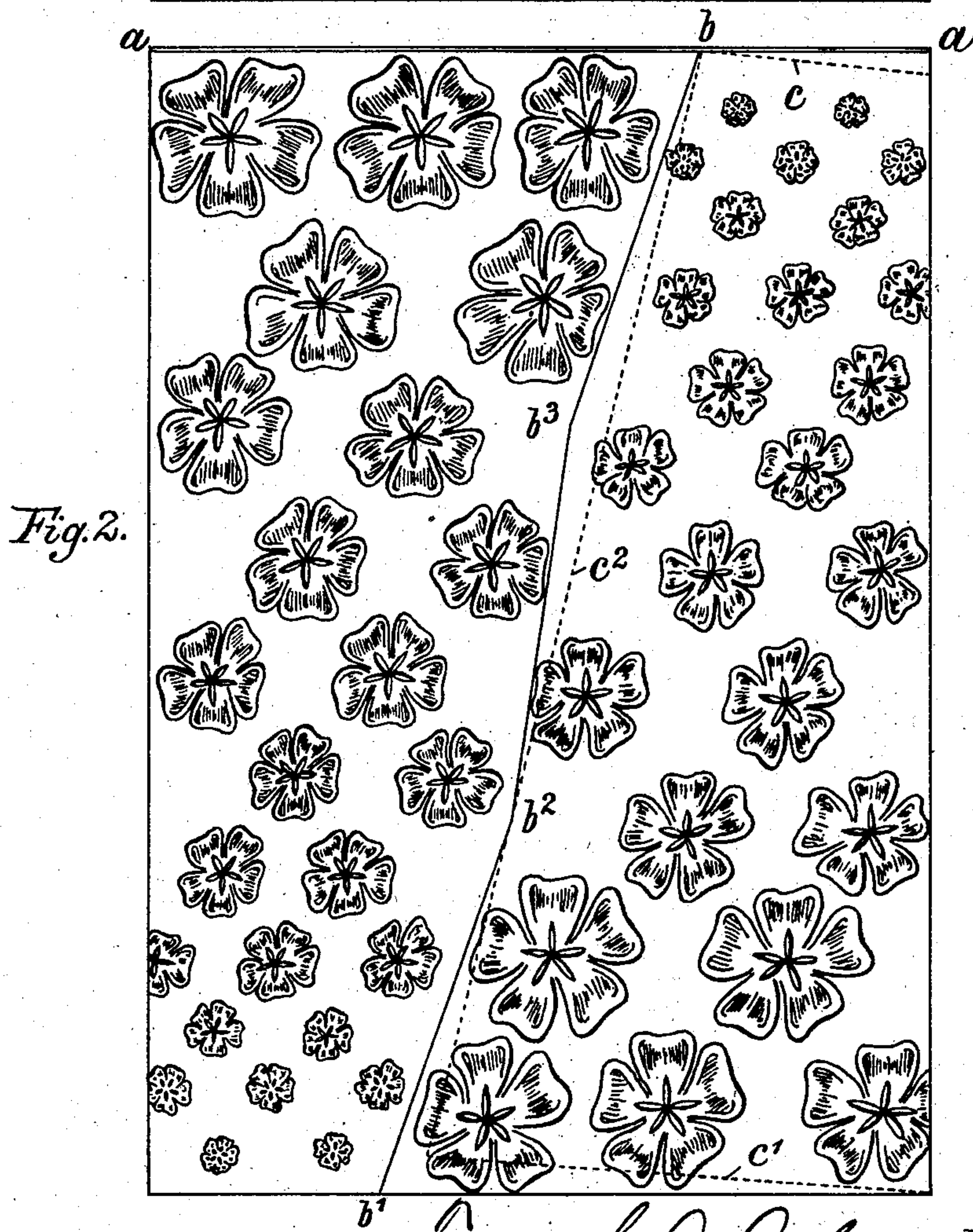
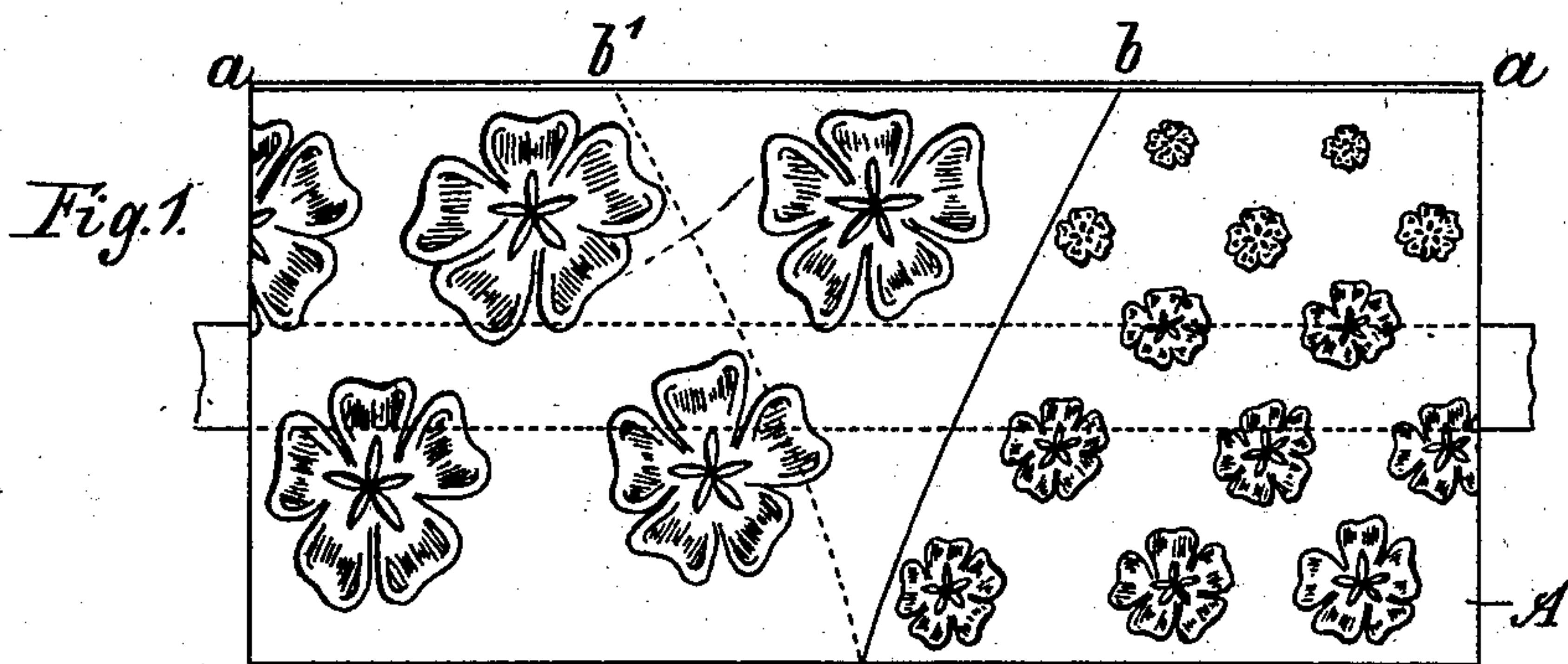


