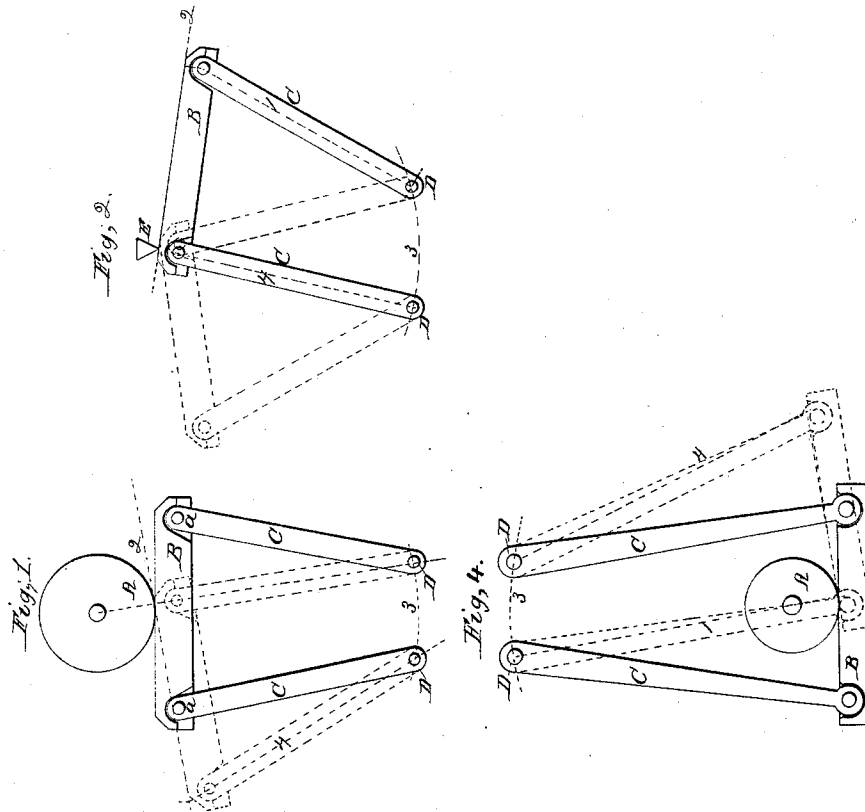
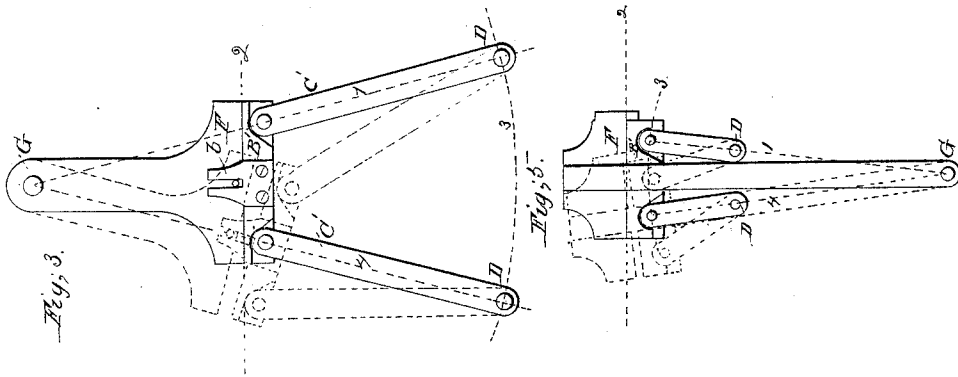


Gordon & Degener,

Mechanical Movement.

N^o 17,565.

Patented June 16, 1857.



UNITED STATES PATENT OFFICE.

GEO. P. GORDON AND FREDK. O. DEGENER, OF NEW YORK, N. Y.

MOTION FOR PRESERVING ROLLING CONTACT, &c.

Specification of Letters Patent No. 17,565, dated June 16, 1857.

To all whom it may concern:

Be it known that we, GEORGE P. GORDON and FREDERICK O. DEGENER, of the city, county, and State of New York, have invented a new and useful mechanical device or movement whereby reciprocating plates or beds are, by the most simple means, allowed to work in contact with the periphery of a cylinder or in contact with a fixed point or line or with a swinging plate or bed; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 4, show a reciprocating bed or plate in contact with a cylinder. Fig. 2, shows a reciprocating bed or plate in contact with a fixed point or line. Figs. 3 and 5, show a reciprocating plate or bed used with a swinging plate or bed.

