No. 682,889. Patented Sept. 17, 1901.

N. E. SPRINGSTEEN.

TICKET PRINTING MACHINE.

(Application filed Apr. 25, 1900.)

(No Model.)

Fig. 1.

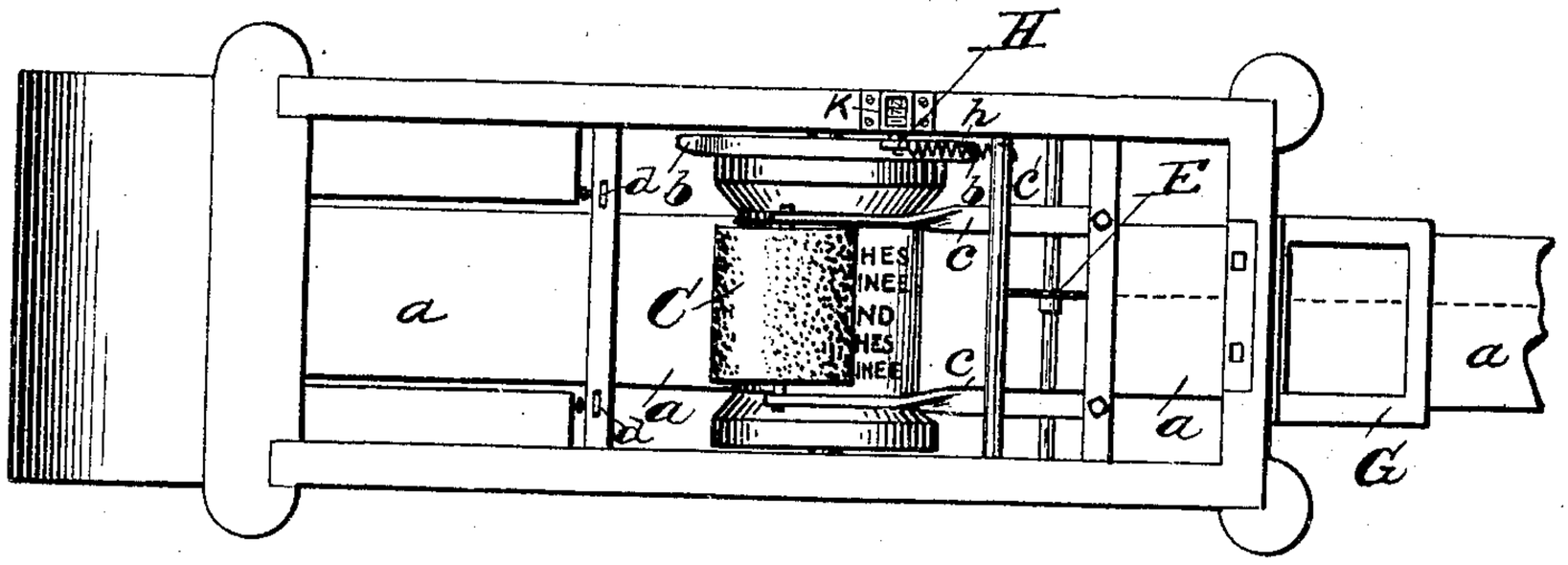
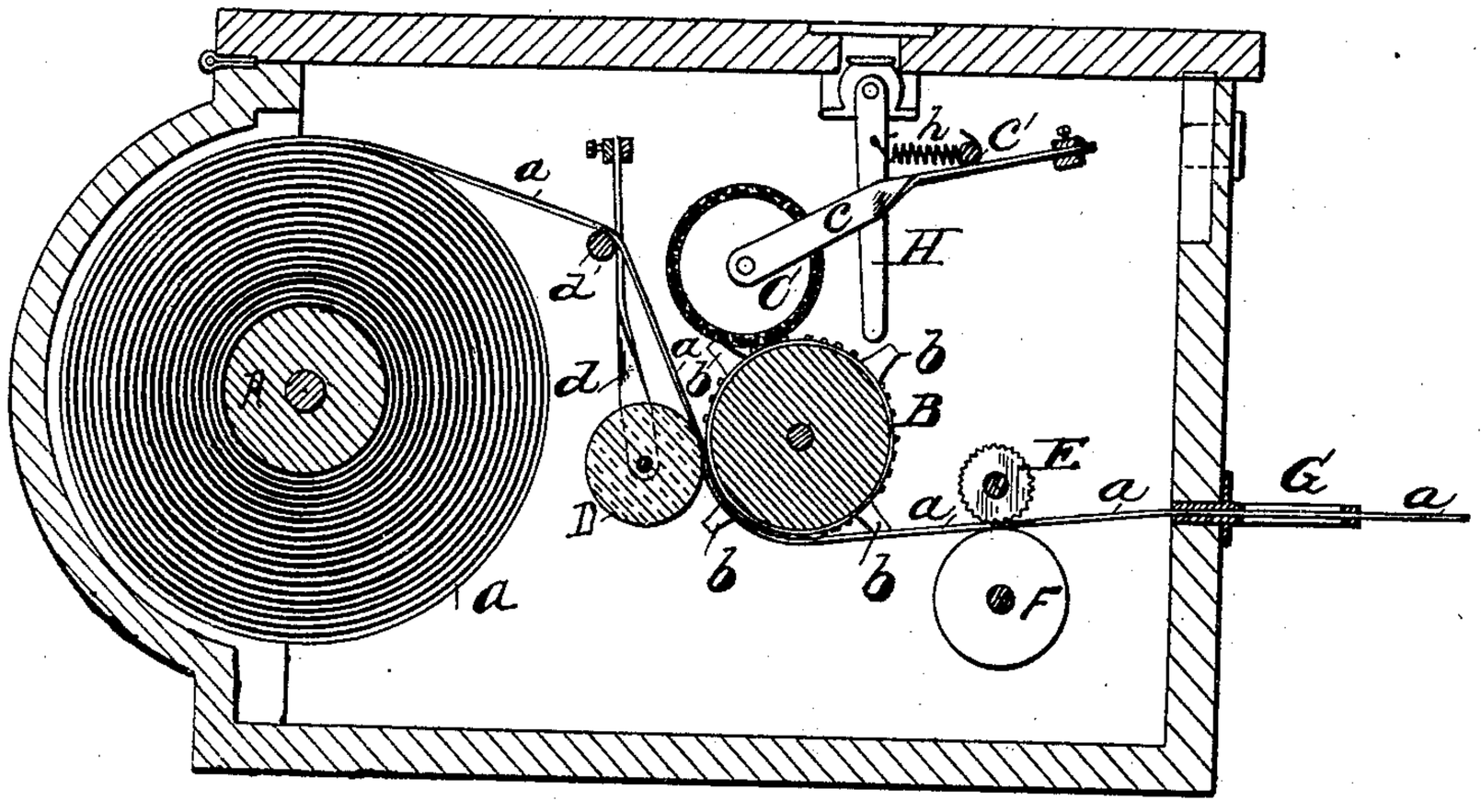


