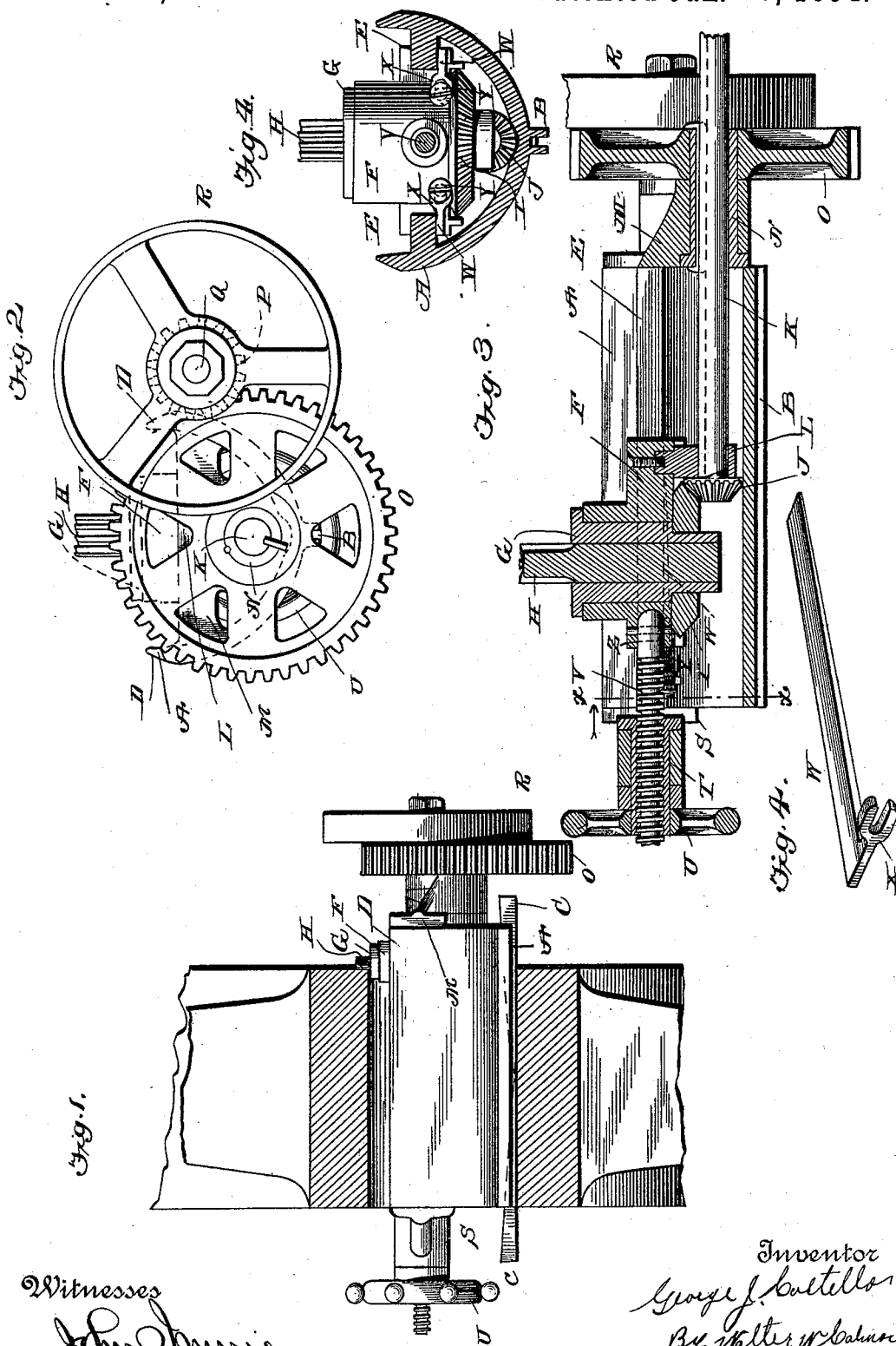


(No Model.)

G. J. COSTELLO.
KEY SEATING MACHINE.

No. 512,808.

Patented Jan. 16, 1894.



Witnesses

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GEORGE J. COSTELLO, OF PHILADELPHIA, PENNSYLVANIA.

KEY-SEATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 512,808, dated January 16, 1894.

