

J. E. GARTSIDE.
 PRINTING ROLL.
 APPLICATION FILED MAY 13, 1912.

1,050,015.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

FIG. 1.

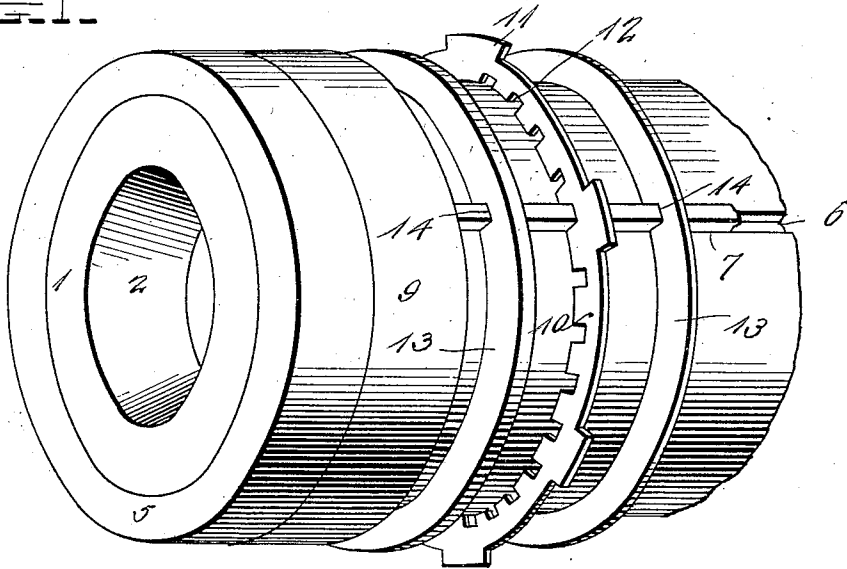
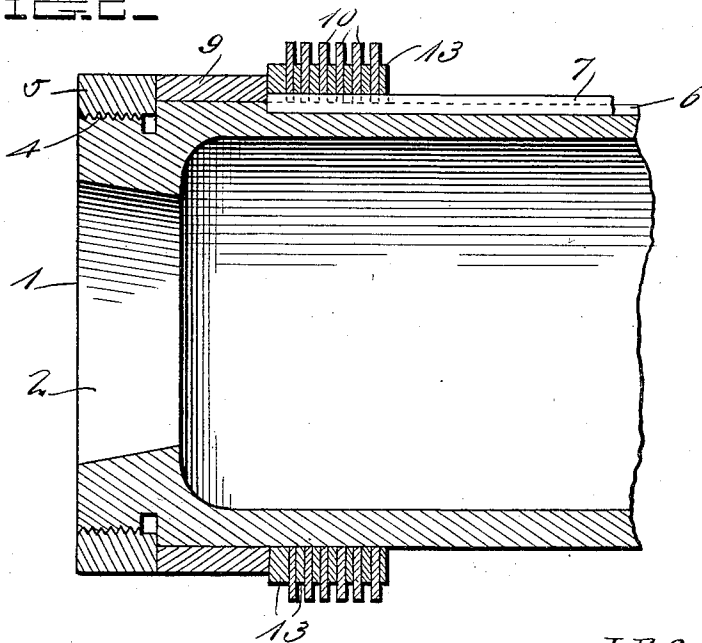


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

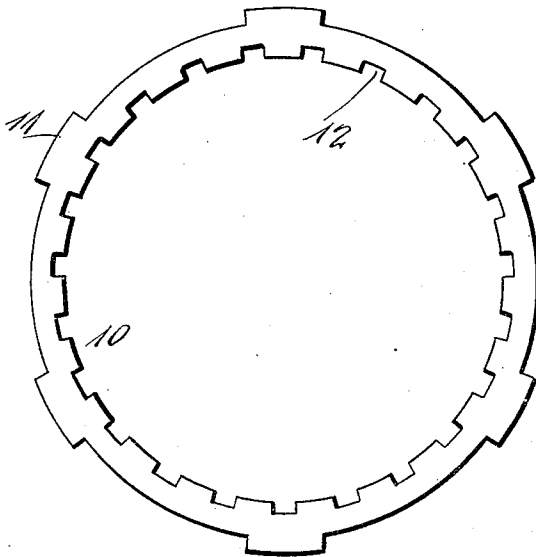


FIG. 4.

