J. STEWART.

Paper-Ruling Machine.

No. 167,859. Patented Sept. 21, 1875.

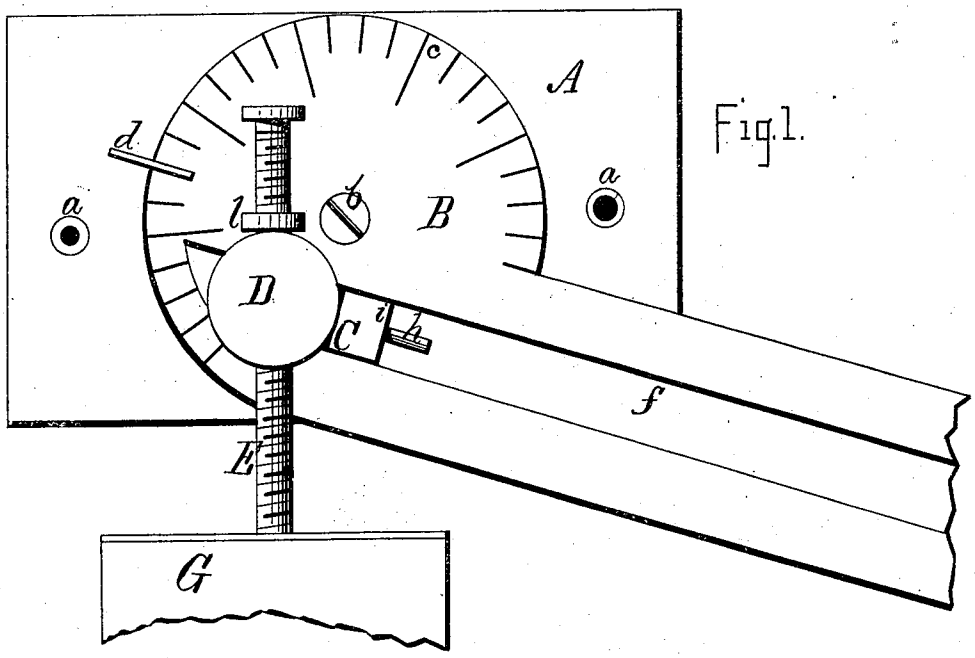

Fig. 1.

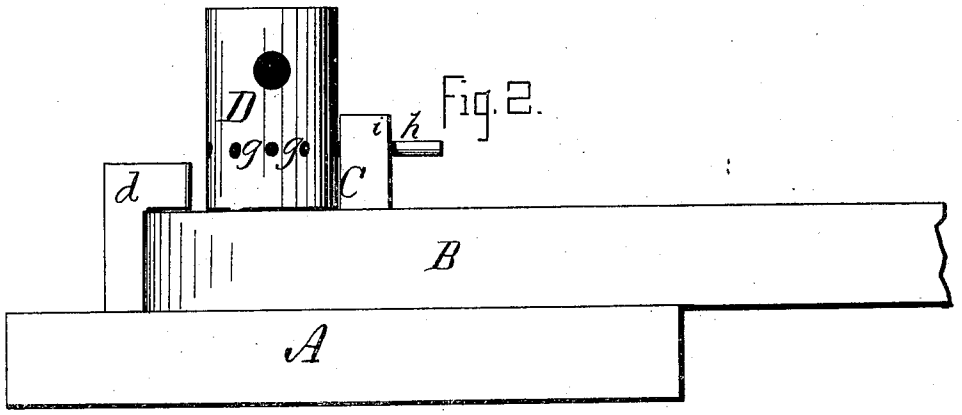

Fig. 2.

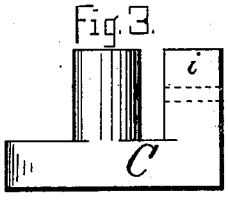

Fig. 3.

WITNESSES

E. M. Gallaher.

F. B. Townsend.

By

INVENTOR

James Stewart

N. PETERS, PHOTO LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES STEWART, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PAPER-RULING MACHINES.

Specification forming part of Letters Patent No. **167,859**, dated September 21, 1875; application filed March 25, 1875.

To all whom it may concern:

Be it known that I, JAMES STEWART, of Washington, in the county of Washington and District of Columbia, have invented an Improvement in Paper-Ruling Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a top view of one of the duplicate parts composing my improvement; Fig. 2, a side view of the same; Fig. 3, a side view of a part detached.

Like letters designate corresponding parts in all of the figures.

The nature of my improvement consists in a device, which, being attached to an ordinary ruling-machine, enables lines to be ruled across the paper at any oblique angle which may be required.

In the drawings, A represents a block or support, which, by screws inserted at *a a*, or equivalent means, may be attached, when desired, to the bed or table of an ordinary ruling-machine. On this block the parts composing the adjustable oblique ruling device are mounted, there being one of these blocks attached to the bed near the upper end or edge thereof, and a similar one near the opposite end or edge. Upon each block A an adjustable ruling-guide, B, is mounted by means of a pivot pin or screw, *b*, around which the guide turns in adjusting its angle. One part of the guide is concentric around this pivot, as shown in Fig. 1, and is divided off into a scale of degrees at its periphery *c* to determine the angle of obliquity to be given to the guide, in connection with a suitable fixed index, *d*, attached to the bed. The guide is held at the angle to which it is adjusted by means of the screw-pivot *b*, or other suitable means. The guide proper has a suitable longitudinal groove or way, *f*, in which the pen-beam carrier C slides to produce the ruling. On this carrier a pivot-head, D, is mounted, having a bearing to receive a vertical pivot or journal of the carrier, so that it can turn thereon to any angle desired. There are holes *g g* at regular intervals in the periphery of the pivot-head to receive a fastening-pin *h*, passed through an upward projection *i* of the carrier, for holding the said pivot-head in any position required, or any equivalent means of securing it in place may be employed. Horizontally through this pivot-head extends a screw-rod, E, which bears one end of the pen-beam G, the other end thereof being held by similar means in the other corresponding device near the other end of the machine. This screw-rod is adjusted longitudinally in position by a nut, *z*, screwed on the rod up to the pivot-head, as shown. Thus the pen-beam is always kept parallel with the side edges of the paper, to whatever oblique angle the ruling-guides may be adjusted.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the adjustable guides B, sliding carriers C, and adjustable pivot-heads D, with the pen-beam G, constructed and operating substantially as and for the purpose herein specified.

JAMES STEWART.

Witnesses:

J. S. BROWN,

E. M. GALLAHER.