

F. W. PERRY.
Machines for Scoring Screw-Caps.

No. 147,163.

Patented Feb. 3, 1874.

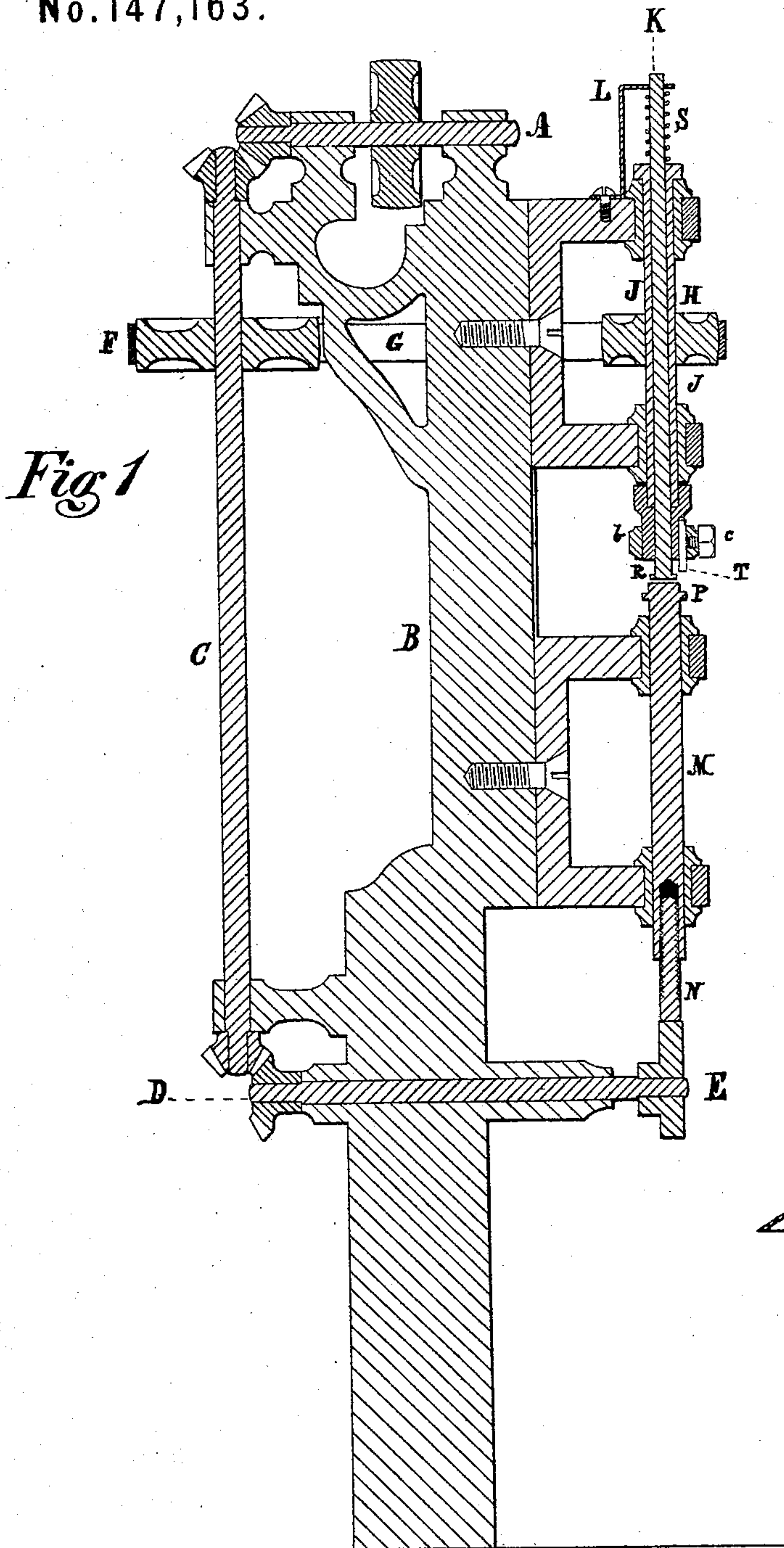


