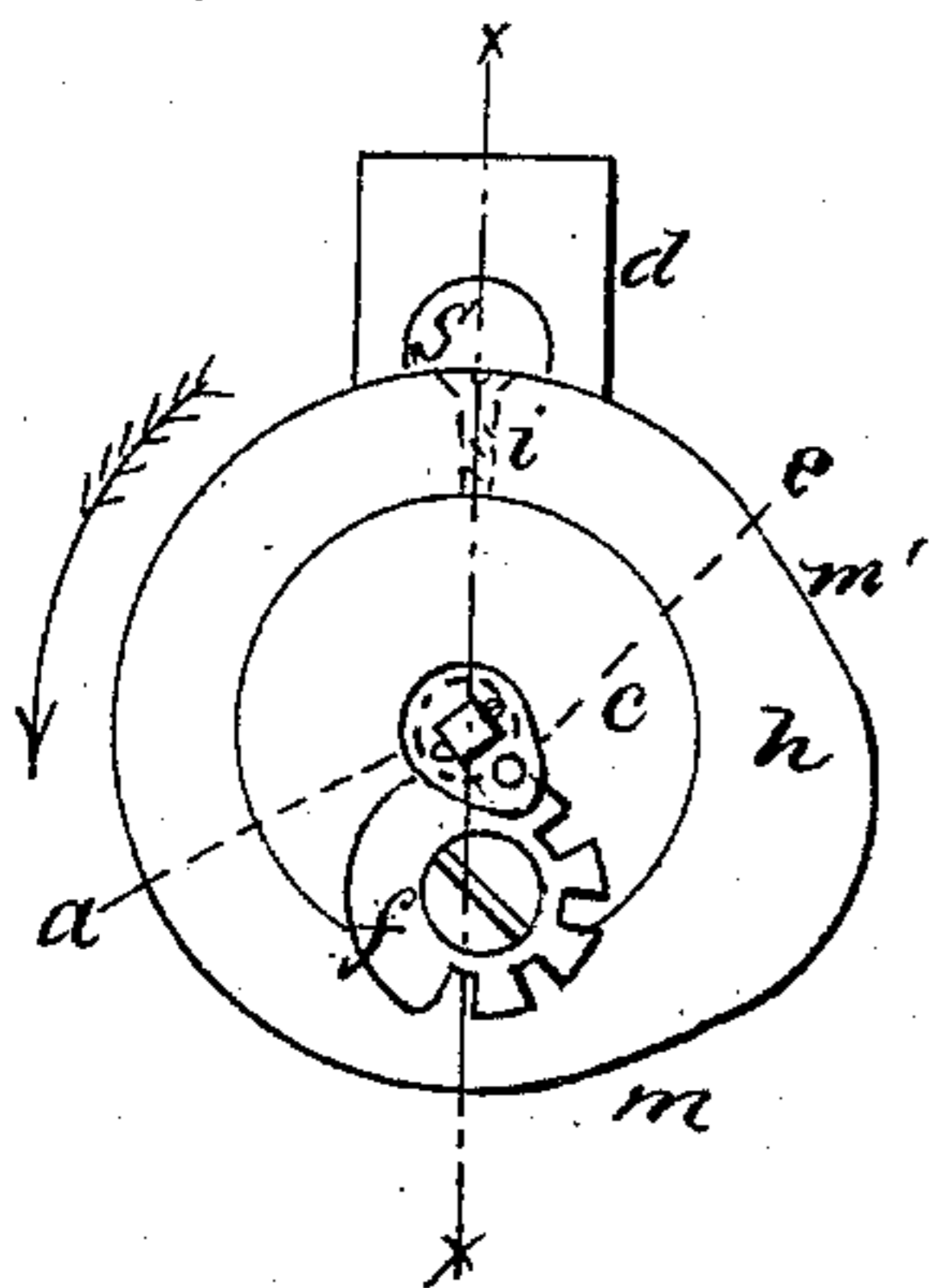


*C. I. Pond.*  
*Ruling Mach.*

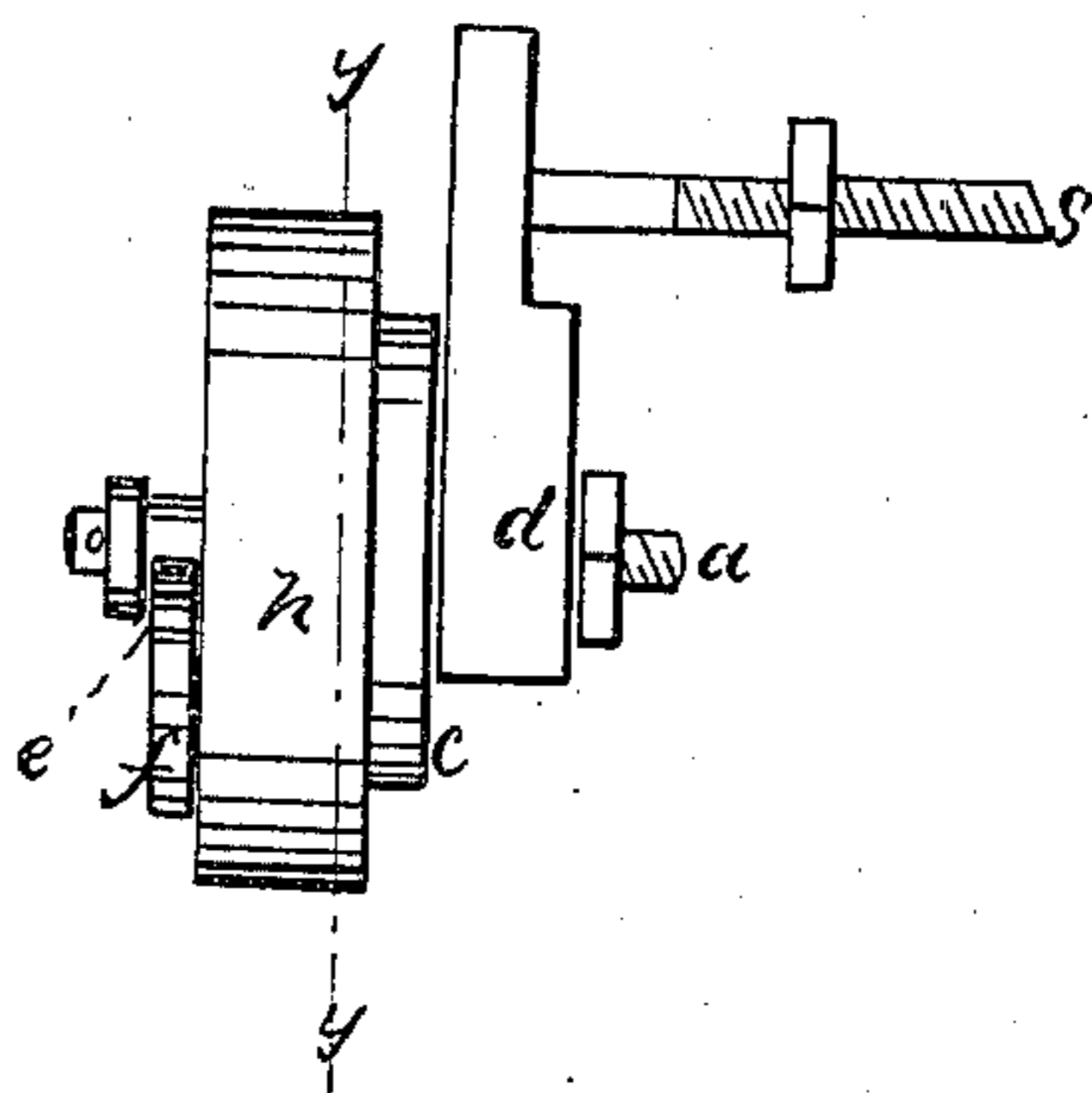