The object of this invention is to obviate the objections or disadvantages attending the working of reciprocating plates or beds in whatever case they may be applied. These objections or disadvantages are: 1st, friction, which is considerable, even when rollers, the usual anti-friction devices, are used and applied in the best manner, and 2d, the expense attending the comparatively complex arrangement of the parts and also the space which said parts, owing to the usual mode of arrangement, necessarily occupy.

The invention consists in supporting or hanging the plate or bed upon supports which are placed out of parallel with each other, the supports being attached to rock-shafts or working on pivots or centers, so arranged, that the plate or bed, as it is reciprocated or moved back and forth, will, at every part of its movement, be in contact at some point on its surface with the periphery of a roller, or with a fixed bar, or act intermittently against the surface of a swinging bed or place having a plane surface.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A, Fig. 1, represents a cylinder and B, is a bed or plate having a plane surface and attached by pivots *a*, to the upper ends of supports C, C. The lower ends of the supports C, C, are attached to rock-shafts D, D, which are placed at such a distance apart

that the lower ends of the supports C, C, are nearer together than their upper ends. The two supports therefore are placed and work out of parallel with each other, as plainly shown in Fig. 1. By having the two supports placed out of parallel, the plate or bed B, as it is moved back and forth will work in contact with the periphery of the cylinder A, the two supports C, C, working back and forth in consequence of being connected to the rock-shafts D, D, and the surface of the plate or bed will work in contact with the periphery of the cylinder during the whole length of its stroke. To effect this, however, it is necessary that a certain proportion of the parts be observed; for instance, the length of the supports must bear a certain relation to the diameter of the cylinder, and the space between the rock-shafts D, must bear a certain relation to the length of the supports.

The proportion of the several parts is obtained as follows. The diameter of the cylinder A, being given, a radial line 1, is drawn of any length, and a line 2, is drawn tangential with the cylinder A. The line 2, indicates the bed B, and its length is always known, and the length of the supports C, C, is known, for of course they cannot be longer than the space between the cylinder and flooring or the lower end of the framing in which the device is placed. A segment of a circle 3, is then struck from the center of the cylinder A, the segment 3, being struck as low as circumstances will permit or as may be desired, and a line 4, is drawn from the end of the line 2, till it intersects the segment line 3. The two lines 1 and 4, indicate the supports; the line 2, the bed or plate.

In Fig. 2, the plate or bed is represented as working against a fixed point or line E. The same rule, however, is observed as regards the proportion of the parts, with the exception that the segment 3, is struck from the point E.

In Fig. 4, the plate or bed B, is represented as being suspended by the supports C, C, instead of being attached to their upper ends as shown in Fig. 1; the same rule as regards proportion, however, is observed as indicated by the dotted lines, the same figures employed in Fig. 1, being used to indicate like parts.

Figs. 3 and 5, show a modification of the device represented in Figs. 1, 2 and 4. In

Fig. 3, a reciprocating bed or plate is shown in connection with a swinging bed or plate. F, represents the swinging bed or plate, G, being the point of suspension, and C', C', 5 represent the supports of the bed or plate B', corresponding to the bed B, in Figs. 1, 2 and 4. If a connection or guide b, of any kind be secured to the bed B', and bed F, it will be seen that the bed B', as it is moved 10 back and forth will act intermittently against the swinging bed or plate F.

Fig. 5, is a trifling modification of the device shown in Fig. 3. In Fig. 5, the center G, of the swinging bed or plate is below, instead of being above the bed B', as in Fig. 3; the same rule is observed however as regards proportion of parts, as indicated by 15 the segment line 3, and lines 1, 2 and 4.

By the above invention, it will be seen that 20 the friction of the usual reciprocating beds or plates is dispensed with, and also the expense attending the construction and arrangement of the same.

Our improvement is applicable to various

purposes, and is especially adapted to type 25 and lithographic presses, and also to shearing devices, and presses for die-sinking. In short, the improvement is applicable in all cases where a reciprocating bed or plate is required to work in contact with a cylinder 30 or fixed line or point, or a flat surface.

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

Supporting or hanging a reciprocating 35 bed or plate B, upon supports C, C, placed obliquely or out of parallel with each other, substantially as described, so that the face of such bed or plate, shall, as it is moved back and forth, work in contact with the 40 periphery of a cylinder, or with a fixed point or line, or act intermittently against a swinging bed or plate, as herein set forth.

GEO. P. GORDON.

FREDK. O. DEGENER.

Witnesses:

J. W. COOMBS,

JAMES F. BUCKLEY.