No. 839,957. PATENTED JAN. 1, 1907.

G. T. REISS.

FEED RATCHET DEVICE.

APPLICATION FILED OCT. 25, 1906.

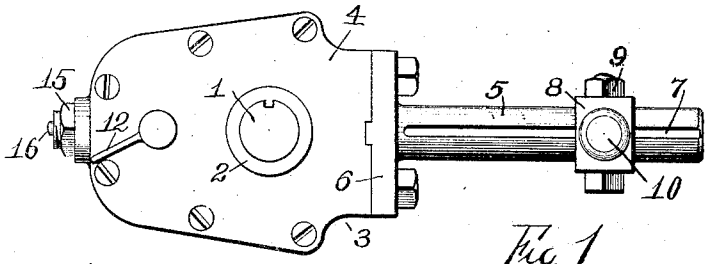


Fig. 1.

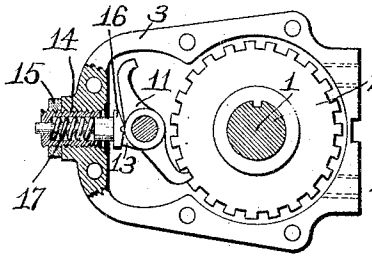


Fig. 3.

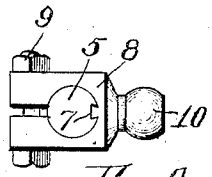


Fig. 4.

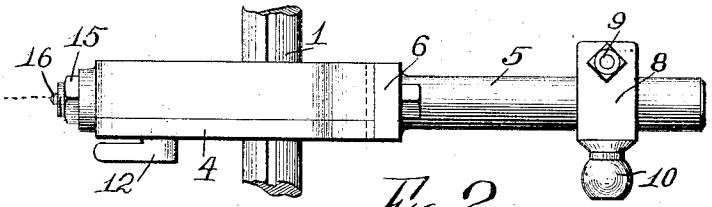


Fig. 2.

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UNITED STATES PATENT OFFICE.

GEORGE T. REISS, OF HAMILTON, OHIO, ASSIGNOR TO NILES-BEMENT-POND COMPANY, OF JERSEY CITY, NEW JERSEY.

FEED RATCHET DEVICE.

No. 839,957. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed October 25, 1906. Serial No. 340,493.

To all whom it may concern:

Be it known that I, GEORGE T. REISS, a citizen of the United States, residing at Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Feed Ratchet Devices, of which the following is a specification.

This invention pertains to a ratchet device for use about the various parts of machine-tools in giving intermittent rotary motion to feed-screws, &c., and the invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a face view of the device; Fig. 2, a plan of the same; Fig. 3, a face view, part vertical section, of the ratchet-case with the cover removed; and Fig. 4, an end elevation of the stem.

In the drawings, 1 indicates a feed screw or shaft to be intermittently turned by means of the device; 2, a ratchet-wheel mounted thereon; 3, a hollow case inclosing the ratchet-wheel, whose hubs take bearings in the front and rear walls of the case; 4, a removable cover-plate forming the front wall of the case; 5, a stem rigidly projecting from the case at right angles to the axis of the ratchet-wheel; 6, a flange formed on the inner end of the stem and bolted to the end of the case; 7, a keyway in the stem; 8, a block slidable on the stem and having a key engaging the keyway therein, the block being slitted open on one side; 9, a clamp-bolt passing through the slitted portion of the block and serving as means by which the block may be firmly clamped at selected point on the stem; 10, a wrist projecting from the block to serve as means by which the device may be oscillated through the medium of a connecting-rod, the illustration showing this wrist as of spherical form to facilitate the actuation of the device from a crank-shaft or rocker-shaft having its axis at an angle to the axis of the ratchet-wheel, a condition often presenting itself in machine-tools; 11, a double-ended pawl pivoted within the case and adapted to coöperate with the ratchet-wheel; 12, a finger-lever on the spindle of the pawl exterior to the case; 13, a V-shaped projection on the back of the pawl; 14, a bushing adjustably threaded into the end wall of the case, its axis being in the common plane of the axes of the ratchet-wheel and pawl; 15, a lock-nut on this bushing to serve as means by which the bushing may be made firm after being screwed a selected distance into the case; 16, a plunger fitted for reciprocation in the bushing and having a centrally-grooved head to coöperate with the V-shaped projection of the pawl, and 17, a spring disposed within the bushing and acting against the plunger and urging the head of the plunger toward the pawl.

In Fig. 3 the lower end of the pawl is in engagement with the ratchet-wheel, the spring-plunger urging this engagement, but permitting the end of the pawl to click idly over the ratchet-teeth on the back stroke. By adjusting the pawl its upper end can be made active, the lower end becoming idle as when the ratchet-wheel is to be turned in the direction opposite the one before considered. By adjusting the pawl to neutral position both its ends become idle and the groove in the plunger engages the V-shaped projection of the pawl and maintains the pawl in idle position. By slacking the lock-nut the bushing may be screwed inward or outward to adjust the spring to desired tension, the lock-nut when tightened holding the bushing in adjusted position. The wrist-block may be adjusted to various points along the stem to vary the degree of angular motion given to the ratchet-wheel at each excursion of the wrist through a path of given length. The stem may be readily unbolted from the case and a longer or shorter or different kind of stem substituted.

I claim—

A feed ratchet device comprising a hollow case, a ratchet-wheel and a pawl pivoted therein, a flanged stem bolted to the case and projecting therefrom at right angles to the axis of the ratchet-wheel, a wrist carried by the stem, a bushing adjustably secured in the wall of the case at right angles to the axis of the pawl, and a spring-plunger mounted in the bushing and coöperating with the pawl, combined substantially as set forth.

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