

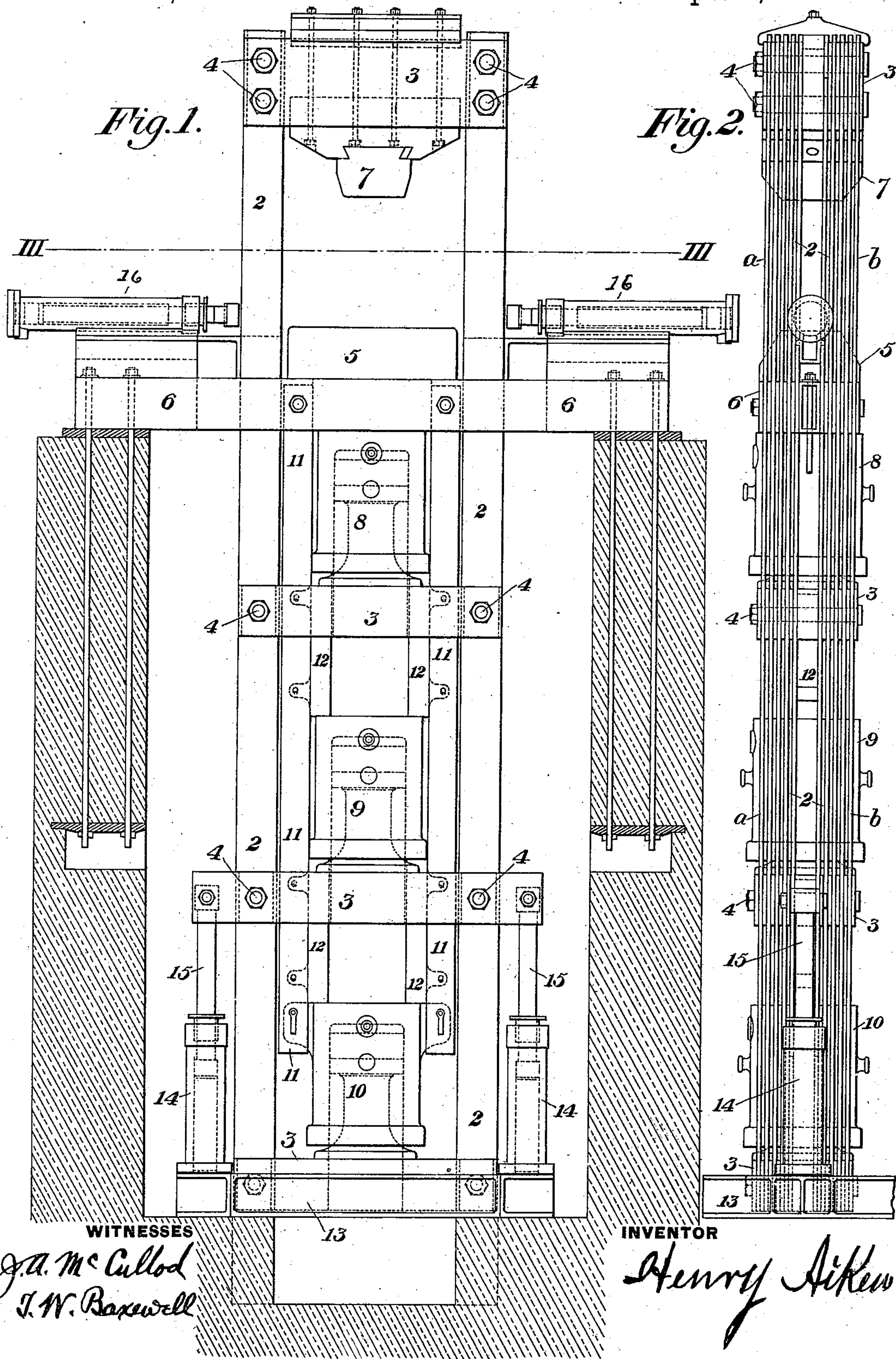
(No Model.)

3 Sheets—Sheet 1.

H. AIKEN.  
FRAME FOR FORGING PRESSES, &c.

No. 545,758.

Patented Sept. 3, 1895.



(No Model.)

