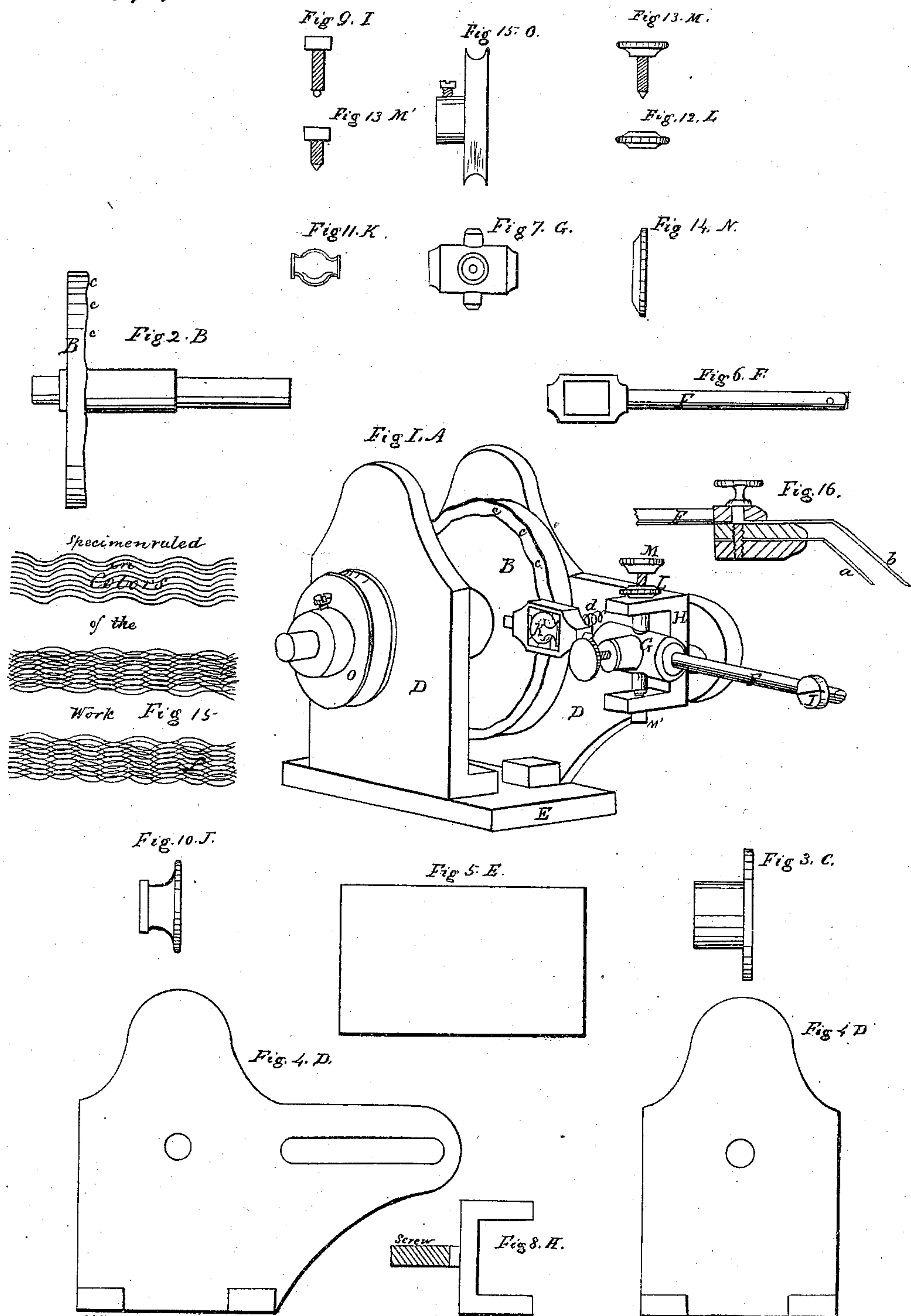


# G. W. Casilear. Ruling Mach.

N<sup>o</sup> 99,758.

Patented Feb. 15, 1870.



Witnesses  
J. A. Casilear  
J. W. Smith

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# United States Patent Office.

GEORGE W. CASILEAR, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 99,758, dated February 15, 1870.

## IMPROVEMENT IN RULING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, GEORGE W. CASILEAR, of Washington, District of Columbia, have invented a new and useful Improvement to the Ruling-Machine; and do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1. A is a perspective view.

Figure 2. B is a roller, with waved surface.

Figure 3. C, band-pulley.

Figure 4. D, sides.

Figure 5. E, bottom.

Figure 6. F, arm or lever.

Figure 7. G, swivel.

Figure 8. H, bridle.

Figure 9. I, button-screw on end of lever.

Figure 10. J, nut.

Figure 11. K, roller.

Figure 12. L, clamp-nut.

Figure 13. M, screws.

Figure 14. N, washer.

Figure 15 is a specimen of ruling produced by my invention.

Figure 16 is a section of the pen-beam of a ruling-machine, with the two series of pens arranged in the position necessary to produce the crossing of the lines, as hereinafter described.

The nature of my invention consists in providing a ruling-machine with a device for producing a waved line or lines, with one pen or set or sets of pens.

A is a perspective view of the improvement.

B is roller, with waved side surface.

Roller K plays against the waved surface of roller

B, producing an oscillating motion at button-screw I, which can be regulated at pleasure by moving swivel G.

The outer end of lever F is connected with the pen-beam of an ordinary ruling-machine, in such manner as to communicate to it the oscillating or vibrating motion produced by the waved rim of wheel B, and this causes the line or lines ruled upon the paper to have a waved or serpentine form, and by using a double row or more of pens, as shown in fig. 16, a series of interlaced eccentric lines, in one or more colors of water-inks, corresponding to the patterns of the curves upon wheel B, as seen in fig. 15, at P, are produced.

The waved wheel B and the feeding-rollers of the ruling-machine are connected by gearing, bands or other devices, so as to move isochronously; and the distance between the two sets of pens, *a b*, is adjusted with reference to the length of the waves *c c* upon the wheel B. When the cross-lines are to be of different colors, of course each series of pens is supplied with a different colored ink, in the usual manner.

What I claim is—

The combination, with a ruling-machine, of the waved wheel B and vibrating lever F, or their equivalents, substantially as and for the purpose set forth.

Also, the combination of two or more sets of pens with the waved wheel B, to produce the crossed and interlaced ruling shown in fig. 15, substantially as set forth.

GEO. W. CASILEAR.

Witnesses:

I. W. SMITH,

I. F. E. PRUD'HOMME.