

(No Model.)

A. B. SCHOFIELD.

SEAL PRESS.

No. 378,624.

Patented Feb. 28, 1888.

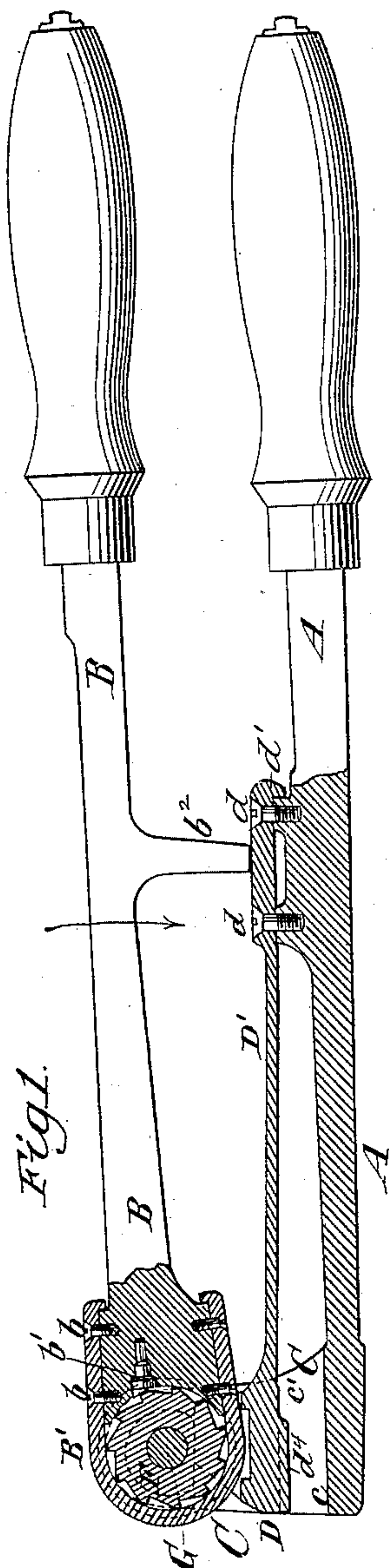


Fig. 1.

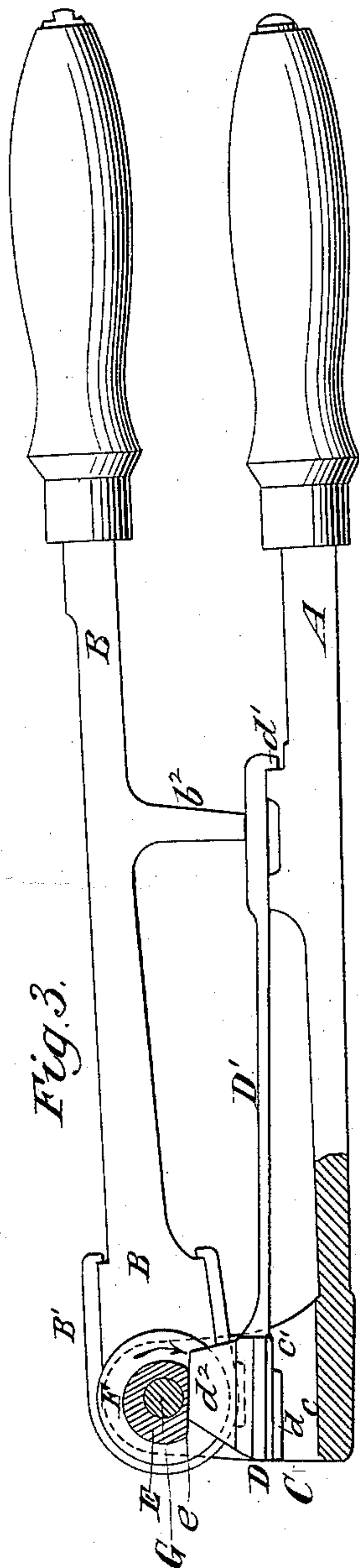


Fig. 3.

