2 Sheets—Sheet 1.

S. L. WIEGAND.

Screw Threading Machine.

No. 81,049. Patented Aug. 11, 1868.

Fig. 1.

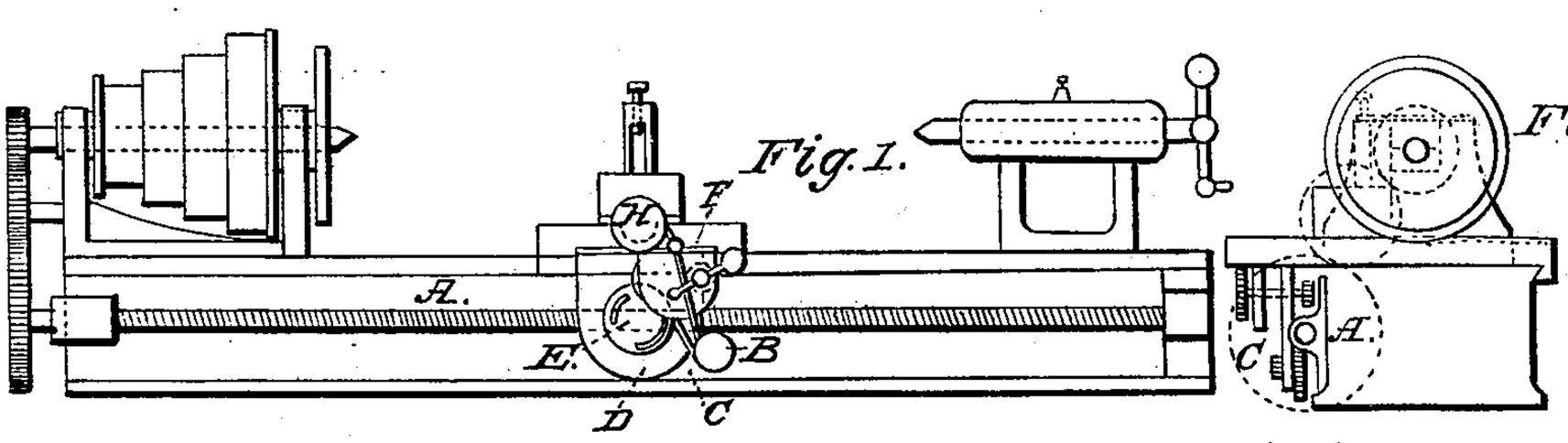


Fig. 2.

Fig. 3.

