

James Duff's Punching or Shearing-Press

PATENTED JUN 27 1871

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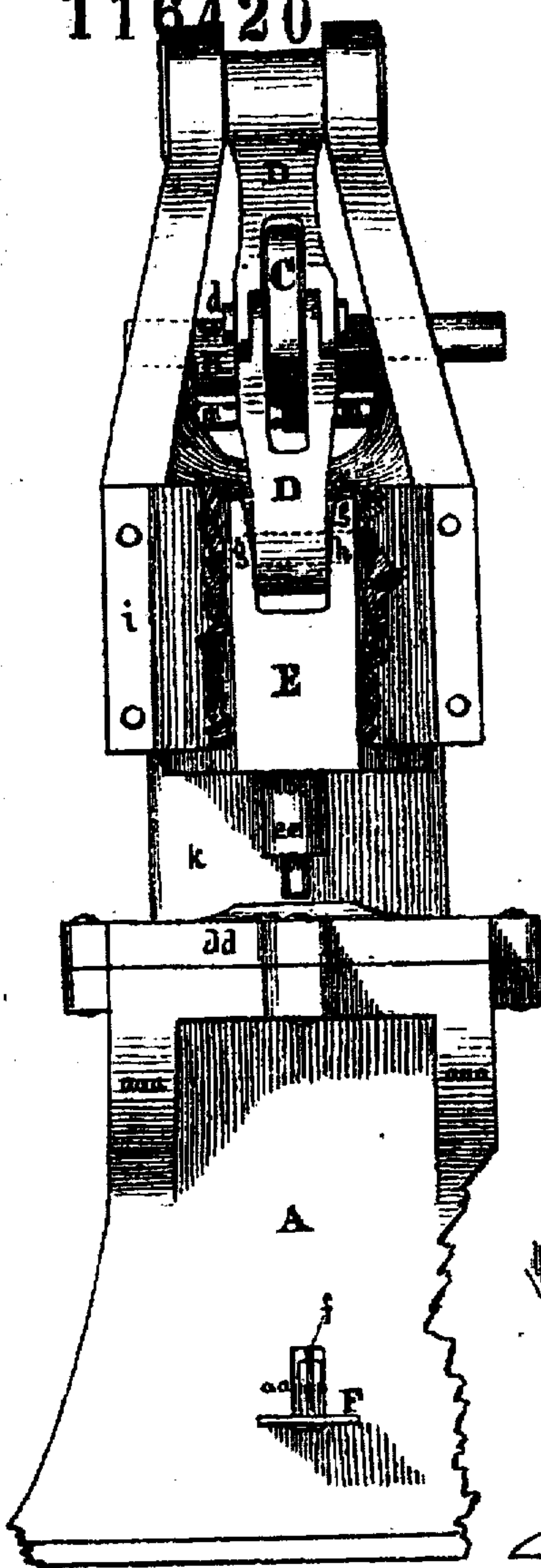


Fig. 2.

