A. DE BRAYER.

MACHINE FOR PRINTING OR REPRODUCING ADDRESSES AND OTHER TYPED OR WRITTEN MATTER.

APPLICATION FILED MAY 30, 1917.

1,349,807.

Patented Aug. 17, 1920.

2 SHEETS—SHEET 1.

Fig. 1

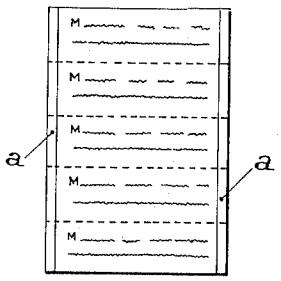


Fig. 2

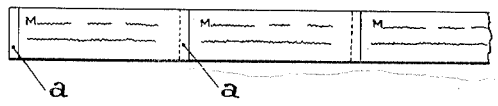


Fig. 3

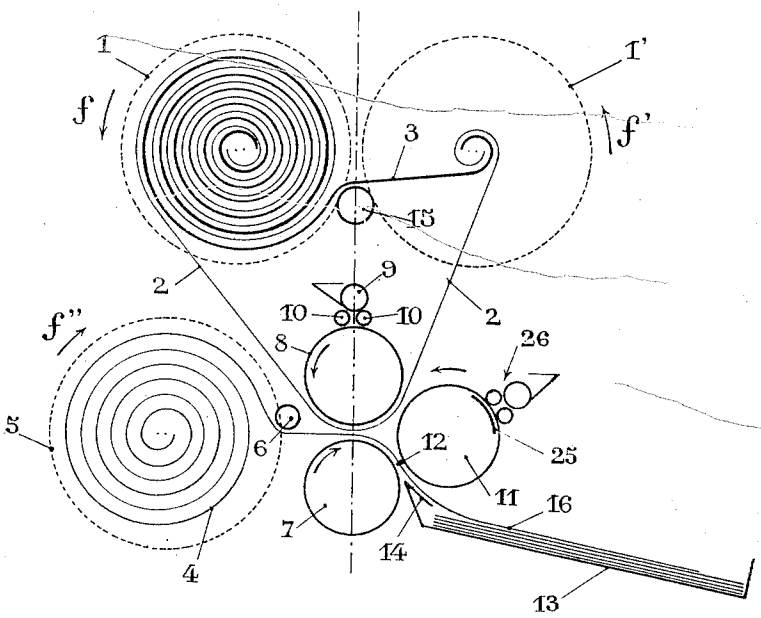
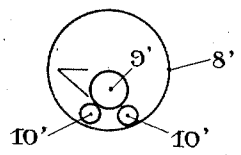


Fig. 4



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2 SHEETS—SHEET 2.

