To all whom it may concern:

Be it known that I, LEANDER WALTER MILLSAP, Jr., a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Hand-Printer for Mailer-Strips and Proof-Sheets, of which the following is a specification.

This invention relates to a device for printing strips with names and addresses for mailer addressing machines, and is also applicable for printing proofs.

Mailer address strips and proof sheets are of such a character that only one or some other small number of copies is required at a time, and the inconvenience and expense of doing such printing by means of a press is so considerable that the work is usually done by hand.

Heretofore it has been the general practice to print mailer address strips and proof sheets by inking the type in the galley on a stone and then placing a dampened sheet or strip of paper on such type, and by means of a platen block pounded by a mallet, to transfer the ink to the dampened paper.

An object of the invention is to make provision whereby the mailing address strips for newspaper offices and the like, and also proof sheets, may be printed by hand from the galley with great ease and rapidity, winding a strip off of a spool as the printing proceeds.

An object is to make provision whereby in printing address strips the strips may be wound onto one spool from another while the printing of the strip between the spools is being effected.

The invention comprises the printing apparatus and parts and combinations of parts thereof as will hereinafter more fully appear.

An object is to deliver the printed strip in a roll ready to be applied to a Wing-Horton, Dick or similar molder.

Further objects are to facilitate attaching the end of the strip to the take-up spool prior to printing the strip; to facilitate applying to the take-up shaft the spool with the strip attached thereto; and to facilitate removing the roll of printed strip from the spool.

Another object is to provide a practical and simple lost motion construction for connecting the spool-driving mechanism with the take-up spool.

Further objects, advantages and features of novelty may appear from the accompanying drawings, the subjoined detail description and the appended claims.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of a hand printer for mailer strips embodying this invention in one of its forms as it appears in operation.

Fig. 2 is a plan of the device shown in Fig. 1, parts being broken away to expose construction otherwise hidden.

Fig. 3 is an elevation from the side opposite that shown in Fig. 1.

Fig. 4 is an axial section of the compensating device that connects the take-up spool with the printing roller.

Fig. 5 is a fragmental elevation of the front end of the device, showing the rocking bearing and the inking device.

Fig. 6 is a transverse section of the compensating take-up device on line A-A, Fig. 4.

Fig. 7 is a fragmental sectional detail on line x-x', Figs. 4 and 6.

Fig. 8 is on a larger scale than Fig. 4 and Fig. 7 is on a still larger scale.

The runner is formed of two parallel side bars 1, 2, bent up at their front ends and fastened together by connecting members 3, 4. Said runner is provided with handles 5, 6 at the rear and front ends respectively by which the device may be run along a column of type.

The runner 1, 2, 3, 4 carries a frame 7 which stands upright above one of the side bars and extends along said runner. Said frame is swiveled at its front end to the front end of the runner by a swivel joint which is shown as comprising a shaft 8 projecting from one side of the frame and extending half way across the runner and provided with a forwardly extending spindle 9 that is journaled at the mid-width of the runner in a rocking bearing 9' that is journaled to the runner by a pin 9". Said frame is thus swiveled to the runner, so that the rear end may be raised and lowered and the frame may be swayed sidewise.

The rear end of the frame is resiliently connected to the rear end of the runner by the spring 10 which is connected to said rear end mid-way between the sides thereof and in the produced axial plane of the spindle 9. Said spring 10 is connected to the frame 7 by a bent rod 11 which is fastened to the
frame at the side of the runner by means of the nuts 12 and the angle washer 13. The arm 14 of the rod 11 allows the force of the spring 10 to draw the frame directly down toward the runner.

Said frame may be constructed of a sheet of metal, the edges of which are bent out at one side and reinforced by the braces a, b and c fastened to the struck-up edges at the corners of the frame so as to hold the struck-up edges rigid and to afford bearings for the various shafts that are mounted on said frame.

The impression roller or platen 15 is fixed to a shaft 16 journaled in the bearings 17, 18 on the frame 7. The bearing 17 is formed by the end of a bent strap 19 which is secured to the frame by screws d. Said strap extends over the roller 15 to hold the axis 16 thereof rigid relative to the frame.

The spools 20 and 21 carry the printed and unprinted paper strip 22 which passes from the front or strip-delivering spool 20 to the back or take-up spool 21 and through the guide 23 and under the impression roller 15.

Said roller 15 is fixed to its shaft 16 and thereby to a cog wheel 24, that meshes with another cog wheel 25, which meshes with cog wheel 26 that is frictionally connected to the shaft 27 which is connected to turn spool 21, thus completing a train driven by the platen or impression roller 15 to rotate said spool when the impression roller rotates. The intermediate gear 25 and its two terminal gears 24, 26 in mesh therewith, cause the take-up spool 21 and, through spool 22, the feed or front spool 20, to rotate in the same direction as the impression roller 15.