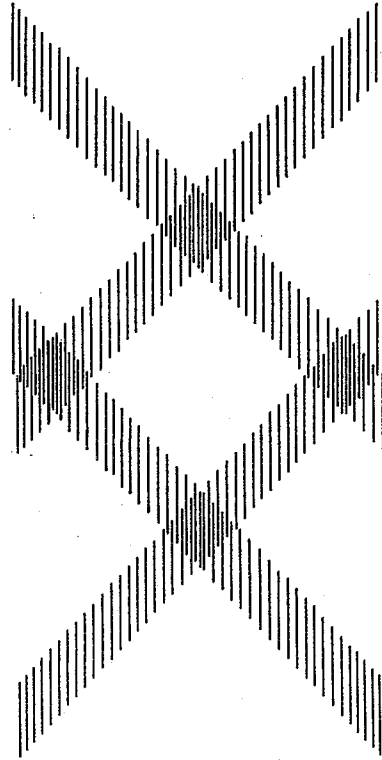
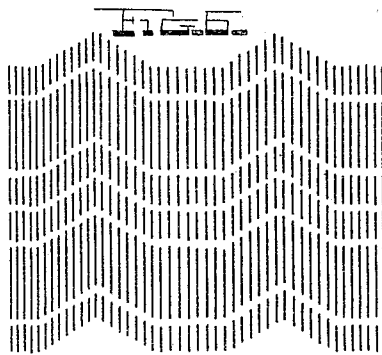
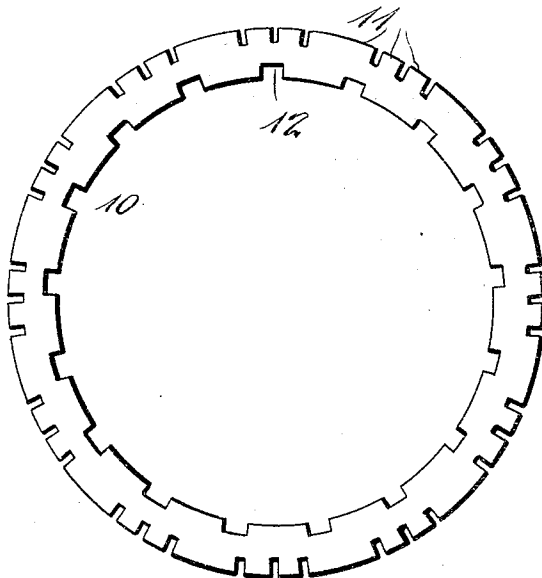


FIG. 5.



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UNITED STATES PATENT OFFICE.

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PRINTING-ROLL.

1,050,015.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed May 13, 1912. Serial No. 696,926.

To all whom it may concern:

Be it known that I, JOHN E. GARTSIDE, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Printing-Rolls; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the class of rotary ruling machines, and more particularly it is a roll made up of a mandrel and a series of rings having printing surfaces on their outer edges, the rings being variously set upon the mandrel so as to produce almost any desired pattern.

The objects of the invention are to produce improvements in devices of this character whereby the printing rings may be adjustably set upon the mandrel to produce a variety of patterns, or may be removed and replaced by rings of another series and this series also adjustably set for a variety of patterns; and to employ improved details of construction in connection with a machine of this character—all as hereinafter more fully described and claimed and as shown in the drawings wherein—

Figure 1 is a perspective view of one end of the mandrel with a printing ring and spacing washer mounted thereon; Fig. 2 is a vertical longitudinal sectional view through the same; Fig. 3 is a side elevation of one form of printing ring, and Fig. 4 a plan view of the pattern produced thereby; Fig. 5 is a side elevation of another form of printing ring, and Fig. 6 a plan view of the pattern produced by this ring.

In the drawings the numeral 1 designates a mandrel which is by preference a roller of some considerable size made hollow for the sake of lightness and having axial openings 2 at its extremities either made plain for the reception of a continuous driving shaft or tapered as shown for the reception of centers on which the mandrel is mounted and by which it is revolved. The ends of the mandrel are reduced and threaded as at 4 for the reception of a nut 5 which is of greater external circumference than the body of the mandrel. In the periphery of the mandrel at one point around its circumference is formed a longitudinal slot or key-way 6, into which is fitted a key 7 which

projects beyond the periphery but not quite as far beyond the same as the nuts, and adjacent the latter sleeves 9 surround the periphery so that when the nuts are tightened up the sleeves are pressed against the extremities of the key in a manner which will be clear.