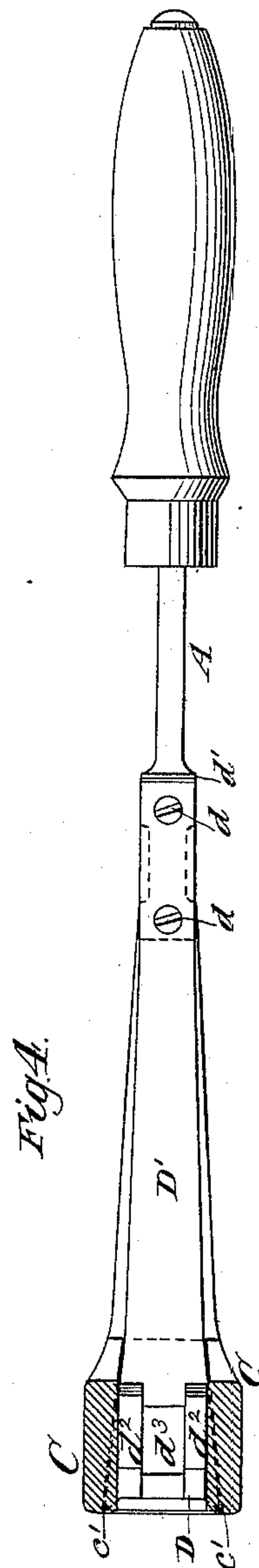


Fig. 4.