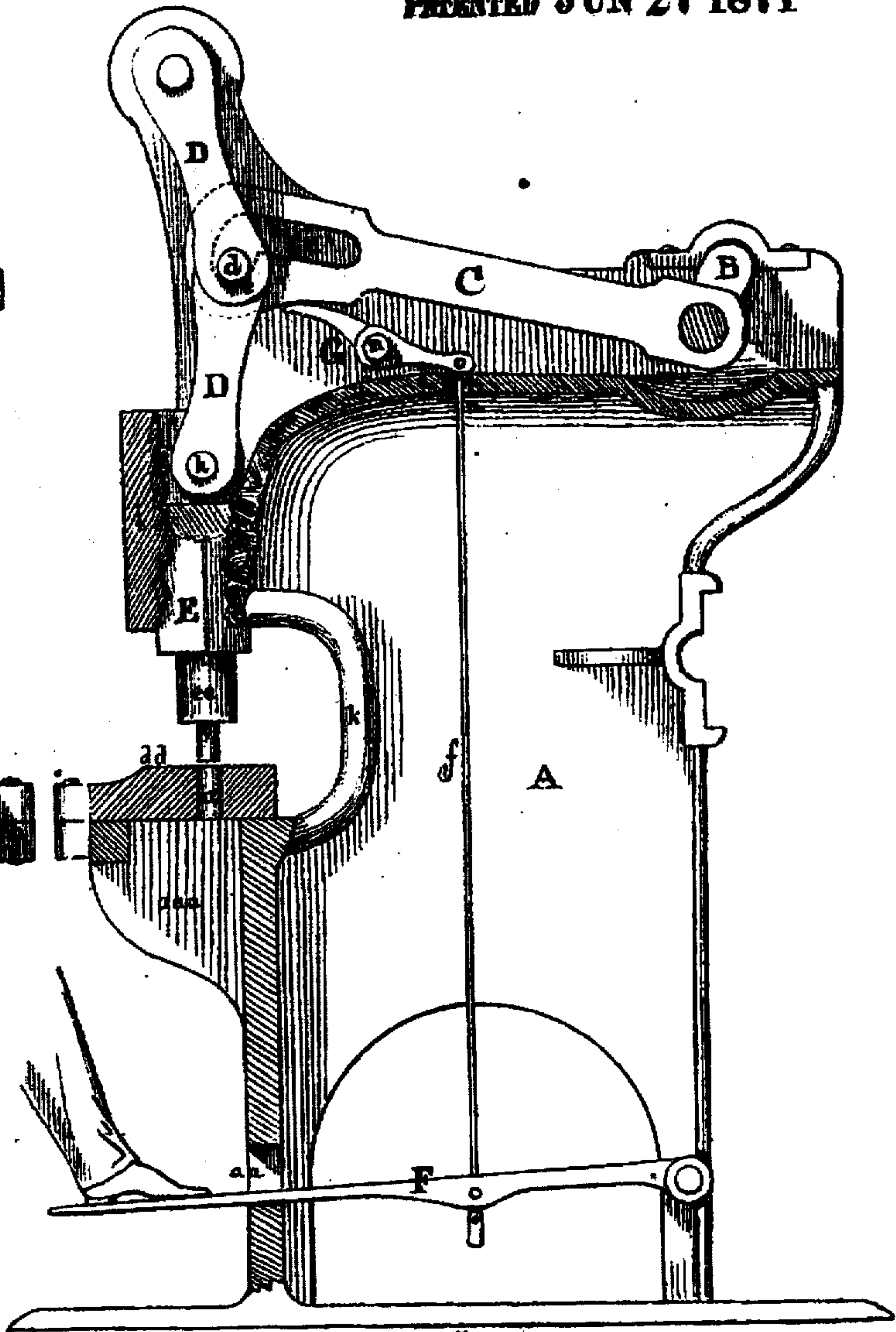


Fig. 1.



Fig. 4.