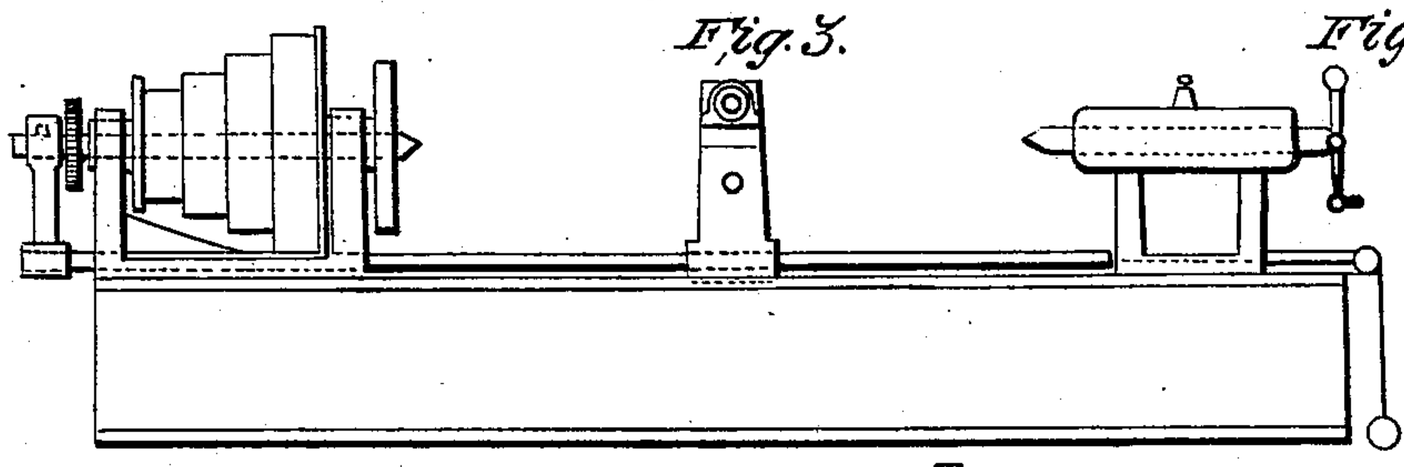


Fig. 4.

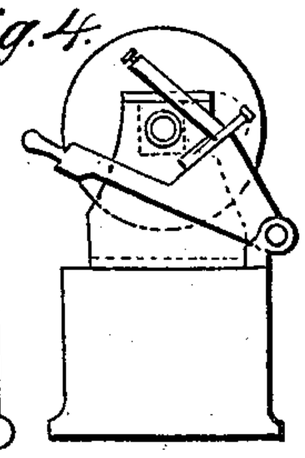


Fig. 6.

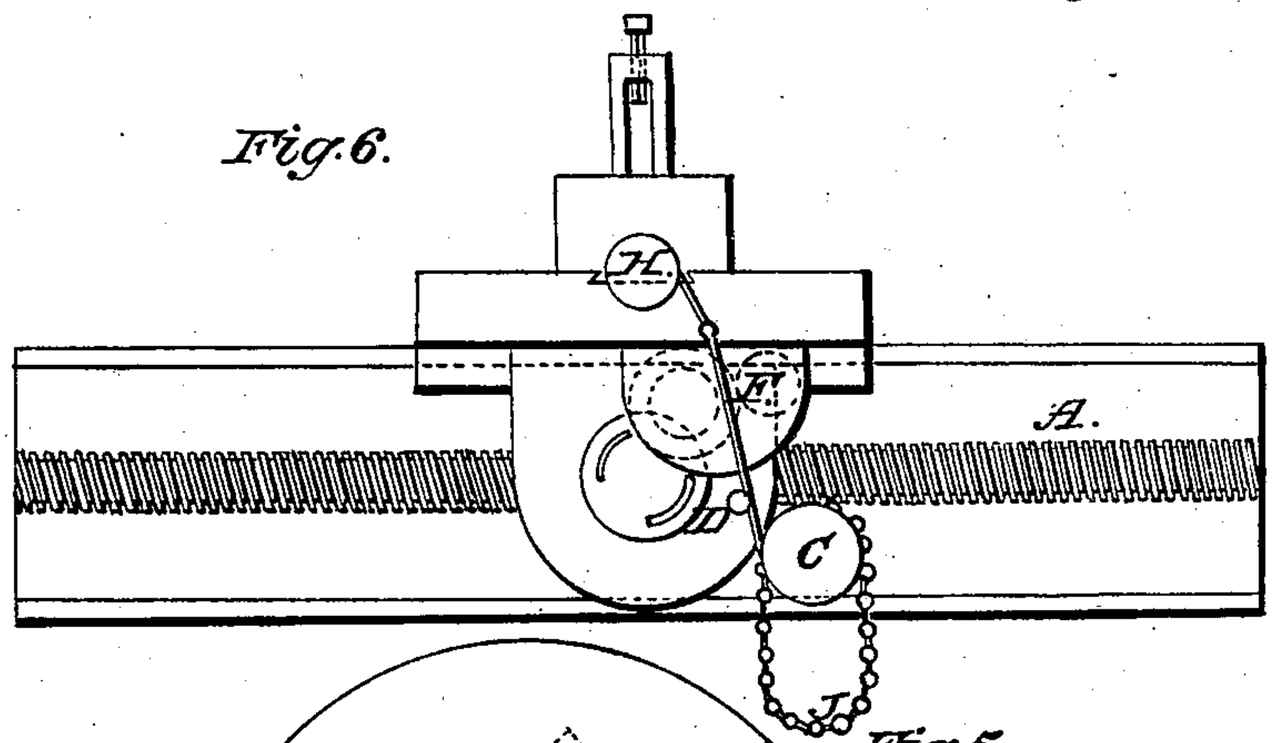
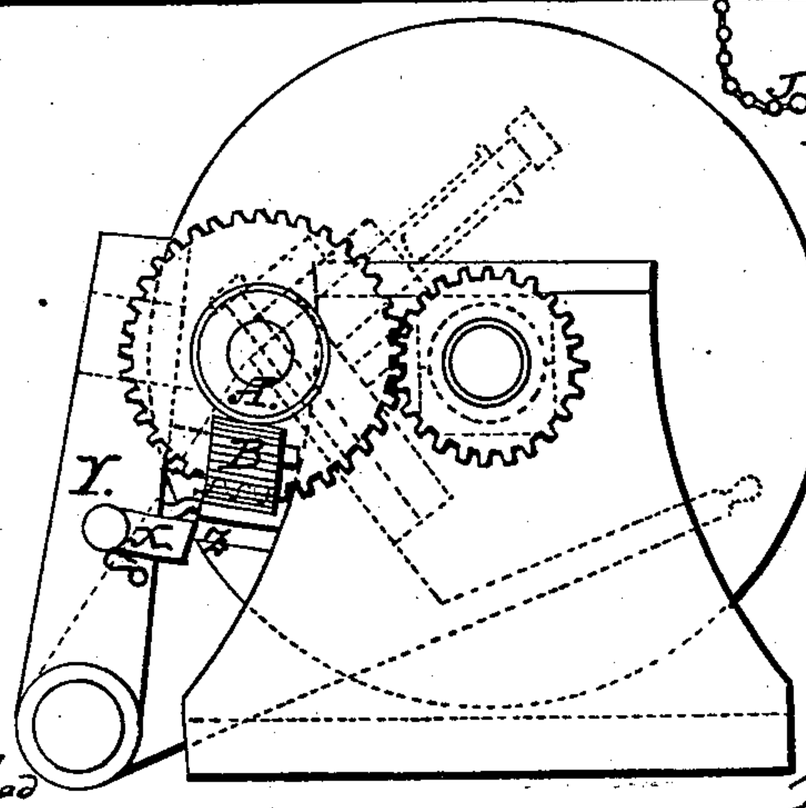


