

No. 867,009.

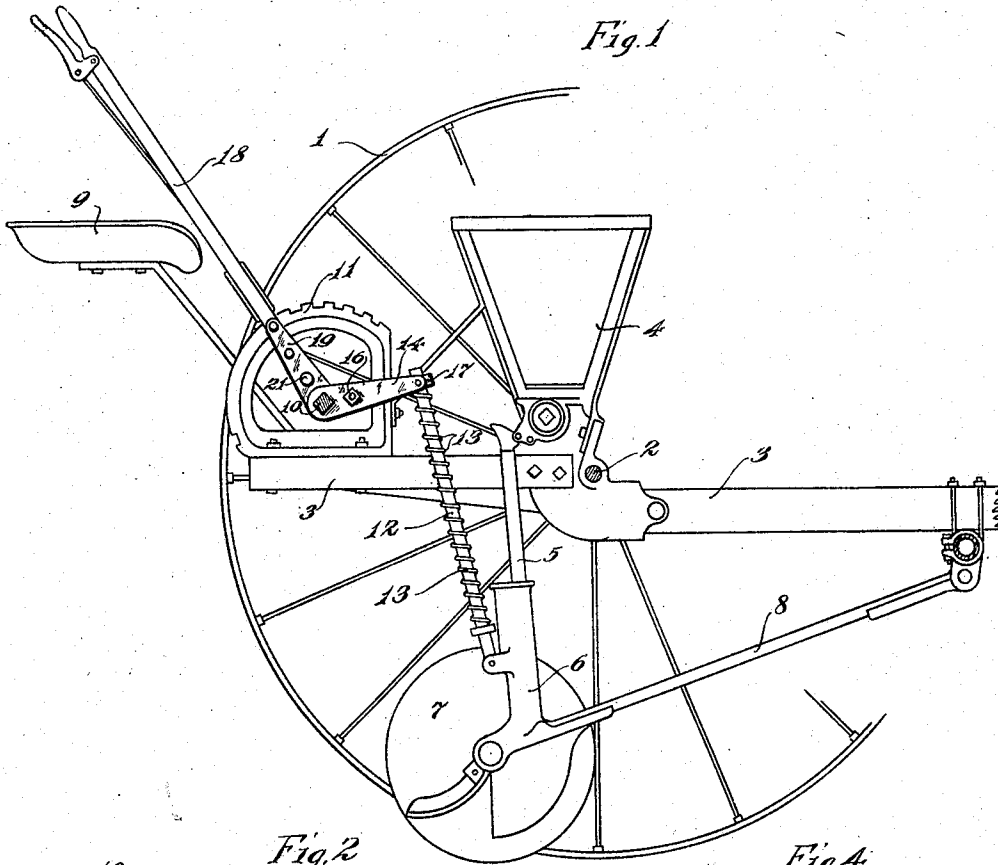
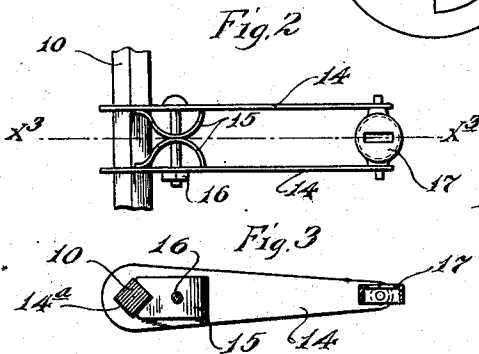
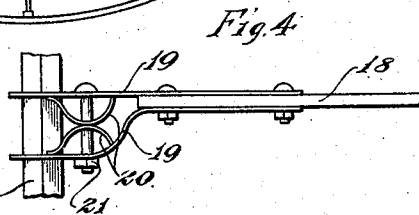
PATENTED SEPT. 24, 1907.

T. BRENNAN, JR.

LEVER.

APPLICATION FILED JUNE 24, 1907.

2 SHEETS—SHEET 1.



Witnesses:

L. L. Simpson.
Leon B. Losey.

Inventor:

Thomas Brennan Jr.

By his Attorneys:

Williamson Merchant

No. 867,009.

PATENTED SEPT. 24, 1907.

T. BRENNAN, JR.

LEVER.

APPLICATION FILED JUNE 24, 1907.

