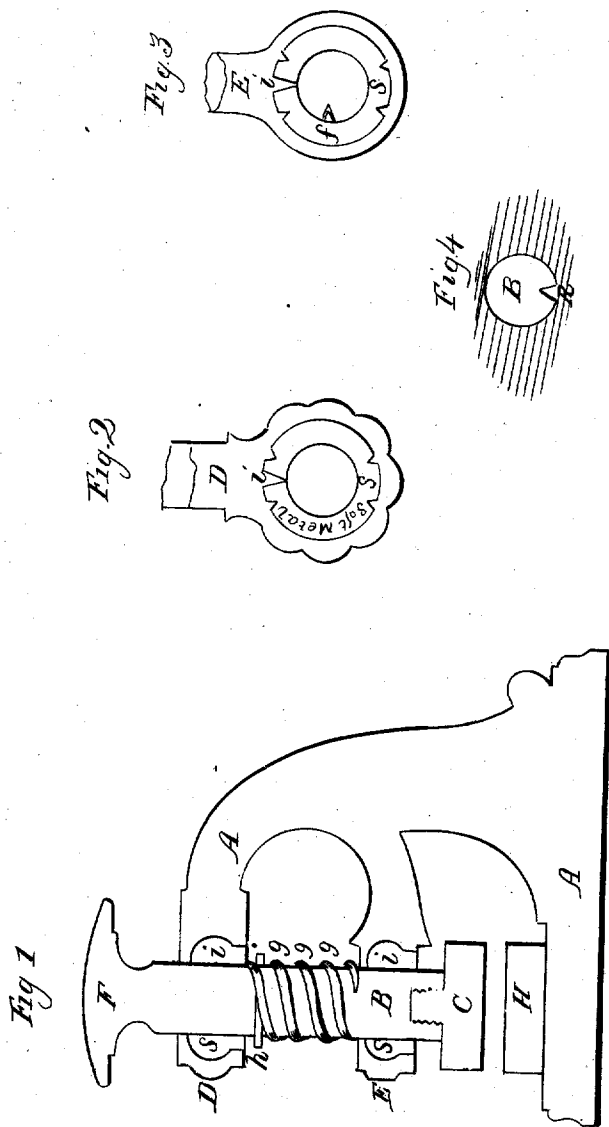


Foster & Evens.  
Hand Stamp.

No 9823.

Patented June 28, 1853



# UNITED STATES PATENT OFFICE.

J. FOSTER, JR., AND PLATT. EVENS, JR., OF CINCINNATI, OHIO.

## METALLIC BOX FOR PRESSES, &c.

Specification of Letters Patent No. 9,823, dated June 28, 1853.

*To all whom it may concern:*

Be it known that we, JAMES FOSTER, Jr., and PLATT. EVENS, Jr., of Cincinnati, in the county of Hamilton and State of Ohio, have  
5 invented a new and useful Improvement in Bushings for Seal-Presses and other Instruments and Machines; and we do hereby declare that the following is a full and exact description thereof, reference being had to  
10 the accompanying drawings, made part of this specification, and to the letters of reference marked thereon.

The nature of our invention consists in dividing the soft metal for bushing purposes around a mandrel, for instance that to  
15 which the die of a seal press is attached, in such wise, that the metal is prevented from shrinking as heretofore on the mandrel and is thereby allowed to shrink on itself toward  
20 the box or cavity in the press frame, so that a sufficiently free motion after cooling, and yet a good working fit, is obtained for the purposes intended.

We effect our invention by means of a  
25 feather (movable or cast) the edge of which being parallel with the axis of the mandrel separates at that point the metal cast around the mandrel, thereby causing the metal as it contracts, to leave the mandrel free, yet in  
30 the most perfect working state, requiring no further touch or finish. The common method of bushing (in solid boxes) mandrels, spindles, &c., is to run or pour in the metal in one continuous ring. This shrinks  
35 so firmly while cooling on and around the mandrel as to render it impossible to move the mandrel without employing a violent stroke of a hammer or some like instrument and thus springing or bruising the mandrel  
40 and boxes and the metal in the boxes and rendering the press frequently totally unfit for use.

Our method of using the stationary or  
45 movable feather as before mentioned obviates all difficulty in constructing machinery where metal has been employed to fill studs, hubs, or loose pulleys, &c., when and where a sliding or rotary motion is desirable.

To enable others skilled in the art to make  
50 and use our invention, we will proceed to describe its construction and operation.

In the drawings similar letters refer in the several figures to corresponding parts.

Figure 1, is a longitudinal and vertical  
55 section through the stock boxes, mandrel and die. Figs. 2 and 3 are each a trans-

verse section through the upper and lower boxes. Fig. 4, shows a transverse section of the mandrel at the portion where it passes through the lower box.

(A A) Fig. 1, represents the stock of a  
60 press; (E, D,) the guides or boxes forming a part of the stock all of which are made of hard cast metal or other materials.

B F is a mandrel made of hard cast metal  
65 or other material, and works through the guides or boxes (E, D).