The printing rings (of which two different forms are shown in Figs. 3 and 5) are each composed of an annular body 10 whose thickness longitudinally of the mandrel will be whatever is required by the pattern and whose width radially of the mandrel will be greater than the distance which the nuts project beyond its periphery; a number of type faces 11 formed upon and projecting beyond the outer edge of the body 10, these faces 11 having whatever form of printing surface it is desired to impart to the pattern; and a number of notches 12 formed in the inner edge of the body and necessarily differently disposed with respect to the type faces for a purpose to appear below. In Fig. 3 there are twenty-three such notches and six type faces which complete the pattern; in Fig. 5 there are seventeen such notches, and the pattern is repeated twelve times around the periphery of the ring. The pattern or type face on the former ring will produce a series of dashes as illustrated in Fig. 4; that on the ring shown in Fig. 5 will produce a series of dashes interposed by shorter dashes or dots as shown in Fig. 6; and it is obvious that a great variety of figures or patterns can be produced by substituting series of printing rings having different type faces. Also it will be clear that by spacing the several faces farther apart or nearer together around each ring the figures produced on the pattern will be correspondingly disposed. Finally it will be understood that if the entire group of rings mounted on any mandrel be relatively moved with respect to each other, the location of the printing upon the finished article will correspond.

Between the printing rings of any group are disposed a number of spacers which are ordinary washers of the thickness necessary to space the rings apart from each other and of a width probably equal to the height of the body 10 but certainly less than the height of the type faces 11, and each washer 13 has a single notch 14 corresponding to one of those numbered 12 in Fig. 3. A rather thicker washer 15 is by preference em-

ployed at the extremity of each group of printing rings, between them and the sleeve 9 as seen in Fig. 2.

The parts are assembled as follows: The 5 nut and sleeve at one end of the mandrel are removed, and a set of rings passed over the end and slid along onto the body of the mandrel with the proper notches 12 in the various rings engaging the key 7 thereof— 10 the rings being spaced apart by spacers 13 which are put on with the rings, and their notches 14 engaging the key. When the group or series has been put into place, the thicker spacer 15 is applied, then the sleeve 15 9, and finally the nuts which are tightened up to hold all parts in place.

Thus is constructed the printing roll as a whole, and the same is mounted on its shaft or centers and either rotated over the paper 20 which is to be printed, or the paper may be passed between the printing roll and a bed roll—suitable ink in either case being supplied to the type faces by means not necessary to illustrate. These devices are ordinarily 25 used for printing figures on wall paper and the like, although I do not desire to limit the use of my machine in this respect. The parts are of the desired sizes, shapes, proportions and materials, and the artisan expert 30 in this line will not require an amplification of the process necessary to alter the pattern as his fancy may dictate.

What is claimed as new is:—

35 1. In a printing roll, the combination with a mandrel having a cylindrical body and a longitudinal key along one side of the

same; of a series of printing rings adapted to be removably mounted upon said mandrel each consisting of a body having a number of type faces projecting from its 40 outer edge so as to repeat the design around the ring, and having a number of notches cut in its inner edge and standing in different relative relation to the various type faces, each notch adapted to fit said key, all 45 for the purpose set forth herein.

2. In a printing roll, the combination with a mandrel having a cylindrical body and a longitudinal key along one side of the same; of a series of printing rings adapted 50 to be removably mounted upon said mandrel, each consisting of a body having a number of type faces projecting from its outer edge so as to repeat the design around the ring, and having a number of notches 55 cut in its inner edge and standing in different relative relation to the various type faces, each notch adapted to fit said key, and a number of spacers for disposition between the printing rings, each consisting of 60 a ring whose width radially of the device is less than the radial dimension of a printing ring when taken through one of its type faces, all for the purpose set forth.

In testimony whereof I have hereunto set 65 my hand in presence of two subscribing witnesses.

JOHN E. GARTSIDE.

Witnesses:

JOHN F. KISSINGER,
CHARLES L. RODGERS.