Fig 1

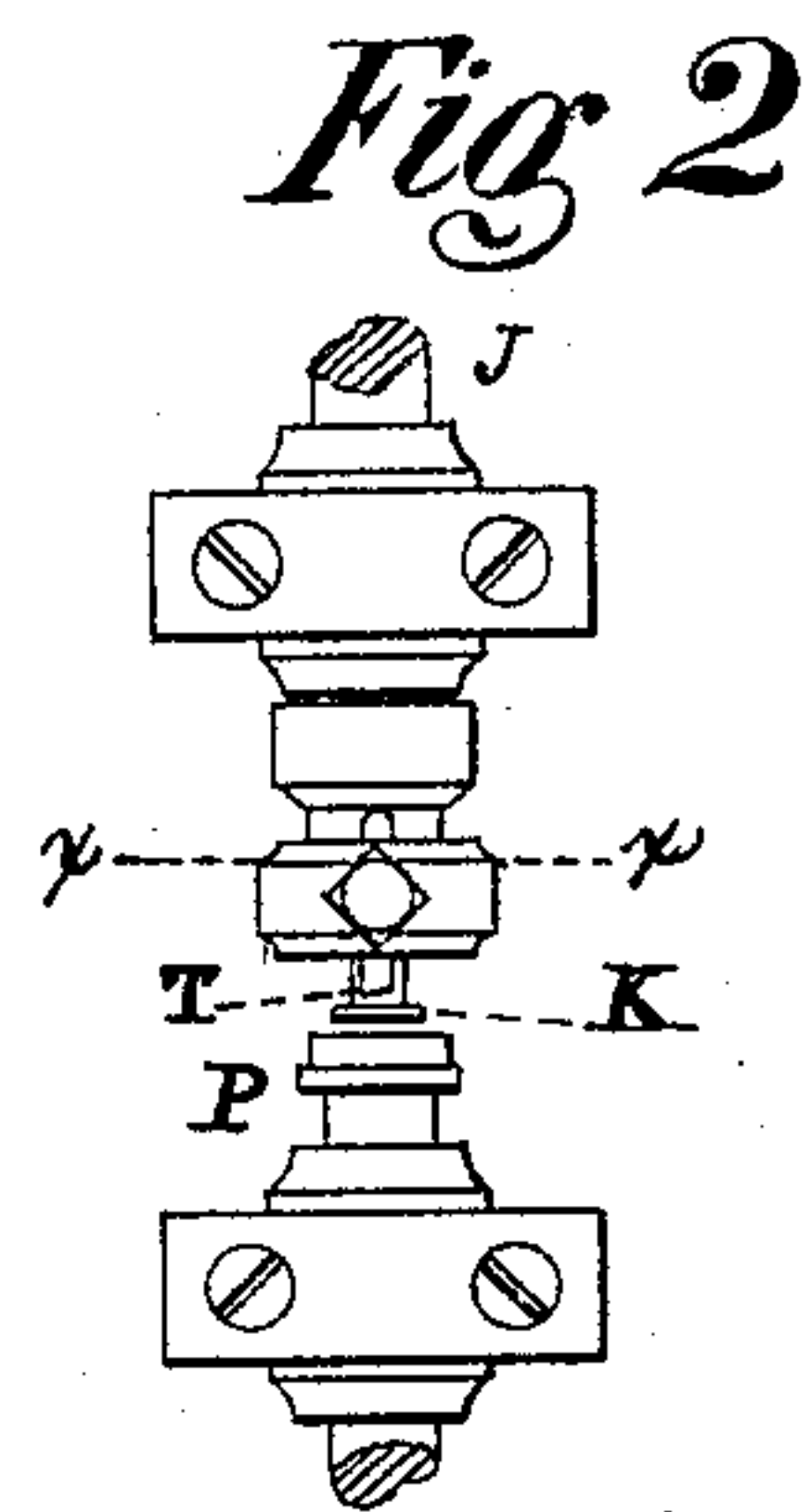


Fig 2

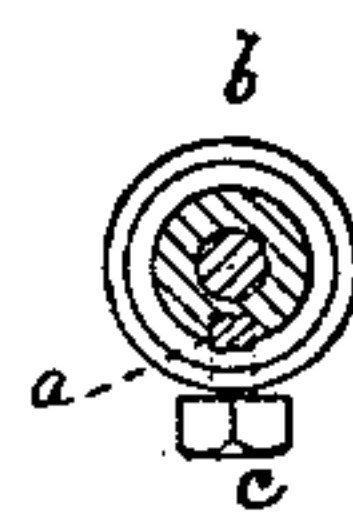


Fig 3

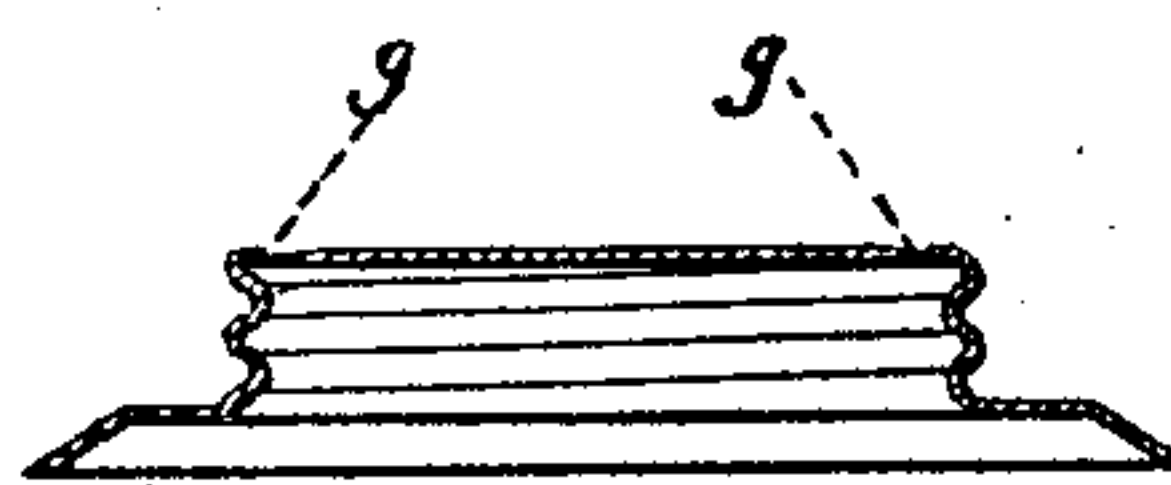


Fig 7

Witnesses:

No. P. Grant.

Theo. E. Wiedersheim.

Inventor:

Frank W. Perry
by *John A. Wiedersheim*
attys.

