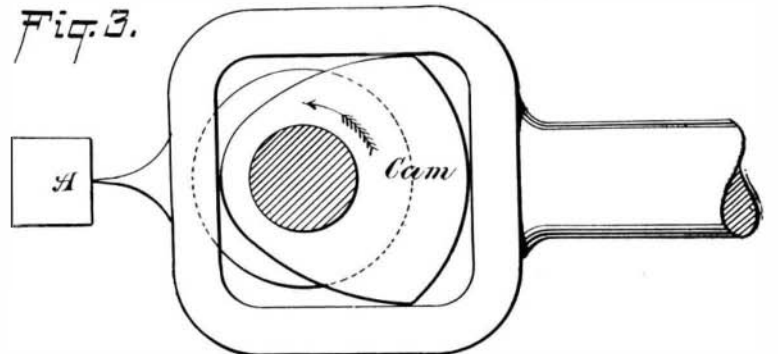
It may oscillate a lever (Fig. 2).

Or it may produce four motions within a quadrangle that is a part of a compound slide or rod (Fig. 3).

If this quadrangle were in the upper of two slides which are arranged at right angles and in horizontal relations to each other, then this cam would, in revo-

more than 90°, and because J has no more length of arc in degrees than K, but the same precisely, then J and K each are 45° of arc. Now if at the center, G, there be placed a tool whose edge shall be at the point, G, that edge will describe, not a square, but one-half a square, the corners being curved as shown at S. Therefore there can be but one size of square hole made by one shape of cam, in a given mortise, but there may be many cams made to fit this mortise, each of which may make a different size of square hole.

way is to wash the part with a concentrated solution of tannic acid, then closely puncture it with a set of needles, such as tattooers use. A crayon of nitrate of silver is next thoroughly rubbed over the area, and after a moment the skin is dried off, when it will be found that the punctures are deeply blackened by the formation of the tannate of silver in the superficial layers of the skin. The cauterization is said to result



lution, produce the same four motions in every part of the upper slide which the point, A, indicates in Fig. 3.

This cam, if the angle of rest be 90°, may be the bearing part of a drilling spindle which will produce a square hole (Fig. 4).

The section, N, is a part of the frame of a drill press. The eccentric cam, O, is fitted to the square mortise in

A cam, if constructed thus (Fig. 5) and mounted concentric to its mean center, will force a lever, or a slide or slides, or a rod, to reciprocate three times in each direction every time the shaft revolves the cam, but there will be no distinct rests at the ends of strokes. If this cam, then, should be placed on the shafts in either Figs. 1, 2, or 3, it would, if it fitted the devices there shown, act similar to what a regular eccentric

in an inflammatory reaction for a couple of days, and subsequently in the formation of a crust or thin eschar, which separates spontaneously in from fourteen to eighteen days, leaving beneath it a superficial red cicatrix, which gradually loses its color, and at the end of a few months is scarcely perceptible. Only a small area should be treated at one time, and a dressing of powdered tannin should simply be used.