M. BLACKALLER.

UNIVERSAL LEVER.

APPLICATION FILED JULY 18, 1914.

1,164,455. Patented Dec. 14, 1915.

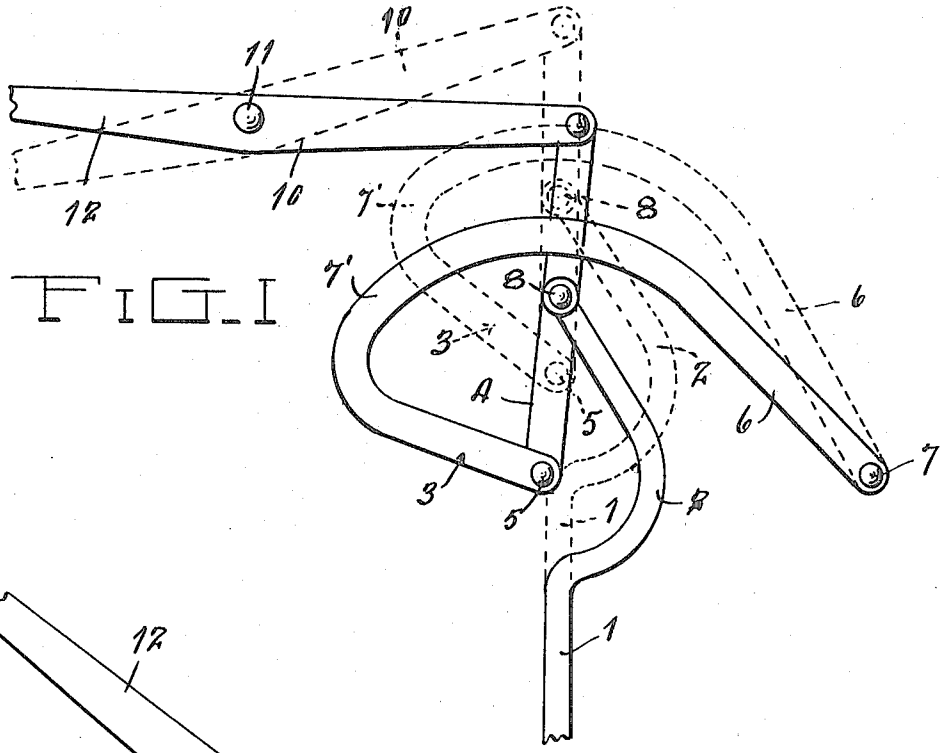


FIG. 1

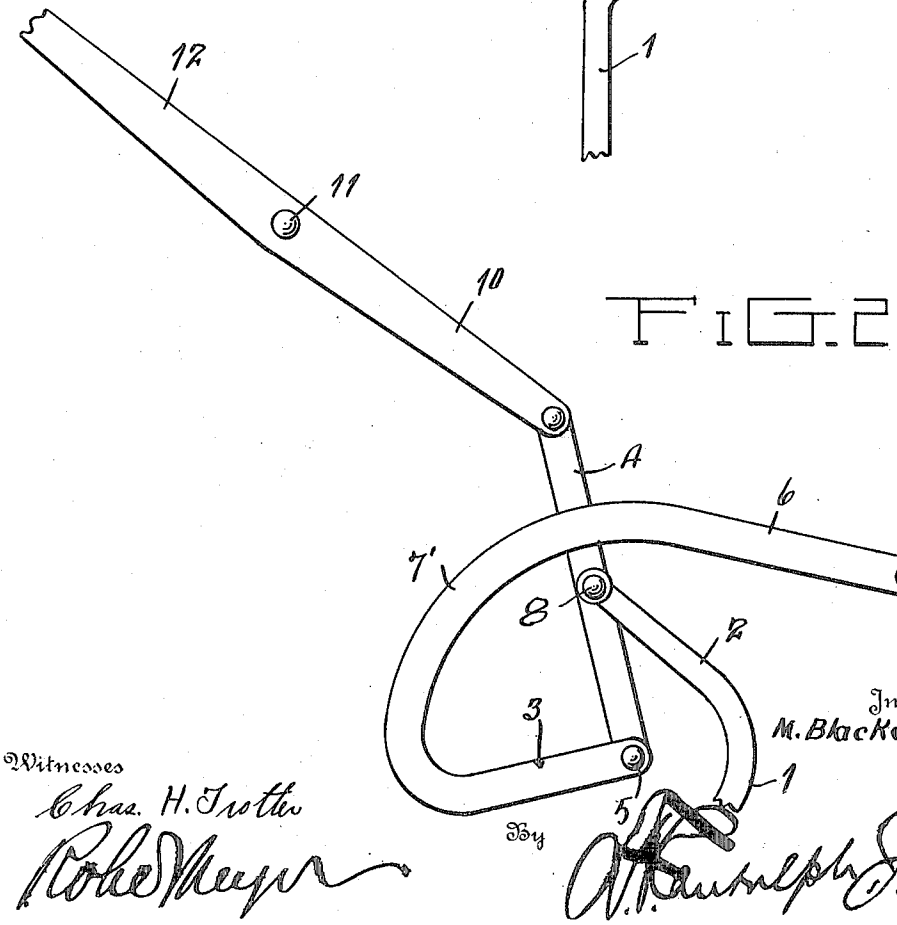


FIG. 2

Witnesses

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UNITED STATES PATENT OFFICE.