*N<sup>o</sup> 16,994.*

*Patented Apr. 7, 1857.*

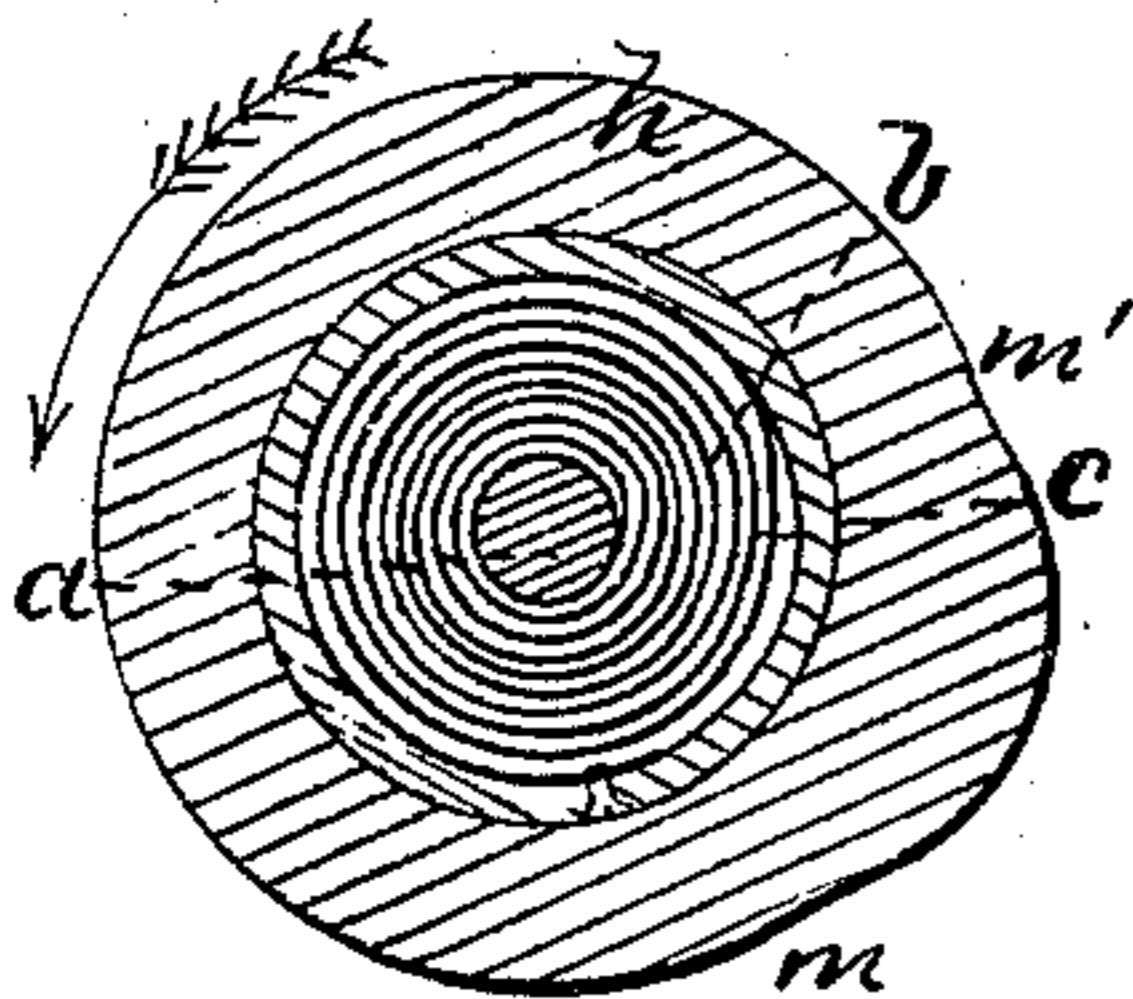