Fig. 5

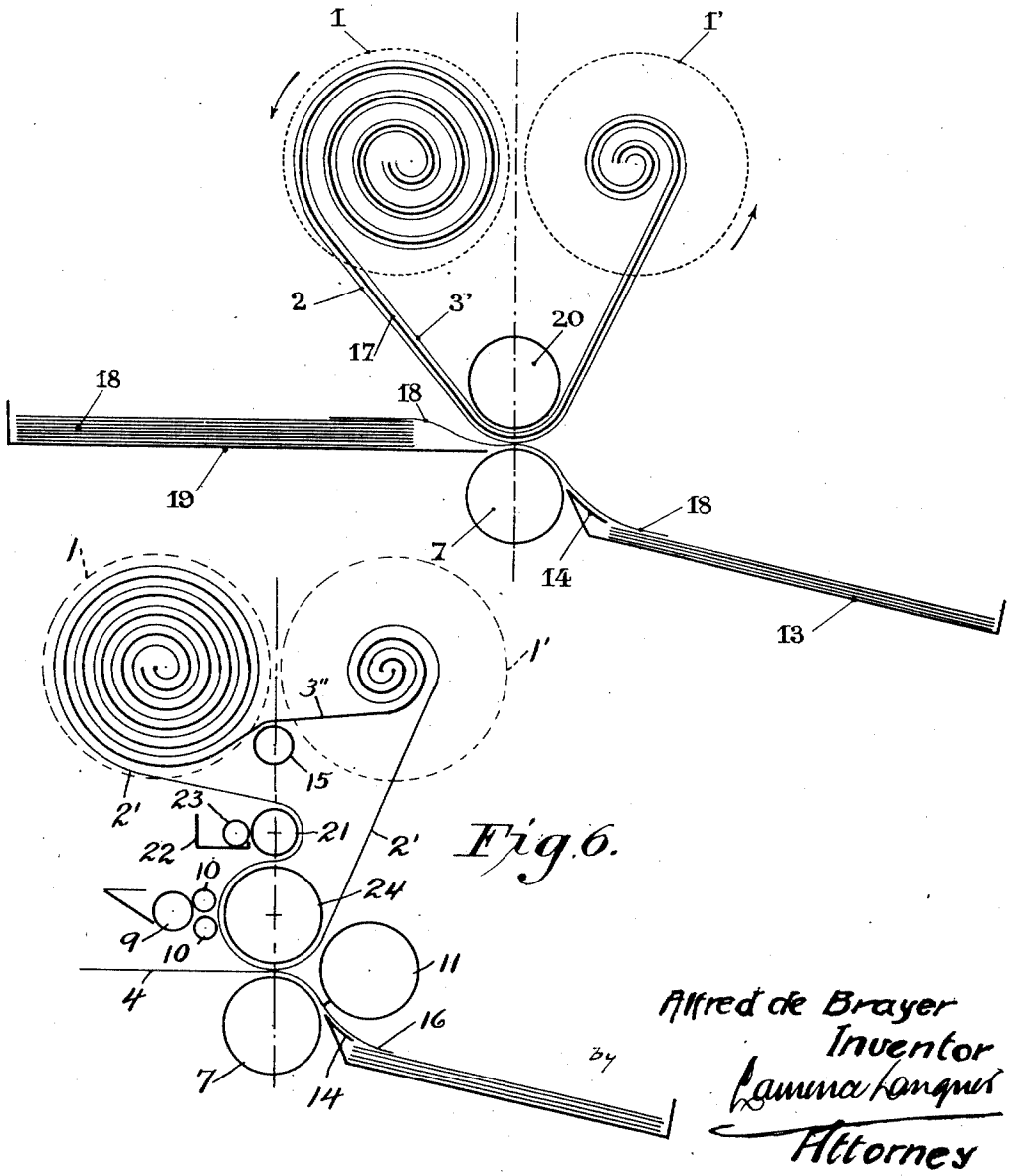


Fig. 6.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR PRINTING OR REPRODUCING ADDRESSES AND OTHER TYPED OR WRITTEN MATTER.

1,349,807. Specification of Letters Patent. Patented Aug. 17, 1920.

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To all whom it may concern:

Be it known that I, ALFRED DE BRAYER, a citizen of the Argentine Republic, and resident of Paris, France, have invented certain new and useful Improvements in Machines for Printing or Reproducing Addresses and other Typed or Written Matter, of which the following is a specification.

This invention relates to machines for reproducing typed or hand-written matter such as addresses. It is the object of the invention to provide an improved machine of this character in which the addresses or the like can be type-written or written by hand on stencil paper made up into the form of a band, or on other material capable of cooperating with an inking device to reproduce the recorded matter on a band of paper which is fed through the machine. Other objects are to improve the method of effecting the inking, and to provide a simple device for cutting the printed band into sections which are delivered to a receiving tray.

The invention is illustrated by way of example in the accompanying drawings, in which:—

Figure 1 shows a sheet of prepared paper or stencil material on which the addresses or the like to be reproduced have been written or typed in column form.

Fig. 2 shows a portion of a band of the record material in the form in which it is made up for use in the machine.

