



No. 15,624/09.

APPLICATION DATED

3rd September, 1909.

Actual Inventor and Applicant ... DAVID UNAIPON.  
 Application and Provisional Specification ... Received, 3rd September, 1909.  
 Complete Specification ... Lodged, 4th July, 1910.  
 Specification ... Advertised, 13th September, 1910.

Classes 37.6; 60.1.

*Drawing attached.*

PROVISIONAL SPECIFICATION.

**"Improved mechanical motion device."**

I, DAVID UNAIPON, of Point McLeay, in the State of South Australia, Commonwealth of Australia, Machinist, hereby declare the nature of my invention entitled "Improved mechanical motion device" to be as follows:—

My invention relates to an improved mechanical motion device, the object of the same being to provide means whereby a rotary motion is converted into a reciprocating motion, such motion however being non-radial.

In carrying my invention into effect I construct a guide plate preferably of metal, the end of which is rounded off to form a portion of a curve or ellipse. Above this plate I provide a pivotally mounted guide through which a rod is passed, such rod being capable of a free sliding action through the guide.

Near the driving end of the rod I fasten a pin or other projection in such a manner that it rests against the back end of the guide. At the driven end of the rod I also fasten a pin or other projection, and immediately behind the same I introduce a guide bar.

The distance between the two projections of the rod is accurately gauged so that the

distance from the back radial edge of the radial guide plate and the front edge of the straight guide plate is always equal when measured in a straight line crossing the pivotal point of the central bearing.

The driving end of the rod may be fitted with any suitable connection to enable it to receive the rotary motion which is derived from the initial source of power whilst the driven end may be employed for such mechanical work as may prove suitable for it.

In practical use the rotary motion which is imparted to the rod causes the rod to swing backwards and forwards upon the pivotal bearing; but in view of the fact that the rod is not fixed in such bearing but is capable of a sliding motion therein the transmitted motion instead of being of a radial nature is a reciprocal straight lined movement, the radial play being adjusted by the curved or elliptical shaped guide which governs the movement of the pin and being also compensated for by the sliding of the rod in its bearing.

Dated this 31st day of August, 1909.

JOHN HERBERT COOKE,  
Agent for Applicant.

Witness—James Tingey.

COMPLETE SPECIFICATION.

**"Improved mechanical motion device."**

I, DAVID UNAIPON, of Point McLeay, in the State of South Australia, Commonwealth of Australia, Machinist, hereby declare this invention, and the manner in which it is to

be performed, to be fully described and ascertained in and by the following statement:—

My invention relates to an improved mechanical motion device, the object of the same

being to provide means whereby a rotary motion is converted into a reciprocating motion, such motion however being non-radial.

In carrying my invention into effect I construct a guide plate preferably of metal, the end of which is rounded off to form a portion of a curve or ellipse. Above this plate I provide a pivotally mounted guide post through which a rod is passed, such rod being capable of a free sliding action through the guide.

Near the driving end of the rod I fasten a pin or other projection in such a manner that it rests against the back end of the guide. At the driven end of the rod I also fasten a pin or other projection, and immediately behind the same I introduce a guide bar or its equivalent.

The distance between the two projections of the rod is accurately gauged so that the distance from the back radial edge of the radial guide plate and the front edge of the straight guide plate is always equal when measured in a straight line crossing the pivotal point of the central bearing.

The driving end of the rod may be fitted with any suitable connection to enable it to receive the rotary motion which is derived from the initial source of power whilst the driven end may be employed for such mechanical work as may prove suitable for it.

In order that my invention may be better understood I will now describe the same by aid of the accompanying illustrative drawings in which

Fig. 1 is a plan of a simple device indicating primary mechanism of the various parts.

Fig. 2 is a side view of same,

Fig. 3 shows an elaboration of the invention in side elevation as applied to a sheep shearing machine,

Fig. 4 is a plan of the guide plate in a sheep shearing machine and indicating the position of the guide pin,

Fig. 5 is an outline plan of the principal parts shown in Fig. 4.

Throughout the drawings similar letters of reference are used to denote similar or corresponding parts wherever they occur.

In the various illustrations **a** is the guide plate, the rounded off or guiding edge of which is indicated in Fig. 1 by the adjacent arrow heads. **b** is the pivotally mounted guide post, the sliding rod being shown at **c**. **d** is the rest pin which impinges against the back of the guide plate so as to control the sliding movement of the rod **c**. At the opposite end of the sliding rod **c** I arrange

a pin or projection hereinafter referred to as the distance pin **e**.

In Figs. 1 and 2 **f** is a guide bar placed immediately behind the distance pin. In Figs. 3 and 5 exactly the same effect as is obtained by the guide bar is achieved by gearing the pin **e** into the moving cutter **g**, which in turn slides in the recess, the back end of which I have also marked **f**, being an equivalent of the bar **f** in the preceding 10 figures.

In Figs. 3 and 5 the remaining parts of the machine are shown which may be summarised as comprising the vertical socket **g** within which the guide post **b** rotates, the 15 tension nut **h** and the holding down spring **j**. The fixed teeth are shown at **k** and the casing at **l**.

