

(No Model.)

A. CAMPBELL.

SLIDING BEARER FOR BEDS OF PRINTING PRESSES.

No. 286,997.

Patented Oct. 23, 1883.

Fig. 1.

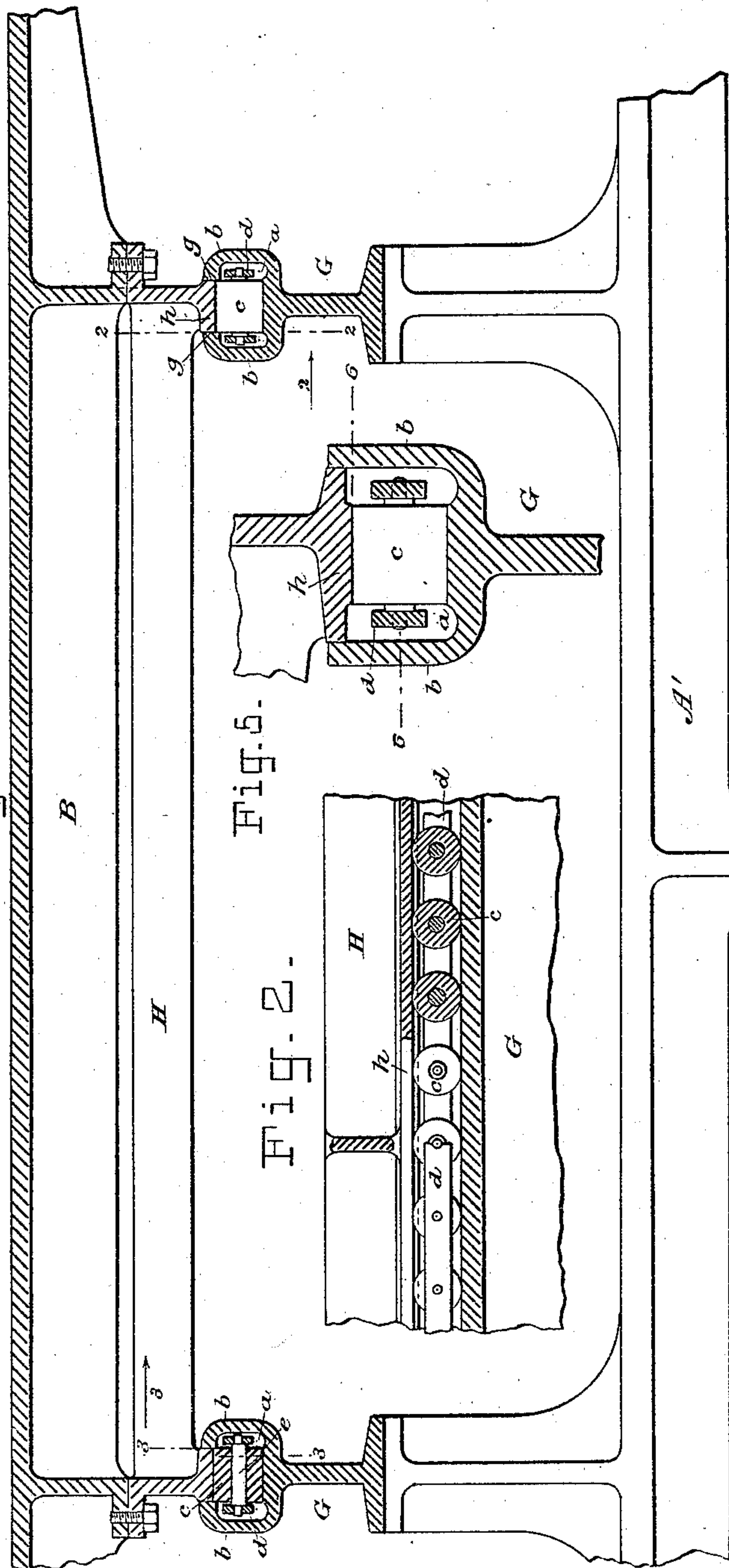


Fig. 5.