Fig. 2.



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NELSON E. SPRINGSTEEN, OF ROYALOAK, MICHIGAN.

TICKET-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,889, dated September 17, 1901.

Application filed April 25, 1900. Serial No. 14,303. (No model.)

To all whom it may concern:

Be it known that I, NELSON E. SPRINGSTEEN, of Royaloak, in the county of Oakland and State of Michigan, have invented a new and useful Improvement in Ticket-Printing Machines, of which the following is a specification.

My invention consists in a machine or apparatus whereby tickets of admission or other like articles may be printed as desired from a continuous roll or strip of paper and readily separated or detached from one another, while the number of such tickets printed and detached is automatically registered and indicated.

The accompanying drawings show a form of my invention especially adapted for the printing of tickets of admission to places of entertainment, &c., although it of course may be used for printing tickets, &c., for other purposes.

In the drawings, Figure 1 represents a plan of the apparatus, the cover of the box or receptacle containing the same being removed to show the construction and arrangement of the apparatus; and Fig. 2 represents a longitudinal vertical section through the apparatus.

A represents a roller or cylinder upon which is wound or rolled a continuous strip or ribbon of paper or other suitable material *a a a a*, of suitable width and quality, upon which the tickets are to be printed. B represents another roller or cylinder upon the surface or periphery of which are mounted suitable type or dies for printing the tickets, the roller having at one end thereof the projecting lugs *b b b* for engaging with and operating the registering device, as hereinafter explained, the number of such projecting lugs being the same, of course, as the number of tickets which will be printed with each complete revolution of the printing-roller B.

C represents an ink roller or cylinder, covered with felt or other suitable material for retaining and distributing ink, which is kept in contact with the surface of the type or dies on the printing-roller B.

D represents a tension roller or cylinder for the purpose of keeping the paper strip or ribbon in contact with the type or dies of the printing-roller B, and thus insuring a proper impression.

E represents a toothed wheel the teeth of which engage with an annular groove or depression in the lower tension or bearing roller or cylinder F, the paper strip or ribbon passing between these cylinders as it is drawn forward, the purpose of this toothed wheel being to perforate the strip or ribbon as it passes between the wheel and roller, and thus form readily-detachable coupons.

K represents a registering or indicating device of any suitable construction operated by the arm or lever H, which is so arranged as to engage with the lugs *b b* on the printing-cylinder B as the latter revolves and to cause an additional number to be registered each time the lever is pushed forward by the movement of one of the lugs, the return of the lever to its original position upon becoming disengaged from the lug being secured by the spiral spring *h*.