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Fig 4

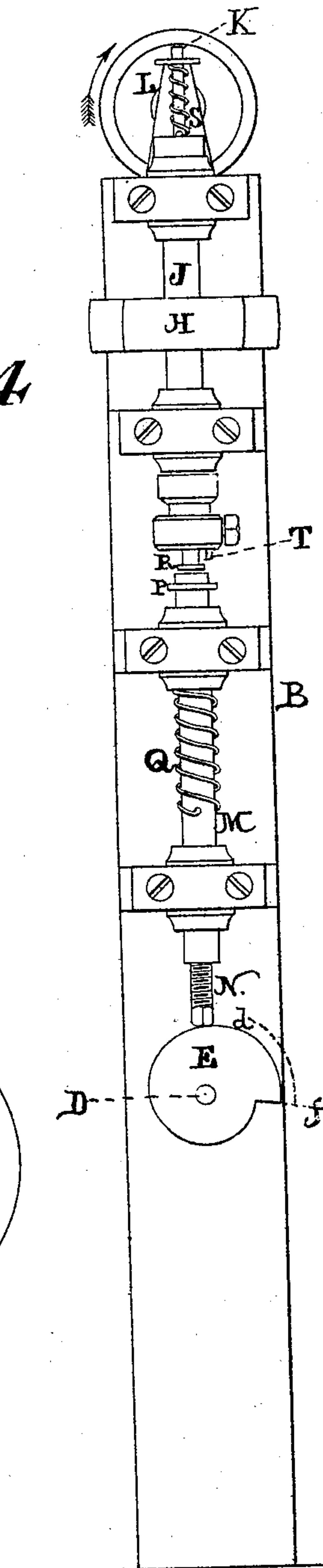


