No. 890,780. PATENTED JUNE 16, 1908.

H. LUTTER & E. A. GIES.

CRANK PLANER.

APPLICATION FILED SEPT. 22, 1905.

Fig. 2.

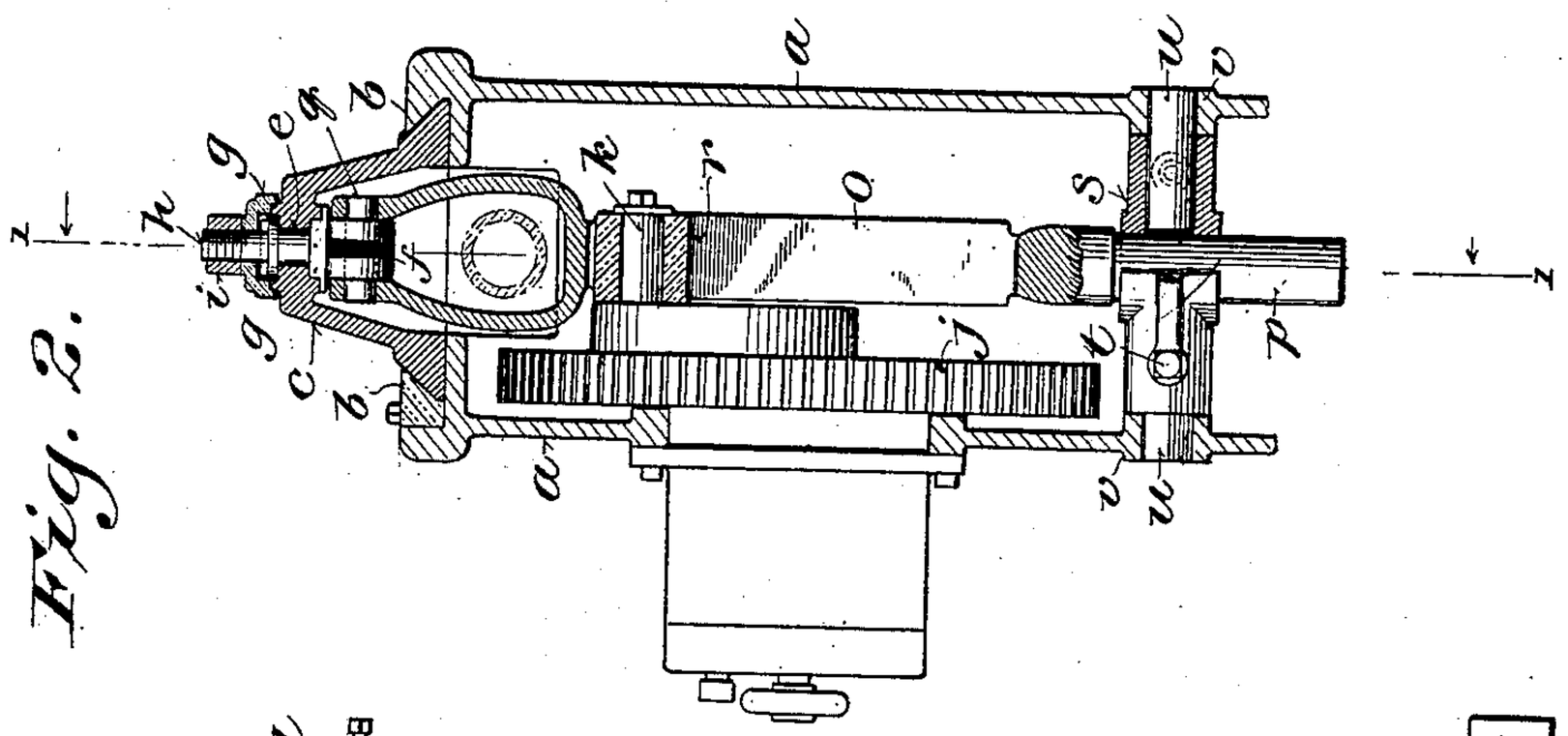
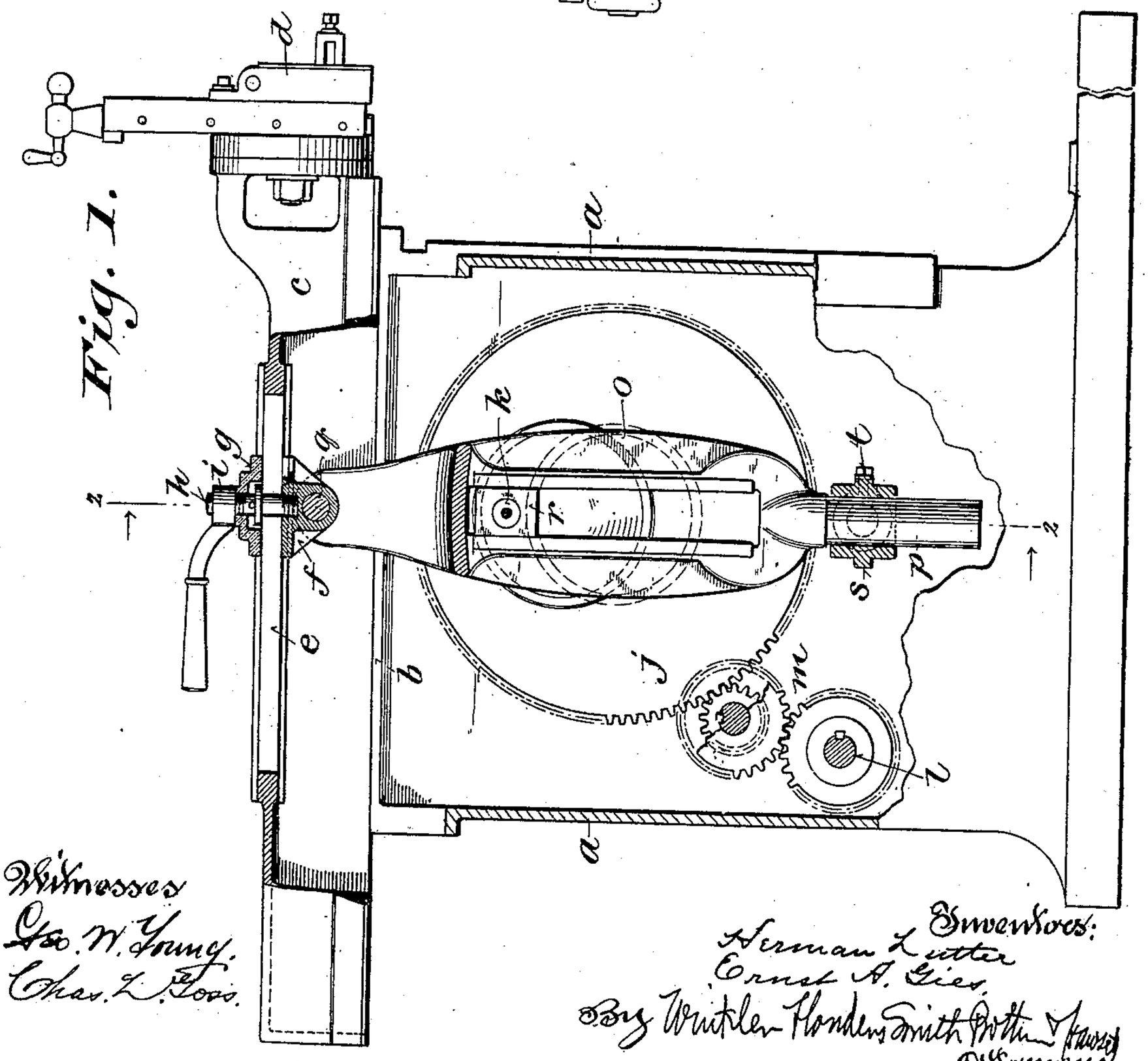


