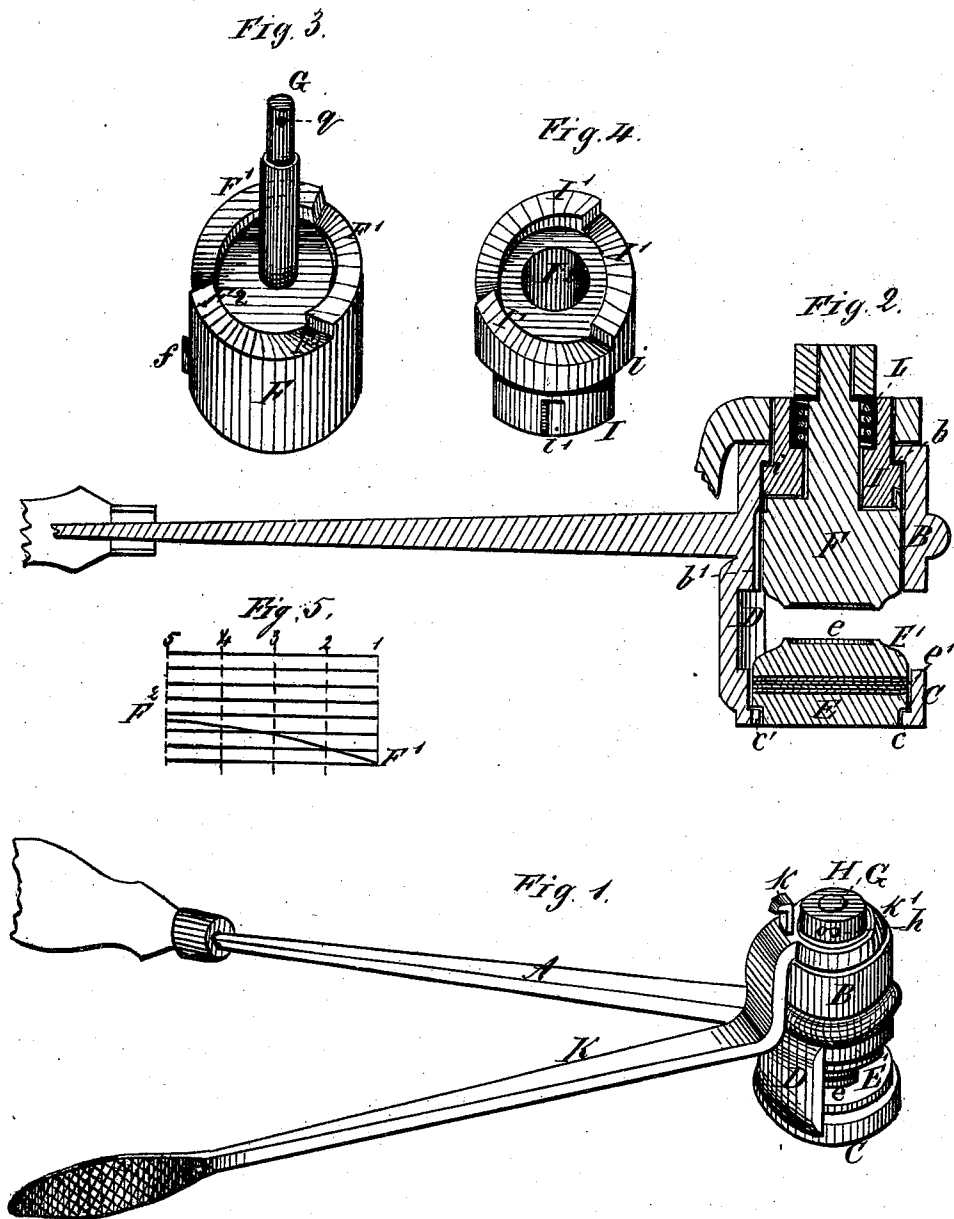


J. F. RUSSELL.

SEALING-TONGS.

No. 172,782.

Patented Jan. 25, 1876.



Witnesses.
Henry Orth
Henri Guillaume

Inventor
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 by *Abbott & Co. attys.*

UNITED STATES PATENT OFFICE.

JOHN F. RUSSELL, OF CANTON, OHIO.

IMPROVEMENT IN SEALING-TONGS.

Specification forming part of Letters Patent No. 172,782, dated January 25, 1876; application filed December 28, 1875.

To all whom it may concern:

Be it known that I, JOHN F. RUSSELL, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Sealing-Tongs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section. Fig. 3 is a detached view of the punch. Fig. 4 is a detached view of the cam and lock; and Fig. 5 is a diagram, illustrating variations in the pitch of the cams.