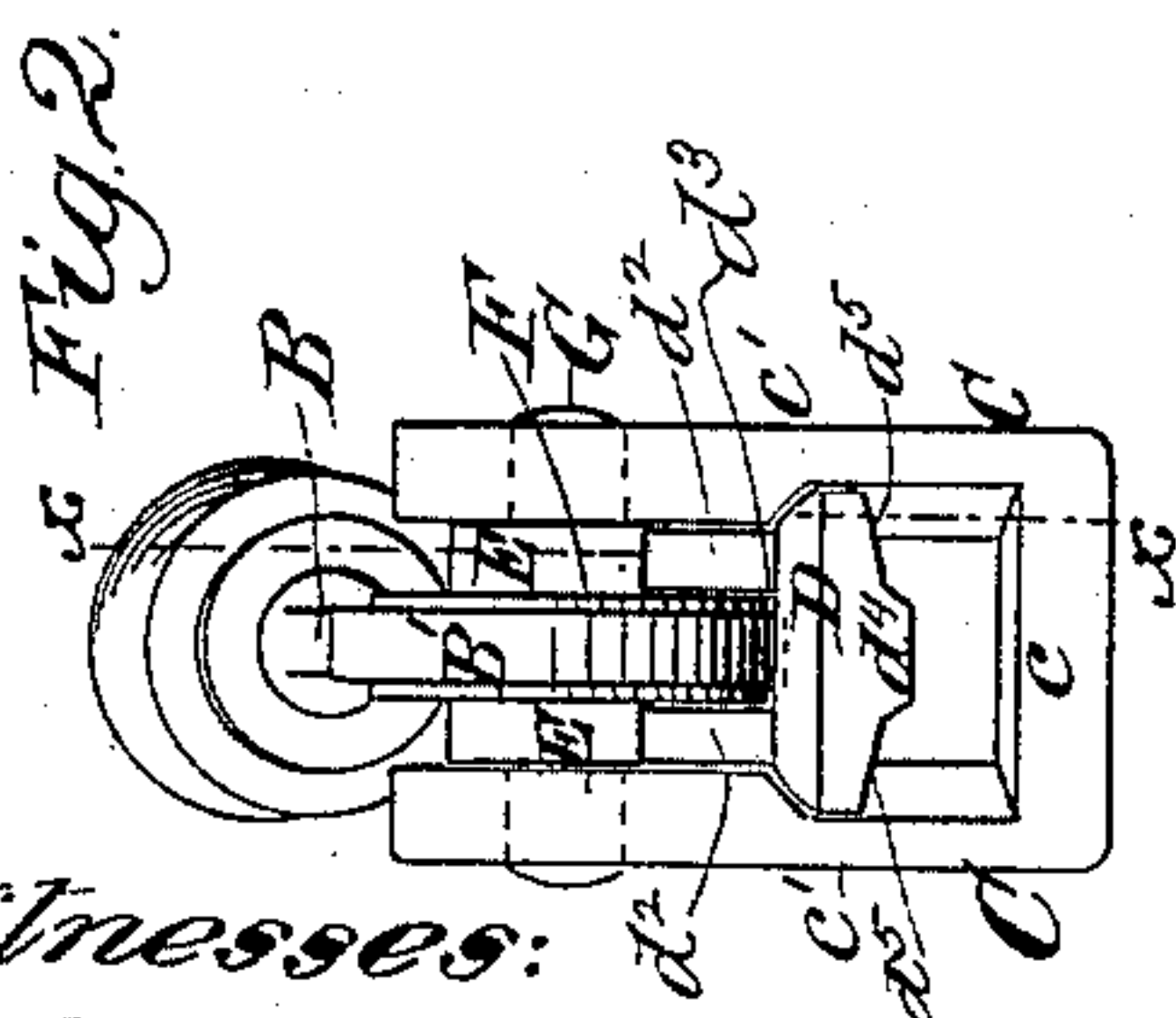


Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## SEAL-PRESS.

SPECIFICATION forming part of Letters Patent No. 378,624, dated February 28, 1888.

Application filed June 1, 1887. Serial No. 239,933. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT B. SCHOFIELD, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and  
5 useful Improvement in Seal-Presses, of which the following is a specification.

In my Letters Patent No. 373,200, dated November 15, 1887, I have shown and described a seal for railway-cars and other structures,  
10 which comprises a bail or loop of wire and a body of soft metal—such as a composition comprising lead as a principal ingredient thereof—and which by pressure is compressed firmly upon the end portions of the bail or loop. The  
15 seal-body has its opposite edges or sides divergent from one end to the other, in order that it may be placed in definite position in a press box or frame having correspondingly-divergent side walls, and in order that it may  
20 be readily removed from the press box or frame after pressure has been exerted upon its face.

My present invention relates to a press to be operated by hand and by which the seal-bodies, above described, of soft metal may be  
25 closed or compressed upon the end portions of the bails or loops of the seal.

The improved press which forms the subject of my invention comprises a box or frame having a bottom and side portions and a die or  
30 presser fitting the space between the side portions and movable toward and from the bottom, a cam-shaft journaled in the side portions of the box or frame and having a cam acting upon the die or presser, and a lever or handle  
35 having a ratchet-and-pawl connection with the cam-shaft and through which the cam-shaft and its cam may be turned to force the presser or die toward the bottom of the box or frame and exert a pressure upon the seal-body placed  
40 therein. I construct the presser or die with bearers or projections upon its back, between which is a space or recess, and the cam-shaft has a divided cam, or two cams, which act upon the bearers or projections, and the operating lever or handle, which has a ratchet-and-pawl connection with the cam-shaft, lies be-  
45 tween the two cams or cam portions, and is accommodated in the space between the bearers or projections on the back of the die or presser.  
50 I also form the cams or cam portions with a flattened or cut-away portion on one side of

the center and its remaining periphery of gradually-increasing radius from one end of the flattened portion to the other, in order to relieve the die or presser once in each revolution and permit the cam-shaft and its cam to  
55 be turned progressively in one direction, and by such turning to first force the die or presser upon the seal-body, and then by further turning in the same direction to relax or relieve  
60 the pressure and permit the withdrawal of the seal-body.

The invention consists in novel combinations of parts and features of construction, which are hereinafter described, and particularly pointed  
65 out in the claims.

