

R. TOMLINSON & J. SMITH.
Automatic Damper-Regulator.

No. 159,477.

Patented Feb. 2, 1875.

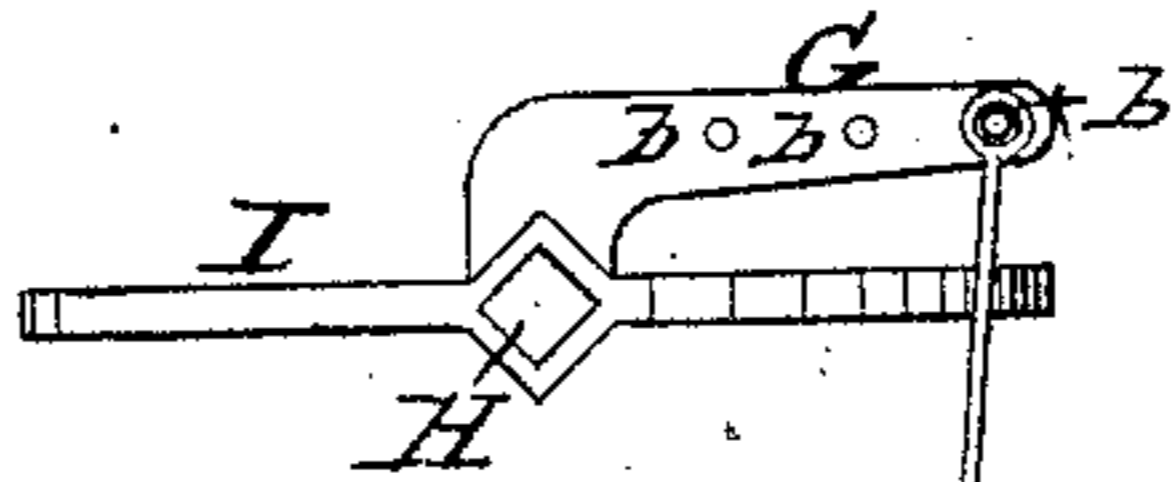
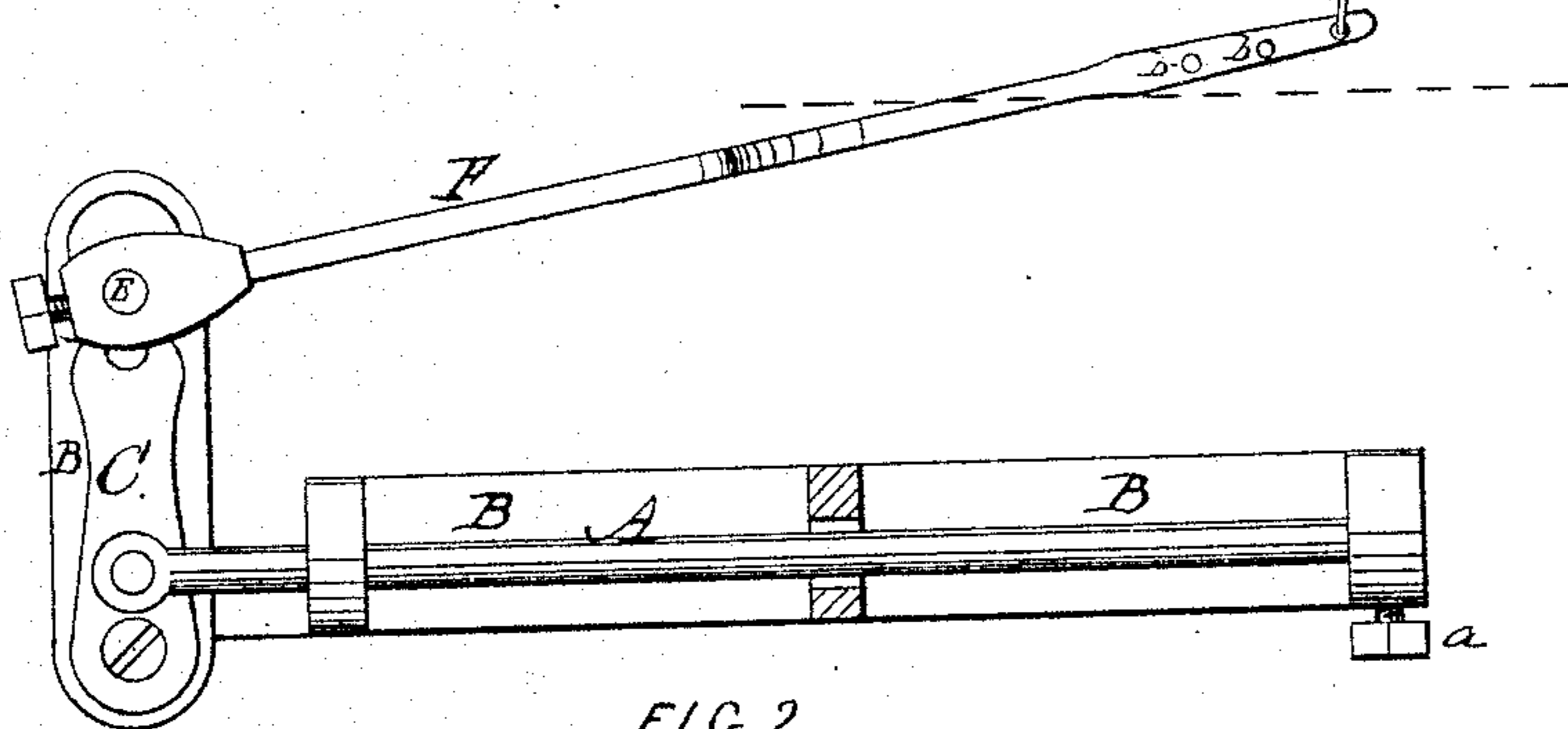