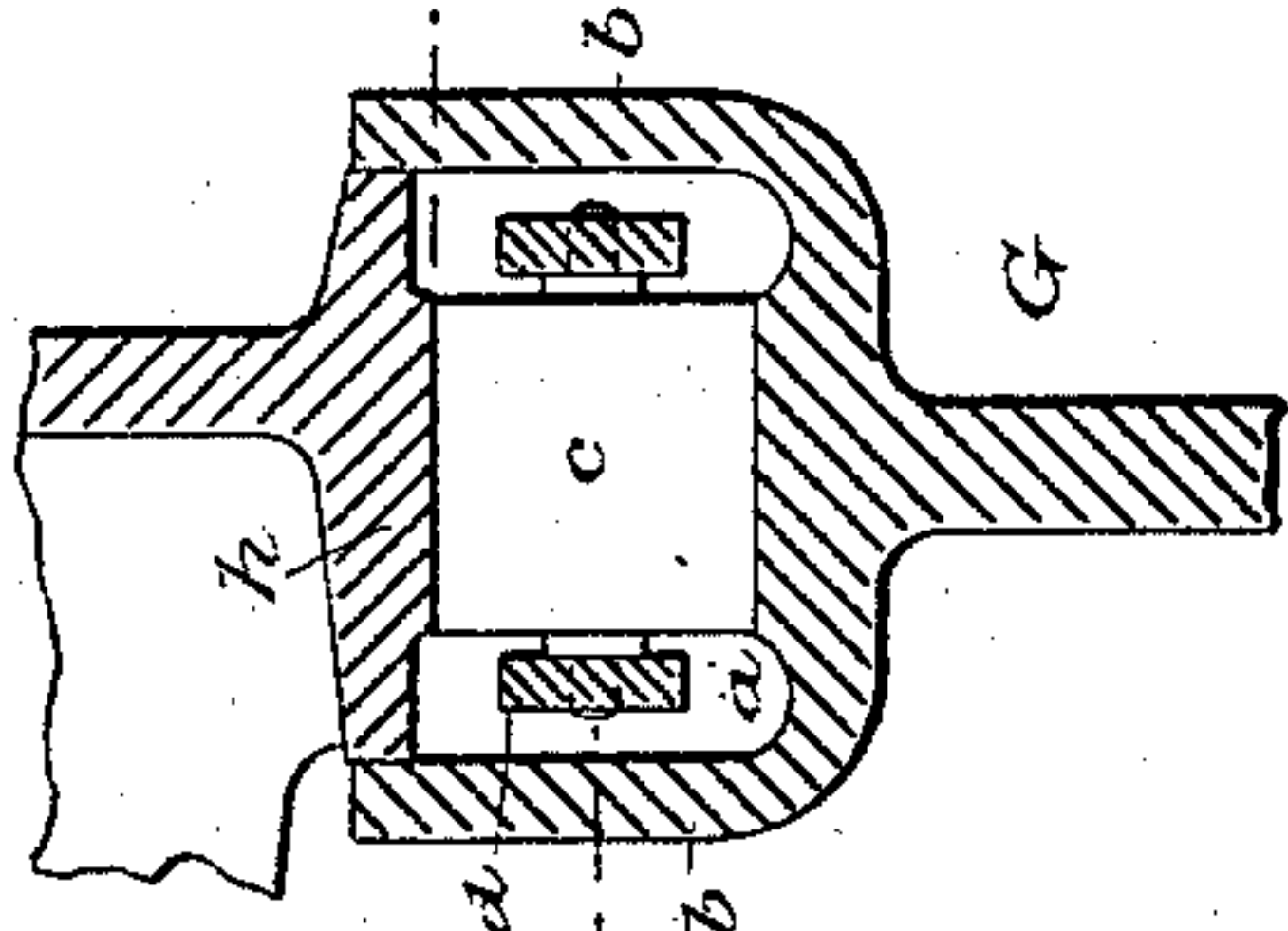


Fig. 2.