Fig. 1.



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UNITED STATES PATENT OFFICE.

HERMAN LUTTER AND ERNST A. GIES, OF MILWAUKEE, WISCONSIN.

CRANK-PLANER.

No. 890,780. Specification of Letters Patent. Patented June 16, 1908.

Application filed September 22, 1905. Serial No. 279,653.

To all whom it may concern:

Be it known that we, HERMAN LUTTER and ERNST A. GIES, citizens of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Crank-Planers, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates to metal planers or shaping machines in which the rams or reciprocating tool carriages are actuated by means of cranks and vibrating yokes or rocker arms with which the driving cranks engage. Its main objects are to produce a more uniform speed of the ram or carriage; to admit and operate upon long pieces of work; and generally to improve the construction and operation of this class of machines.

It consists in certain novel features of construction and in the peculiar arrangement and combinations of parts hereinafter particularly described and defined in the claims.

In the accompanying drawing like reference characters designate the same parts in both figures.

Figure 1 is a vertical longitudinal section on the line 1 1, Fig. 2, of a machine embodying the invention; and Fig. 2 is a vertical cross section of the same on the line 2 2, Fig. 1.

a designates a box frame provided at the top with longitudinal guide ways *b b*, and *c* designates the reciprocating ram or carriage mounted in said guide ways and provided at one end with an adjustable tool holding head *d*, of the usual or any suitable form and construction for use in this class of machines. The ram is longitudinally recessed on the under side, and is formed in the upper side with a longitudinal slot *e*, in which is adjustably secured a pivot head *f* by means of a clamp *g*, a screw *h* and nut *i*.

j is a gear wheel journaled on one side in the frame *a* and provided on the other side with a crank pin *k* which is adjustable towards and from the center of said wheel to vary the travel of the ram. The gear *j* is connected with the driving shaft *l* as shown in Fig. 1, by back or change speed gearing *m*, which may be of any suitable form and arrangement.

o is a longitudinally slotted rocker arm or vibrating yoke formed at its lower end with a longitudinal cylindrical stem *p* and forked at its upper end, which is connected by a cross pin *q* with the block *f*. The crank pin *k* is provided with a block *r* which is fitted to slide in the longitudinal slot of the rocker arm *o*.

s is a rocker head formed with a socket or sleeve bearing in which the stem *p* is fitted and movable endwise, and at right angles to said bearing with a transverse bore in which are fitted and secured by set screws *t*, pivot pins or journals *u*, projecting therefrom into bearings *v* in the sides of the frame. The ends of the rocker head abut against the inner ends of the bearings *v*, thereby holding it and the lower end of the rocker arm *o* against lateral play. The detachable pivot pins or journals *u* of the rocker head admit of readily assembling and of removing the parts for renewal or repairs.

With the foregoing construction and arrangement of the rocker arm and its connections the pivot pin *q* connecting it at its upper end with the ram is caused to travel in a straight line and the crotch in the forked end of the arm is prevented from rising and falling with the rotation of the actuating crank, as it does in machines where the lower end of the rocker arm has a fixed pivot or fulcrum connection with the frame. In this way a clear open space of invariable area is maintained between the forked end of the arm and the under side of the ram for the passage of long pieces of material like a pipe, for example, as indicated in Fig. 2, on which it may be desired to operate with the machine.

The arrangement of parts herein shown and hereinbefore described tends to produce a more nearly uniform speed in the travel of the ram throughout its entire traverse than when the rocker arm has a movable pivot connection therewith and a stationary fulcrum, since towards the limits of the movement of the ram the distance between the pivot connections of the rocker arm with the ram and frame is increased, the throw of the actuating crank remaining constant for any given adjustment.

Various modifications in the minor details of construction and arrangement of parts may be made without departing from the principle and intended scope of the invention.

We claim:

1. In a crank planer the combination with the frame, a reciprocating ram mounted thereon and a driving crank journaled in the frame, of a longitudinally slotted rocker arm

pivoted at its upper end to said ram and having a longitudinal stem at its lower end, and a rocker head journaled in said frame transversely to said arm and having at right angles to the axis on which it rocks a bearing in which said stem is fitted and adapted to move endwise, the axis of said bearing intersecting the rocking axis of the head substantially as described.

2. In a crank planer the combination with the frame, ram and actuating crank, of a rocker arm pivoted at its upper end to said ram and having a longitudinal cylindrical stem at its lower end, and a rocker head having a cylindrical bearing in which said stem is fitted and movable endwise and on each side of said stem a transverse journal bearing in the frame, substantially as described.

3. In a crank planer the combination with the frame, ram and actuating crank, of a rocker arm pivoted at its upper end to the ram and having a longitudinal stem at its lower end, a rocker head having a bearing in which said stem is fitted and movable endwise, and separate journals removably fitted in a transverse bore in said head and projecting therefrom into bearings in the sides of the frame, the axis of the bore intersecting the axis of said bearing substantially as described.

In witness whereof we hereto affix our signatures in presence of two witnesses.

HERMAN LUTTER.
ERNST A. GIES.

Witnesses:
CHAS. L. GOSS,
MAUDE L. EMERY.