

S. Estes.
Shuttle Motion.

N^o 22,114.

Patented Nov. 23, 1858.

Fig. 3.

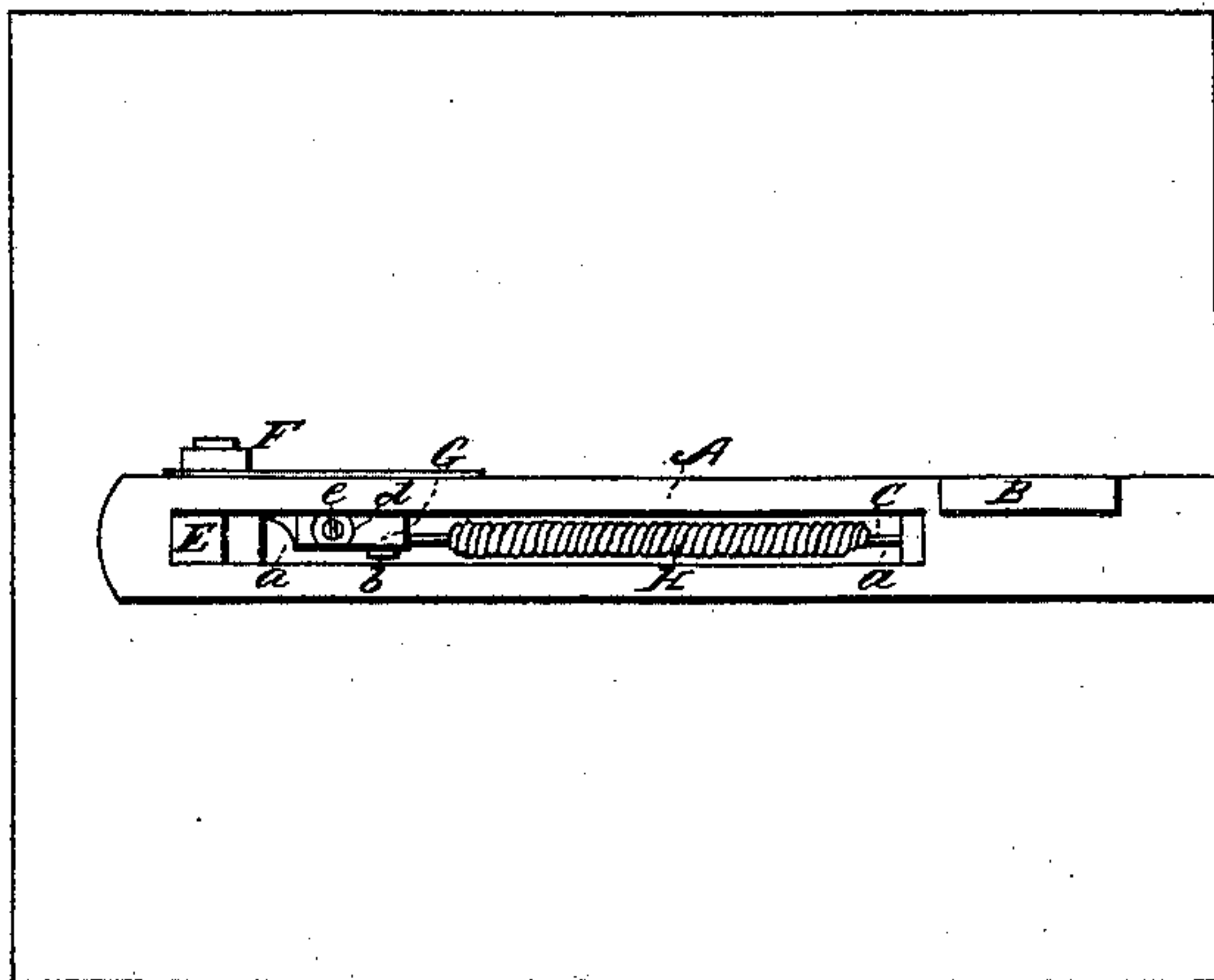


Fig. 2.