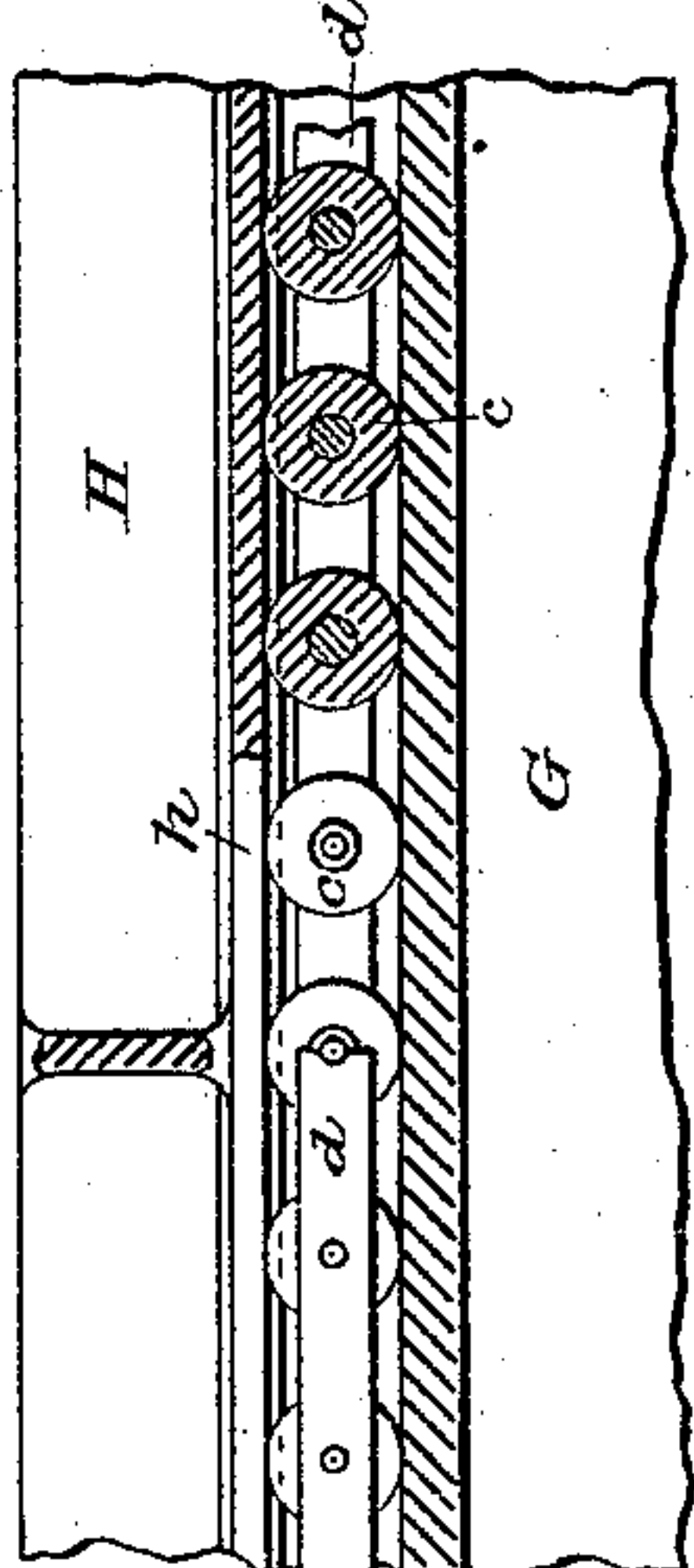


Fig. 6.

