

J. D. CONNOLLY.

Strikers for Paper-Ruling Machines.

No. 143,672.

Patented Oct. 14, 1873.

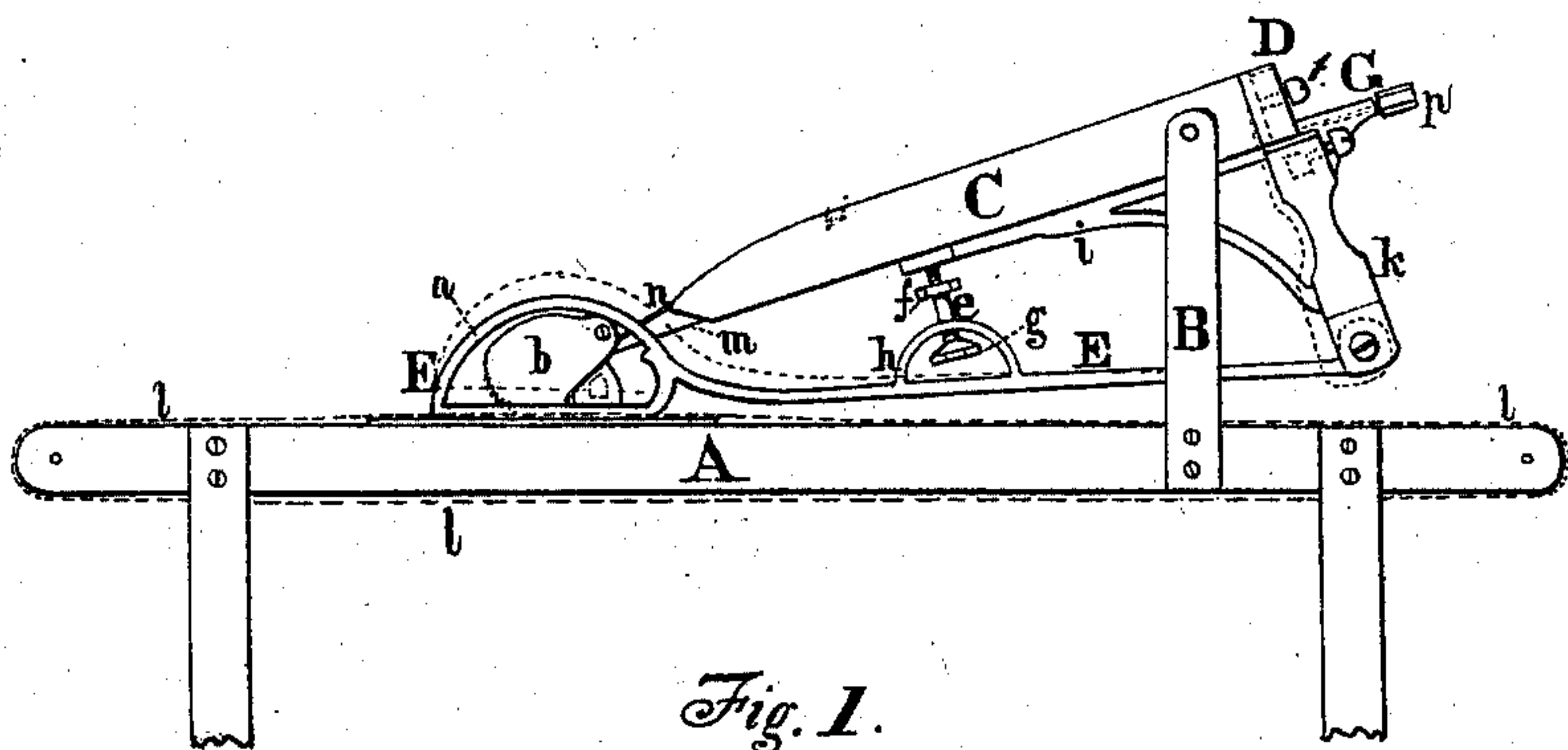


Fig. 1.