The strip 22 extends from the front side of the spool 20 down underneath the impression roller; and for mixer address strips is extended up to the rear side of the spool 21; to which the strip is fastened so as to be wound on said spool as the roller runs along the strip. The ends of said mixer strips are respectively fastened to the spools 20 and 21 and said strip is adapted to be wound up by the spool 21 after it has passed under the roller 15. The shafts 16 and 27 are connected together by the train of gears 24, 25, 26 so that the spool 21 will be positively turned by rotation of roller 15 and in the same direction therewith, and the spool 21 will take up the portion of the strip over which the roller rolls; the strip being unwound from the spool 20 as the roller rolls on the strip and over the type.

The intermediate gear 25 is mounted on a radius arm 28 that is journaled on the roller shaft 16 at the outside of the frame 2; and said radius arm is held in adjusted position by the clamp screw 29 and set nut 30, said screw 29 working in the slot 31 of the arm 32 projecting up from the frame.

The strip guide 23 is hinged on a pin 34 that projects from the frame parallel to the roller 16 and said guide is provided with a spring tension device 35 that presses the strip against the plate 23 that forms this 70 strip guide.

The guide plate and tension spring are thus pivoted to oscillate on an axis that is always parallel to the axis of the impression roller, thus insuring that the strip will be held smooth and will not wrinkle.

It is understood that the impression roller, the means for delivering the strip thereto, and means for operating said roller on said strip lying on top of the type face and pressed thereon along the body or column of type in order to print the strip as the roller passes thereover, may be employed to print the strip upon inked type irrespective of the means by which the same may be inked; but in order to facilitate the work, I have brought into combination with said roller and the strip delivering means, a type-inking device comprising an inking frame 38 connected by suitable means as the standards 39, with the frame 7 and the runner 1 by the rod 9" which connects the rocker bearing 9" to the runner.

Type-inking composition rollers 40, 41, 42 are yieldingly mounted in the frame 38 and are adapted to distribute the ink on the surface of the type 43 as the frame 38 and the runners 1, 2 are run along the furniture 44 extending alongside the type. A steel-inking roller 45 journaled on links 46 and that are pivoted at 47 to the frame 38 receives ink from a fount 48 and distributes the ink to the top of the front rollers 40, 41 between and on the tops of which the steel-inking roller 45 runs. A screw 49 is pivoted to the link 46 and passes through an arm 50 that is pivoted to the frame 38 and is adapted to hold the inking fount 48 on the inking roller 45, the weight of which holds it in contact with the type, 110 inking rollers 40, 41. A distributing roller 52 resting between the rollers 41, 42 distributes the ink on said rollers 41, 42 so that as the device is moved along the body of the type 43 to the left in Figs. 1 and 2 and to the right in Fig. 3 the type 43 will first be inked, then the strip 22 will be applied thereto and then the impression roller 15 will cause the impression to be taken.

The runners 1, 2, 3, 4 with their handles 5, 6, the frame 7 and the spring 10 and its connections constitute hand-operated means for pressing the rollers 15, 40, 41 and 42 toward the type and for moving the same along the type thereby unwinding the strip 125 from the strip-delivering means 20 and printing said strip as the work progresses.

It is understood that the roller 15 and strip 22 together with the runner and other parts may be of any width required for 130
taking proof from a column or any desired number of columns of predetermined width; and that in case of taking a proof the strip 23 instead of being wound upon a take-up device such as the spool 21, may be detached from spool 21 and allowed to pass underneath the plate 33 that forms a part of the roller frame and that is adapted to act as a tearing edge, so that after a portion of strip 22 has been printed, the printer may tear off the printed portion of the sheet. In case the strip 22 is to be used upon a mailer machine, it is necessary that the printed strip be delivered from the printing device in the form of a roll. This necessitates not only winding the strip 22 on spool 21 to form the roll, but also detaching the rolled printed strip from the spool 21, so that it can be applied to the mailer. In this connection the printing device for smaller strips is provided with the means from which I shall now describe, referring more particularly to Figs. 2, 4, 6 and 7.

