

UNITED STATES PATENT OFFICE.

ERVIN E. STRAWN, OF DES MOINES, IOWA, ASSIGNOR TO THE OMNIGRAPH COMPANY,
OF DES MOINES, IOWA, A CORPORATION.

PRINTING AND RULING MACHINE.

1,398,475.

Specification of Letters Patent. Patented Nov. 29, 1921.

Application filed October 23, 1919. Serial No. 334,074.

To all whom it may concern:

Be it known that I, ERVIN E. STRAWN, a citizen of the United States, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Printing and Ruling Machine, of which the following is a specification.

The object of my invention is to provide in combination with a printing machine, a device for continuously ruling a sheet of paper drawn from a roll.

A further object is to provide such a device adapted to hold the paper taut for the ruling.

Still a further object is to provide such a device including ruling pens, and means for detachably mounting said pens on a support, and also means for adjustably mounting said support on the frame of a machine.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim and illustrated in the accompanying drawings, in which:

Figure 1 shows a side elevation of a printing and ruling machine embodying my invention.

Fig. 2 shows a top or plan view of a portion of the machine comprising the ruling device.

Fig. 3 shows a detail view of one of the ruling pens.

Fig. 4 shows a detail, sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 shows a detail, sectional view taken on the line 5—5 of Fig. 2; and

Fig. 6 shows a detail view of part of the ruling mechanism.

In the accompanying drawings I have used the reference numeral 10 to indicate generally a printing machine of the type, for instance, as that shown in my prior Patent, No. 1,325,491, issued December 16, 1919.

The mechanism of the printing machine is run from the motor 11. The machine has a reciprocating roller platen 12.

Extending rearwardly from the main body of the machine are frame members 13 supporting suitable rollers 14, 15 and 16 which serve as paper guides.

Suitably mounted on the lower rear part

of the machine is a roll of paper 17. The paper is threaded over the rollers 14, 15 and 16, and over the roller 18 on a pivotally mounted bracket 19. The paper is held taut between the rollers 14 and 15.

My improved ruling device comprises angle iron brackets 20, mounted on the frame members 13 by means of bolts 20^a. Supported by the brackets 20 is a suitable plate 21 over which the paper moves.

The upper portions of the brackets 20 have slots 22 to receive spindles 23. On the spindles 23 on the opposite sides of each bracket 20 are nuts 24 and 25 for gripping the bracket 20 between said nuts for causing the spindles to be frictionally locked to the brackets 20. At the inner end of each spindle 23 is an inwardly opening channel 26. Received in the channels 26 are the ends of cross bars 27 and 28 which are preferably of wood and locked together with the bar 28 superposed on the bar 27 by means of bolts 29.

The ruling pens 30 are inclined from the forward edges of the bars 27 and 28 downwardly and forwardly in the machine, and have at their upper ends rearwardly extending pins or the like 31 which are gripped between the bars 27 and 28.

By loosening the nuts 32 on the bolts 29 the said bars may be separated for adjusting the ruling pens laterally to the desired position in the machine.

Supported on the cross bar 28 is an inking pad 33 of absorbent material. Inking devices 34 lead from the pad 33 to each ruling pen.

It will be seen that pressure on the pen point on the paper may be regulated by swinging the bars 28 and 27 and thereby imparting a slight rotation to the spindles 23 which are frictionally held in the brackets 20 for thereby varying the width of the ruled lines 35 on the paper.

I believe I have devised a new and valuable structure in my combination printing machine adapted to print paper from a roll with an adjustable and readily detachable ruling device. The ruling device may be quickly and easily removed by loosening the nuts 23 and 24.

The paper is advanced in a substantially continuous web or band under the ruling device. Suitable cross lines may be printed during the printing operation.

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The pens may be easily adjusted laterally in the machine in the manner hereinbefore described.

The pressure of the pens on the paper may be varied and regulated by swinging the bars 27 and 28 on their frictionally held spindles.

In the machine the paper is constantly subjected to the action of the ruling means, so that the ruling is done as the paper advances. The advancing paper is intermittently successively printed on successive portions, for instance, in eleven inch lengths for making cross lines and printing any other desired matter, and is finally cut off in suitable lengths, such as eleven inch sheets.

Some changes may be made in the construction and arrangement of the various parts of my improved machine without de-

parting from the essential spirit and purposes of my invention, and it is my intention to cover by my claim any modified forms of structure or use of mechanical equivalents which may be reasonably included within its scope.

I claim as my invention:

A ruling device comprising a pair of brackets, a bar supported by said brackets and adapted to support a traveling sheet of paper, spindles mounted in the respective brackets, channel-shaped members on the spindles, a pair of bars having their ends received in said channel-shaped members, a ruling pen having a member received between said bars, means for locking said bars together, and means for supplying ink to said pen.

Des Moines, Iowa, July 9, 1919.

ERVIN E. STRAWN.