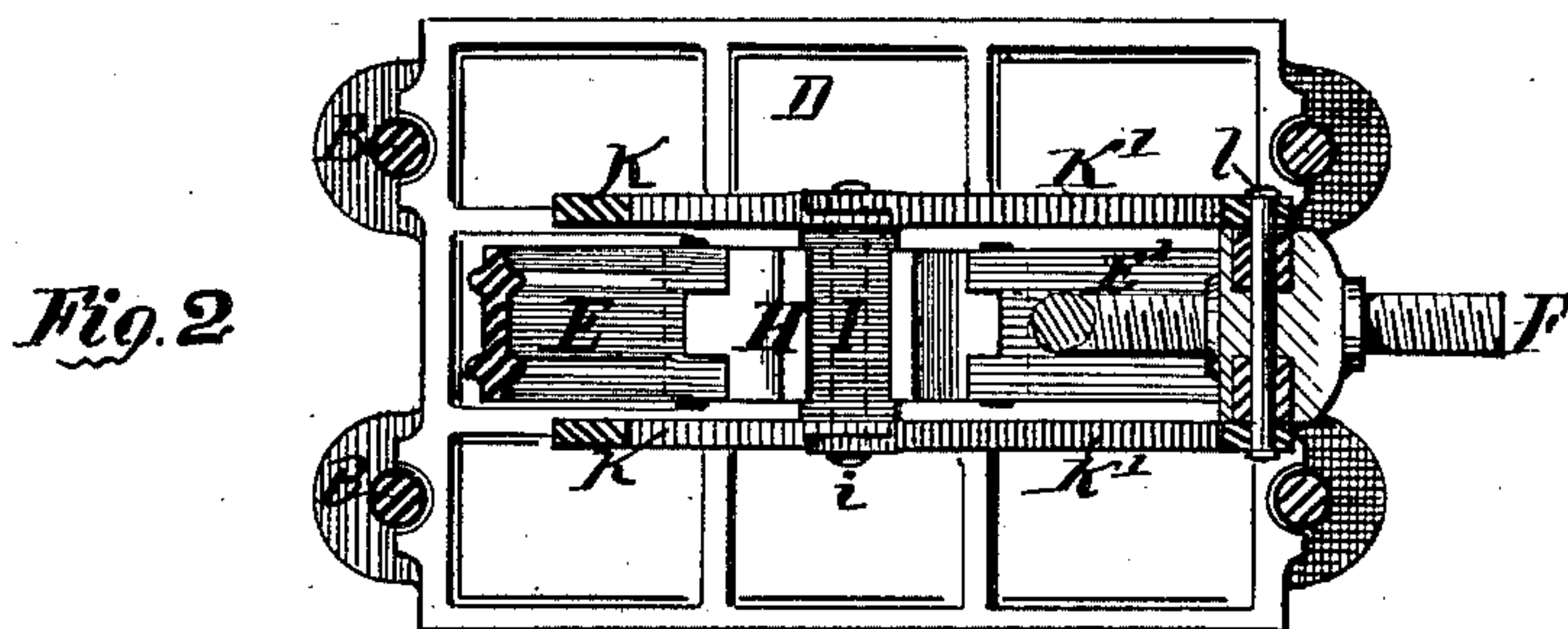
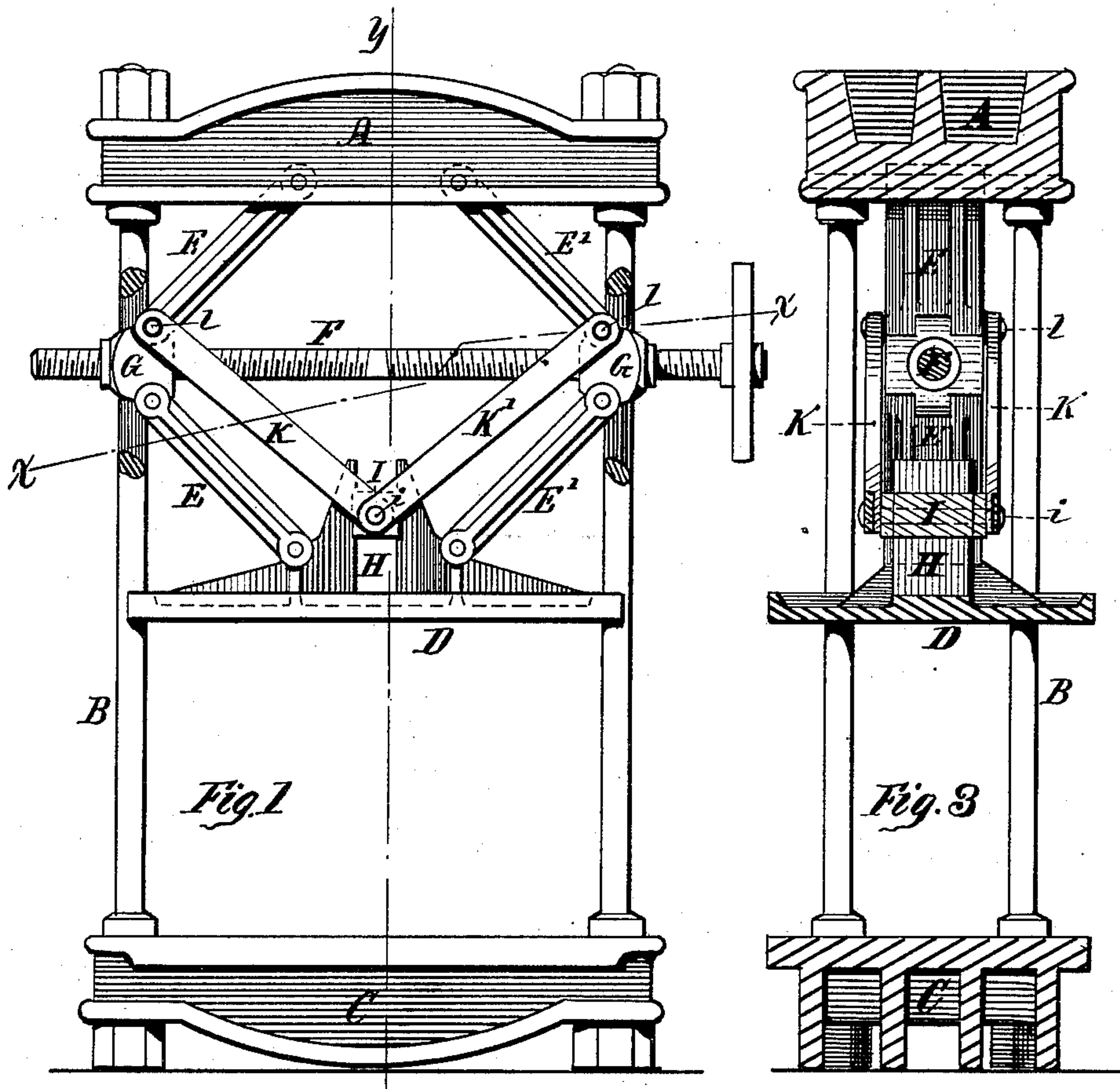