Fig 6

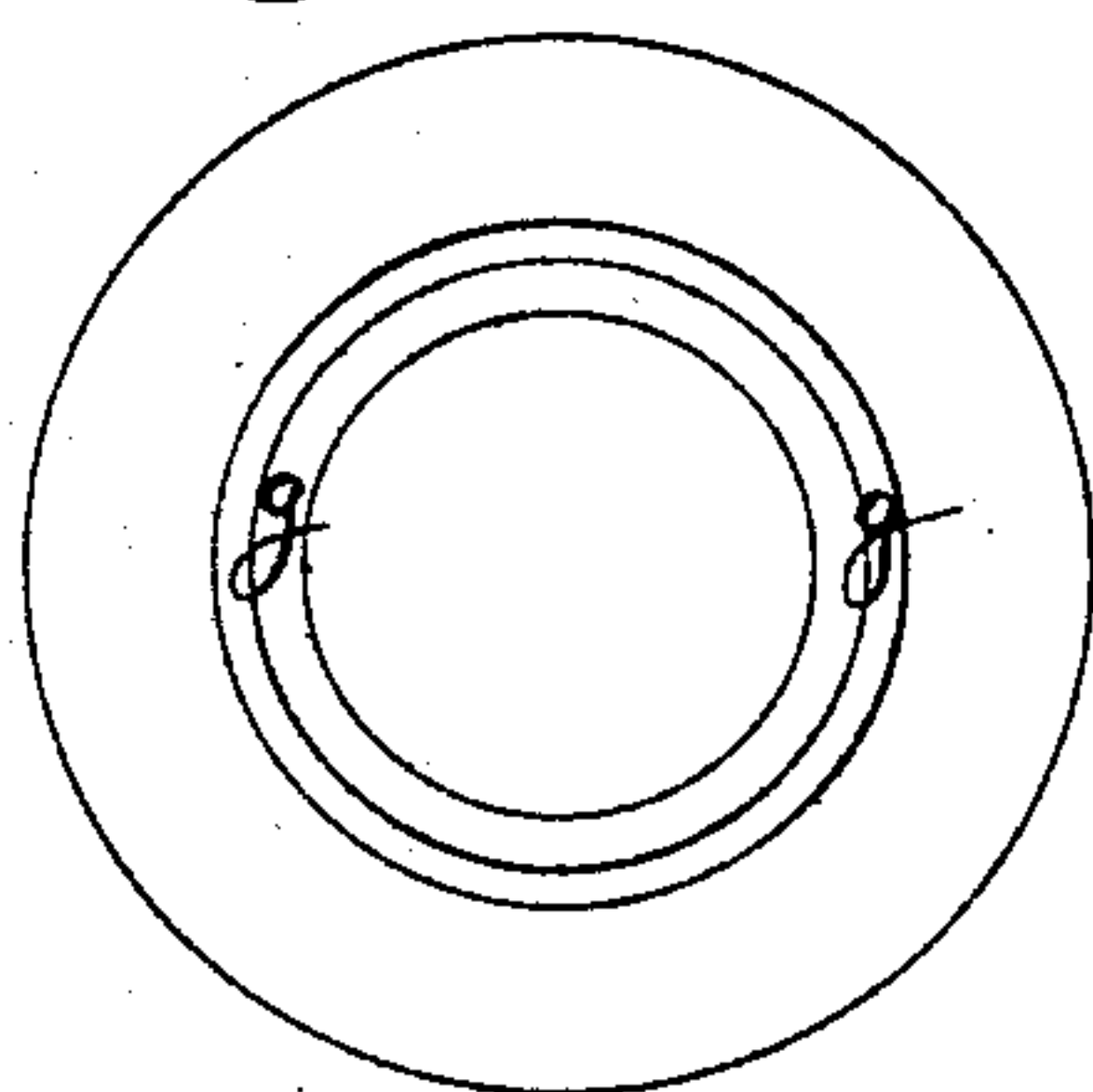
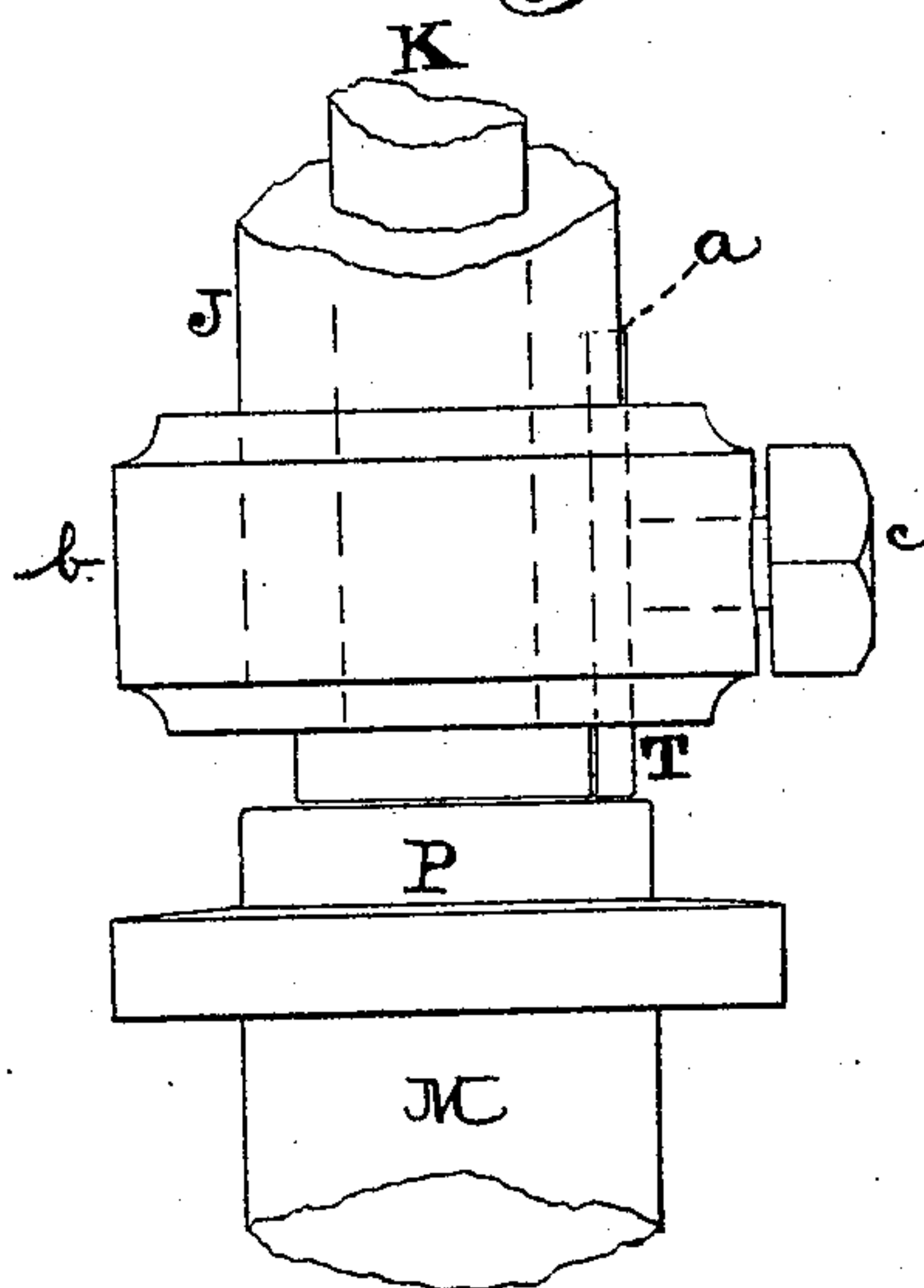


