W. L. GASS & H. JACKSON.

MECHANICAL MOVEMENT.

APPLICATION FILED MAR. 3, 1908.

921,971. **Patented May 18, 1909.**

Fig. 1

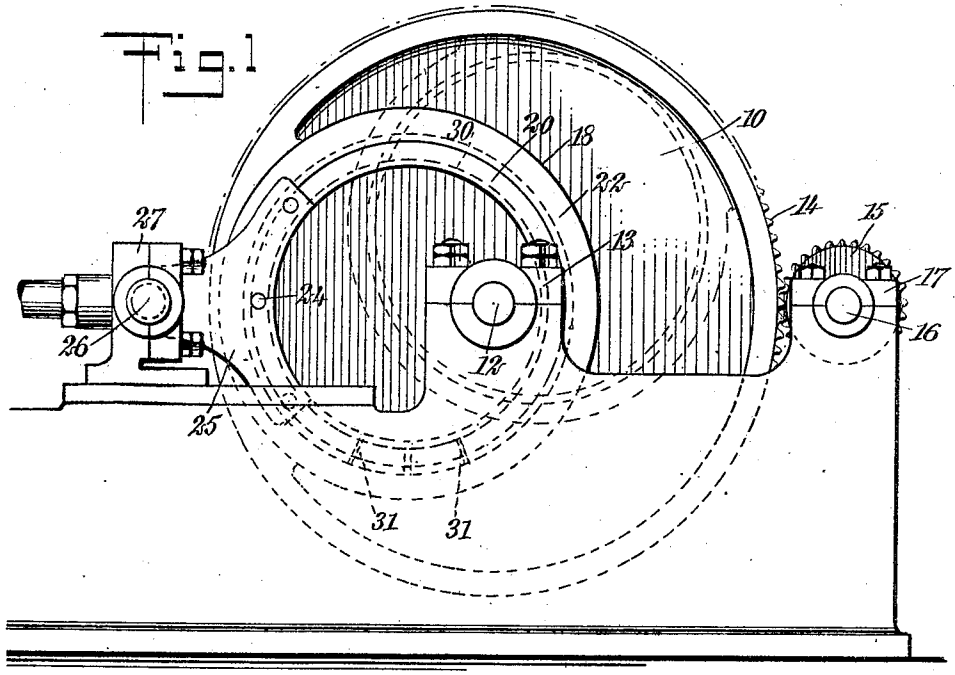


Fig. 2

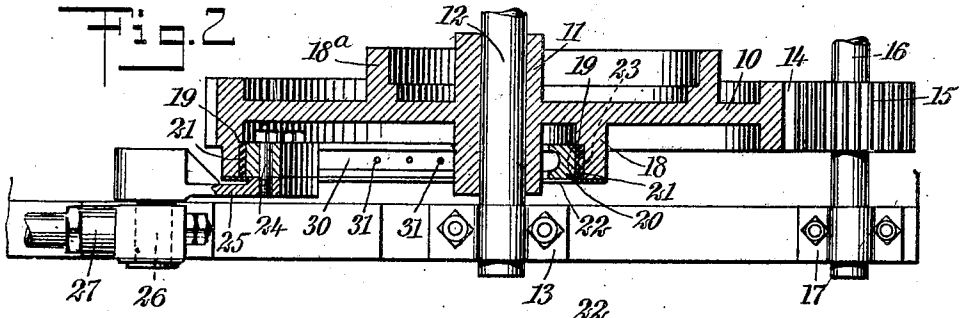
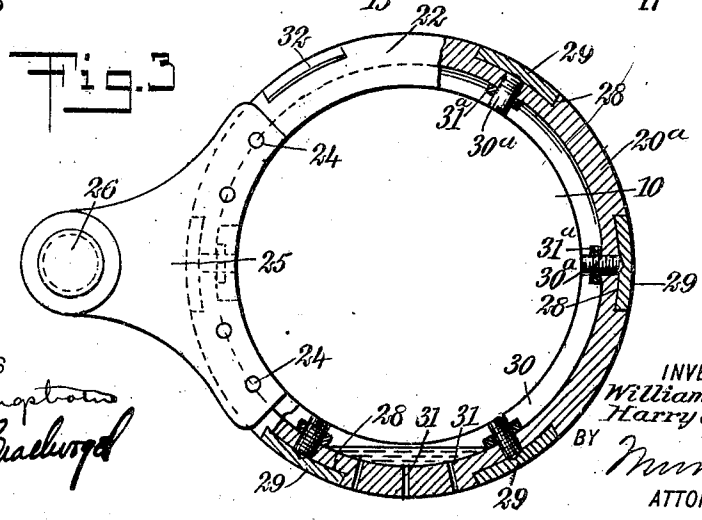