A is the handle, attached to which is the supporting-frame, consisting of a cylinder, B, and a ring, C, rigidly connected to the cylinder by means of a semicircular web or plate, D.

E is a removable bed-piece, fitting closely within the ring C, and resting upon a rib, *e*, which extends by preference entirely around the inside of the ring, except at *e'*, where there is a throat or passage through the rib, for a purpose which will be hereinafter explained.

E' is an adjustable die or matrix, having any suitable design cut, engraved, or embossed upon its surface at *e*.

e' e' represent pieces of paper of other suitable thin material placed between the matrix E' and the bed-piece E. By reducing or increasing the number of the pieces *e' e'* the height of the matrix E' relative to the bed E may be adjusted.

b is a rib formed upon the inner side of the upper end of cylinder B.

b' is a groove or key-seat, cut vertically in the inner face of the cylinder. The inner diameter of the ring C is greater than that of the cylinder B by the thickness of rib *c*. Thus the diameter of the space inclosed by this rib is the same as that of the cylinder.

F is the die or plunger, fitting closely within cylinder B, and provided upon its upper surface with three, more or less, cam-tracks, F¹ F², and having a lug or spline, *f*, projecting from one side.

The pitch of all of the cam-tracks is the

same, but is not uniform from end to end in each track, being less or slower at the upper or outer ends F² than it is at the inner or lower ends F¹, as illustrated by the vertical and horizontal lines in Fig. 5, in which the line F¹ F² represents the upper surface of the track. From an inspection of this figure it will be seen that the rise of the track is much greater or more rapid in passing from the first to the second of the vertical lines than it is in passing from the fourth to the fifth of these lines.

When preferred, any suitable design may be formed in or upon the under side of the die, to correspond with the design upon the matrix E'.

G is a stud rising centrally from the plunger. H is a cap, secured to the upper end of stud G by means of a pin passing through holes *h* *g*, or their equivalents.

I is a tubular cam-block, shown in an inverted position in Fig. 4. It is provided upon its lower face with three cams, I' I' I', which, when the parts are in proper working position, as in Figs. 1 and 2, engage with the cam-tracks E'. The upper end or shank of this cam-block projects through the upper end of cylinder B, and is recessed to receive a spiral spring, L, which surrounds the stem G.

K is a lever, formed by preference with a double elbow at the heel end, where it has a ring or collar, K', surrounding the upper end of the cam-block I, to which it is secured by a key, *k*, that enters a key-seat, *k'*. (See Fig. 4.)

The device may be operated by placing the seal (which is usually made of soft lead) between the plunger F and the matrix E', and then moving the lever K toward the handle A. The cam-block is thus rotated upon the plunger, which is prevented from turning by the spline *f*, which rests in the groove *b'*, and as the contact of the shoulder *i* of the cam-block with the rib *b* of the cylinder B prevents the cam-block from moving upward the plunger F is forced downward toward the matrix E', and the seal is thereby compressed. The cap H enters the recess or socket in the cam-block, increasing the tension of the spring L, so that when the lever is moved in the opposite direction the spring will at once lift up the plunger.

In consequence of the decrease in the pitch

of the cam-track near the points indicated by F^2 , as above explained, the amount of pressure which is produced upon the seal is greatly increased at or near the close of the downward movement of the plunger.

The device may be readily taken apart in the following manner: First, by taking out the matrix, the paper e' , and the bed E, then lifting them up from the rib c , and slipping them out between the ring C and the cylinder B, and then taking out the key K, when the plunger and cam-block can be readily removed through the ring C, the lug or spline f passing through the throat c' in the rib c .

The matrix E' might be arranged upon the rib c without the intervention of the bed-plate E and packing-piece e' ; but I prefer the construction shown.

What I claim is—

1. The handle A, in combination with the cylinder B, provided with rib b , ring C, having rib c , and the circular plate D, substantially as set forth.

2. The cylinder B, having the groove b' , in combination with the plunger F, provided with lug or spline f , substantially as set forth.

3. The combination of lever K, cam-block I, plunger F, and matrix E' with cylinder B and handle A, substantially as set forth.

4. The combination, with the ring C and rib c , of the bed-piece E, matrix E' , and packing-pieces e' , substantially as set forth.

5. The ring C, provided with rib c , having a throat, c' , adapted to permit the passage of the plunger F, having the lug or spline f , substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN F. RUSSELL.

Witnesses:

HENRY REEMSNYDER,
P. S. SOWERS.