Fig. 5.



Witnesses.

Joseph Hollingshead

John D. Bloor

Inventor;

S. Lloyd Wiegand

2 Sheets—Sheet 2.

S. L. WIEGAND.

Screw Threading Machine.

No. 81,049. Patented Aug. 11, 1868.

Fig. 11.

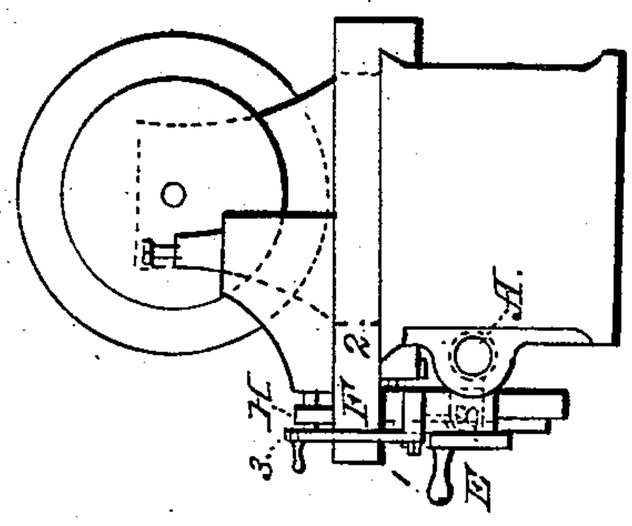


Fig. 8.