At the end of the sliding rod **c** a bridle **m** or any other convenient connection is arranged, to which motion may be applied from any source of power.

In the primary form of mechanism I used a tension spring **n** to assist in keeping the rest pin against the edge of the guide plate, 25 but this spring may be dispensed with in certain mechanism such as that connected with the sheep shearing machine.

The method of using my invention is as follows:—

The proper relation between the curve of the guide plate and the guide bar or its equivalent having been obtained the various parts are set up in accordance with the illustration so that when motion is applied as for 35 instance by an eccentric the rod slides through the guide post **b**, the rest pin meanwhile describing the part circle or curve of the back plate, so that the distance pin **e** can traverse in a straight line.

In some cases where difficulty exists in obtaining absolute accuracy of the relation between the curve and the guide plate an intermediary such as moving teeth **g** of a sheep shearing machine or other plate of a similar 45 nature which works in a guide or groove may be interposed, and the hole therein for the reception of the distance pin **e** may be very slightly elongated.

My invention may be applied to a great 50 variety of uses wherein it is desirable to convert a rotary motion into a reciprocal motion without the latter having a radial traverse.

Having now fully described and ascertained my said invention and the manner in which 55 it is to be performed, I declare that what I claim is:—

1. A mechanical motion device consisting of or comprising a guide plate having its

guide edge of the nature of a curve or ellipse, a pivotally mounted guide post, a sliding rod designed to slide through a hole or opening in the guide post, a rest pin at or near 5 the driving end of the sliding rod, and a distance pin at or near the opposite end of the sliding rod, a guide bar or groove for the reception of the distance pin either with or without an intermediate plate, the various 10 parts being arranged together substantially as described and illustrated.

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2. An improved mechanical motion device consisting of or comprising the parts set forth and claimed in preceding Claim 1 in combination with any adaptable mechanical device such as (for example) the driving gear 5 and cutter of a sheep shearing machine as described and as illustrated.

Dated this 2nd day of July, A.D. 1910.

JOHN HERBERT COOKE,  
Agent for Applicant. 10

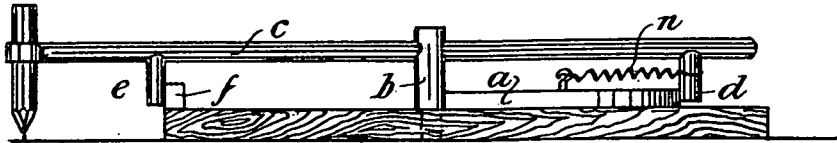
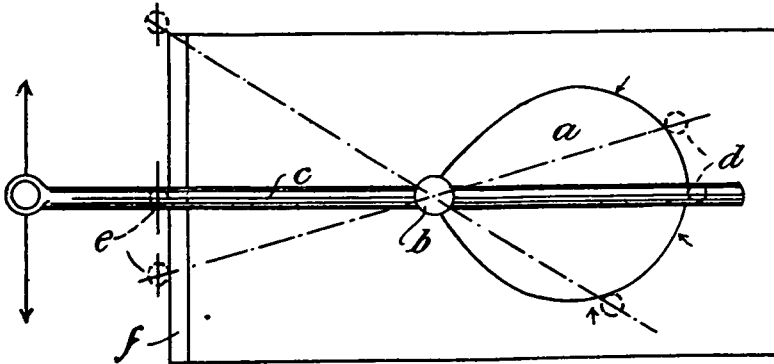
*Witness*—James Tingey.

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DAVID UNAIPON.

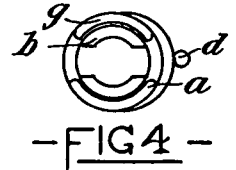
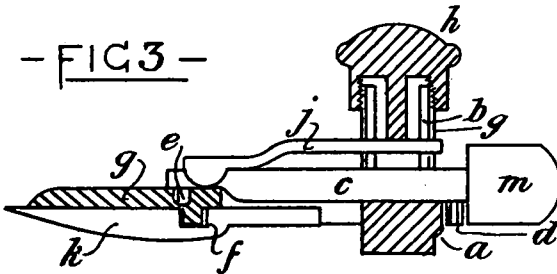
Mechanical Motion.

- FIG 1 -



- FIG 2 -

- FIG 3 -



- FIG 4 -

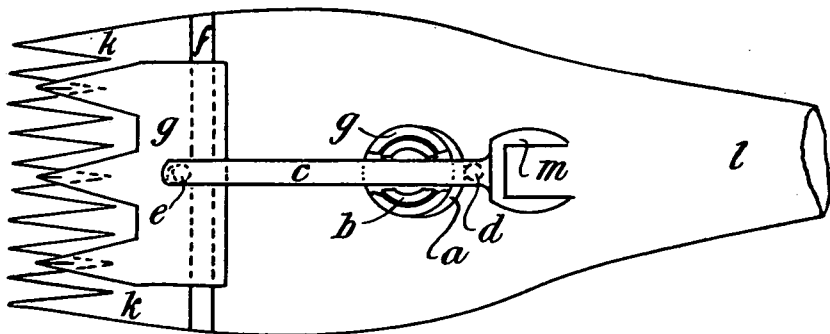


FIG 5. -