3 Sheets—Sheet 2

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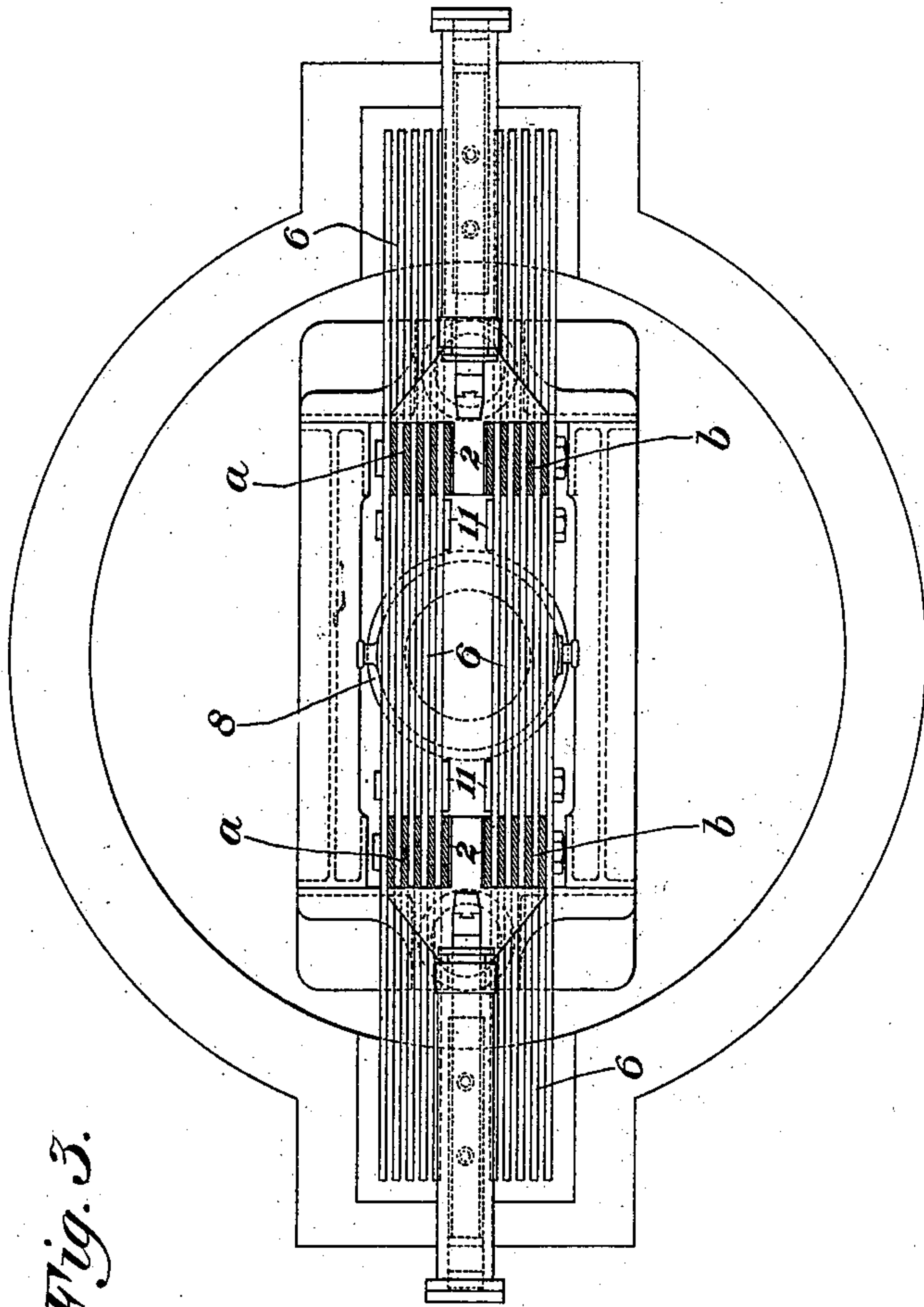


Fig. 3.

WITNESSES

J. A. McCulloch  
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INVENTOR

Henry Aiken



(No Model.)