Fig. 3 is a diagram illustrating in vertical section one form or arrangement of the machine for reproducing the addresses or the like, in which the records are on stencil paper, and the inking is effected by means of rollers.

Fig. 4 shows diagrammatically a modified inking arrangement.

Fig. 5 shows diagrammatically a modified form of the machine in which a stencil band is also used, but the inking is effected by means of a ribbon.

Fig. 6 shows diagrammatically a modified form of the machine in which the record matter is prepared by an autographic process and is inked by a conveniently disposed roller.

When impressions are to be taken from a record in the form of a band containing addresses for example, these addresses are inscribed either by typewriting or by hand, one beneath another on the sheet, which may be a stencil sheet such as is shown in Fig. 1, or may be a sheet of autographic paper. The sheet with the addresses or the like upon it is then cut up into strips each containing one of the addresses, cutting being effected along the dotted lines shown in Fig. 1, after which the various strips are connected together to form a longitudinal band as is shown in Fig. 2. The lateral edges marked *a* are preferably formed of strengthened or more resistant material, and they may be gummed so as to facilitate their adhesion one to another as in Fig. 2. The edges *a* however may also be connected together to form a band as in Fig. 2, by any mechanical means suitable for the purpose.

The resulting band shown in Fig. 2 containing the addresses or the like successively therein, and made up into any desired length according to the number of addresses to be reproduced, is rolled up and is ready for use in the machine.

Referring now to Fig. 3, the reproducing machine shown therein consists essentially of a combination of two drums for the winding of the address band, of a support for the roll of the paper to be printed upon, of an inking device, impression cylinder, a cutting device for cutting up the printed strip into sections, and finally a receiving tray for the cut and printed sections.

The drums for receiving and winding the address band are marked 1, 1′. The band itself is marked 2, and is wound on the drum 1 with the interposition of a protecting band 3 which is employed, as explained below, to protect against smearing with ink the side of the band 2 which, during the printing, comes into contact with the paper strip. The band 2 is unrolled from the drum 1 in the direction of the arrow *f*, and after passing around a roller 8 it is wound on the drum 1′ turning in the direction of the arrow *f*′. The protecting band 3 is unrolled from the drum 1, and after passing over a roller 15 it is rolled in again with the band on the drum 1′.

The paper on which the addresses or the like are to be printed, is arranged in a coiled strip 4 on the support or drum 5. During the printing the strip of paper unrolls in the direction of the arrow *f*″ at the same time as the band 2 unrolls. The paper strip is guided under a roller 6 suitably placed for guiding the strip properly between the im-

pression cylinder 7 and the inking roller 8 around which the band 2 passes. When the band 2 is a stencil band, the printing is done by causing the ink to pass through the portions of the band from which the surface has been removed in typing or writing the addresses thereon. The ink forced through the stencil band is applied to the strip 4 which reproduces the typewriting or handwriting on the stencils.

In the construction shown in Fig. 3, the inking roller 8 is supplied with ink from a duct 9 and a pair of receiving and distributing rollers 10 which serve to distribute the ink over the surface of the roller 8. A convenient arrangement to employ is one in which, during the printing, the impression cylinder 7 and the inking roller 8 are drawn or pressed together by any convenient known means adapted to allow the degree of pressure on the stencil band and the paper, necessary for obtaining good impressions, to be varied as required.

After the printing, the paper strip passing around the impression cylinder 7 is severed into lengths between each address and the next, by means of a blade 12 on a cylinder 11 which rotates synchronously with the impression cylinder 7, and in the direction of the arrow indicated. The sections 16 of the printed strip, thus severed one from another, are received in a tray 13 as indicated.