In the accompanying drawings, Figure 1 is a partial longitudinal section of a press embodying my invention. Fig. 2 is an end view thereof, looking toward the right hand of Fig.  
70 1. Fig. 3 is a side elevation and partial section upon the plane of the dotted line *xx*, Fig. 2; and Fig. 4 is a transverse section of the press box or frame and a plan of the die or presser arranged therein.

Similar letters of reference designate corresponding parts in all the figures.

A B designate operating handles or levers which work toward and from each other, and are here shown as arranged in the same plane  
80 of movement. Upon the end of the handle or lever A is a box or frame, C, here shown as formed in the same piece with the lever, and comprising a bottom, *c*, and side portions, *c'*, extending in the same direction therefrom.  
85 The portions of these sides or side walls, *c'*, which are adjacent to the bottom *c* are divergent toward the outer end of the box or frame C, so that when a seal-body of correspondingly-divergent shape is introduced into the box or  
90 frame it will be placed in definite position therein, and so that after the seal-body is subjected to pressure between a die or presser, D, and the bottom *c* it may be readily removed from the box or frame, as it could not  
95 be if the edges or sides of the seal and of the box or frame were each parallel. As here represented, the presser or die D is supported by a spring-arm, D', secured by screws *d*, or otherwise, to the handle or lever A, and which  
100 has a lip, *d'*, at the end lapping upon a shoulder on said lever or handle.



In and between the two side portions,  $c'$ , of the box or frame C, I have represented a cam or cam-shaft, and the lever or handle B has a ratchet-and-pawl connection with such cam or cam-shaft.

In the present example of my invention the cam, the form of which is shown in Fig. 3, is divided or composed of two portions, E E, between which lies a ratchet-wheel, F, and said cam or the divided cam E and the ratchet-wheel F may be formed in one piece of metal and journaled upon a pin, G, inserted through the side portions,  $c'$ . The piece composing the cam portions or cams E E and the ratchet-wheel F may either be fixed upon the pin G, so that they turn with the pin, or may be loose upon the pin, which is fast in the side portion,  $c'$ , and the piece composing or comprising the cam or cam portions E E and the ratchet-wheel F constitutes a cam-shaft turned by the operating lever or handle B. I have here represented the lever or handle as having its end completed by a strap, B', secured thereon by screws  $b$ , and as having a pawl,  $b'$ , consisting of a plug of metal inserted in a suitable bore or cavity, and which engages with the teeth of the wheel F. Consequently it will be seen that when the lever or handle B is operated in the direction of the arrow shown thereon in Fig. 1 the ratchet-wheel F and its connected cams or cam portions E will be turned, and when said lever or handle is operated in a reverse direction the pawl  $b'$  will playidly over the teeth of the wheel F and enable the handle to be returned to take a new hold upon the ratchet-wheel F. The pawl  $b'$  slides freely in a bore or socket in the lever or handle B, as shown in Fig. 1, and when the handle is raised the pawl by gravity drops into engagement with the teeth of the ratchet-wheel F. As here represented, the die or presser D has upon its back bearers or projections  $d^2$ , separated by an intervening space,  $d^3$ , and the cams or cam portions E bear upon these bearers or projections  $d^2$ , while the ratchet-wheel F and the heads of the operating handles B are received in the space  $d^3$  between such bearers or projections.

As best shown in Fig. 3, the cams or cam portions E are flattened or cut away upon one side of the center, as at  $e$ , so that at one point in the revolution of said cams the die or presser D will be relieved, and will be permitted to rise under the influence of its spring D', in order to release the seal-body and permit it to be withdrawn from the box or frame C. The cams or cam portions E are turned constantly in one direction, as indicated by the arrow in Fig. 3, and a full revolution from the position shown in Fig. 3 when a seal-body is inserted is required to compress the seal-body and relieve or permit the return of the die or presser D. I have also shown the handle or lever B as provided with a projection,  $b^2$ , which, by striking against the lever or handle A, or part secured thereto, serves to limit the movement of the lever or handle B in one direction and

prevents said levers or handles from being brought close together and injuring the hands.