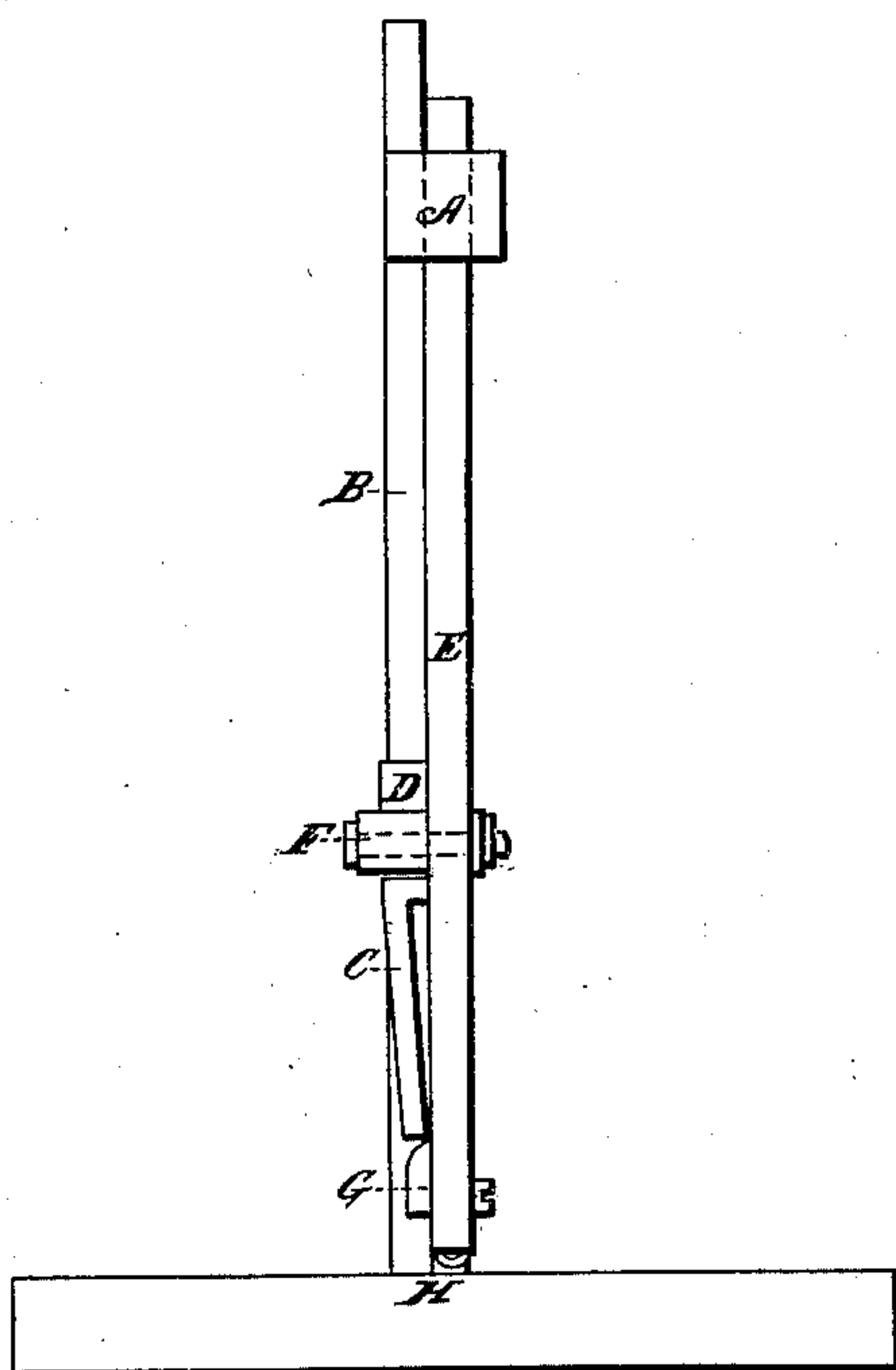
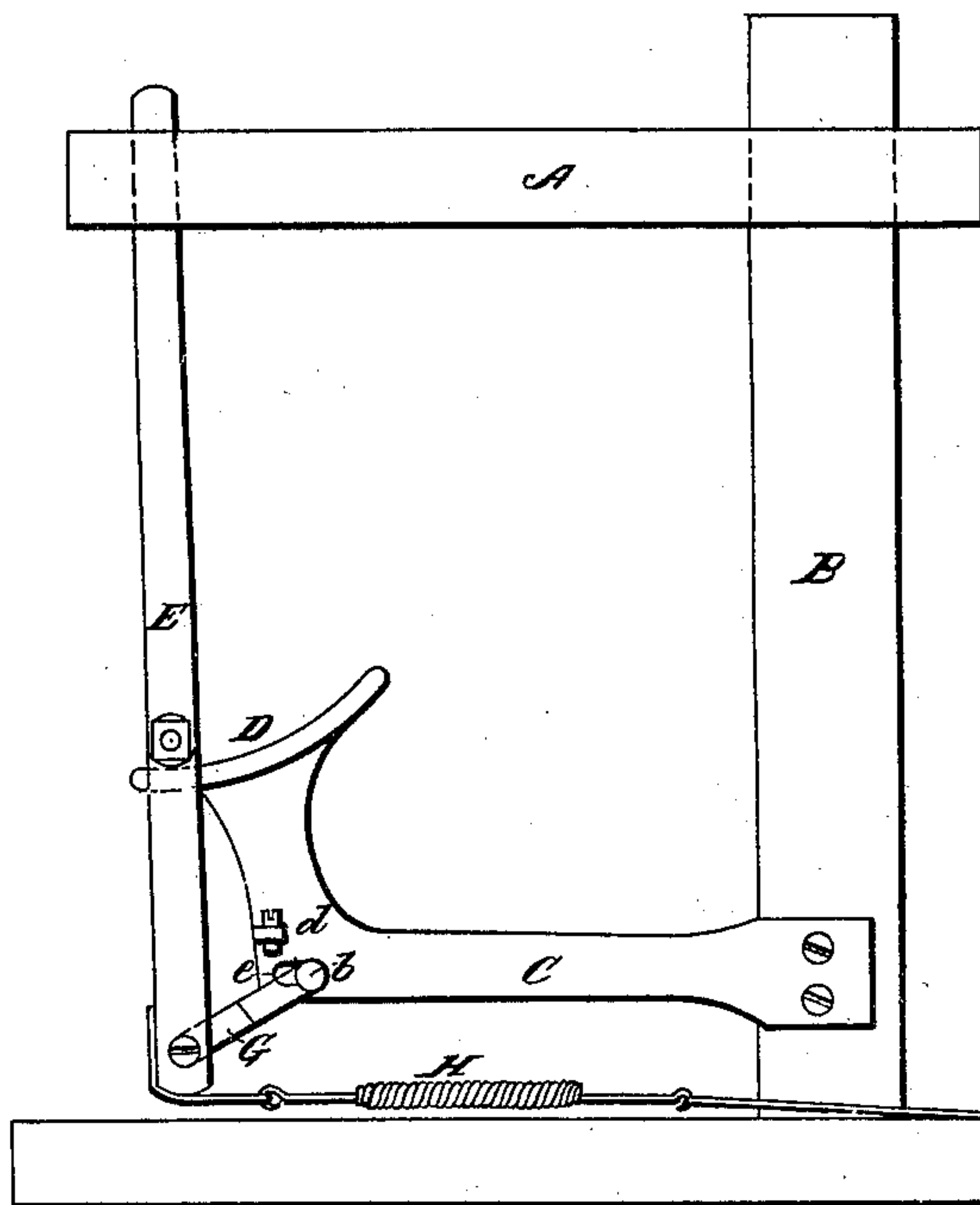


