

(No Model.)

2 Sheets—Sheet 1.

A. PARTRIDGE.
PERFORATING MACHINE.

No. 290,102.

Patented Dec. 11, 1883.

Fig. 1.

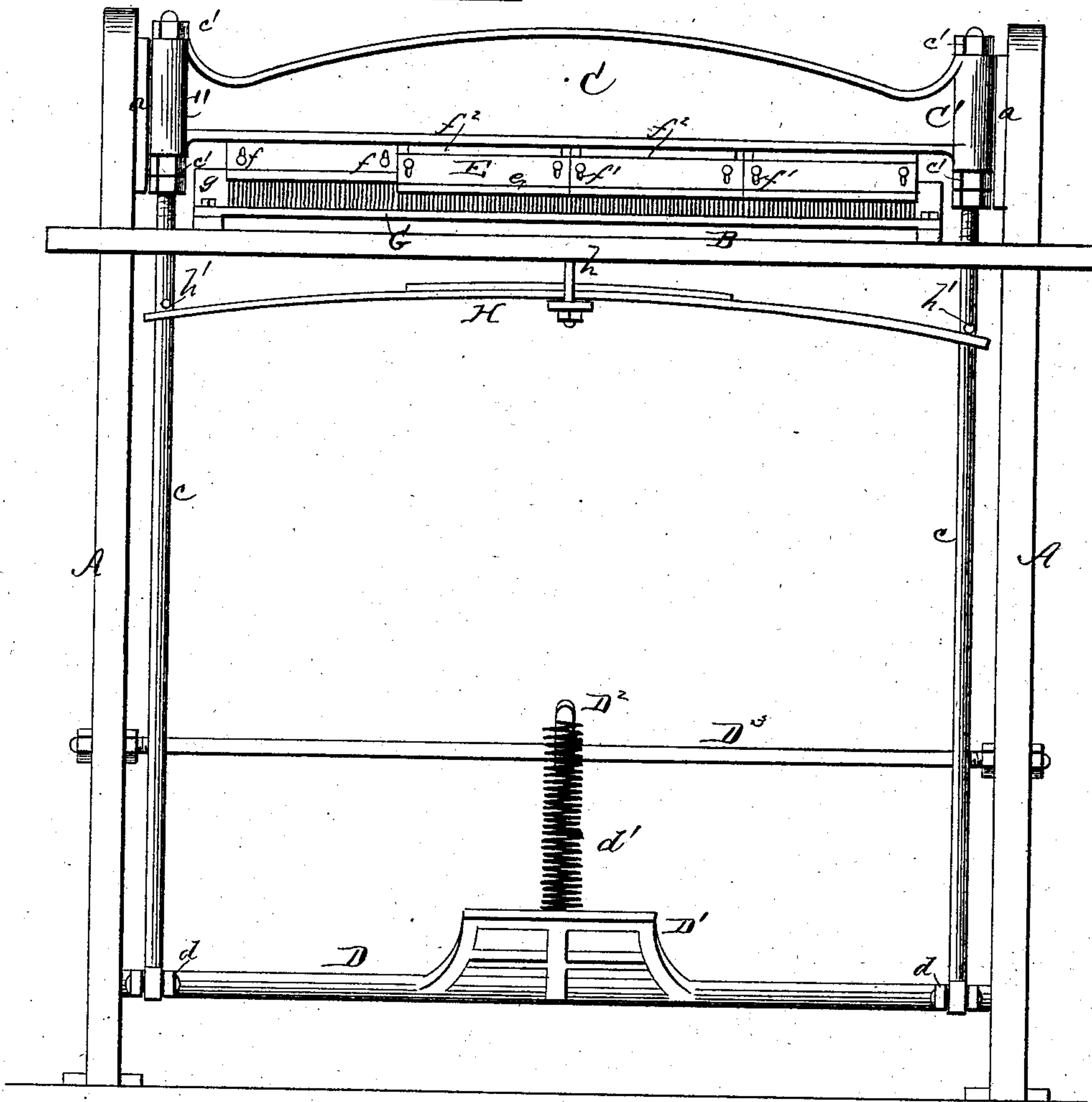
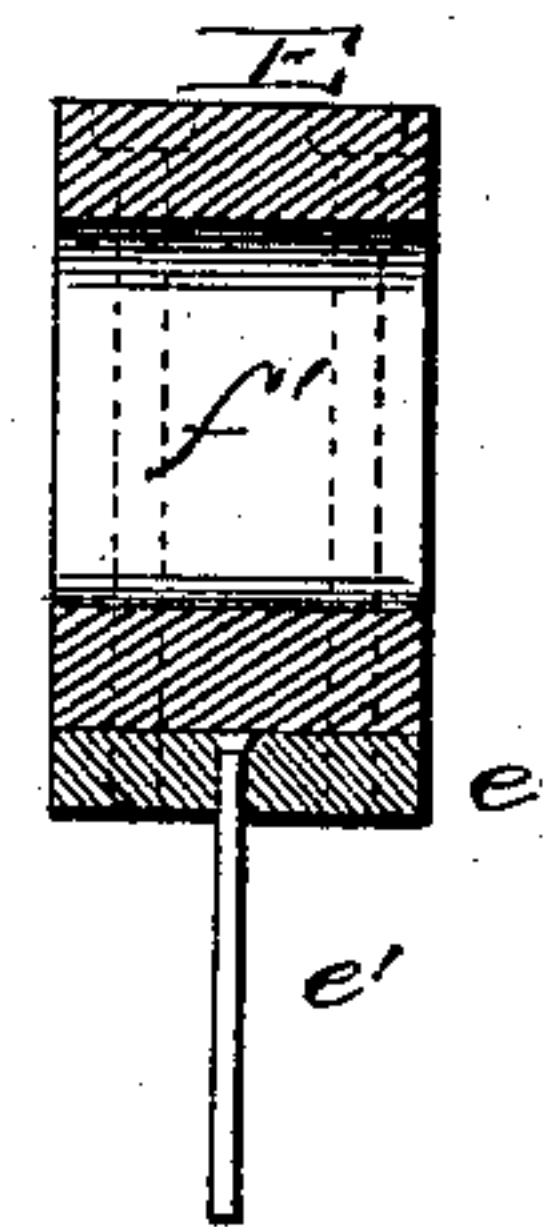