The machine above explained operates as follows: The address band 2, the protecting band 3 and the coil of paper 4 being arranged in the machine in the manner indicated in Fig. 3, the apparatus is set in operation, being driven by hand or from any suitable source of power, while the cylinders, drums and the like turn each in the direction of the arrow indicated thereon or adjacent thereto. The band 2 and the strip of paper 4 pass through the machine at the same rate between the cylinder 7 and the roller 8, this latter being supplied with ink as mentioned above, so that the ink can be forced by the pressure exerted between the cylinder 7 and roller 8, through the stencil sheet so as to reproduce the stenciling on the paper 4. As the printing is effected the band 2 is coiled up again with the protecting band 3 on the drum 1', the band 3 serving to prevent the inked face of the stencil from coming into contact with the other face which must be kept clean for printing upon the paper 4.

As the strip of paper is cut into sections, the cutting only takes place when the section 16 has nearly reached its final position as shown in Fig. 3, and after the cutting the section falls by its momentum and weight into its proper position on the pile, while the next section which is fed forward is guided over the top of the last by the guide 14 so that the sections are properly superposed in the tray. The operation continues in the same manner until the whole band 2 has been printed from, having been unwound from the drum 1 and wound up again on the drum 1'. If a fresh set of impressions is to be taken from the same band 2 it is wound back again onto the drum 1 by turning in the directions opposite to the arrows f and f' until the starting position is reached again, whereupon the printing on the strip of paper can be resumed.

The inking arrangement shown in Fig. 3 may be replaced by a modified arrangement shown in Fig. 4, in which the roller 8 is replaced by a hollow roller 8' having the inking device inside the same. The ink duct and roller 9' supply the ink to a pair of distributing rollers 10, which work over the interior face of the hollow roller 8'; its surface is then perforated so that the ink from the inside passes through to the outer surface which applies it to the stencil band.

In the form of construction of the machine shown in Fig. 5, the record or address band is also in the form of a continuous stencil band as above described. The machine differs from that of Fig. 3 however, in that the ink is supplied by means of a ribbon, while this figure also illustrates how the printing can be done on separate sheets or sections of paper already cut into the proper lengths, instead of being done upon a continuous strip which is afterward cut into sections. The band 2 which is rolled up on the drum 1 together with the inking ribbon 17, and the protecting band 3', is passed from the drum 1 around a roller 20 and is wound up again together with the ribbon and protecting band, on the drum 1'. The inking ribbon 17 is on the upper side of the band 2, that is to say on the face away from the paper, while the protecting band 3' which is on the other side of the inking ribbon, is preferably formed of waxed paper or the like so as to prevent effectively smearing of the lower or impression face of the band 2 by the ribbon 17 when coiled up. The sheets of paper 18 on which the printing is to be effected, are already cut to the proper sizes for receiving the addresses or the like to be printed from the band 2, and are placed in a pile on the table 19 which serves as the feeding table of the printing machine. The sheets are fed one by one between the band 2 and the impression cylinder 7 as the machine operates, being printed owing to the pressure exerted between the cylinder 7 and roller 20, pressing the paper against the stencil band while the ink is forced therethrough from the ribbon 17. The printed sheets are received as in the first

described construction, on a tray 13 provided with a guide 14 at the front.

It will be obvious of course that the method of inking by means of the ribbon as shown in Fig. 5 is applicable to a machine in which the paper is fed in any suitable way, either as a continuous strip afterward cut into sections as in Fig. 3, or as already cut sections as in Fig. 5, and so forth.

In the form of construction shown in Fig. 5, the ribbon 17 serves at the same time as a support for the address band 2. This function of the ribbon 17 is important because stencil paper in the form of a band is liable to be damaged rather easily, and it is found in practice that when the band is supported by a ribbon 17 which is always coiled and fed therewith, its life is considerably lengthened. In the form of construction shown in Fig. 3 a ribbon may also be used rolled up with the address band 2 on the drum 1, and unrolling with it, passing around the inking roller 8, and being wound up again on the drum 1', the ribbon then serving to support the band 2, and being of a material having sufficient capillary qualities to allow the ink to pass through it from the roller 8 to the stencil band.