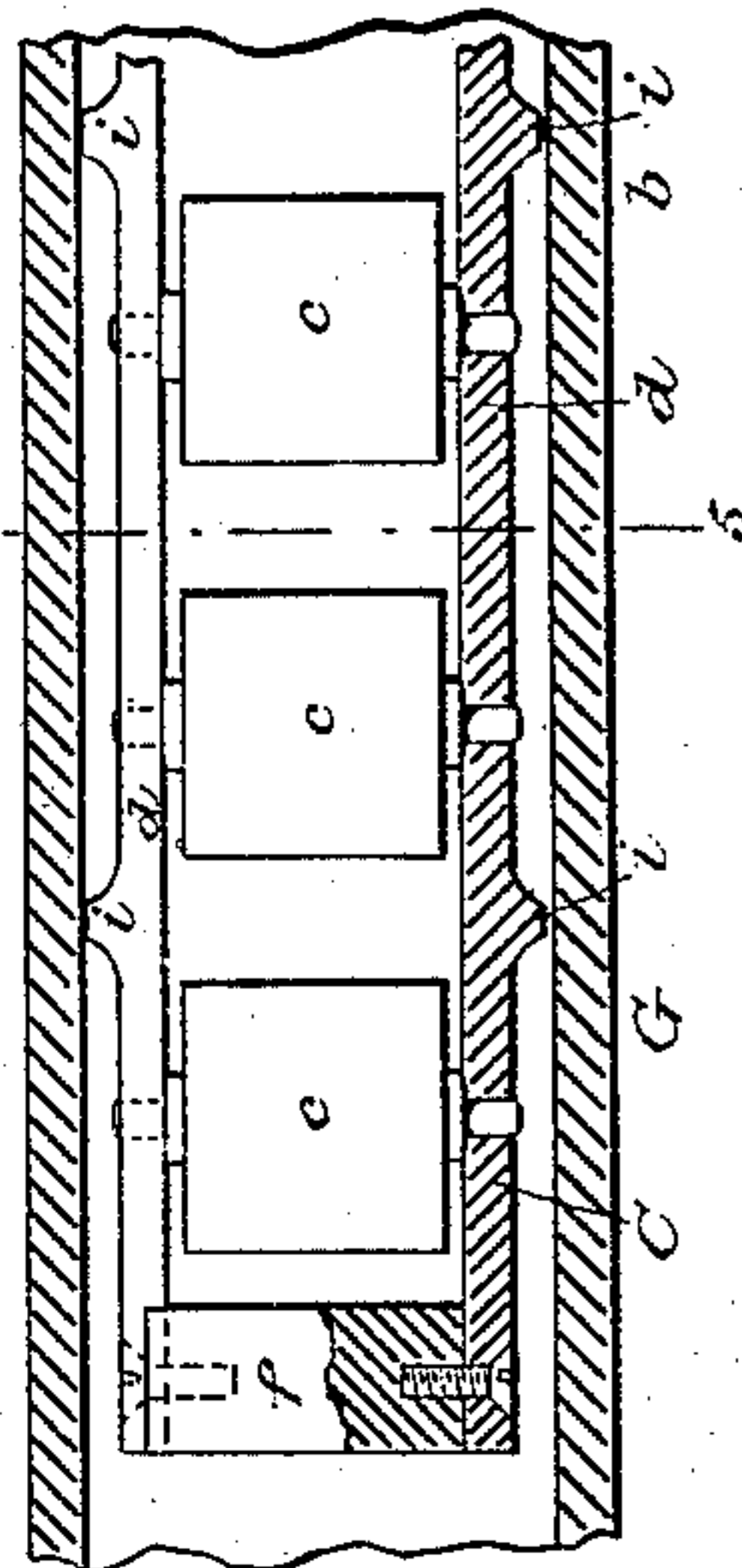


Fig. 4.