F. A. ARBENZ.  
APPARATUS FOR PRINTING FABRICS.  
APPLICATION FILED JAN. 27, 1902.

NO MODEL.



*Frederick A. Arbenz*

*Inventor*

*Witnesses:*  
*John A. Paulson*  
*Max Helmke*

*by Schreiter & Mathews*

*his Attys*



# UNITED STATES PATENT OFFICE.

FREDERICK A. ARBENZ, OF WEST HOBOKEN, NEW JERSEY.

## APPARATUS FOR PRINTING FABRICS.

SPECIFICATION forming part of Letters Patent No. 721,492, dated February 24, 1903.

Application filed January 27, 1902. Serial No. 91,452. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. ARBENZ, of West Hoboken, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Printing Fabrics, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, wherein—

Figure 1 is a front elevation of a printing-roller constructed according to my invention, and Fig. 2 a piece of fabric containing the print made by means of such roller.

My invention relates, as stated above, to apparatus for printing of fabrics and is embodied in a printing-roller capable of producing such print, as shown in Fig. 2.

In the manufacture of dress goods for skirts it is desirable to have the design-pattern so arranged that its features gradually increase from the hip toward the bottom of the skirt. Thus far such peculiar arrangement of a design could only be produced on embroidered materials. All attempts to produce such effect in weaving fabrics on looms or by printing such design upon them failed owing to the complications encountered in carrying out any such problem and owing to the considerable waste resulting in cutting such material in the necessary peculiar shape of the gores. These circumstances rendered it heretofore practically impossible to produce any such woven or printed fabrics. My invention tends to obviate these difficulties by so devising the printing-roller that the design is made in divided fields whose outlines approximately correspond with the shapes into which the material must be cut and by arranging the design in each field so that when made up into a skirt the smallest features of the design appear approximately at or near the waistband and then gradually increase toward the bottom of the skirt.

In making such printing-roller A, I make its circumference equal to one or more lengths of a skirt-gore. Then I draw the line *a a* parallel to its axis, and after locating points *b* and *b'* approximately one and two-thirds of the length of the roller, which is a position corresponding to the upper and lower dimensions of a gore of a skirt, I indicate the line *b b'*. This line is composed of three approximately equal parts joined together at obtuse angles, whose apexes *b<sup>2</sup>* and *b<sup>3</sup>* project in opposite directions deflecting from the line di-

rectly connecting the points *b* and *b'*. The line thus produced represents a nearly-exact outline of two gores of a skirt joined together reversely. The imprint of the roller is shown in Fig. 2. The fields are so arranged that their longest dimensions run approximately parallel with the warp of the fabric. This is of considerable importance and advantage in working such material into a garment. When cutting a skirt of this material, each field is utilized for one gore. It will of course be necessary to trim the outlines of the field indicated on the pattern, to cut them to the desired length, and change their lines as the shape of the body requires; but the cuttings will always, excluding exceptional cases, be only narrow strips, constituting only a very small percentage of the material, and the lines on which the gores are sewed together run always the direction of the warps of the fabric. To demonstrate this, I have indicated in dotted lines *c*, *c'*, and *c<sup>2</sup>* in Fig. 2 to what extent the outlines of the gore indicated on the design will require to be modified in order to change such part into a front gore of a skirt.

The construction of such printing-roller, as shown here and described, has also the advantage that it enables to terminate the design on either end of the field, or on both, if desired, by a border corresponding in motif with the features of the design, but so executed that whatever trimming of the gores may be undertaken a symmetrical arrangement of the main features of the design may be effected; but its main advantage is that it enables to print the desired style of design in such manner that the use of the material for the purposes intended may be done without almost any waste whatever. The seams are always in line with the warp. My invention thus places into the hands of the public a material which can be produced in any desired artistic style at very reasonable costs.

I claim as my invention—

A printing-roll for fabrics, having its surface divided into fields of approximately equal areas and provided with a design, whose features gradually increase in each field from one end to the other, substantially as herein shown and described.

FREDERICK A. ARBENZ.

Witnesses:

ROBERT VALENTINE MATHEWS,  
M. A. HELMKE.