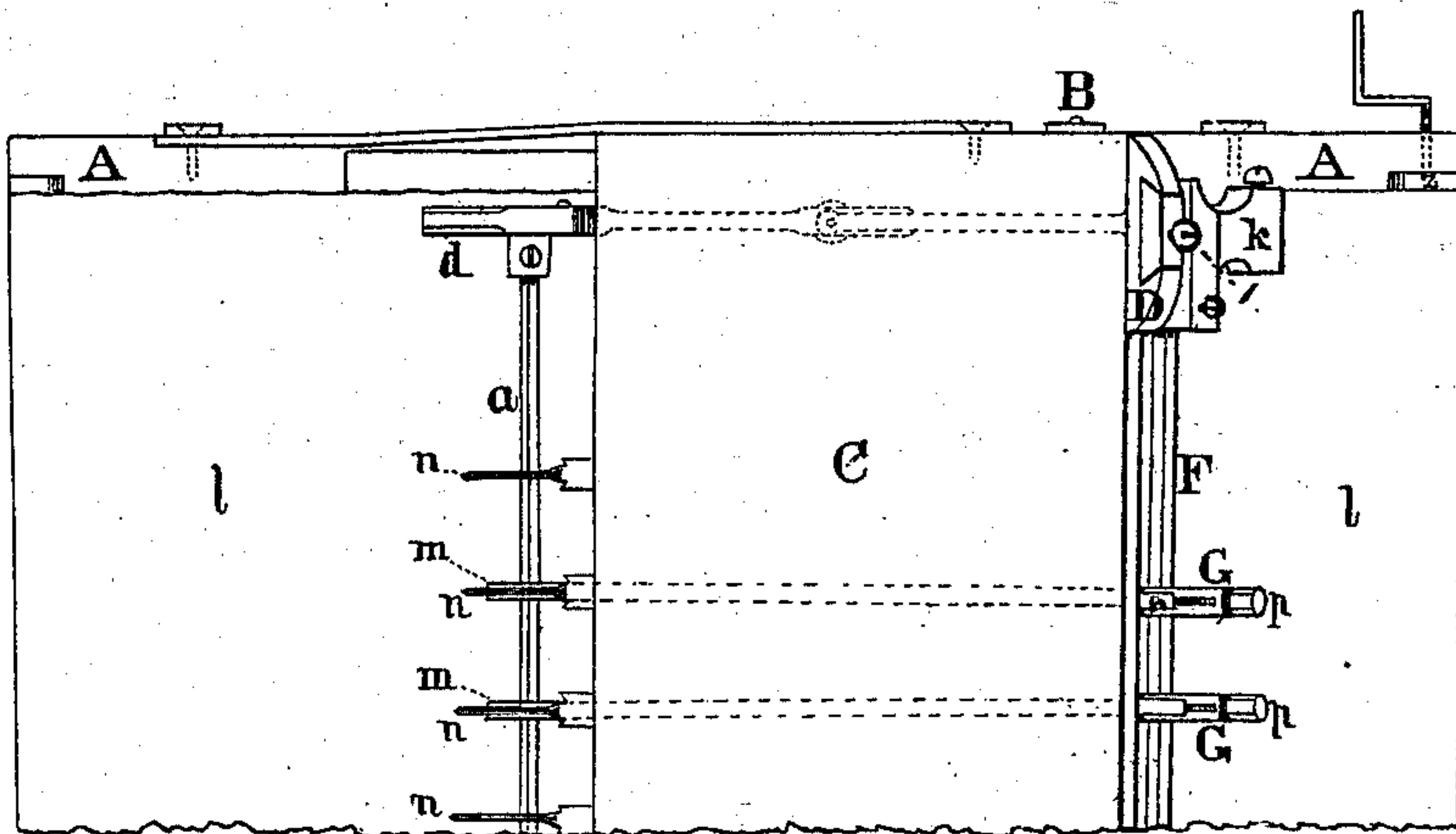


Fig. 2.