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UNIVERSAL LEVER.

1,164,455. Specification of Letters Patent. Patented Dec. 14, 1915.

Application filed July 18, 1914. Serial No. 851,753.

To all whom it may concern:

Be it known that I, MIGUEL BLACKALLER, a citizen of Mexico, residing at San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Universal Levers; and I do hereby 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.

This invention relates to levers, and the primary object of the invention is the provision of a series of pivotally connected levers, which are provided for the purpose of the transmission of power from any suitable source to a rod or bar, for reciprocating the rod or bar in a perfectly straight line at all times.

Another object of this invention is the provision of a plurality of arcuate levers, which are curved so that the various parts of the levers will not interfere with the pivotal points thereof during the operation of the same.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters of reference designate like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view of the improved universal lever showing the same in one position in solid line and in an adjusted position in dotted line, and Fig. 2 is a view of the improved universal lever showing the same other than that illustrated in Fig. 1 of the drawings.

Referring more particularly to the drawings, 1 designates a rod or lever, which may be the piston rod of an engine, a pump suction rod, or any rod which it is desired to reciprocate in a straight line for rendering the operation of the same uniform.

The rod 1 has its upper end curved outwardly and extending upwardly at an incline as is clearly shown at 2, so that during the reciprocation of the rod it will at no time, interfere with the operation of the lever 3, which lever is pivotally connected at its terminal end to a lever 4, as is shown at 5. During the operation of the lever or rod 1, the same passes quite frequently within the path of the movement of the pivotal point 5 of the levers 3 and 4, and by the provision of the arcuate or curved portion therein, it will at all times clear the pivoted ends of the levers 3 and 4, thereby eliminating the liability of the interference of the motion by contact between the levers 3 and 4 and the rod 1. The lever 3 is arcuate in shape, having a straight portion 6, which is pivotally mounted upon a pin 7, and which straight portion has the arcuate portion 7′ formed thereupon. The arcuate portion 7′ curves over and about the pivotal point 8 between the upper terminal end of the rod 1 and the lever 4, which pivotal point is formed substantially intermediate of the ends of the lever 4, as is clearly shown in the drawings. The lever 3 is curved as is shown at 7′ so as to permit of the various movements of the lever necessary for the proper transmission of the power to the lever 4, without interfering with the pivotal point 8, or the upper terminal end of the rod 1. The lever 4 has a power transmitting lever 10 pivotally connected to its upper terminal end or the end opposite to the one to which the lever 3 is connected, and the lever 10 is pivotally mounted upon a rod 11, which rod is carried by any suitable permanent structure. The lever 10 is pivoted, upon the rod 11, intermediate its ends, and the end 12, which projects outwardly from the pivotal point and the various levers 3 and 4 is connected to any suitable type of power producing means (not shown) which will oscillate the lever 10 upon its pivotal point.

Upon the oscillation of the lever 10 upon its pivotal point, a thrusting movement will be imparted to the lever 4, which will in turn impart an oscillatory movement to the lever 3, owing to the fact that the latter lever is pivotally mounted upon the rod 7, which rod is supported by any suitable type of permanent structure. Upon thrusting movement being administered to the lever 4, and an oscillatory movement to the lever 3, the vertical reciprocatory movement will be imparted to the rod 1 for causing this rod to perform its function. The provision of the lever 3 steadies the movement of the rod and being formed as it is and pivotally connected to the lever 4, which lever is in turn pivotally connected as has been heretofore

described to the rod 1, it will impart the power which is derived from the source of power which is positioned to one side of the rod, to the rod 1 in a vertically reciprocatory manner, and prevent any slight oscillation of the upper terminal end of the rod.

In reducing the invention to practice certain minor features of construction, combination and arrangement of parts may necessitate alterations to which the patentee is entitled provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:

In a universal lever structure, a power transmitting lever pivotally connected intermediate its ends to a stationary structure, a second lever pivotally connected to one terminal end of said power transmitting lever, a working rod pivotally connected to said second lever intermediate its ends, an arcuate lever pivoted to the free end of said second lever and having its free end pivoted to a stationary object thereby steadying the movement of the working rod and preventing any oscillation of the upper part of said rod, said working rod having its upper terminal end arcuate to avoid collision with various parts of said lever structure and prevent friction of the same.

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

MIGUEL BLACKALLER.

Witnesses:

ANTONIO AGUILAR,

GREGORIO AGUILAR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."