FIG. 1.



F/G. 2.

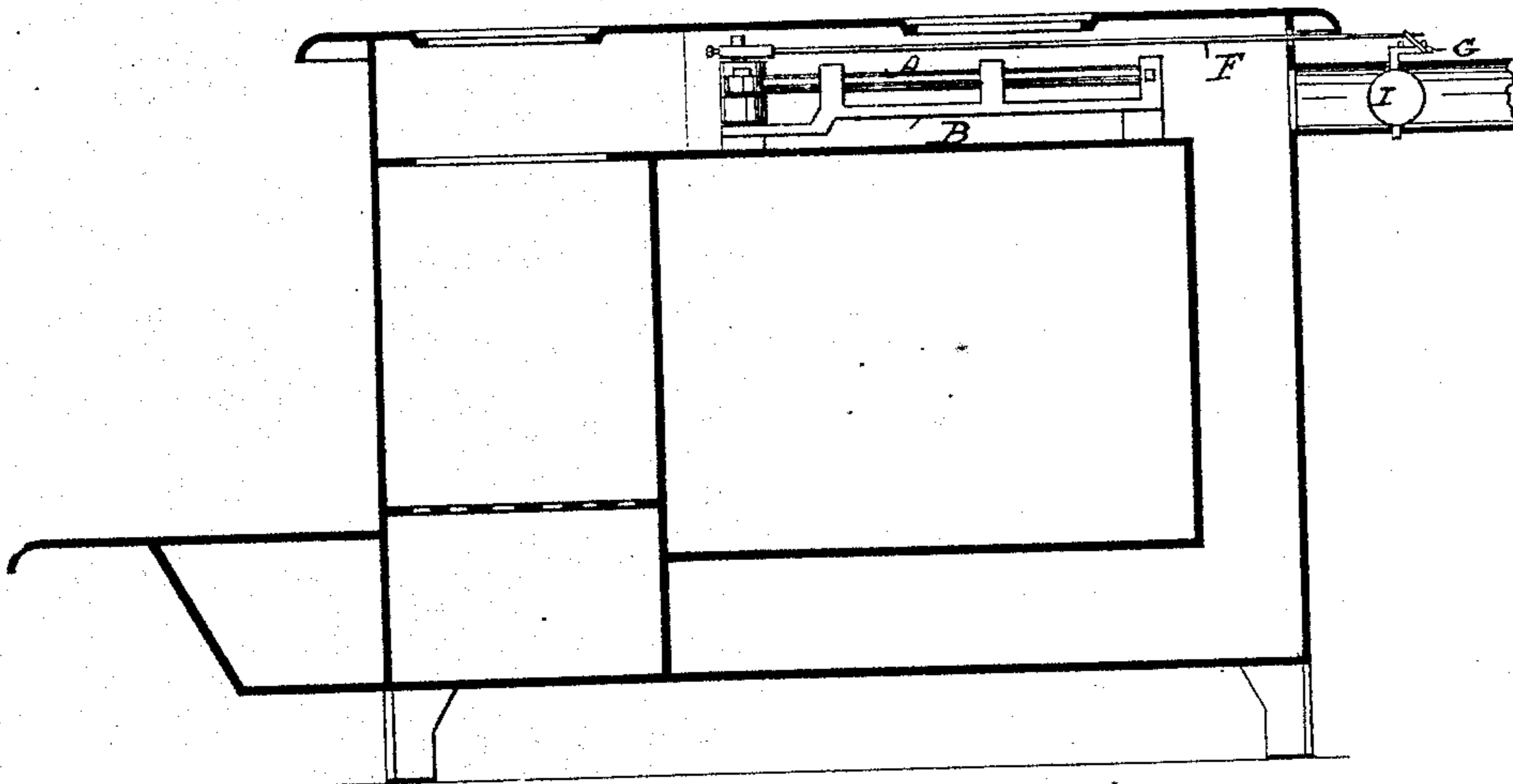