G represents a projecting hollow metal plate projecting from the front of the box or receptacle containing the apparatus in the line of travel of the strip or ribbon *a a* and adapted to the width and thickness of the same, forming a straight edge for the tearing off or detaching of the printed tickets from the strip, as desired. The upper and lower surfaces of the projecting plate G should preferably be cut away, as indicated, for the purpose of enabling the operator to more readily seize the strip or ribbon of paper and draw the same forward.

In the drawings the inking-roller C is shown as supported on metal strips or arms *c c*, having a sufficient degree of elasticity and which bear against the transverse pin *c'*, thus insuring the inking-roller being held in contact with the surface of the printing-roller B with a sufficient degree of pressure, though it is obvious that the same result may be obtained by other equivalent means, the construction shown, however, having been found to be a cheap and efficient method of producing the desired result. In like manner the tension or contact roller D is supported by the metal arms *d d* bearing against the transverse pin

d', thus insuring the tension-roller being held against the surface of the printing-roller B with a sufficient degree of pressure.

The operation of my apparatus is as follows: As tickets are desired for use the operator seizes the end of the paper strip or ribbon projecting through and into the opening in the metal plate G and draws the strip forward. The paper being held in contact with the surface of the printing-roller B by the tension-roller D, an impression of the type or dies on the surface of the printing-roller, which revolves as the ribbon is pulled forward, is produced on the surface of the ribbon. As the printing-roller is revolved by the pulling of the paper forward one of the projecting lugs *b b* engages with the lever H as each complete ticket is printed and by pushing the lever forward causes an additional number to be registered on the register or indicator K, thus indicating automatically the total number of tickets printed. As the ribbon is pulled forward and passes between the toothed wheel E and the tension-roller F it is perforated longitudinally by the teeth of the wheel E, thus forming a readily-detachable coupon. The toothed wheel E may of course be omitted in case tickets having a detachable coupon are not desired. When a sufficient number of tickets have been drawn out, they may be readily detached by the operator, the end of the projecting metal plate G forming a straight edge for that purpose. As the printing roller or cylinder B revolves fresh ink is supplied to the types or dies on its surface from the inking-roller C, which revolves with it.

Additional tension-rollers or other devices for preventing the paper from moving too freely or to insure its proper contact with the surface of the types or dies on the printing-roller B may of course be employed if found necessary or desirable, though I believe the apparatus shown, if properly arranged, will be found entirely practicable and sufficient for the purpose.

Having thus briefly described my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, a printing-roll having at one end a plurality of radial projections, a register having an actuating-arm arranged in the path of said projections, an inking-roll mounted to coöperate with the printing-roll, a paper-roll and a pressure-roll arranged to act against the paper reeled from said paper-roll while it is in contact with the surface of said printing-roll.

2. In an apparatus of the class described, a printing-roll having at one end a plurality of radial projections, a register having an actuating-arm arranged in the path of said projections, an inking-roll mounted to coöperate with the printing-roll, a paper-roll a pressure-roll arranged to act against the paper reeled from said paper-roll while it is in contact with the surface of said printing-roll, and paper-perforating means arranged in advance of the printing-roll.

3. In an apparatus of the character described, a printing-roll, a yieldingly-mounted engaging roll, a paper-roll, a yieldingly-mounted pressure-roll arranged to act against the paper while under action by the printing-roll, a spring-actuated register-arm, a plurality of radial projections upon the printing-roll arranged to engage said spring-actuated arm, and paper-perforating mechanism arranged in advance of the printing-roll.

4. In an apparatus of the class described, a casing, printing mechanism in said casing, and the casing having a slot and a hollow plate fitted in said slot and provided with shoulders fitted against the casing, said plate being slotted and having a straight edge.

5. In an apparatus of the class described, a casing, printing mechanism in the casing, and a projecting hollow plate upon the casing, the upper and lower walls of the plate being slotted and the slots being in registration and said plate having a straight edge in advance of the registering slots.

6. In an apparatus of the class described, a casing having a slot, and a hollow plate fitted in said slot and projecting from the casing, the upper and lower walls of the plate being slotted and the slots being in registration and said plate having a straight edge in advance of the registering slots.

7. In apparatus of the character described, the combination of a printing roll or cylinder carrying radial lugs or projections arranged at certain regular intervals apart, a register having a spring-held lever or arm adapted to be engaged by said lugs or projections, an inking-roll adapted to engage said printing-roll, a paper-guide roll arranged in connection with said printing-roll, a paper-perforating roll, a paper-tension roll arranged under said perforating-roll, and a straight-edge or paper-tearing device arranged for operation in connection with the aforesaid parts, substantially as set forth.

NELSON E. SPRINGSTEEN.

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