Fig 5



Witnesses:

A. J. Grant.

Theo. E. Wiedersheim.

Inventor:

Frank W. Perry.
by John A. Wiedersheim
att'y.

UNITED STATES PATENT OFFICE.

FRANK W. PERRY, OF CAMDEN, ASSIGNOR TO JOHN L. MASON, OF NEW BRUNSWICK, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR SCORING SCREW-CAPS.

Specification forming part of Letters Patent No. **147,163**, dated February 3, 1874; application filed December 3, 1873.

To all whom it may concern:

Be it known that I, FRANK W. PERRY, of the city and county of Camden and State of New Jersey, have invented a new and useful Apparatus for Scoring Sheet-Metal Screw-Caps; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a central vertical transverse section of the device embodying my invention. Fig. 2 is a front view of a detached portion. Fig. 3 is a horizontal section in line *xx*, Fig. 2. Fig. 4 is a front view. Fig. 5 is a front view of a detached portion enlarged. Fig. 6 is a top view of a "scored" screw-cap. Fig. 7 is a central section thereof.

Similar letters of reference indicate corresponding parts in the several figures.

It is well known that sheet-metal screw-caps are applied to cans and other packages to contain oil and other fluids, and that it is important that the top or central portion of the two sections or parts of the caps are solid or closed to prevent leakage between the joints thereof. It is, however, essential that when the can or package reaches its destination, one of the sections or caps has its center or top cut away to form an opening for the discharge of the fluid.

My invention is designed for the purpose of scoring, half-cutting, or thinning a portion of one section of the cap, whereby said portion is in condition to be readily cut by a knife or other suitable implement. The invention consists in a rotary knife-cutter or bit. It also consists of a feeding-spindle. It further consists of a spindle for holding the cap while being cut. It also consists in means for imparting a "dwell" to the feeding-spindle. It also consists in a screw for regulating the depth of the cut or score.

Referring to the drawings, A represents the main shaft, having bearings in a suitable frame or support, B. C represents a shaft which receives motion from the shaft A, and imparts motion to a horizontal shaft, D, suitable intermediate gearing being provided therefor, and the shaft D carries, at the end opposite to its

geared end, a cam, E. A pulley, F, is attached to the shaft C, and, by means of a band, G, and pulley H, imparts rotary motion to a vertically-arranged spindle, J, which is mounted on the frame B and has an opening its entire length, and through the opening passes a spindle, K, whose upper end is angular and passes through an angular opening in an arm, L, which holds and guides the upper end of said spindle K, while the main portion of the latter is within the spindle J, whereby said spindle K is permitted to rise and fall within the spindle J, but without having rotary motion therewith. M represents a spindle, which is mounted on suitable arms of the frame B and arranged vertically under the spindles J K. The lower end of this spindle M carries a screw, N, which rests on the cam E, and its upper end is formed with or has connected to it a head, P. A spring, Q, is arranged with the spindle M and proper portions of the frame B, for forcing the said spindle downwardly and against the cam E. The lower end of the inclosed spindle K carries a head, R, and bearing against its upper end is a spring, S, whose tendency is to keep the spindle K to its lowest point. T represents a knife, cutter, or bit, which is connected to the lower end of the spindle J, and in the present case said knife is fitted in a groove, *a*, in the spindle, a collar, *b*, passed around the shank of the knife, and a screw, *c*, introduced through the collar to bear against the shank of the knife.

The cam E is so constructed that when, in rotation, it raises the spindle M to its highest point, it reaches the point *d*. Then, the face *d f*, being the arc of a circle whose center is the shaft D, bears against the spindle M without elevating the same, thus causing what is termed a dwell of said spindle, after which the spindle clears the point *f* of the cam E and drops to its normal position.

The operation is as follows: A screw or other sheet-metal cap is placed on the head of the spindle M, and, as the latter is elevated by the cam E, the cap is advanced toward the knife T, and comes in contact with the inclosed spindle K, which, while being raised by the raising of the spindle M, bears against the metal cap, and when the spindle M is at its highest point the said cap is firmly held by the spindle K,

due to the action of the spring S. When said highest point of the spindle M is reached, then the dwell occurs, and the knife T is in contact with the upper face of the metal cap, and, in its path of rotation, caused to cut a channel in the said upper face of the cap, near the periphery thereof, this constituting the score of the cap (see *g*, Figs. 6 and 7,) and completing the scoring operation. The spindle M then drops, the cap is removed therefrom, and a fresh cap applied. The degree of penetration of the knife is readily adjusted by the screw N in the spindle M.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The knife T, having a rotary motion and operating for scoring the metal cap presented to it, substantially as set forth.

2. The feeding-spindle M, having a rising-and-falling motion and operating for present-

ing the metal cap to the scoring-knife, substantially as set forth.

3. The holding-spindle K, in connection with the feeding-spindle M and scoring-knife T, substantially as and for the purpose set forth.

4. The rising-and-falling spindle K inclosed within the rotary spindle J, in combination with the feeding-spindle M arranged thereunder, and raising the said spindle K, in the manner and for the purpose set forth.

5. The combination, with the feeding-spindle M and scoring-knife T, of the cam E, constructed to impart a dwell to the said feeding-spindle, as set forth.

6. The adjusting-screw N, in combination with feeding-spindle M of an apparatus for scoring metal caps, substantially as set forth.

FRANK W. PERRY.

Witnesses:

JOHN A. WIEDERSHEIM,

THEO. E. WIEDERSHEIM.