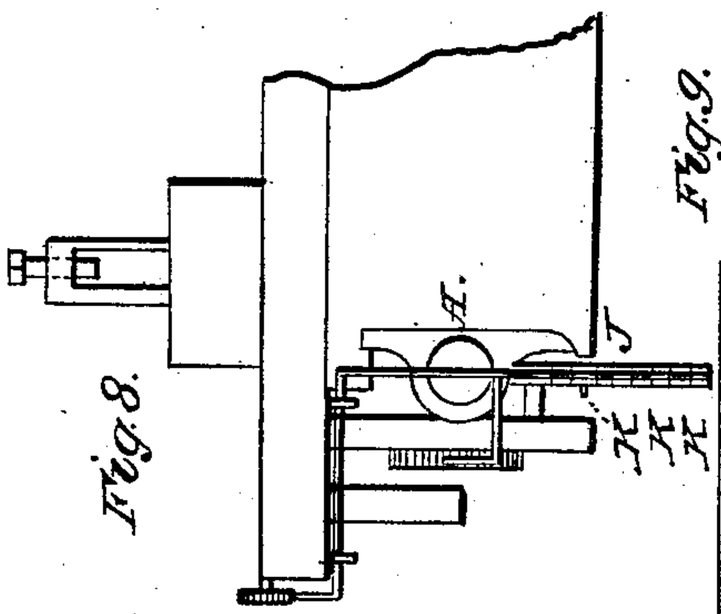
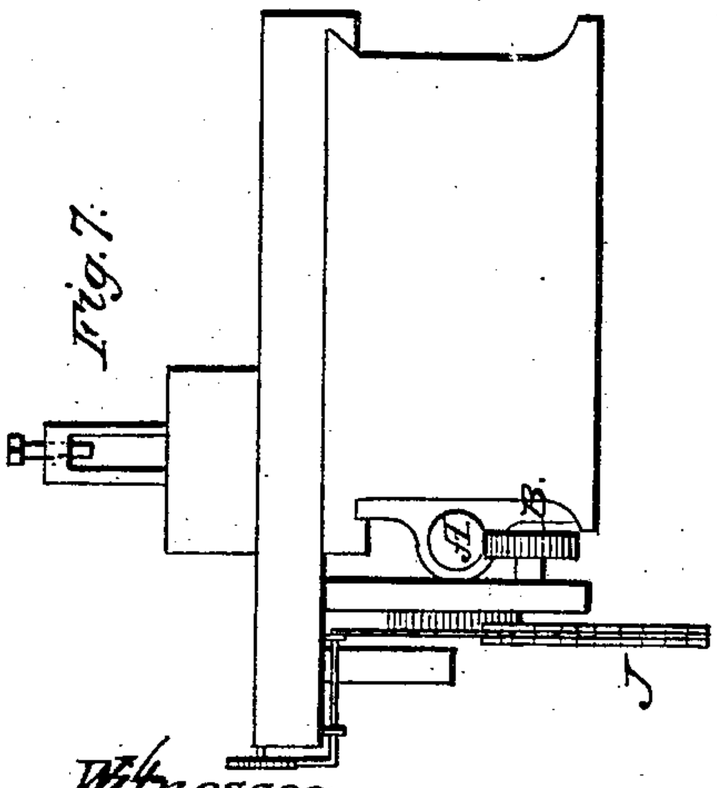


Fig. 7.



Witnesses;

Walter J. Budd

Joseph S. Budd

Fig. 9.