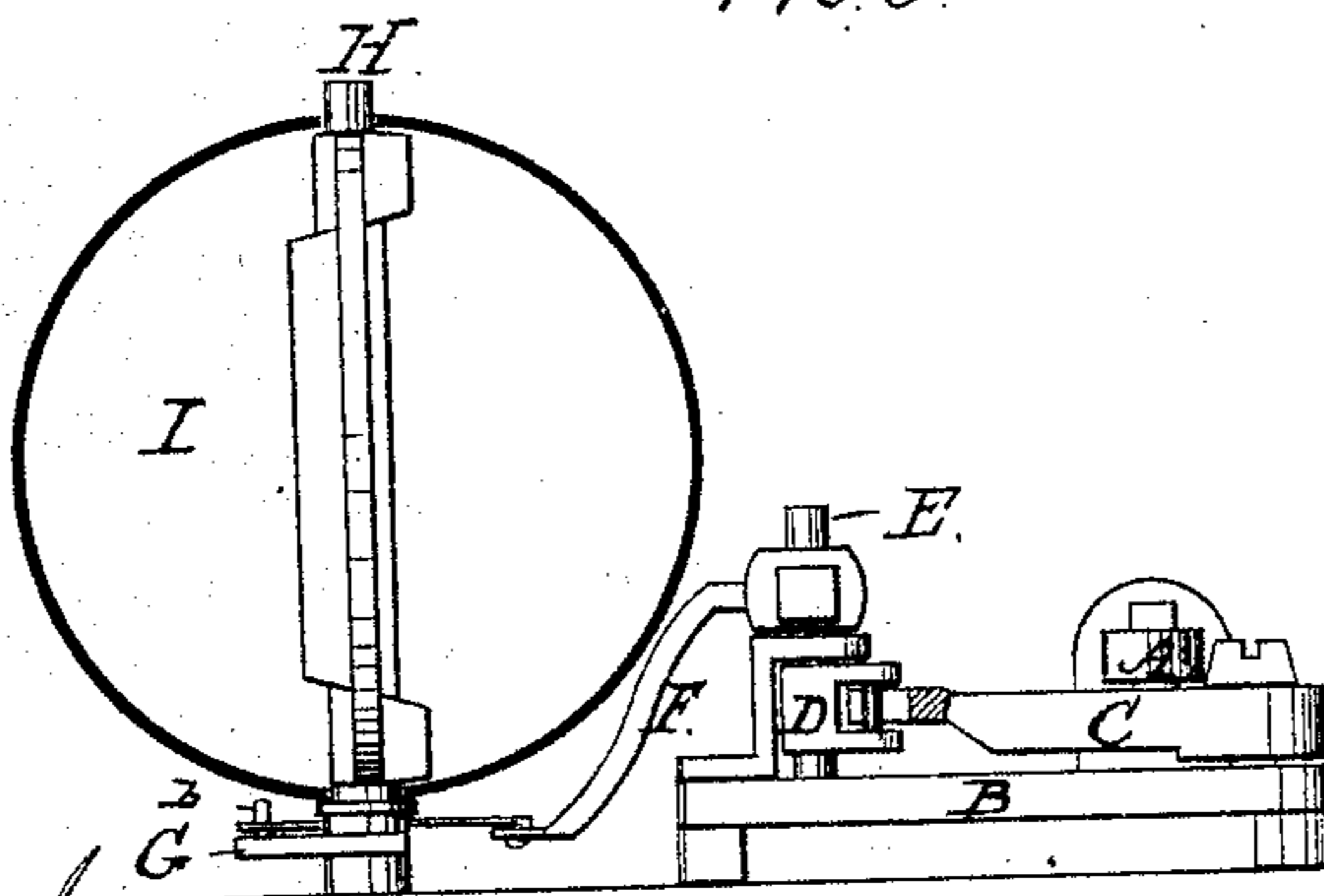