(C) represents the die of a seal press made of brass or other material, an inch in diameter more or less, as the case may be.

(K) is the counter die composed of suitable soft metal.

The pieces to be sealed or embossed such as envelopes, checks, notes, bills of exchange or any other papers or documents are placed  
75 between the die and counter-die and by a blow with the hand on the button of the mandrel the die and counter-die are brought together and a perfect impression produced.

This press is cheap owing to our mode of  
80 bushing and very convenient owing to its combination of parts, doing away with the lever and screw commonly employed in other seal and embossing presses.

(g, g, g) is a spiral spring placed around  
85 the mandrel between the two guide boxes (D E) in order to elevate the mandrel with the die attached after being forced down to make an impression. The upper part of the spring operates against pin (H) while the lower guide or box (E) answers as a point of resistance to the lower part of the spring, thereby causing the spring to elevate the mandrel and make it self-acting as regards  
90 its upward movement. The mandrel (B, F,) is in size about the diameter of the upper opening or core-hole of the guides or boxes (E, D,) through which it works and is filled to its place as it traverses the rest of these boxes (E, D,) by soft metal, being cast  
100 around it in the recesses (S, S, S,) seen in Figs. 1, 2 and 3. The metal is prevented from forming a continuous ring around the mandrel by means of feathers (i, i,) (which may be arranged so as to be removed away),  
105 cast in each guide box, the edge of the feathers being parallel with the core-hole or upper opening in the boxes or guides for the purpose of coming nearly or quite in contact with the mandrel and consequently  
110 separating or dividing the metal, cast around the mandrel for bushing purposes

and thus allowing the metal in cooling and contracting to draw from the mandrel and thereby to permit the mandrel to have a free and yet neatly fitting and sliding movement.

5 The mandrel after being fitted after this method can be taken out with the hand. This obviates all hammering and forcing, so commonly the case in the old method of fitting studs, guides, boxes and hubs of loose  
10 pulleys, &c. Nor is it necessary in this method to reduce the size of the mandrel as is commonly the case in the old plan where the bushing is cast in one continuous ring.

(B) Fig. 4 gives a transverse section of  
15 the mandrel showing the groove (R) which is cut in the mandrel where it traverses the lower box E for the purpose of letting the metal form a feather or guide key (f) in this lower guide or box (E), the metal run-  
20 ning into the said groove as the metal is poured into the guide or box around the mandrel, this feather or key is employed for the purpose of preventing the mandrel from having any lateral motion in order  
25 to bring the die down on the counter-die in its proper place and thereby avoiding the defacing of the counter-die.

The die and counter-die are formed in the ordinary method commonly employed.  
30 The stock is heated, the mandrel is not heated, but being inserted in its place, the whole is turned and held upside down so that the highly heated metal can be poured into the cavities (s, s,) formed by the solid  
35 boxes at their lower part. When cool the stock is again placed on its own basis of support. It is not absolutely necessary that the edge of the feather should touch the mandrel for if it be a little remote so as to  
40 leave a thin film of metal at that point the shrinking of the ring will force it open at this point.

We have illustrated our invention by its application to a seal press for it is applic-  
45 able to such presses with special advantage and it was there we first adopted it. In such presses an easy fit, and at the same time great perfection are required or the press is of no value, for if there be any  
50 side shake to the piston the counter-die is soon ruined. Such perfection it attainable in the ordinary way at a great expense;

but by our improvement it is attained in the most simple, expeditious and economical manner. Our improvement is however, 55 adapted to, and intended for all kinds of shafts, spindles, &c., where anti-friction boxes are employed.

What we claim therefore is—

The mode of preventing the shrinking 60 and binding of metal bushings when cast upon screws, mandrels, spindles, shafts, and the like by the insertion of feathers, either movable or fixed, in the boxes to be bushed for the purpose of separating or 65 breaking the ring of bushing-metal substantially in the manner and for the purposes herein above set forth.

JAMES FOSTER, JUN.

PLATT. EVENS, JR. 70

Witnesses:

THOS. G. CLINTON,  
J. POWELL.

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#### DISCLAIMER.

To the Commissioner of Patents:

The petition of JAMES FOSTER, Jr., of 80 Cincinnati, Ohio, respectfully represents, that on the 14th day of June, 1852, your petition in conjunction with PLATT. EVENS, Jr., made application for Letters Patent for certain alleged improvements in seal 85 presses and metallic boxes or bushing therefor, and that so much of said improvements as entitled your petitioner to be a joint inventor with said EVENS has been excluded from the claims under said application and 90 make no part of the subject of Letters Patent granted upon the same, on the 28th day of June, 1853, whereby your petitioner having no right or title to be considered joint inventor or joint patentee with said EVENS, 95 hereby disclaims all right, title and interest in said invention or improvement and patent as joint inventor or patentee, and prays that this disclaimer may be entered of record in the Patent Office.

JAMES FOSTER, JUN.

Witnesses:

ROBERT PAXTER,  
I. HENRY HIREMAN.