In operating the press, the cams or divided cam E being first brought to the position shown in Fig. 3, the seal-body is introduced into the box or frame C and the lever or handle B is operated to produce a complete rotation of the cam or cams E, thereby compressing the seal-body and at last relieving the pressure upon the die or presser D, by reason of the flattened or reduced surfaces  $e$  coming to a bearing on the projections or bearers  $d^2$ . I have here represented the die or presser as having a central projection,  $d^4$ , upon its face, whereby the pressure is first exerted upon the center portion of the seal-body, and preferably the surfaces of the die or presser upon opposite sides of the projection  $d^4$  are inclined, as shown at  $d^5$ .

In my improved press, as will be understood from the foregoing description, the cam or cams E do not act directly upon the seal-body, but simply act upon the back of the presser D, which is by such cam forced against the seal-body. Inasmuch as the cam E has the flattened portion  $e$  upon one side, and has its acting surface gradually increasing in radius from one end of this flattened portion around the circumference of the cam to the other end of such flattened portion, the seal-body, after the operation of the cam has once been started, cannot be got out of the press without turning the cam its entire revolution and bringing its flattened side  $e$  opposite the presser D. For this reason, and also because the box or frame which receives the seal-body is constructed to prevent the spreading of the seal-body save in the direction of the length of the box or frame, the seal-bodies must be of uniform character after the operation of the press upon them, and hence any tampering with the seal after it is applied to the car or other inclosure would be at once detected. It is necessary that the sides of the box or frame C shall be divergent toward the outer end of the same, because if they were parallel the seal-body, after being pressed, could not be withdrawn from the box or frame. The construction of cam which I employ, and also the fact that it acts against the back of the presser D instead of directly against the seal-body, enables me to utilize the entire circumference of the cam for operation upon a seal-body. This necessitates several movements of the lever or handle B, and hence the power of a man applied to the lever or handle will be sufficient to properly operate upon a comparatively large seal-body, which his strength would not be sufficient to properly seal if the cam E acted directly upon the seal-body. The uniformity of the seals which are operated upon by my press is the combined result of the box or frame which confines the seal on four sides and only allows it to spread by elongation, and of the cam acting against the back of the presser and operated upon by the handle or lever B through the medium of a ratchet and pawl. The desired result could not be produced by the employment of a cam acting upon the back



of the presser and operated through the medium of a ratchet and pawl, unless the metal of the seal-body were confined on its four sides, and the confining of the seal-body on its four sides would not effect such uniformity if the presser D were acted upon directly by the handle or lever B, because then the entire operation of sealing would have to be accomplished by one movement of the handle or lever, and the extent of the pressure would vary according to whether the full movement of the handle or lever was performed, thus leaving the extent of the pressure entirely within the control of the person performing the sealing operation.

In my Letters Patent No. 373,201, granted November 15, 1887, I have shown and described a seal-press which comprises a box or frame having its side walls divergent toward the outer end, and in which the die or follower is operated by a screw and a lever or handle having a ratchet-connection with the head of the screw. In my present application I do not desire to claim anything shown or described in my former patent.

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

1. The combination, with the box or frame open at the outer end and comprising a bottom and side portions or walls, of a die substan-

tially filling the space between the side walls and movable toward and from the bottom, a cam-shaft journaled in the side portions of the box or frame and provided with a cam acting upon the die and having a flattened or cut-away portion on one side of its center in order to relieve the die once in each revolution, and having its remaining periphery gradually increasing in radius around the circumference of the cam from one end to the other of said flattened portion, and an operating lever or handle having a ratchet-and-pawl connection with the cam-shaft, substantially as herein described.

2. The combination, with the box or frame C, having a bottom and side portions, of a die or presser, D, movable toward and from the bottom of the box or frame, and which has on its back the bearers or projections  $d^2$ , and the intervening space,  $d^3$ , of the cam-shaft having the cams or divided cam E E acting on said bearers or projections, and the operating lever or handle having a ratchet-and-pawl connection with the cam-shaft between the cam portions E E, and which is received in said space  $d^3$ , substantially as herein described.

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