(No Model.)

O. P. BUSHNELL.
Press.

No. 231,994.

Patented Sept. 7, 1880.



WITNESSES

W. R. Barton
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INVENTOR

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Atty.

UNITED STATES PATENT OFFICE.

OSCAR P. BUSHNELL, OF WORCESTER, MASSACHUSETTS.

PRESS.

SPECIFICATION forming part of Letters Patent No. 231,994, dated September 7, 1880.

Application filed April 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, OSCAR P. BUSHNELL, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain
5 new and useful Improvements in Presses; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the
10 same, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to provide a means in knuckle-joint presses for guiding and
15 retaining the follower in proper relative position with the arms and screw, and to guard against unequal movement of said arms. I attain this object by mechanism such as is illustrated in the accompanying drawings and
20 hereinafter described.

Figure 1 represents a front view of a knuckle-joint press embracing my improvements. Fig. 2 represents a horizontal section of the same at line *x x*, Fig. 1. Fig. 3 represents a vertical
25 section of the same at line *y y*, Fig. 1.

In the drawings, A denotes the head of the press; B, the bolts or standards; C, the platen or foot; D, the follower; E E', the knuckle-joint arms; F, the right-and-left screw, and
30 G the nuts or knuckles by which the arms are worked on the screw. Said parts may be made substantially in the ordinary manner, or as shown, and need not therefore be herein more fully described.

Centrally of the follower D, and firmly attached to its upper side or cast thereon, I arrange a short vertical guide or ways, H, between which works a slide-bar, I, or equivalent guided piece, to which are pivoted, at *i*,
40 swinging braces K K', which extend respectively to the right and left knuckles G, or to the ends of the arms E E' near said knuckle-joints, as indicated. The ends of said braces

K K' are attached by hinges or pivots *l*, so as to move inward and outward with the pressing-arms E E', the guide I moving up or down the way H, and forming a firm running connection with the follower, retaining the follower and screw in central position with respect to each other, and preventing the arms E at
50 one side from closing more rapidly than the arms E' at the opposite side, or vice versa.

The upper ends of the brace-bars K K' may be pivoted on either of the hinge-bolts which secure the pressing-arms to their knuckles G,
55 or they may be independently pivoted to the sides of said knuckles or nuts, or to the sides of the arms above said joints. A convenient construction is to pivot them on the hinge-bolts *l* of the upper arms in the manner shown
60 in the drawings.

A double set of brace-arms, K K', may be used, said arms being arranged at either side of the arms E E', with the guide-piece I between their lower ends, and the pivot-bolt *i*
65 passing through from side to side, as indicated. A roll might be used in place of the sliding guide-piece I; but I prefer the construction shown.

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

The short vertical guideways H, the sliding bar I, fitted to move between the same, and the brace-arms K K', connecting the ends of said sliding bar with the joints or sides of the
75 upper pressing-arms, E E', in combination with the follower, screw, and pressing-arms in a knuckle-joint press, said parts being constructed and organized for operation as hereinbefore described. 80

Witness my hand this 18th day of March, A. D. 1880.

OSCAR P. BUSHNELL.

Witnesses:

CHAS. H. BURLEIGH,
S. R. BARTON.