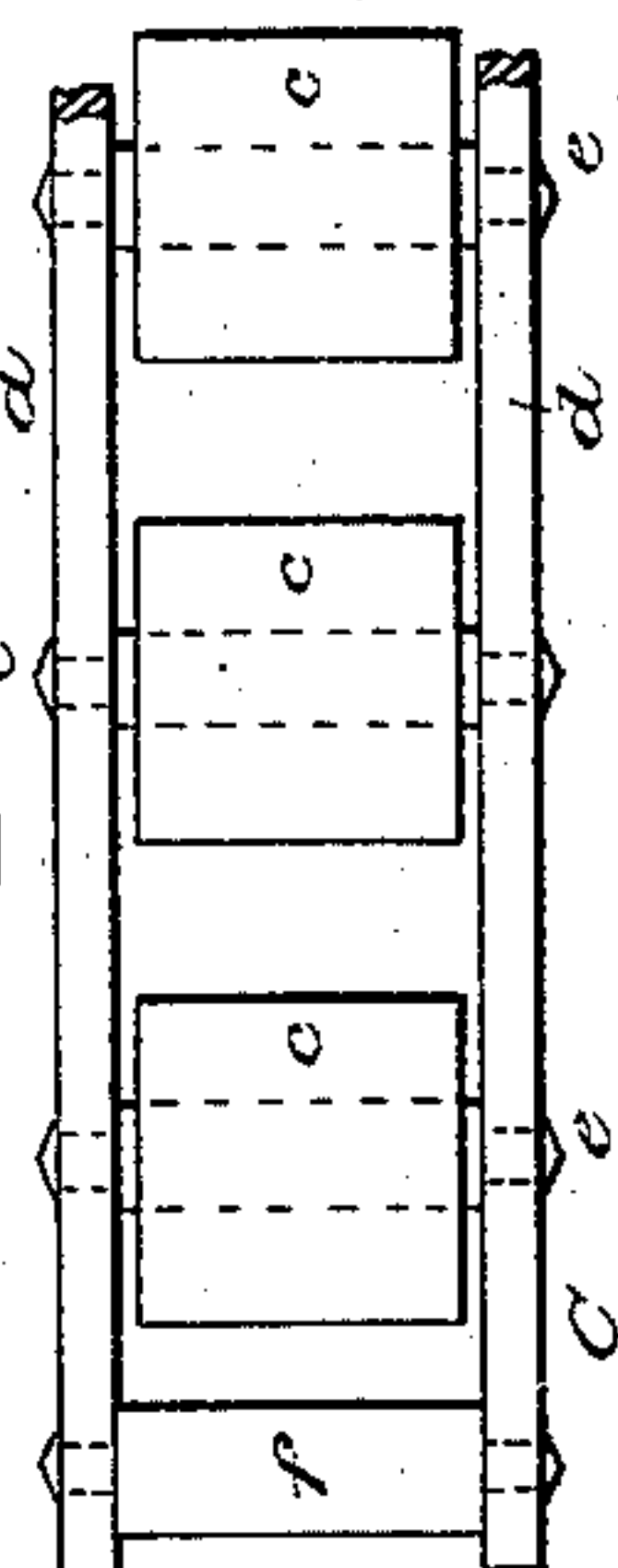
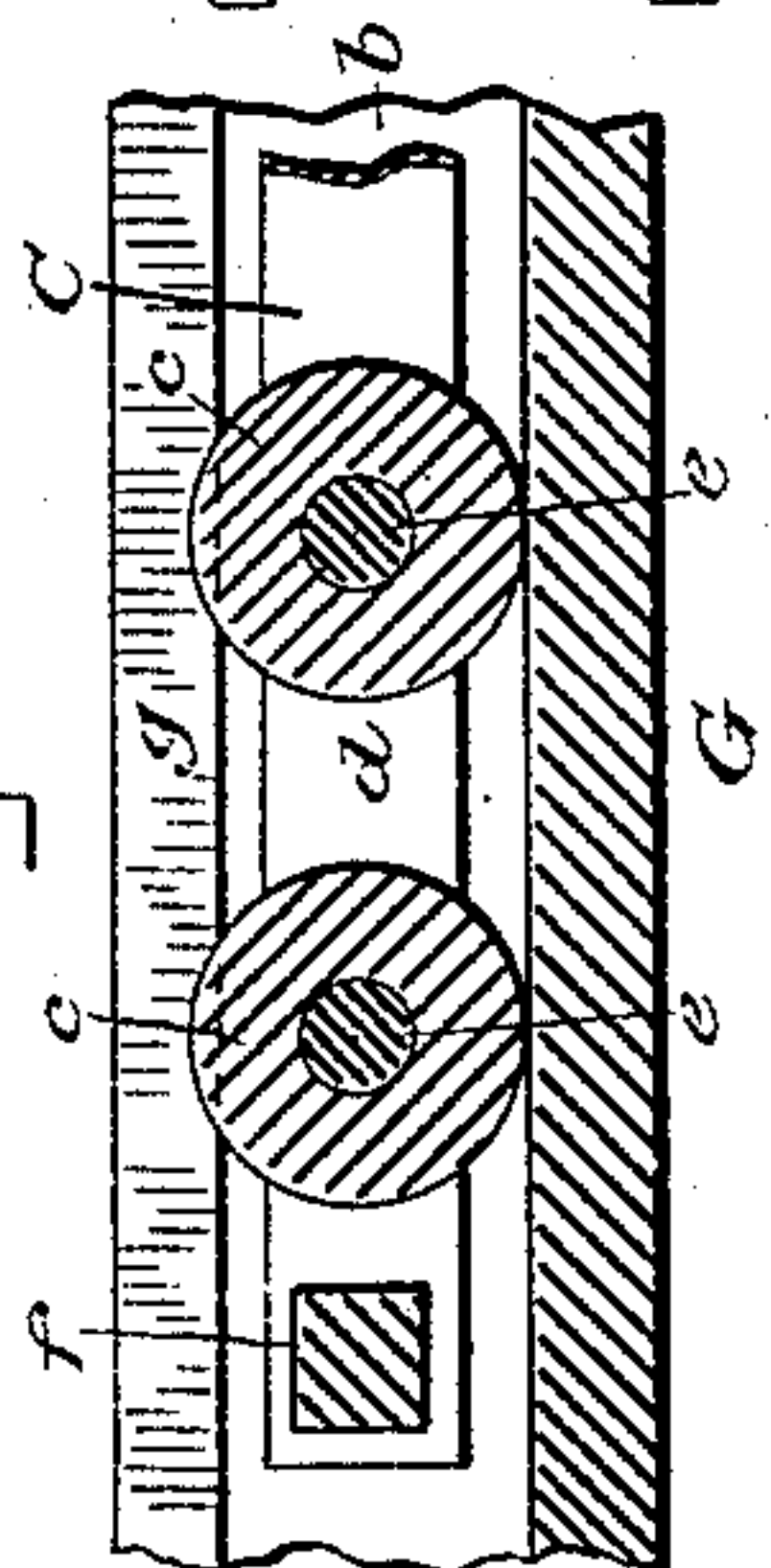


Fig. 3.