*Fig. 1.*



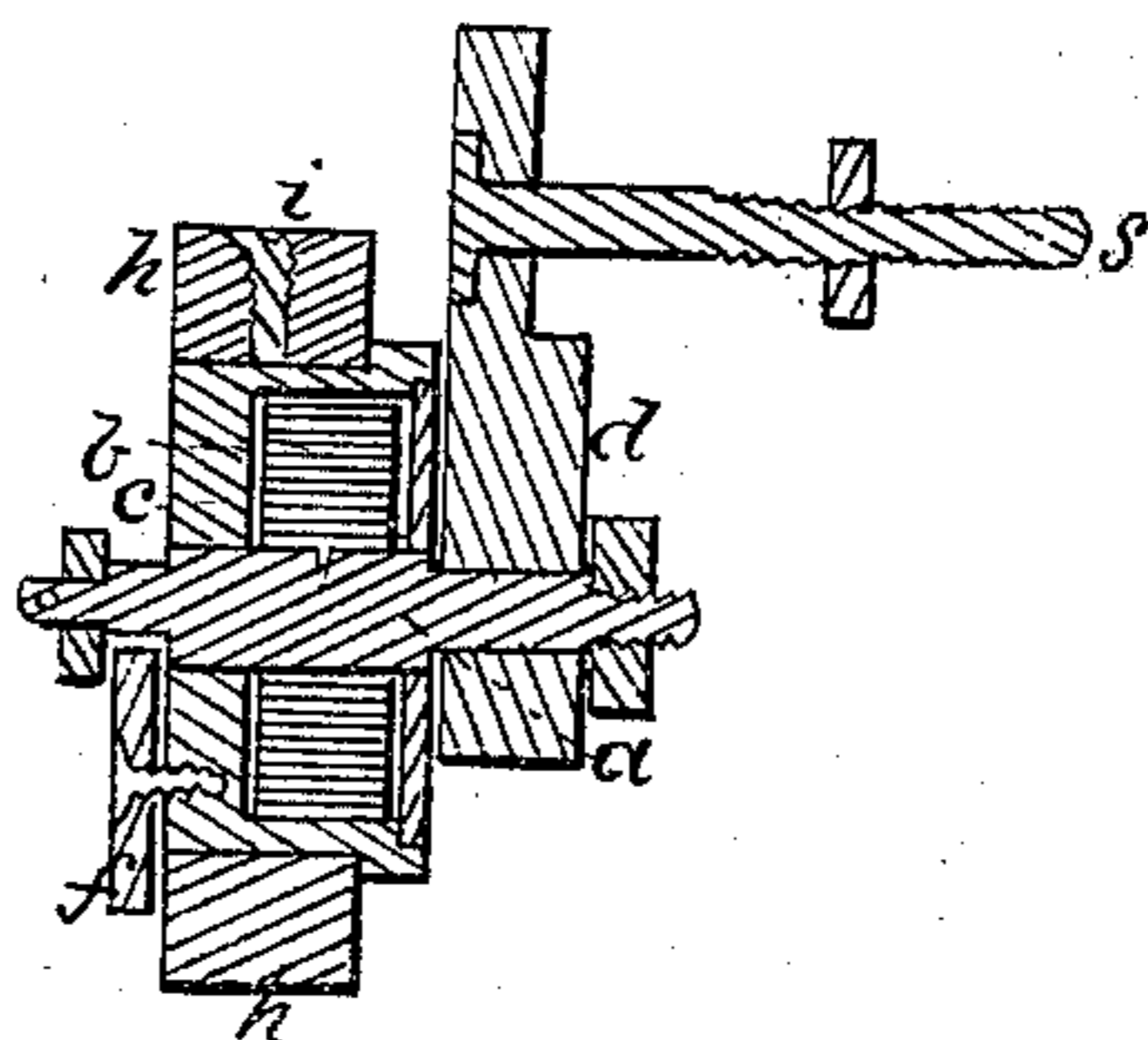
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



# UNITED STATES PATENT OFFICE.

CHAS. L. POND, OF BUFFALO, NEW YORK.