Fig. 3



WITNESSES

John A. Bergstrom

John K. Bradbury

INVENTORS

William L. Gass

Harry Jackson

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM L. GASS AND HARRY JACKSON, OF NEW YORK, N. Y.

MECHANICAL MOVEMENT.

No. 921,971. Specification of Letters Patent. Patented May 18, 1909.

Application filed March 3, 1908. Serial No. 418,968.

To all whom it may concern:

Be it known that we, WILLIAM L. GASS and HARRY JACKSON, both citizens of the United States, and residents of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Mechanical Movement, of which the following is a full, clear, and exact description.

This invention relates to mechanical movements, and more particularly to mechanism for converting a rotary movement into a reciprocatory one.

More specifically, the invention relates to mechanism of the class described comprising a rotatable, driven member having an eccentric, an annular member operable by said eccentric, and means for connecting said annular member with a reciprocable member, so that the rotary movement of the driven member serves to reciprocate the reciprocable member.

An object of the invention is to provide mechanism of simple and durable form, for converting a rotary movement into a reciprocatory one, which is efficient in operation and which is inexpensive to manufacture.

A further object of the invention is to provide mechanism of the class described, which lends itself readily to inexpensive and easy shop construction, and by means of which a perfect alinement of the parts can be effected without difficulty.

The invention consists in the construction and combination of parts, to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side elevation of our invention; Fig. 2 is a longitudinal section of the same; and Fig. 3 is a side elevation partly in section, showing a detail of the invention, of modified form.

Before proceeding to a more detailed explanation of our invention, it should be clearly understood that the same can be advantageously employed in most forms of mechanism in which it is necessary to convert a rotary into a reciprocatory movement. For example, it can be usefully employed in connection with pumps of the reciprocating type, steam engines, prime movers, and the like. We employ a rotary member having formed thereon an integral eccentric ring, in which is movably arranged a further ring or annular member, which is connected by means of a suitable bracket and a wrist pin with the member to be reciprocated. The rotation of the driven member through the eccentric, effects a reciprocatory movement of the annular member controlled by the eccentric, which in turn is transmitted to the reciprocable member to be driven, in accordance with the well-known principle of eccentric movement.

Referring more particularly to the drawings, we provide a rotatable member 10, preferably cast, or otherwise fashioned from suitable material, in the form of a disk. The member 10 has a central hub 11 by means of which it is mounted upon a shaft 12. The latter is journaled in suitable bearings 13 or is otherwise rotatably mounted. The member 10 may be driven by means of the shaft 12, or may be provided peripherally with teeth 14 adapted to mesh with the teeth of a pinion 15 rigidly carried by a shaft 16 journaled in bearings 17 suitably positioned to permit the operative engagement of the pinion with the teeth of the driven member 10. The latter may be actuated by means of the shaft 16, which may be power-driven or otherwise operated in any suitable manner. At one side, the member 10 has formed thereon an integral eccentric ring 18 which encompasses the hub 11. The ring 18 is interiorly machined to form a shoulder 19. An annular member or ring 20 is arranged within the eccentric ring 18 and has a peripheral rim or bearing face 21 of an easily fusible material such as Babbitt metal or of any other material adapted to the purpose. The annular member 20 abuts against the shoulder 19 and is held in position within the eccentric ring 18 by means of a retaining ring 22 suitably fastened in position at the outer rim of the ring 18 and extending inwardly beyond the rim. The engagement of the Babbitt metal rim 19 with the eccentric ring 18 is a bearing one. The annular member 20 has an inner peripheral groove 30 forming oil-retaining means, and it is further provided with oil-holes 31 which permit the pas-

