No. 638,990. Patented Dec. 12, 1899.

M. A. REPLOGLE.

SLIDING TOGGLE.

(No Model.) (Application filed Aug. 5, 1898. Renewed July 3, 1899.)

Fig 1

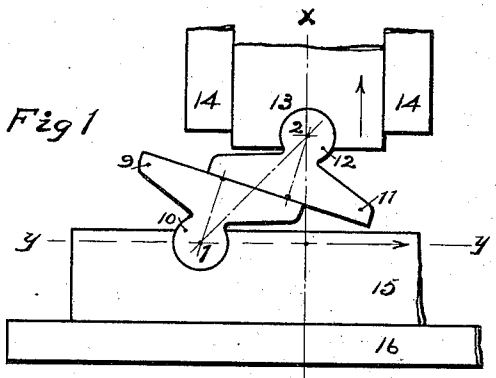


Fig 4

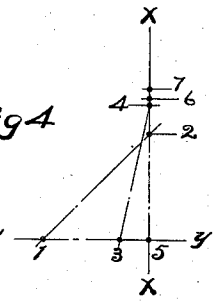


Fig 2

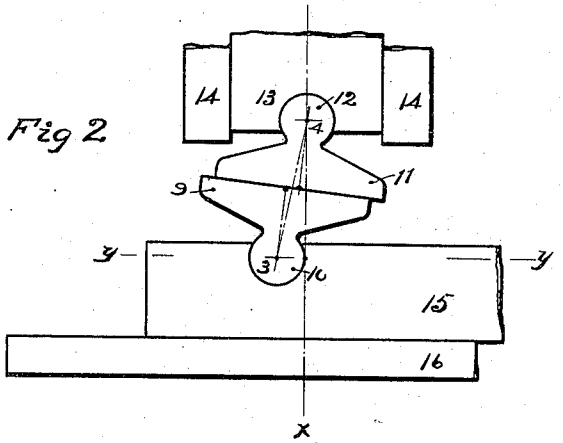


Fig 5

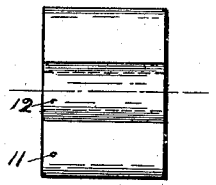


Fig 3

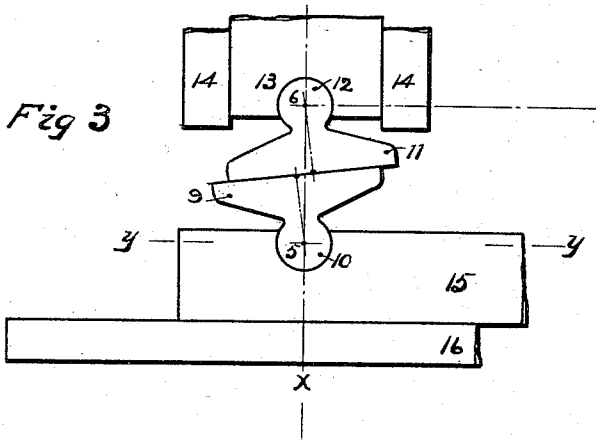




Fig 6

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SLIDING TOGGLE.

SPECIFICATION forming part of Letters Patent No. 638,990, dated December 12, 1899.

Application filed August 5, 1898. Renewed July 3, 1899. Serial No. 722,733. (No model.)

To all whom it may concern:

Be it known that I, MARK A. REPLOGLE, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Sliding Toggle; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to toggles or toggle-joints, such as are used in creating great pressure in a direction at right angles to that of the motion of the impelling force; and the object of the invention is to provide a mechanical device which combines the functions of a wedge or moving inclined plane with the function of the ordinary toggle-joint and embraces the advantages of both.

To this end the invention consists of the novel construction and combination of parts as specified herein and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of one of my devices in the position which it occupies at the first stage of its action. Fig. 2 is a view of the same in a further advanced stage of the same action. Fig. 3 is a view of the same at the culmination of the action or at the point where the impelled portion is at the farther end of its course. Fig. 4 is a diagram demonstrating more clearly the action of the device as shown in the three preceding figures. Fig. 5 is a detail view of one of the members of the device. Fig. 6 is a side view of the same detail.

Similar figures of reference refer to similar parts throughout the several views.

For convenience of explanation the vertical line $x\ x$ is drawn through the first three figures, showing the line on which a body is to be moved, and the line $y\ y$, at right angles to it, is a line in the direction of which the impelling force acts. Now let it be understood that it is desired to lift a weight or create a pressure by means of moving the member 13 in the direction of the arrow thereon, the motion thereof being transmitted to it from the member 15, which has impelling force applied to it, moving it in the direction of the arrow thereon. Member 13 is prevented from moving laterally by guides 14 14, and the member 15 is maintained in the same horizontal plane by the guide 16. To the upper side of the member 15 is pivotally attached a member consisting of an enlarged flat poll or plane 9 and a cylindrical portion 10, which latter portion is designed as a journal, by means of which the member is journaled or jointed to the member 15. It may then assume the position shown in Fig. 1, in which its poll or face engages in sliding contact with an exactly similar member in an inverted position and similarly journaled or jointed to the member 13 by means of the journal 12 and having its sliding poll or surface 11 in inverse aspect to that of the member attached to 15. In the construction shown ample amount of journal and sliding surface is provided, as by this means the adjustment of machinery is maintained in consequence of the distribution of friction, so as not to wear out the surface exposed to such friction. It is evident that the construction may be varied to suit the exigencies of any case.

The operation may be more fully described as follows: When, as in Fig. 1, the slidable member 15 is moved in the opposite direction to that of the arrow, the toggle members will separate, but, their plane surfaces remaining in the same aspects as there shown, when the member 15 is again impelled in the direction of the arrow the slidable surfaces will first come in contact, as shown in the figure, and the motion of 15 being continued in the direction of the arrow the surfaces of the two toggle members continue to slide until they pass through all the intermediate positions between that shown in Fig. 1 and that shown in Figs. 2 and 3, in which figures the members are shown to have slid until their coinciding faces have tilted upward to the angle of repose, which is partially determined by the amount of lubrication on the surfaces. The motion inward thus far is indicated by the distance 1 to 3 on the line $y\ y$, Fig. 4, while the upward motion of the member 13 is represented by the distance 2 to 4 on the line $x\ x$, Fig. 4. After the surfaces cease sliding if the member 15 continues the motion on the line $y\ y$ from the point 3 to 5, Fig.

4, the upward motion of the impelled member is continued from 4 to 6—a very slight distance as compared with 3 to 5, therefore capable of making an enormous pressure, which is the object to be attained.

Having thus described the invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described toggle comprising two similarly-constructed members having polls or flat surfaces adapted to slide each upon each and the opposite ends of said members adapted to be pivotally joined respectively to impelling and impelled moving members, in combination with means for controlling the direction or motion of said moving members, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MARK A. REPLOGLE.

Witnesses:
ETHEL M. RICHARDS,
A. J. BRANDA.