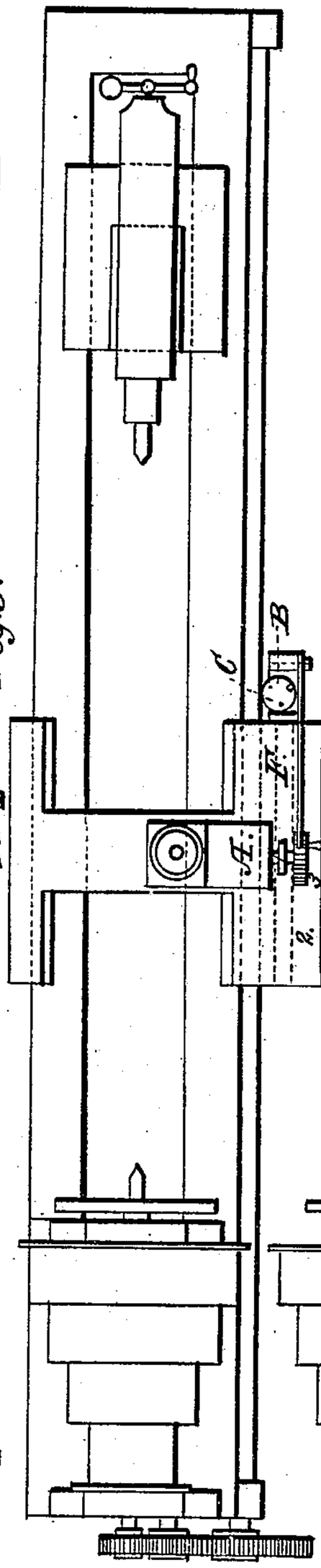
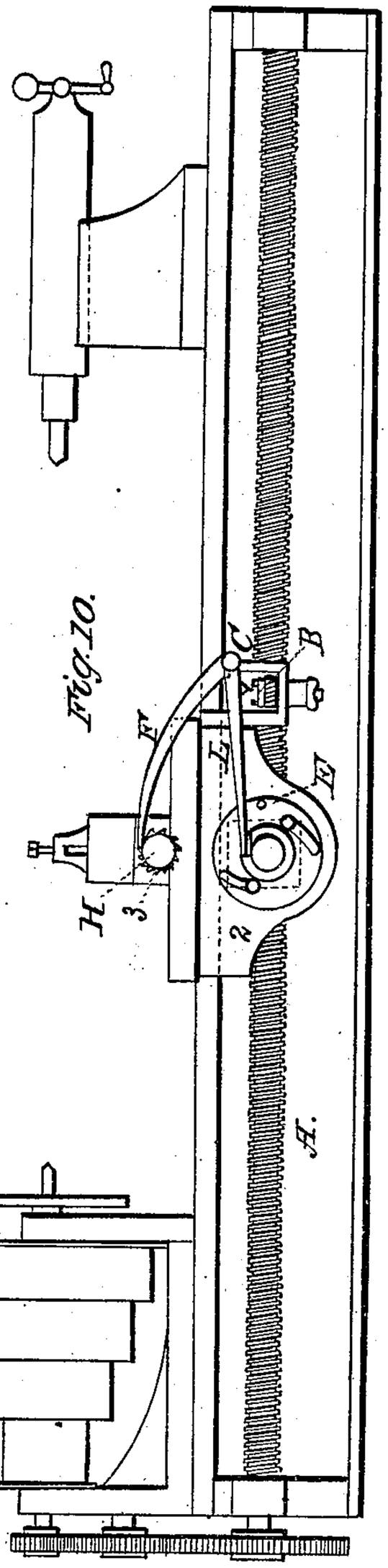


Fig. 10.



Inventor;

S. Lloyd Wiegand

United States Patent Office.

S. LLOYD WIEGAND, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 81,049, *dated August* 11, 1868; *antedated July* 29, 1868.

IMPROVEMENT IN SCREW-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, S. LLOYD WIEGAND, of the city of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Machinery for Making Screws; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and letters of reference marked thereon.

The character of my invention is to control that class of machinery for cutting screws, in which it is desirable to pass the cutting-tool more than once in the same path, upon the screw, in course of production, so as to make it impossible to engage the nut into the leading or guiding-screw, except at such time as the several parts are in their proper relative positions.