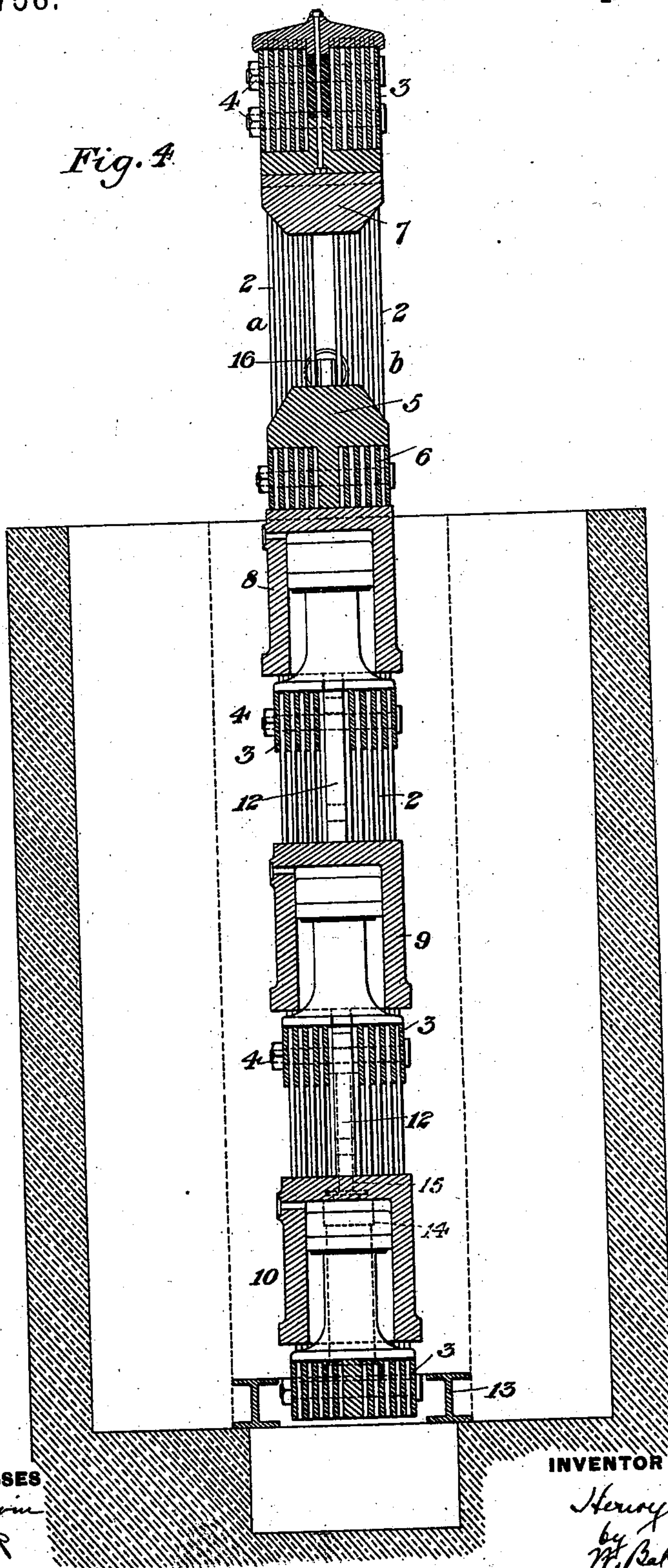
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Fig. 4



WITNESSES

*M. L. Brown*  
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# UNITED STATES PATENT OFFICE.

HENRY AIKEN, OF PITTSBURG, PENNSYLVANIA.

## FRAME FOR FORGING-PRESSES, &c.

SPECIFICATION forming part of Letters Patent No. 545,758, dated September 3, 1895.

Application filed June 27, 1893. Serial No. 478,944. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY AIKEN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Frames for Forging-Presses, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 shows in front elevation a metal-forging press embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a plan view, and Fig. 4 is a vertical central section through Fig. 1 looking to the right.

The object of my invention is to provide a frame for forging-presses, shears, or other like machinery, which shall be of simpler, stronger, and cheaper construction than other frames heretofore known; and it consists principally in a frame composed of series or groups of parallel plates or bars, and in such frame when secured together and braced by cross bars or plates which extend between said parallel plates or bars.