The form of construction shown in Fig. 6 differs from those above described in that the address band, instead of being on stencil paper (from which the impressions are taken by forcing the ink through the parts thereof which have been perforated or removed by the writing thereon) is on autographic paper, that is to say the paper which, as is well known, has the property when covered with writing in a special ink, of reproducing this writing when a greasy ink is applied to it by means of a roller, the surface of the paper which is not written upon repelling the greasy ink, while the surface which is written upon receives a deposit of the ink and afterward applies it to the paper; the printing process in this case therefore is analogous to a lithographic impression process.

Referring to Fig. 6, the band 2' with the addresses or the like written or typed thereon, is a band of this autographic paper coiled on a drum 1 as in the other examples. A protecting band 3'' is also employed precisely as in the example of Fig. 3. The band 2' passes around a roller 21 covered with suitable absorbent material and kept moist by means of water from a trough 22 applied to it by a roller 23. This arrangement is necessary in order to maintain a certain degree of humidity on the surface of the band 2', which is essential in order that it may operate in the required manner when the ink is applied thereto. The band 2' passes from the roller 21 around a roller 24, and in so doing ink is applied to it by the pair of rollers 10 receiving ink from the duct 9. The strip of paper 4 to be printed upon next comes in contact with the band 2' while it passes between the roller 24 and an impression cylinder 7. After the printing, the band 2' is coiled with the protecting band 3'' on the drum 1' as in the example of Fig. 3. A strip of paper 4 after receiving the printed impression due to the pressure exerted between the cylinder 7 and roller 24 in the usual manner, passes between the cylinder 7 and a cutting cylinder 11 having a blade 12, operating in the same manner as the device shown in Fig. 3, to cut the strip of paper into sections 16 which are fed over a guide surface 14 on to a receiving tray 13. Obviously instead of using this arrangement for feeding, cutting and receiving the paper, an arrangement such as that of Fig. 5 might be used.

The machine in any of the examples of construction, may have added thereto an arrangement for enabling headings or other matter which will remain the same for every impression, to be printed on each paper section in addition to the address or the like. This result may be attained by means of a very simple arrangement indicated in Fig. 3. As shown in this figure, the cylinder 11 carries a printing plate 25 supplied with ink by means of an inking device 26, and adapted to print the heading or the like on each section of the paper as it passes between the impression cylinder 7 and the said cylinder 11.

In the preceding description it has been assumed that the machine according to each of the examples of construction, is intended for printing from address bands on single sheets or strips of paper. It will of course be understood however that the invention is applicable for any analogous purpose, and for example with a feeding arrangement such as is shown in Fig. 5, the "sheets" 18 on which the printing is effected may be envelops or postal wrappers and other like articles. The mechanical details of the machine have not been illustrated as the form of the supporting frame and the mechanism for turning the drums, rollers and cylinders may be of any well known kind forming no part of the present invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a machine for printing addresses and the like, the combination of a record band having the matter to be reproduced inscribed thereon; a drum on which the band is initially wound and from which it is unwound; a drum on which the band is wound as it unwinds from the first drum; a roller around which said band passes on its way from the first drum to the second;

inking means associated with said roller; means for pressing the paper on which the inscribed matter of the record band is to be printed against said band; a cylinder having a printing surface thereon for printing additional matter on the paper while it is passing through the machine, said cylinder adapted to coöperate with said paper-pressing means; and means for inking said printing surface.

2. In a machine for printing addresses and the like, the combination of a record band having the matter to be reproduced inscribed thereon; a drum on which the band is initially wound and from which it is unwound; a drum on which the band is wound as it unwinds from the first drum; a roller around which said band passes on its way from the first drum to the second; inking means associated with said roller; a drum adapted to carry a coiled strip of paper on which the inscribed matter of the record band is to be printed; an impression cylinder for pressing the paper strip against the record band as it passes said roller; a cylinder for coöperation with the impression cylinder provided with a cutting blade and with a printing surface, said blade adapted to bear upon the paper strip as it passes the impression cylinder and to cut it into sections, and said printing surface adapted to print additional matter on the paper; and means for inking said printing surface.

ALFRED DE BRAYER.