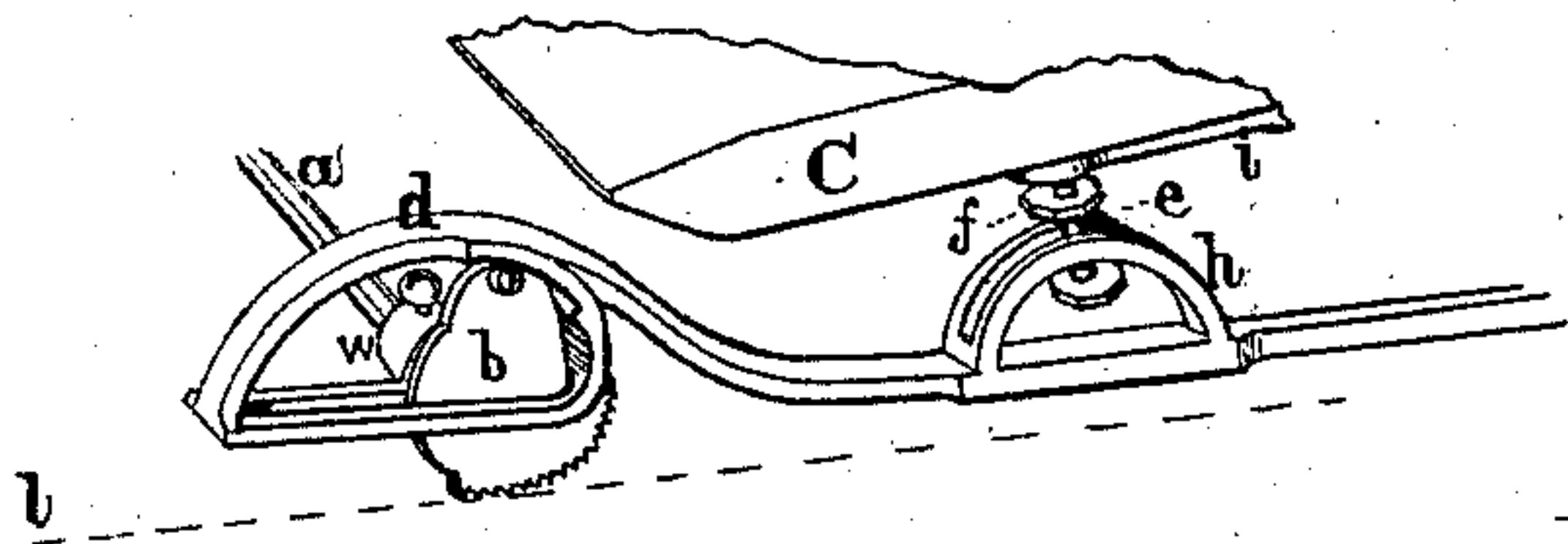


Fig. 4.

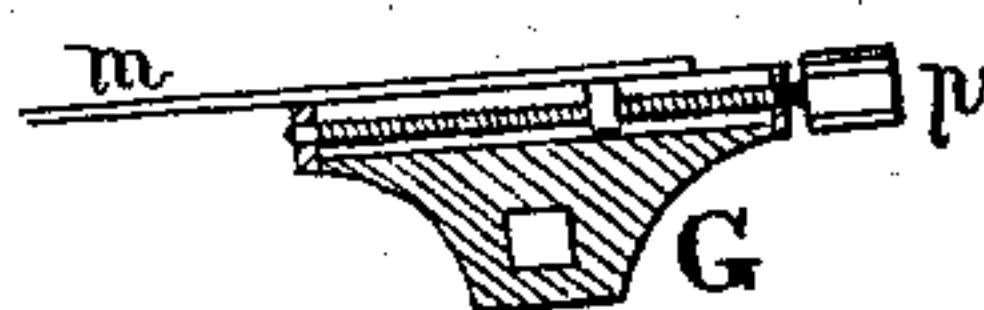


Fig. 5.