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SLIDING BEARER FOR BEDS OF PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 286,997, dated October 23, 1883.

Application filed January 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, ANDREW CAMPBELL, a resident of Brooklyn, in the county of Kings and State of New York, have invented certain
5 Improvements in Sliding Bearers for the Beds of Printing-Presses, of which the following is a specification.

The reciprocating beds of cylinder printing-presses are commonly provided with two
10 runners extending longitudinally beneath them, which slide on ways formed on the fixed frame-work of the press. To decrease the friction between these ways and the sliding runners anti-friction rollers have been in-
15 terposed between them, and these have been variously arranged and guided.

The object of my present invention is to provide a means of constructing anti-friction roller-bearers which shall not be subject to
20 certain defects which are inherent in the construction heretofore employed.

Figure 1 of the accompanying drawings is a transverse section of a portion of the bed of a press with its supporting frame-work, showing my improved anti-friction bearers in trans-
25 verse section. Fig. 2 is a fragmentary longitudinal section of one of the bearers cut in the plane of the line 2 2 in Fig. 1. Fig. 3 is a similar section, on a larger scale, cut in the plane of the line 3 3 in Fig. 1, and looking in
30 the direction of the arrow. Fig. 4 is a plan of a fragment of the roller-frame and rollers removed. Fig. 5 is a transverse section illustrating a modification, and Fig. 6 is a sectional
35 plan thereof, each of these sections being cut in the plane of the like-numbered line in the other.

Let B designate the reciprocating bed of the press, A' a transverse frame extending across
40 from one side frame to the other, (these side frames not being here shown,) and R R two longitudinal girders supported on the frame A' and at intervals, or other like transverse frames. For a more complete illustration of these sev-
45 eral parts, and of their connection with the remaining frame-work and mechanism of the lower part of the press, reference may be made to my application No. 70,171, for patent on variable bed motions for printing-presses,
50 filed August 24, 1882, wherein the parts above

referred to are designated by the same letters of reference herein applied to them.

The girders G G are of I shape, except that their upper flanges are extended laterally and then upwardly, so as to form a trough or deep
55 groove, *a*, on the top of each girder. The flanges forming the side walls of this trough are lettered *b b*. Inside the trough are placed the anti-friction rollers *c c*, which roll on its
60 bottom, and are connected together and kept at proper distances apart by a frame, C, consisting of two side bars, *d d*, pierced with holes at intervals, to receive the reduced ends of
cross-spindles *e e*, which pass through axial
65 holes in the rollers. These spindles may fit the rollers loosely, and their ends may be riv-
eted to the bars *d d*, as shown in Fig. 4, in which case the spindles are non-rotative and the rollers turn on them; or the spindles may
70 fit the rollers tightly and rotate with them, their reduced end or journals turning in the holes in the bars *d d*. At each end of the frame C the bars *d d* are fastened together by means of a cross-bar, *f*, to which they are riv-
75 eted.

It will be observed by reference to Fig. 1 that the walls *b b* are turned toward each other at the top, presenting approaching faces *g g*; or, in other words, that their inner sides be-
80 low these faces are hollowed out or cut away, to leave free spaces for the movement of the bars *d d*. These faces *g g* are planed true and smooth, and extend from slightly below the
tops of the rollers *c c* to a short distance above them. The runners *h h*, which are shown in
85 Fig. 1 as forming part of a rectangular frame, H, bolted to the under side of the bed B, fit in between these faces *g g* and rest directly on the rollers *c c*. Their side edges are planed to fit
90 closely between the faces, and in their longitudinal movement they slide past and between them, and are thereby guided laterally. As there is no side thrust tending to force them
against the faces, this sliding contact develops but little friction. The rollers are guided rela-
95 tively to each other by the frame C, as already described, and are prevented from becoming displaced laterally by their upper portions fitting loosely between the faces *g g*, as best shown
100 in Fig. 3. As they roll a sufficient portion of

their ends is in contact with the faces *g g*, to keep them from moving laterally and from becoming tilted or assuming an inclined position. The frame C does not touch any portion of the