2 SHEETS—SHEET 2.

Fig. 5

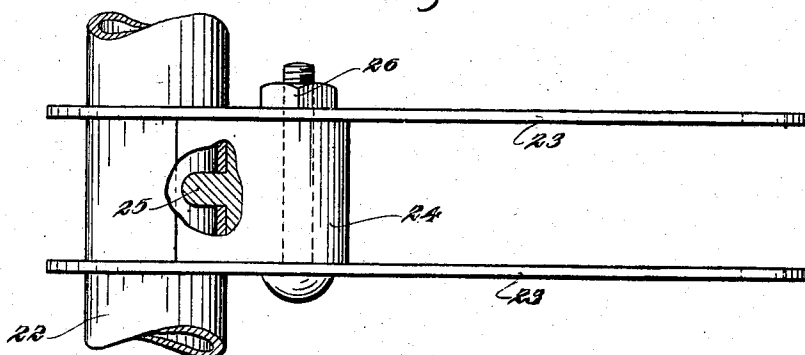
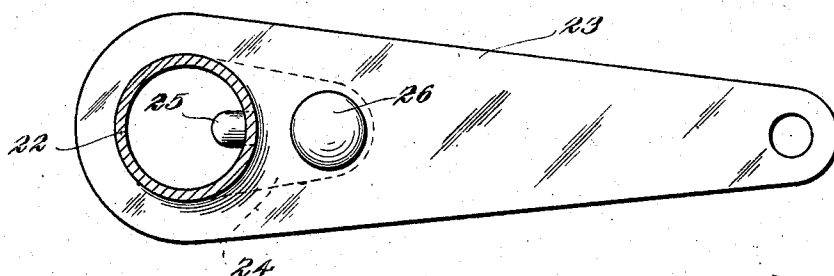


Fig. 6



Witnesses:

L. L. Simpson.

A. H. Opsahl.

Inventor:

Thomas Brennan, Jr.

By his Attorneys:

William M. Mendenhall

UNITED STATES PATENT OFFICE.

THOMAS BRENNAN, JR., OF ST. LOUIS PARK, MINNESOTA, ASSIGNOR TO MONITOR DRILL COMPANY, OF ST. LOUIS PARK, MINNESOTA, A CORPORATION OF MINNESOTA.

LEVER.

No. 867,009.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed June 24, 1907. Serial No. 380,470.

To all whom it may concern:

Be it known that I, THOMAS BRENNAN, JR., a citizen of the United States, residing at St. Louis Park, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in 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.

My invention relates to the construction of levers or arms, and more particularly to those that are used in connection with angular shafts to which they are anchored or secured, and has for its object to improve the same in the several particulars hereinafter noted.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The immediate object had in view in designing the improved lever or arm was to provide improved devices of this character for use in connection with the disk raising and lowering devices of seeders and drills, but the same principle of construction may be employed in various other machines.

In the accompanying drawings, the invention is illustrated as applied to a disk drill for the particular purpose above indicated.

In these drawings, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view partly in side elevation, partly in diagram and partly in section and with some parts broken away, illustrating my invention applied as above stated. Fig. 2 is a plan view showing a presser arm constructed in accordance with my invention. Fig. 3 is a section taken on the line $x^3 x^3$ of Fig. 2. Fig. 4 is a view in rear elevation, showing a lever also designed in accordance with my invention. Fig. 5 is a detail in plan; and Fig. 6 is a detail in side elevation illustrating a modified form of the arm shown in detail in Figs. 2 and 3.

Referring to the parts of the disk drill, the numeral 1 indicates the wheels, the numeral 2 the axle, the numeral 3 the frame, the numeral 4 the seed hopper, the numeral 5 one of the grain delivery spouts, the numeral 6 one of the shoes, the numeral 7 one of the disks, the numeral 8 one of the drag bars, and the numeral 9 the seat.

The numeral 10 indicates a square or angular rock shaft of the disk raising and lowering device, also frequently designated as the presser device. In the usual construction, this rock shaft is manipulated by a latch lever that coöperates with a fixed lock segment 11 on the rear of the frame 3, and is provided with a plurality of presser arms that are connected to the respective seed

boots 6, each by a rod 12, around which is placed a coiled presser spring 13.

In the preferred application of my invention to this mechanism each so-called presser arm is made up of a pair of laterally spaced flat metal members 14, the pivotally mounted ends of which are provided with angular seats that fit (preferably quite loosely) upon the square or angular shaft 10. For a square shaft, such as shown, these seats should also be square but they may be made enough larger in size to permit them to be freely slid upon the said shaft. Preferably, these arm members 14 are stamped from sheet wrought iron or steel. Between the said arm members, adjacent to the shaft 10, is placed a pair of reversely bowed spring metal spacing and clamping members 15 and through perforations in these members 15 and in the arm members 14, a nutted bolt 16 is passed.