Fig. 4.



WITNESSES:
H. C. McArthur
C. L. Carman

INVENTOR:
Alfred Partridge
per
H. Harrison
Attorney.

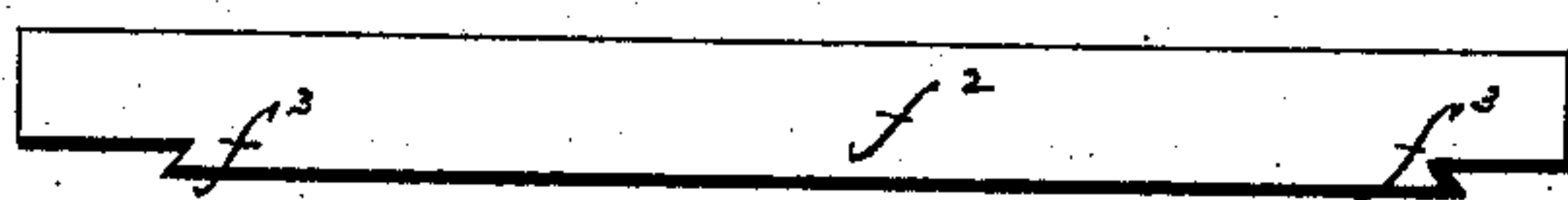
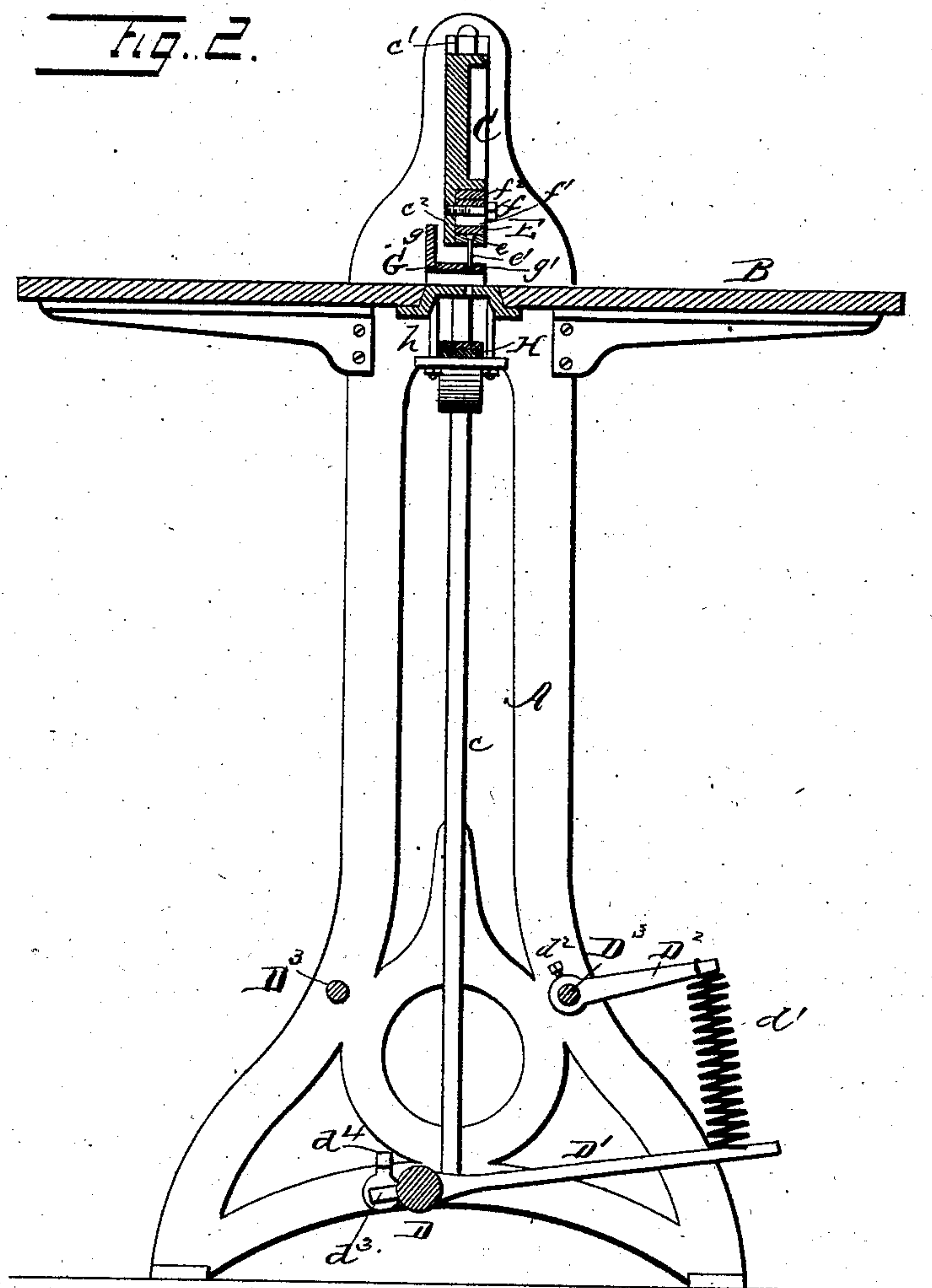
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2 Sheets—Sheet 2.

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H. C. McArthur

C. L. Carman.

Inventor,

Alfred Partridge

Per

H Harrison

Attorney.

UNITED STATES PATENT OFFICE.

ALFRED PARTRIDGE, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDWARD P. DONNELL, OF SAME PLACE.

PERFORATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 290,102, dated December 11, 1883.

Application filed January 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALFRED PARTRIDGE, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Perforating-Machines, of which the following is a specification.

This invention relates to improvements in machines for perforating paper; and it consists in certain peculiarities of construction, which will be hereinafter more fully described, and set forth in the claims.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a front elevation of my device; Fig. 2, a vertical cross-section of the same, and Figs. 3 and 4 are details of parts thereof.

A represents the side frames of my perforator, which are connected near their upper ends by a table, B, as shown, upon which the paper to be perforated is placed. The side frames, A, above the table B, are provided or formed on their inner side with grooved ways *a a*, in which is fitted a vertically-sliding cross-head, C, supported and operated by a rod, *c*, at either end, which is passed through a sleeve or socket, *C'*, in the ends of the cross-head, and rendered adjustable by set-nuts *c' c'* above and below said sleeves. These rods *c c* pass downward through the table, and their lower ends are pivoted between small lugs *d d*, projecting from a rock-shaft, D, journaled in the lower end of the side frames. This rock-shaft is also provided at or near its center with a treadle, *D'*, by which it is operated, and which is thrown up after being depressed by the foot by means of a spiral spring, *d'*, connecting it with an adjustable arm, *D''*, secured by a set-screw, *d''*, to one of the stay-rods, *D'''*, of the frame, as shown. The cross-head C is provided with a downwardly-projecting flange, *c''*, on its under rear edge, against which are bolted the needle-bars E. These needle-bars are constructed of a casting or bar, E, to the under side of which is secured, by countersunk screws, a plate, *e*, which is perforated for the reception of the needles or perforat-