FIG. 3



WITNESSES

Robert Morris Jr
W. Dineenore

INVENTOR.

R. Tomlinson
J. Smith.
Per Brown Berthous
Attorneys.

UNITED STATES PATENT OFFICE.

RALPH TOMLINSON, OF BOSTON, AND JOSEPH SMITH, OF SOMERVILLE,
MASSACHUSETTS.

IMPROVEMENT IN AUTOMATIC DAMPER-REGULATORS.

Specification forming part of Letters Patent No. **159,477**, dated February 2, 1875; application filed
September 14, 1874.

To all whom it may concern:

Be it known that we, RALPH TOMLINSON, of Boston, Suffolk county, and JOSEPH SMITH, of Somerville, county of Middlesex, of the State of Massachusetts, have invented an Improved Automatic Damper-Regulator, of which the following is a specification:

This invention relates to that class of damper-regulators for stoves and other heating apparatus in which the closing and opening of the dampers is automatically effected by the expansion and contraction of a metal rod or bar to which the damper is connected.

The invention has for its object to render such class of devices more effective and reliable in operation; and it consists of a peculiar combination of parts, to be hereinafter described.

In the accompanying plate of drawings, Figure 1 is a plan view illustrating the mechanism of our improved automatic damper-regulator. Fig. 2 is a sectional view from front to rear of a stove with our improved damper-regulator arranged and applied therein. Fig. 3 is a view in elevation.

In the drawings, A represents the metal bar, which, by its expansion and contraction, is to open and close the damper of the heating apparatus. This bar A we prefer to make of brass, and it is located within an iron frame, B, which frame B has studs to hold the bar from buckling as it expands or contracts. The bar A, at one end, is fixed by a set-screw, *a*, and at the other end is left free for movement as it expands and contracts, the whole purpose of this being to throw the whole action of expansion and contraction at the free end of the bar. This free end of the bar is pivoted to a crank-arm, C, hung to the frame B, carrying the bar A; and this crank-arm is connected to the crank-arm D of a vertical spin-

dle, E, arranged to turn on the frame B. The spindle E connects, by a pitman-rod, F, with the arm G, attached to the spindle H of the damper I. The arm G is adapted, as at *b b b*, for adjusting the leverage of the pitman-rod F, through the arm G on the damper, and thus secure a quicker or slower opening and closing movement of the damper.

The apparatus hereinabove described is placed within the stove, &c., so as to be in line with the smoke and other products of combustion as they pass to the escape-flue; for instance, as shown in Fig. 2, the pitman-rod E passing out of the stove to the damper to be regulated by the expansion and contraction of the bar A.

With the apparatus located as above described, the bar A, in its expansion, closes the damper, and in its contraction opens the damper, the degree of movement in either case depending, of course, on the heat to which the bar is subjected, and on the adjustment of leverage, as aforesaid.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with the metallic bar A, supported within the frame B, of the crank-arm C and the pitman-rod F, attached at one end to the crank-arm, and at its other end to the crank G, connected with the damper, the whole being constructed and arranged for operation as herein shown and described.

The above specification of our invention signed by us this 31st day of July, A. D. 1874.

RALPH TOMLINSON.
JOSEPH SMITH.

Witnesses:

EDWIN W. BROWN,
W. DINSMORE.