A tubular stud bearing 54 is fixed to the frame 7 and extends therefrom in parallelism with the shafts 16 and 55 of the roller 15 and the delivering spool 20 respectively. The shaft 27 is journaled in said tubular stud bearing and has an enlargement 56 at its outer end. A tubular spindle 57 is fixed to the enlargement 56 of the shaft 27, and is journaled on the outside of the stud bearing 54. The tubular spindle 57 extends on said stud bearing nearly to the frame 7 and is provided with a longitudinal groove 58 extending from end to end thereof to receive a feather 59 that may be a fine wire soldered to the hollow shaft 60 of the spool 21, so that the hollow shaft may be slipped onto the spindle 57 and by reason of the groove and feather will rotate therewith. A spring pressed retainer 61 and its spring 62 are mounted in a transverse bore 63 in the enlarged portion 56 of the shaft and the retainer is held pressed outward to retain the spool 21 on the hollow spindle. The spring 62 is held in the transverse bore 63 by screw 64.

The shaft 27 extends from that side of the frame 7 opposite the roller 15, and a friction disk 65 is fixed thereto by set screw 66. A fiber disk 67 is journaled on the shaft 27 to frictionally engage disk 65 and the pinion 26 is provided with a friction disk 68 that is held in engagement with the fiber disk 67 to frictionally press the same against the friction disk 65. The requisite pressure is effected by a spring 69 mounted on the shaft 27 and pressed against the pinion 26 and is held in position by a collar 70 fixed to the shaft 27 by a set screw.

The spool 31 is made in two sections, each of which comprises a section of a cylindrical core. The core sections 72, 73 are provided with interlocking means, as the teeth 74, whereby they are held from endwise separation except when relatively rotated from the position shown in Fig. 2. The feather 59 is fastened to the inside of the hollow spool shaft 60 and is adapted to run in the groove 58 irrespective of which end of the spool is presented toward the frame 7. The interlocking device 74 comprises a tooth under which the end of the mailer strip may be inserted after the spool has been applied to the shaft. When the end of the strip is so applied, rotation of the roller 15 will cause the spool 21 to rotate. This winds the strip on spool 21 as the roller 15 rotates by reason of being run on the strip 22, which flattens down upon the type as the device is moved thereover. The gearing 24, 25, 26 is timed to rotate the spool with sufficient speed to take up the printed strip upon starting to wind on the core of the empty spool. As the strip is wound upon the spool, the take-up power is thus increased, so that the take-up speed of the spool exceeds the speed of the delivery by roller 15 to said spool, the disk 68 or the disk 67 slips relative to the disk 65. The friction between the disks is tempered by the spring 69 so as to hold the strip 22 taut but not to tear such strip.

The operation will be understood by the foregoing description it being seen that the operator, by means of the handles 5, 6, may apply the device to the type 43 after the same has been placed in the galley. Then the device is run along the type, inking the same and printing the strip until impressions from all of the type have been taken. This same operation may be repeated with galley after galley until all the impressions required are taken. Then the strip 22 may be severed behind the roller 15, the latch 61 depressed and the spool withdrawn whereupon the flanges may be relatively rotated to detach the cores 72, 73 from each other. Thereupon they may be withdrawn from the roll of printed mailer strip, which is then ready to be applied to the mailer machine, not shown.

The spool section may then be returned to the spindle as before and the detached end of the mailer strip may be fastened thereto and the operation just described repeated.

The front spool 20 is detachably connected to its shaft 55 with a catch 61 corresponding to the catch for the spool 21. Said spools are somewhat shorter than the space between the catches 61 and the frame, so that the spools may become adjusted into line with the roller 15. The guide 23 adjusted the strip with relation to the roller and the spools will take position according to the adjustment.

In practical operation the column or columns of type from which the printing is 130
to be done will be separated from other similar columns of type by the usual printers' wooden furniture. The side bars of the runner slide on the furniture between the columns while the impression roller presses the paper strip against the type face.

I claim:

1. In a printing device, a runner base provided with a handle at each end and adapted to be run along a column of type; a frame superimposed upon said runner base and attached to the same at one end by a swivel joint so that the rear end of said frame may be raised or lowered or moved sidewise; a centrally positioned spring attached to the rear end of the runner base at one end and at the other adjustably to the rear end of the frame; a presser roller journalled in the frame and adapted to run resiliently upon the type; means carried by the frame to ink the type; and means carried by the frame to feed a paper strip between the presser roller and the type.

2. In a printing device, a runner base; a frame superimposed upon said base; a presser roller on said frame; reeling means to feed paper under said roller; automatic resilient means attached to the frame adapted to hold said roller down between said runners; and means to allow said frame to be moved up or down or sidewise at any time.

3. A printing device adapted for taking proofs and comprising a base; a frame attached to the base; a platen on the frame adapted to be held normally, automatically, resiliently and universally movable upon type at the base; and means for supplying a movable strip of paper between the platen and the type.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 23rd day of July, 1917.

LEANDER WALTER MILLSAP, JR.

Witness:

JAMES R. TOWNSEND.