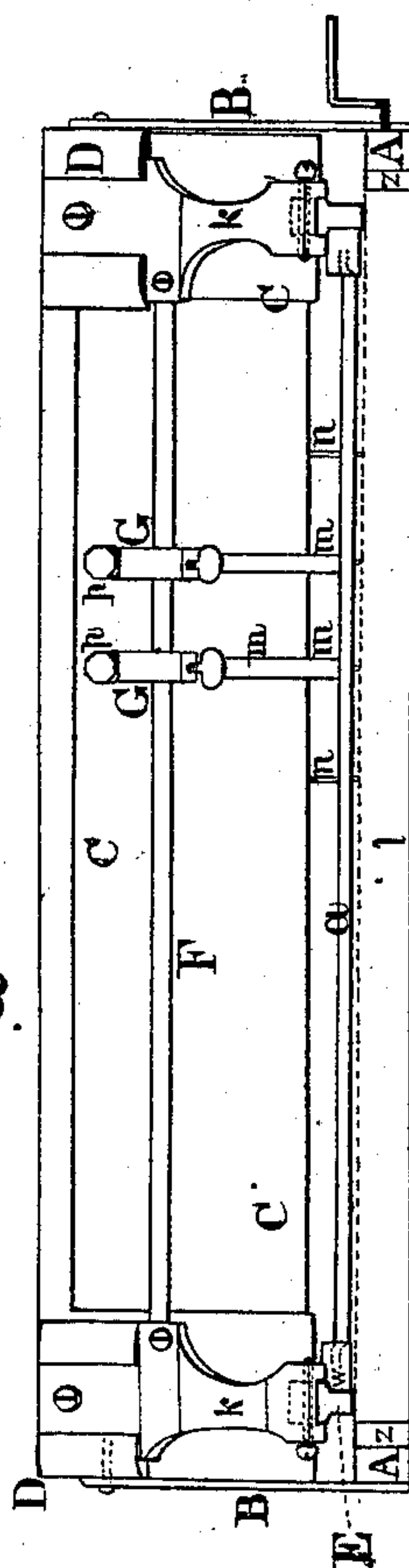


Fig. 3.

Witnesses
James Thurston
John Hamilton

James D. Connolly
by Edmund Thurston
his Atty.

UNITED STATES PATENT OFFICE.

JAMES D. CONNOLLY, OF LINCOLN, NEBRASKA, ASSIGNOR OF ONE-HALF
HIS RIGHT TO RICHARD DOYLE, OF PEORIA, ILLINOIS.

IMPROVEMENT IN STRIKERS FOR PAPER-RULING MACHINES.

Specification forming part of Letters Patent No. **143,672**, dated October 14, 1873; application filed
May 9, 1873.

To all whom it may concern:

Be it known that I, JAMES D. CONNOLLY, of the town of Lincoln, in the county of Lancaster, in the State of Nebraska, have invented an Improvement in "Strikers" for Paper-Ruling Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a side elevation; Fig. 2 a plan of one-half of the machine; Fig. 3, end elevation of same; Fig. 4, perspective view of arm of striker, showing the position of the toothed cam and its slot, and of the segmental slotted detent *h* and screw *f*, between the striker and the pen-carriage; Fig. 5, vertical section of pen-setter *G*, showing screw and nut and the attached rod *m*.

This invention consists in a construction and combination of devices, as will be hereinafter fully explained and pointed out in the claims.