5 trough *a*.
 A modified construction is shown in Figs. 5 and 6. The tops of the walls *b b* are not turned toward each other to form faces *g g*, but are continued straight up, and the runner *h* is
 10 made wider, so as to fit between the walls and be guided by them, as before described. The rollers *c c* are guided, not by direct contact with the walls, but through the medium of the frame C, the bars *d d* of which have projec-
 15 tions *i i* at intervals, which slide against the walls *b b*. The inner surfaces of these walls are planed down to below the bars *d d*. The rollers are here shown as being turned in one piece with their journals *e e*.
 20 The distinguishing features of my invention are that the runners *h h* are laterally guided by direct contact with the fixed walls *b b*, and the rollers *c c* and their frame C are used only to transmit the weight from the runners to the
 25 fixed trough or way, according to the best method heretofore in use, which is illustrated incidentally in my before-mentioned applica-
 30 tion. The frame C is made strong and heavy, its side bars fit closely between the walls *b b* and extend vertically above the tops of the rollers, and the runner *h* fits between them. This frame should travel, as the rollers will naturally do, at half the speed of the bed; but in practice it has been found that if the
 35 friction between its sides and the runner is greater than that between its sides and the fixed trough it will travel faster than half the speed of the bed, and its end will strike the end of the trough, and on its return move-
 40 ment its other end will strike the opposite end of the trough. This not only jars the machine, but while the bed is completing its movement the runners have to slide across the rollers, thus wearing flat places on them. On
 45 the other hand, if the friction between the frame and the trough is the greater, the frame will not travel far enough, the runner being forced to slide or "creep" on the rollers. To avoid these objections, rack-and-pinion gear-
 50 ing has been added, as shown in said patent, to drive the frame positively the proper distance; but this complicates the device, increases the cost, and adds to the friction. My present construction avoids this result by bringing the
 55 runners into direct contact with the fixed parts that guide them laterally, so that no amount of friction between these parts can effect the speed of the rollers or the extent of their travel. The rollers and their frame are thus left free
 60 to move at the speed which they naturally as-

sume, and no gearing is necessary to compel them to move correctly. Another advantage of my invention is its greater cheapness. The frame C in my preferred construction may be put in rough, as it has not to fit anything ex- 65
 cept the spindles *e e*, and the trough *a* has to be planed only on its bottom and on the faces *g g*. The only parts to be planed to fit each other are the edges of the runners and the faces *g g*; but in the former construction the 70
 frame C and trough *a* have to be planed to a sliding fit with each other, and the runners *h* and frame C have also to be made to fit.

In place of using the walls *b b* for lateral guides to the runners *h h*, any other fixed part 75
 may be so used, and the rollers *c c* may be connected together and guided in any suitable manner, or they may be unprovided with any connection with each other, without departing from the essential features of my invention. 80

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

1. The combination, in a printing-press, of the bed, the runners arranged on its under side, the fixed ways or bearers extending longi- 85
 tudinally beneath said runners, a series of anti-friction rollers interposed between each of said runners and ways, and fixed guides bearing directly against the said runners and adapted to guide the bed against lateral dis- 90
 placement while it is performing its longitudinal reciprocation, substantially as and for the purposes set forth.

2. The combination of bed B, having runners *h h*, with fixed girders G G, two series of 95
 anti-friction rollers, *c c*, frames C C, each connecting together the rollers of one series, walls *b b* on each of said girders, extending upward, turned toward each other, and terminating in opposite faces, *g g*, said faces embracing be- 100
 tween them the runner *h* and the upper parts of the ends of the rollers, whereby said runner and rollers are guided laterally, substantially as set forth.

3. The combination of bed B, runners *h h*, 105
 girders G G, anti-friction rollers *c c*, interposed between each of said runners and girders, frame C, connecting said rollers together, and arranged out of contact with all other parts, and fixed guides or guiding-faces *g g*, embrac- 110
 ing between them the runner *h* and the upper portions of the rollers *c c*, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 115
 witnesses.

ANDREW CAMPBELL.

Witnesses:

A. R. HILLYER,
 D. E. FARRELL.