## PAPER-RULING MACHINE.

Specification of Letters Patent No. 16,994, dated April 7, 1857.

*To all whom it may concern:*

Be it known that I, CHARLES L. POND, of Buffalo, in the county of Erie and State of New York, have invented a new and useful

Improvement in Paper-Ruling Machinery; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is an outside view of my improved attachment. Fig. 2 is an edge view of the same. Fig. 3 is a section on  $x x$ , through axis of shaft  $a$ . Fig. 4 is a section on  $y y$  perpendicular to axis of shaft  $a$ .

Similar characters of reference in the several figures denote the same part.

The object of my invention is to provide a simple and accurate method of ruling broken lines at one continuous operation.

It consists in an attachment to the pen holder constructed and operating as hereinafter to be described, by which, while the paper is passed under the pens with the rapidity of continuous ruling, the desired amount of space and length of lines are attained.

In the drawing  $c$  is a circular box, having a shaft  $a$  passing through it, so that said box may turn freely on the shaft. Within the box is a coiled spring  $b$ , attached to the box and shaft in the same manner as the main spring of a watch is connected with its drum and shaft. On the inner extremity of the shaft  $a$  is an arm  $d$ , by which the attachment is connected with the pen holder. And on the outer extremity of the said shaft is a small tongue  $e$  meshing in the teeth of the stop wheel  $f$  secured on the outer face of the box. Upon this box  $c$  is secured a rim  $h$ , by means of a screw  $i$ , so that said rim will turn with the box around the shaft  $a$ . A portion of the outer edge of this rim is concentric with the periphery of the box, and a portion from  $m$  to  $m'$  eccentric. This detachable rim is designed to have dimensions depending on the nature of the work to be performed. The length of line to be ruled being the development of the concentric portion of the bounding edge, and the spaces the development of the eccentric portion.

Having thus described the construction of my improvement, its operation will readily be understood. The screw  $s$  through the

shaft arm secures the attachment to the pen holder. Its situation is such that its edge shall rest upon the roller under the striking point, when the pens touch the paper. The point  $m$  of the concentric edge being in contact when the pen points drop upon the head line, the box and rim will revolve in direction of arrow as the paper is carried forward, and the pens be permitted to mark during the time the concentric portion of the rim is in contact with the surface on which it rolls. But when the point  $m'$  is reached the eccentric will lift shaft  $a$ , and with it the pen holder, causing a space to be left while the rim rolls from  $m'$  to  $m$ , then a new contact of the pens and paper ensues with the same result as before; and so on throughout the length of the paper.

It will be seen that as the rim and box roll, the coiled spring becomes tightened, consequently when at the finish of the sheet the pen holder is lifted by the operator in order to strike the head line of the next sheet, the rim and box will be carried back by the spring to the position from which they first started. So that they will insure the same length of line and width of spaces to the next sheet.

The tongue  $e$  enters a new tooth of the stop wheel at each revolution, and when the rim flies back on the lifting of the pen holder the contact of the last notch and the said tongue will insure that the rim assumes the position from which it has previously started. The attachment figured in the drawing has its stop wheel cut for four revolutions of the rim.

To insure the revolution of the rim and box, the edge of the rim may be roughened, or the surface in contact with it may be covered with rubber.

I claim—

The spring connected box and shaft, combined with the stop wheel, and the detachable rim as described, constructed, arranged, and operating, substantially as, and for the purposes specified.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

CHARLES L. POND.

Witnesses:

GEO. PATTEN,

JOHN S. HOLLINGSHEAD.