It also consists in certain improved constructions hereinafter particularly described and claimed.

In the drawings, 2 2 represent the upright side posts of the frame. Each of these is composed of two adjacent groups *a b* of parallel plates or bars, as shown in Figs. 2 and 3. The opposite groups of the frame are connected at suitable intervals by parallel cross bars or plates 3, which extend across the frame and are fitted alternately between the parallel plates *a b*, being connected therewith by pins 4. The frame so made may be rigidly anchored at the base, and I desire to claim the frame broadly when constructed as above described, irrespective of the manner in which it is applied to the machine; but I prefer to arrange the same as shown in the drawings, and as I shall now describe. The anvil or stationary head of the machine 5 is fixed to a stationary supporting guide frame or base 6, which is preferably composed of parallel cross bars or plates, between which the upright bars or plates of the frame can move. The moving head 7 is secured to the upper portion of the frame, and the frame itself is adapted to be moved vertically within the guide-frame 6, so as to cause the approach of

the head 7 to the anvil, or their separation. The motion of the frame is effected by means of a suitable number of cylinders 8, 9, and 10. The topmost cylinder 8 bears against the under side of the fixed guide-frame 6. The lowest cylinder 10 is upheld from said guide-frame by supporting-rods 11, and the cylinders 8 and 9 are upheld by separating-bars 12, interposed vertically between them. The rods 11 and bars 12 are situated in the gap between the adjacent groups of parallel bars which constitute the frame, as shown in Fig. 2. The plungers of the cylinders project downwardly and are supported by the cross-bars 3, so that on projecting the plungers they will bear down upon said cross-bars, and will thus cause the frame to move vertically downward, and to carry with it the moving head 7. The frame is guided in this vertical motion by the guide-frame 6, and by a casting 13 at the base of the structure. The upward motion of the frame is effected by counterbalancing-cylinders 14, the plungers 15 of which are connected to the frame or to projecting cross-bars 3 thereof.

16 16 are horizontal cylinders, by which the metal to be sheared may be adjusted or held on the anvil.

It is to be understood that my improvement may be adapted to the construction of metal shears, as well as to forging-presses, by substituting shear-blades for the tools 5 and 7.

The advantages which result from the construction of the frame as I have described it are that I am able to obtain at reduced cost a light and very strong frame structure, the parts being admirably adapted to withstand the strain to which they are put when in use. The cost is less and the construction is stronger than when the frame is made up of castings and bolts.

Within the scope of my invention, as described in the claims, modifications in the form and arrangement of the parts may be made by those skilled in the art, since

What I claim is—

1. The combination of a vertically movable frame for shears, forging presses, &c., a guide frame through which it moves, and a series of cylinders, and supports suspending the lowest cylinder from the guide-frame, the upper



cylinder or cylinders being supported from the lowest cylinder; substantially as described.

2. A frame for forging presses, shears, &c., composed of groups of parallel plates or bars, secured together and braced by cross-bars or plates which extend between the same; substantially as described.

3. A frame for shears, forging presses, &c., consisting of two opposite posts, each composed of two groups of parallel plates or bars, the plates or bars of the opposite groups being connected by interfitted cross-bars or plates and pins; substantially as described.

4. A frame for forging presses, shears, &c., composed of groups of parallel plates or bars, secured together and braced by cross-bars or plates which extend between the same, a guide-frame through which said frame is vertically movable, and a series of operating cylinders suspended serially from said guide-frame and having plungers which bear on the movable frame; substantially as described.

5. The combination of a vertically movable frame for shears, forging presses, &c., a guide-frame through which it moves, a series of cylinders suspended serially from said guide-frame, and plungers which bear on the movable frame; substantially as described.

6. A frame for shears, forging presses, &c., consisting of two opposite posts, each composed of two groups of parallel plates or bars, the plates or bars of the opposite groups being connected by interfitted cross-bars or plates and pins, in combination with actuating cylinders and plungers, whose connecting mechanism extends through the gap between the adjacent groups; substantially as described.

In testimony whereof I have hereunto set my hand.

HENRY AIKEN.

Witnesses:

W. H. PUPELS,  
J. A. McCULLOD.