ing-pins *e'*. These needles are headed on their upper ends, and are passed through the plates *e* from the upper side, their heads being countersunk in the plates, and when these plates and the bars E are secured together the bars cover the heads of the needles and hold them firmly in place, as seen by Fig. 4. The needle-bars E are applied to the cross-head C in short sections, and secured by bolts or screws *f f*, passing through vertical slots *f' f'* in the bars and entering the flange *c''* of the cross-head. Above the blocks, between them and the main part of the cross-head, are inserted small plates *f'' f''*, which serve to hold the bars down to their lowest position when it is desired to use the needles, and which are provided on each outer corner with a notch having an under beveled corner, *f'''*, as seen by Fig. 3, to enable them to be easily removed by any thin piece of material, such as a knife-blade, screw-driver, &c.

Beneath the cross-head, and slightly above the face of the table B, is arranged a clearing-bar, G, of thin metal, stiffened and rendered rigid by a flange, *g*, along its rear side. This bar is provided with a series of perforations, *g'*, for the passage of the needles, and the table beneath it is also perforated to correspond, as seen by Fig. 2. To throw the cross-head up after a quantity of paper has been perforated, I provide a flat spring, H, resting in a stirrup, *h*, beneath the center of the table, and having its ends bearing upward against pins *h'* in the rods *c c*.

The operation of this device is as follows: The needles having been properly adjusted, a quantity of paper is slipped beneath the bar G to its proper position, and the cross-head depressed by the foot on the treadle *D'* until the needles have passed entirely through the paper, when the foot is lifted and the springs *d'* and H throw up the treadle and cross-head, withdrawing the needles, which are cleared of the paper by means of the bar G. To prevent the cross-head from being thrown down too far, I provide one end of the rock-shaft D with a rear projection, *d'''*, which engages with a hooked casting, *d''''*, secured to the side frame, and stops it at the proper point. When it is desired to perforate only partly across a sheet

of paper, as in the case of checks and similar articles, one or more of the filling-plates f^2 are removed, and the corresponding sections of the needle-bars are loosened and pushed up, 5 where they are again secured in a position too high for their needles to take effect when the cross-head is forced down. It will be seen that the easy and quick adjustment of the slotted needle-bars renders it unnecessary to 10 remove them from the machine, and should any of the needles become bent or broken the plate in which they are set is easily removed and a new point inserted, rendering repairs very economical.

15 I am aware that a flat clearing-bar has been used in this class of machines; but the paper clings so tightly to the needles that the bar springs upward and fails in accomplishing the object for which it is used, and often bends 20 or breaks the needles; but the bar I have shown, while thin, is so stiffened by its rear flange as to be perfectly rigid, and cannot spring, as stated above.

25 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a perforating-machine, a needle bar or block formed in sections, and adapted to be adjusted to and from the work, whereby 30 part of the needles may be rendered inoper-

ative at the will of the operator, substantially as and for the purpose set forth.

2. In a perforating-machine, the combination, with a vertically-sliding cross-head, of a needle-bar formed in sections provided with 35 vertical slots, and secured to the cross-head by set-screws, substantially as shown and described.

3. In a perforating-machine, the cross-head C, formed with a flange, c^2 , in combination 40 with the slotted needle-bars E, set bolts or screws f , and filling-plates $f' f'$, having notched corners, substantially as and for the purpose set forth.

4. A paper-perforating machine consisting, 45 essentially, of the main frame A, table B, vertically-sliding cross-head C, adjustable sectional needle-bars E, flanged clearing-bar G, pitman-rods $c c$, rock-shaft D, provided with a treadle, D' , and lugs $d d^3$, stop d^4 , and the 50 recoil-springs d' and H, all constructed, combined, and arranged to operate substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED PARTRIDGE.

Witnesses:

RICHARD NEEL,
FRANK JOHNSON.