Fig. 1.



UNITED STATES PATENT OFFICE.

SAMUEL ESTES, OF NEWBURYPORT, MASSACHUSETTS.

PICKER-STAFF FOR LOOMS.

Specification of Letters Patent No. 22,114, dated November 23, 1858.

To all whom it may concern:

Be it known that I, SAMUEL ESTES, of Newburyport, in the county of Essex and State of Massachusetts, have invented an
5 Improved Mechanism for Operating the Picker-Staffs of Looms; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—
10 Figure 1, is a front elevation and Fig. 2, is an end view of such mechanism.

By means of my invention that part of the picker staff which strikes the end of the shuttle and drives the shuttle over the race
15 beam, is made to travel in a straight line. In this respect my improved mechanism performs a function common to that of many other picker motions or other operative mechanism.

20 In the drawings, A, exhibits a portion of the race beam of the lay of a loom, while B, may be supposed to represent one of the swords which support such race beam. From this sword, an arm C, projects and
25 carries an inclined curved surface or guide, D, which is arranged with its outer or lower end in or about in a vertical line passing through the outer end of the passage in the race beam, through which the picker staff
30 E, plays, such passage being shown at *a*, in Fig. 3, which is a top view of the mechanism.

The picker staff E, carries a friction roller F, which rests on the top surface of
35 the guide D while the lower end of the picker staff is jointed to the outer end of a radial arm G, whose inner end turns on a pin or fulcrum *b*, extending from the arm C. Immediately over the said radial arm
40 and projecting from the arm, C, as shown in the drawings, is a projection, *d*, carrying an adjustable stop, *c*, which screws into and through the said projection. Furthermore, a retractile spring, H, is applied to the lower
45 end of the picker staff, as well as the lay.

In carrying out my invention, the picker staff, when in or about in a vertical position lies against the outer end of the passage or slot, *a*, of the race beam. Under these cir-
50 cumstances, the guide, D, for the roller of

the picker staff is placed as hereinbefore described and has but one inclined surface for the roller to work against. The common mode of arranging the guide is to place it immediately under part of the passage, *a*,
55 and to form it with two inclinations extending in opposite directions from one another. Under these circumstances, the picker staff when against the outer end of the said passage, *a*, stands at an inclination
60 to the horizon instead of in a vertical position. This inclination which diminishes through the first half of its forward motion is not favorable for the correct throw of the shuttle as it rather tends to promote the
65 elevation of the rear end of the shuttle when the picker staff first strikes the shuttle in order to advance it. With my improved arrangement of the picker staff and the guide, D, with reference to the outer end of the
70 passage, *a*, the picker staff, when driven forward starts from a vertical position or nearly so, and as it advances, it gradually increases its inclination so as to cause that part of it which may extend about the shut-
75 tle to decline toward the shuttle in a manner to prevent its rear end from rising upward during its flight over the passage, *a*. Furthermore, the single inclination of the guide, D, facilitates the retraction of the
80 shuttle and the gradual diminution of the force tending to throw the shuttle forward. It also has other important advantages. By means of the stop, *c*, and its arrangement, I cannot only determine the extent of for-
85 ward movement of the staff, but prevent it from being thrown upward at the termination of such forward movement.

I claim—

My improved arrangement of the picker
90 staff E with the guide, D, with respect to the outer end of the passage, *a*, the same being substantially as shown in the drawings and as hereinbefore described.

In testimony whereof I have hereunto set
95 my signature.

SAMUEL ESTES.

Witnesses:

JOHN COOK,
WILLIAM DAVIS.