sage of the oil to the wearing surfaces. If so desired, the Babbitt metal rim 19 at the outer surface, may have oil grooves 23 of any preferred or common form. The annular member 20 has rigidly secured thereto, by means of bolts 24 or in any other suitable manner, a bracket 25 having a wrist pin 26 engaging the cross-head 27 or other reciprocable member. As the member 10 is rotated, the eccentric ring 18 travels about the center of rotation of the member 10, and thus reciprocates the cross-head 27 through the annular member 20, the cross-head, of course, being constrained to move in the direction of its length. In this way, the rotary movement of the driven member is transmitted to the cross-head or other reciprocable member in a backward and forward movement. If so desired, the opposite side of the member 10 may be provided with an eccentric ring 18^a and the latter can be used to reciprocate another member, such as the cross-head 27.

In Fig. 3 is shown an annular member 20^a of modified form having at the separated points, peripheral recesses 28 in which are loosely arranged wear shoes 29. The latter are adapted to engage at the inside of the eccentric ring 18 and are controlled by means of bolts 30^a having lock nuts 31^a. By means of the bolts 30, the shoes 29 can be adjusted as they wear. If so desired, the bolts 30^a and the lock nuts 31^a can be dispensed with and the shoes adjusted by placing shims 32 underneath the same.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In combination, a rotatable member having an eccentric, a member movably held by said eccentric and having a lubricant reservoir, a retaining ring secured to said eccentric and extending over said member, a reciprocable member, and means for operatively connecting said member and said reciprocable member, said member having means for directing lubricant from said reservoir to the wearing surfaces.

2. In combination, a rotatable member having an eccentric formed thereon, said eccentric having a shoulder, a circular member arranged within said eccentric and engaging said shoulder, a removable retaining ring mounted upon said eccentric and partly over said circular member, said circular member having a bearing rim engaging at the inside of said eccentric, a bracket upon said circular member and having a wrist pin, and a reciprocable member having a pivotal connection with said wrist pin.

3. In combination, a rotatable member having an eccentric ring formed thereon, said eccentric ring having at the inner side a shoulder, an annular member arranged within said eccentric ring and engaging said shoulder, a removable retaining ring mounted upon said eccentric ring and extending partly over said annular member, said annular member having an outer rim of an easily fusible metal, engaging at the inside of said eccentric ring, a bracket rigid with said annular member and having a wrist pin, and a reciprocable member having a pivotal connection with said wrist pin, said annular member constituting a lubricant reservoir.

4. In combination, a rotatable member having an annular eccentric formed thereon, an annular member movable in said eccentric, a cross-head, and means for movably connecting said cross-head and said member, said annular member having at the inside a peripheral groove constituting a lubricant reservoir, and being provided with openings therethrough to permit the passage of lubricant from said groove to the wearing surfaces.

5. In combination, a rotatable member having an eccentric ring formed thereon, an annular member arranged within said eccentric ring, means for retaining said annular member within said ring, said annular member having an outer rim of easily fusible metal engaging at the inside of said eccentric ring, a reciprocable member, and means for operatively connecting said reciprocable member and said annular member, said annular member, at the inside having a peripheral groove constituting a lubricant reservoir, and being provided with openings therethrough serving to conduct lubricant to the outer surface of said rim of fusible metal.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM L. GASS.
HARRY JACKSON.

Witnesses:
JOHN K. BRACHVOGEL,
EVERARD B. MARSHALL.