Application filed February 1, 1893. Serial No. 460,553. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. COSTELLO, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Key-Seating Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in key seat cutters and consists in certain novel features which will be hereinafter described and claimed.

The object of my invention is to produce a portable machine by the use of which key seats may be readily cut in the bores of large pulleys and gear-wheels. This object I accomplish by the use of the device illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved machine showing it in position in a wheel. Fig. 2 is an end view of my improved machine in its operative position and Fig. 3 is a longitudinal section of the machine. Fig. 4 is a detail perspective view of one of the wedges for holding the cross head to its guides, and Fig. 5 is a cross section on the line $x-x$ of Fig. 3.

Referring to the drawings by letter, A designates the body of my improved key seat cutting machine which is substantially U-shaped in cross-section and is provided on its outer surface at its center with the longitudinal grooves B having inclined bases in which wedges C are inserted to bear against the bore of the wheel or pulley and thereby secure the machine in position as will be readily understood on reference to Fig. 1. The edges of the body are beveled as shown at D and on its inner side the body is provided with the longitudinal ribs or guides E on which I mount a cross-head F. The rotary cutter-head G is mounted in this cross-head F so as to rotate freely therein and carries a rotary knife or cutter H as clearly shown. The rotary knife or cutter depends from the lower end of the cutter-head and on the upper end of the cutter-head I provide the beveled pinion I which meshes with a similar pinion J on the inner end of the driving shaft K. The said driving shaft is supported by a standard L rising from

the cross-head and a bracket M secured to the end of the body. The driving shaft is journaled directly in the cross-head and passes through a sleeve N in the bracket, being keyed to the said sleeve so as to rotate therewith but at the same time be capable of longitudinal movement through the same. A driving gear-wheel O is secured on the said sleeve and meshes with a pinion P which is secured upon a stub shaft Q projecting from the bracket M. I further secure upon this stub shaft the driving wheel R which may be set in motion by means of a crank handle, a driving belt or any other preferred means. At the opposite end of the body I secure a bracket S in which an internally threaded sleeve T is secured, the said sleeve having a hand wheel U secured to its outer end. A worm-screw V is mounted in the said sleeve and engages the threads of the same, its inner end being connected to the cross-head as shown, so that when the hand wheel U is rotated a longitudinal movement will be imparted to the worm-screw and the cross-head consequently shifted longitudinally of the main body of the machine. In order that the cross-head may hold this cutter firmly to its work and not move too easily upon its ways or guides I provide the tapered keys or wedges W which are fitted between the said ways or guides and the seats therefor in the cross-head as shown most clearly in Fig. 3. These keys or wedges are provided at their larger ends with the inwardly projecting offsets X in which I mount the set screws Y the ends of which engage sockets Z in the cross-head. It will be readily seen that by properly adjusting the set screws the cross-head will be held upon the ways or guides with the desired steadiness.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided a very simple machine by which key seats may be easily and rapidly cut in the bore of a large gear-wheel or band-pulley and the advantages thereof are thought to be obvious.

In practice, the machine is inserted through the bore of the wheel and secured therein by means of the wedges shown and described and motion is then imparted to the driving wheel and through the same and the intermediate

- gearing to the driving shaft. The cutter will thus be set in motion and will be caused to act on the inner surface of the wheel so as to form a groove or key seat therein. As the
5 metal of the wheel is cut away the hand wheel U is turned so as to move the worm shaft which thereby slides the cross-head along the body and consequently holds the cutter to its work.
- 10 It will be readily observed that my machine is composed of very few parts and that a broken or worn out part can be easily and quickly renewed without in any way impairing the efficiency of the machine.
- 15 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—
1. A portable key seat cutter having a substantially U-shaped body provided with beveled edges whereby it is adapted to fit within

and be held by the hub of the wheel or pulley and having grooves on its outer side adapted to receive and hold the securing wedges.

2. The combination of the body having brackets at its ends, the cross-head mounted
25 therein and having a standard, a cutter carried by said cross-head, a driving shaft mounted in the standard on the cross head and the bracket at one end of the body, gearing between said driving shaft and the cutter, an
30 adjusting screw mounted in the bracket at the opposite end of the body and connected to the cross-head and means for operating said adjusting screw.

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

GEORGE J. COSTELLO.

Witnesses:

JOHN I. FARRELL,

HENRY E. ECKERSBERG.