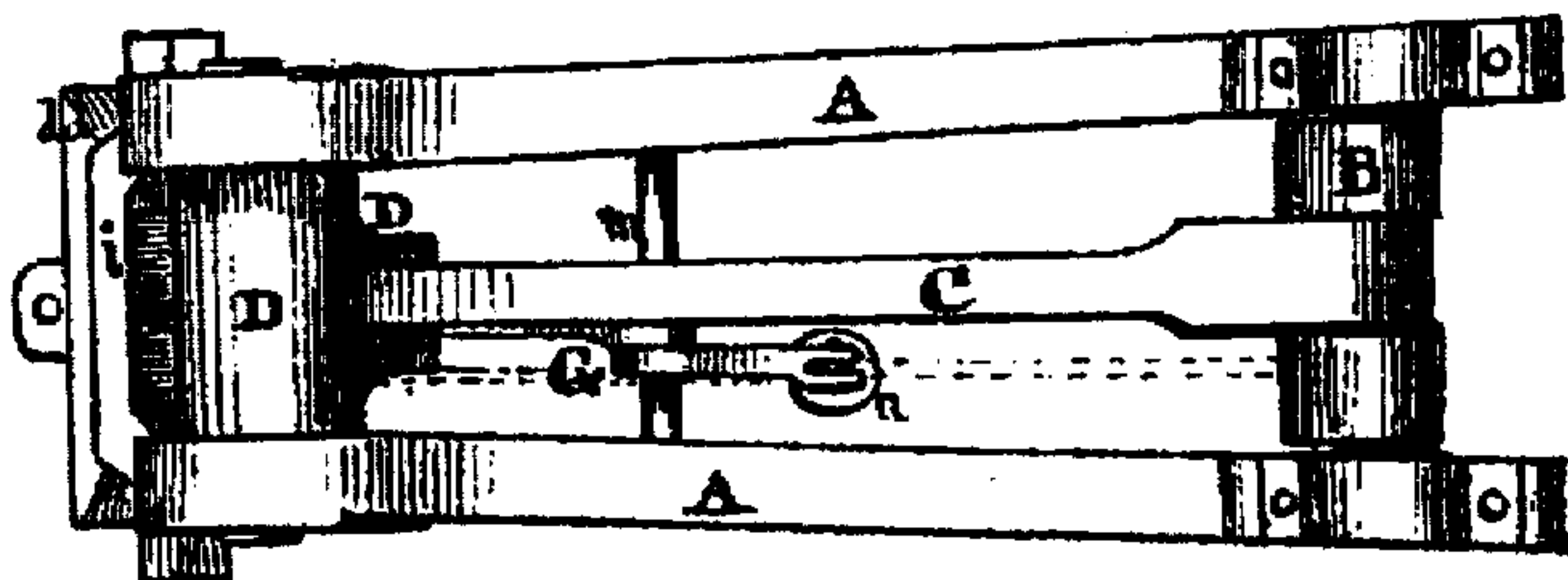


Fig. 3.

Witnesses
Henry M. Hall
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UNITED STATES PATENT OFFICE.

JAMES DUFF, OF PEORIA, ILLINOIS.

IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. 116,420, dated June 27, 1871.

To all whom it may concern:

Be it known that I, JAMES DUFF, of the city of Peoria, in the county of Peoria and in the State of Illinois, have invented an Improvement in Punching or Shearing Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a side sectional elevation; Fig. 2, a front sectional elevation; Fig. 3, a plan view; and Fig. 4, a detailed view of arm, showing slot.

Like letters in the figures of the drawing indicate like parts.

This invention relates to greater facility in operating the toggle-joint in a punch or cutting press by making a side recess in the slot in the arm connecting the crank with toggle, into which the pin of the toggle is received, at pleasure of the operator, by which device the punch or shear can be kept moving vertically down to the spot intended to be cut or punched, marking, as it were, the precise point where the cut of the punch or cut will be made when the punch or shear is thrown into gear.

A is the frame of the machine, in the upper part of which is the toggle-joint D D, operated by the crank B. The punch or shear-guide is shown at *i* and the bed-plate at *d d*. B, the crank, to which is attached the arm C, the arm connecting toggle with crank B. *c c* is a slot running in the same line as the arm. *e* is a continuation of the slot, down, at right angles, which is raised at pleasure to hug the pin *d* of the toggle. D, the toggle-joint, attached above to the frame A, and below to the pin *h* of guide-block E. F is a lever operated by the foot, and pivoted at the

lower part of the press, and connected, by a rod, *f*, with the lever and dog G, under the arm C, operating on the latter. This lever and dog are hung on the pin *m*.

The operation of this machine is as follows: In cutting or punching no effect is produced by the operation of the crank and arm C on the toggle, excepting to raise the punch or shear, and fall by its own gravity, until the lever F is depressed. The latter being done, the pin *d* of the toggle-joint is caught in the slot *e*. Then each horizontal movement of the arm C, operated by the crank B, causes the punch or shear to do its work.

The advantage of this invention is, that the punch or shear can be continued in motion down to the face of the object intended to be cut, but not cut or punch until the exact place for cutting or punching is ascertained, as the arm C lying on the pin *d* passes back and forth over the pin *d* until the dog G is raised, at which time the punch comes into operation.

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

The crank B and arm C, constructed with the slots *c c* and *e*, as described, in combination with the pin *d* of the toggle-joint D carrying the guide-block E with punch *e e* and dog G, connecting by rod *f* with lever F, all arranged and operating as shown and set forth.

In testimony that I claim the foregoing punching or shearing machine I have hereunto set my hand this 13th day of July, A. D. 1870.

JAMES DUFF.

Witnesses:

HENRY W. WELLS,
ED. THURLOW.