In the drawing, *A* represents the frame of a common ruling-machine, with rollers, *Z*, at either end to carry the endless web *l l l*; *B B*, standards, which support the pen-carriage *C* at either end, and in which the latter is pivoted. *D D* are recessed blocks, placed on the rear edge of the pen-carriage *C*. These have each a vertical dovetailed recess, which admits one of the correspondingly-shaped tongues of the posts *k k* of the striker-frame *E*, which are retained therein by the set-screws *l* at the proper points, or similar detents, the object being to afford convenient means for taking off the attached frame *E*, so as to enable more pens to be added to the bar *F*, if desired, the posts having to be removed first before the bar can be detached to get the sliding blocks *G* on the latter; *E E*, the striker-frame, (its attachment to the pen-carriage has been just described,) is composed (similarly to other strikers) of two arms attached to the carriage *C*, which support the pen-end of the latter. I connect the two posts *k k*—above described—which form the rear ends of the striker, by a horizontal bar, *F*, to carry the pen adjusters or "setters" *G G*, of which there may be one

to each pen, and to be operated as required. These are simply slotted blocks *G G*, perforated to admit the rod *F*, and have each a set-screw to keep them in place upon the rod. Forward from each block projects (as far as to rest upon the forward bar *a* of the striker *E* and touch the under side of a pen, *n*,) a light flat rod, *m*, which can be projected beneath its proper pen to keep the same from ruling a line until the "trip" *b* lowers these pens to the paper, as hereafter described. Each of these rods terminates above their respective blocks *G G*, &c., and over a longitudinal groove in a nut which enters the groove, and which is engaged and runs upon a rotary screw, *p*, by which means the rod is projected or retracted to elevate or depress the pen to which it is directed. From the lower end of each post *k k* of the striker *E*, and pivoted therein, projects an arm, *E*, which terminates beyond the front of the supported carriage *C*, which rests upon brackets *i*, which project forward in the same plane as that of the arms *E E* from the posts *k k*. Each arm terminates in a semicircular foot, *d*, having a flat bearing upon the paper and web *l*, and having a trip or toothed cam, *b*, pivoted in its segment above, which trip, when the foot *d* is elevated, presents a segmental-toothed edge toward the rear of the frame or the direction in which the paper to be ruled is advancing. A thumb-screw, *e*, working in a slotted segmental bearing, *h*, on either arm *E*, is pivoted or set in the under surface of either of the brackets *i i* of the striker. Midway upon said screw *e* is an adjustable nut, *f*, by which the play of the carriage *C* or striker *E E* is regulated. The two feet *d d* of the striker are connected by a horizontal rod, *a*, for the purpose of supporting the ends of the pen-setter rods *m m*, &c.

This invention is for the purpose of ruling lines of unequal length at one operation—as, for instance, in ruling subdivisional lines upon ledgers or other books, which lines commence one or two spaces below the commencement of the divisional or principal lines. These devices, nevertheless, allow the pens all to leave the paper at one moment, so as to finish the lines ruled at an equal distance from the margin or bottom of the page. The pens *n n*, &c.,

are first set when it is desired to rule shorter lines, or lines commencing below others, by projecting forward beneath the pen which is to rule said desired line, the rod *m* by means of the screw *p* in the "setting-block" *G*. When the web and paper move forward the motion trips the cams *b b*, letting down simultaneously the feet *h h* and the carriage *C* with those pens which remain in their normal position, and which are to rule the longer lines, the pens which are set to do the shorter lines descending to the paper afterward.

In commencing to rule, the carriage *C* is first pressed down by hand to bring the pens, which are not controlled by the setters *G p m*, down to the paper at the desired point. This depression of the carriage brings the pens, which are pressed outward by the pen-setters, upward from the paper, which pens are brought down to the paper later by the tripping of the cams *b b* when the passage of the web *l l* has carried their teeth forward.

What I claim as my invention is—

1. The removable posts *k k*, provided with set-screws *1 1*, in combination with blocks *D* attached to the pen-carriage *C*, and removable bar *F*, all constructed and arranged to operate substantially as and for the purpose set forth.

2. The rods *m m*, adjustable by means of screws *p p*, and arranged to work in slots of blocks *G G*, which are laterally adjustable upon the removable bar *F*, having set-screws to hold the said blocks in position, all constructed to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing improvement in ruling-machines I have hereunto set my hand this 22d day of April, A. D. 1873.

JAMES D. CONNOLLY.

Witnesses:

CHAS. P. WATSON,

JOHN CARTER.