The bowed portions of the clamping members 15 are pressed together and the end portions thereof are pressed against the respective arm members 14, when the bolt 16 is tightened. Those ends of the said spring members 15 that are turned toward the angular shaft 10 are notched to fit the adjacent angle of the shaft, as best shown in Fig. 3, and when the said nutted bolt 16 is tightened, these notched ends are tightly pressed against the engaged portion of the shaft, and the opposite angular side of the shaft is tightly wedged against the opposite angular portion of the seat 14^a of the said arm members 14. It will thus be seen that the composite arm, when the nutted bolt 16 tightened, will be very rigidly clamped to the said angular shaft between the notched ends of the clamping and spacing member 15 and the opposite sides of the said angular seats 14^a, so that it is not, in fact, very material what shape is given to those portions of the seats 14^a that are covered by the notched ends of the said clamping members 15.

In the particular application of the arm illustrated in Figs. 1, 2 and 3 of the drawings, a spring cap 17 is placed between and pivotally connected to the free ends of the arm members 14 and the rod 12 is passed through this cap so that the said cap may bear against the upper end of the spring 13.

In the application of the same principle of construction to the latch lever 18 which coöperates with the lock segment 11, to hold the rock shaft 10 in different adjustments, laterally spaced flat metal members 19 are bolted or otherwise secured to the lower end of said lever, and these, like the arm members 14, are provided with angular seats that engage the square shaft 10. Also, spring spacing and clamping members 20 that correspond to the members 15 are placed between the members 19, and the said parts 19 and 20 are clamped together by a nutted bolt 21, and the notched ends of the said members 20 are forced against the adjacent angu-

lar portion of the said shaft 10 in the same manner described in connection with the so-called presser arm.

A lever or arm of the kind above described may be very cheaply constructed and is strong and durable. 5 It has the further advantage that it may be made in any machine shop and, therefore, affords a very desirable substitute for corresponding parts that have hitherto almost universally been made from malleable iron.

The form of arm illustrated in Figs. 5 and 6, while 10 within the broad scope of my invention, does not involve all of the novel features of the construction illustrated in Figs. 1 to 4 inclusive. It, however, has these features in common; laterally spaced arm members and a combined spacing and clamping member inter- 15 posed between them, which latter is held clamped between the arms and engaged with the shaft by a common bolt or clamping means. Referring to the details thereof, the numeral 22 indicates a round shaft shown in the form of a pipe, and the numeral 23 indicates the 20 laterally spaced metal arm members which have seats through which the shaft 22 is passed. The numeral 24 indicates a combined spacing and clamping block which is placed between the arm members 23, and is provided with a lug or lock projection 25 that engages 25 the perforation or seat in the tubular shaft 22. A short nutted bolt 26 is passed through the arm members 23 and through the block 24 and serves to clamp the said block between the said arm members and to hold the same pressed against the shaft 22 with its lug 25 inter- 30 locked with the seat thereof, so that the said arm is locked in said shaft for pivotal movements therewith.

In the claims the term "arms" is used in a broad sense to include what might sometimes be designated as a lever. The term "angular shaft" is used in a broad

sense to include a shaft that is other than round in cross 35 section.

What I claim is:

1. The combination with an angular shaft, of an arm made up of laterally spaced members having seats engaging said shaft, a combined spacing and clamping member inter- 40 posed between said arm members, and means for clamping said arm members onto said spacing and clamping member and forcing the same against the said shaft, substantially as described.

2. The combination with an angular shaft, of a pair of 45 laterally spaced arm members having angular seats engaging said shaft, a pair of reversely bowed spring clamping and spacing members interposed between said arm members, and a bolt passed through said arm members and interposed spring members, and forcing the ends of the lat- 50 ter against the angular shaft, substantially as described.

3. The combination with an angular shaft, of a pair of laterally spaced arm members having angular seats en- 55 gaging said shaft, a pair of reversely bowed spring clamping and spacing members placed with their bowed portions pressed together and with their end portions engaging said arm members and having notched ends that engage the adjacent angular portion of said shaft, and a nutted 60 bolt passed through said arm members and interposed spring members, substantially as described.

4. The combination with a shaft, of an arm made up of laterally spaced members having seats that engage said shaft, a combined spacing and clamping member inter- 65 posed between said arm members adjacent to said shaft, and a bolt passed through said arm members and spacing and clamping member and holding the latter and the said arm members interlocked to the said shaft, substantially as described.

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

THOMAS BRENNAN, JR.

Witnesses:

SPENCER E. DAVIS,
C. C. WOLFORD.