Figure 1 shows a front elevation of this invention applied to an engine-lathe of the usual construction.

Figure 2 shows a side elevation of the same.

Figure 3 shows a front elevation of this invention as applied to a chasing-lathe, such as is used by steam fitting manufacturers.

Figure 4 shows a tail-stock end elevation of the same.

Figure 5 shows an enlarged elevation of the head-stock end of a lathe, with this invention applied.

Figures 6 and 7 show a modification of a portion of this invention.

Figure 8 shows another modification thereof.

Figures 9, 10, and 11 show respectively a plan front elevation and end elevation of this invention as made and in actual use upon an engineer's screw-cutting lathe.

The same letters of reference apply to the same parts in the several figures.

Into the leading-screw A, I gear a toothed wheel, B, which, in number of teeth, is best to make a multiple of the number of threads to the standard of length, and the common divisor to the train of wheels conveying motion from the lathe-arbor to the leading-screw, upon the same axis, and rotating with the toothed wheel B.

I place a wheel, containing the cam or cams C, which, operating upon the detent or latch L, engaging in the slotted plate E, holding open the nut, or segment of á nut, which conveys the motion from the leading-screw to the tool-carriage or rest, prevents the nut from being engaged in the leading-screw, except when the cams C are in the proper position, in which they were previously adjusted, which occurs simultaneously with the coincidence of the cutting-tool with the line already described on the work.

Operated by the same cam, or by another similar cam, is a lever, F, which controls the feeding-motion of the cutting-tool, by means of the detent G acting upon or detaining the ratchet-wheel upon the feed-screw H.

The wheel B rotates only when the carriage 2 is moved independently of the motion imparted to it by the nut from the leading-screw A, or when the leading-screw A is rotated, and the saddle or carriage 2 is stationary, and whenever, by the rotation of the wheel B, the cams C lift the detents or pawls L and F, so as to disengage them from the revolving slotted plate E, which opens and closes the nut on the leading-screw A, and from the toothed wheel 3 on the feed-screw H, the workman in attendance can then engage the tool in the work being made, and the nut into the leading-screw, and by adjusting the cam C, before commencing to cut the screw-thread up the work, it is impossible to engage either the nut into the leading-screw A, or the tool into the work, excepting when the proper threads in both coincide in position to be engaged simultaneously.

The operation of the modified form of this apparatus, shown in figs. 3 and 4, is the same in principle as in figs. 1 and 2, the detent X being fastened upon the arm Y, and operating upon the stationary bar Z, and supported by the spring S, and is depressed so as to permit the nut to fall in gear by the cam upon the wheel B, thus permitting the tool to cut the thread, and the nut to become engaged in the screw at the proper time, even if the number of threads of the screw in course of construction is not equal to or a multiple of the number of threads of the leading-screw.

Instead of a toothed wheel, I sometimes, as shown in fig. 8, use a chain, J, with projections, which gear into the screw and bearing-projections K, which answer the purpose of cams. By taking out links or inserting

others in this chain, the number of threads, proportioned to the return of the same tooth in gear with the screw, can be varied.

Instead of operating the chain, by gearing it directly into the leading-screw, I have, in figs. 6 and 7, shown a mode of gearing it from a spindle or wheel rotating with a gear-wheel working into the leading-screw.

What I claim as my invention, and desire to secure as such by Letters Patent, is—

1. The gear, constantly engaged in the leading-screw, and the cam and the detent or pawl, combined and used therewith, substantially as shown and described, for preventing the re-engagement of the nut or segment of a nut in improper positions in the leading-screw.

2. The gear, constantly engaged in the leading-screw, in combination with the cam and detent, as described and shown, to prevent the re-engagement of the cutting-tool in the work when in improper positions.

S. LLOYD WIEGAND.

Witnesses:

JOHN D. BLOOR,

JOHN S. HOLLINGSHEAD.