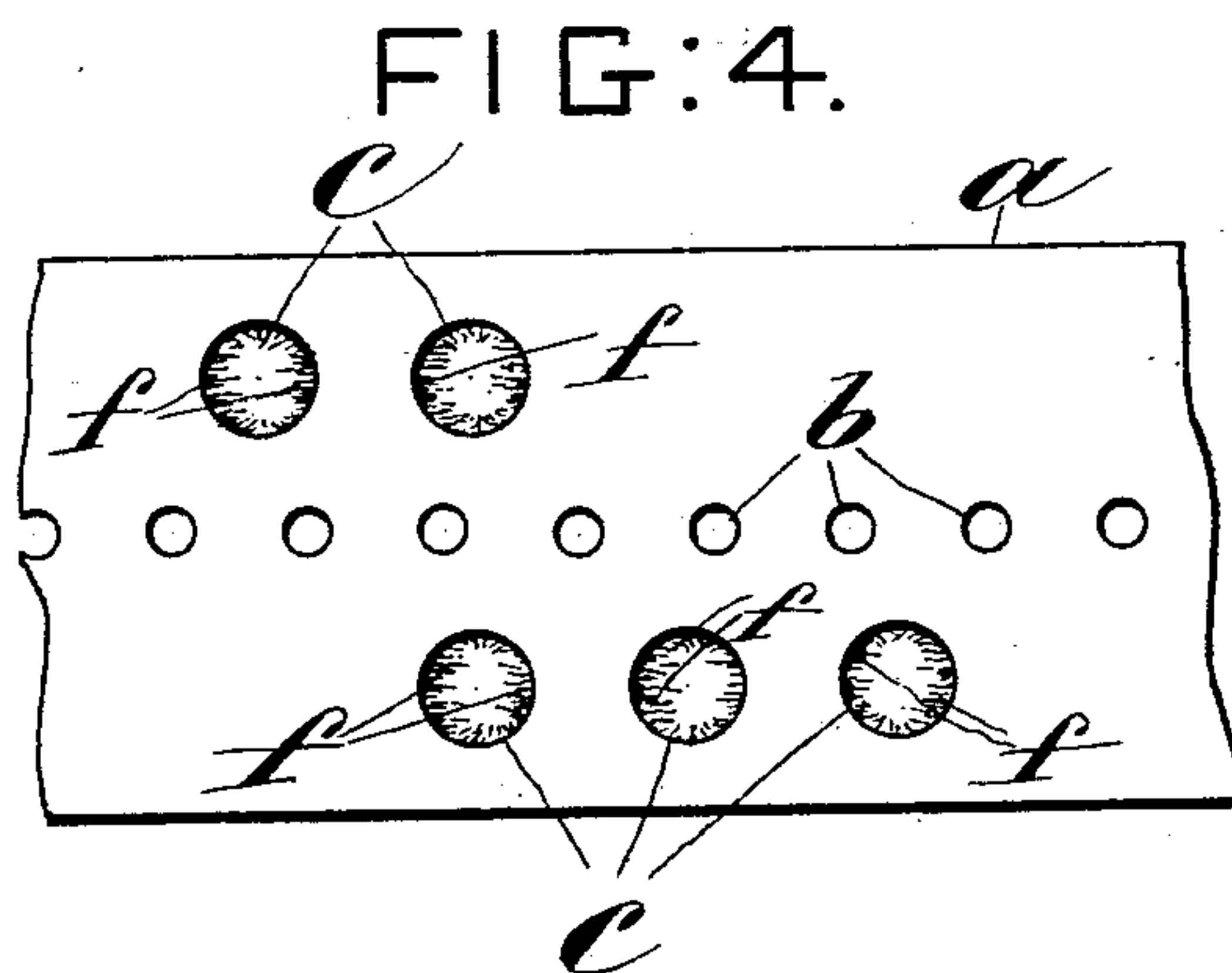
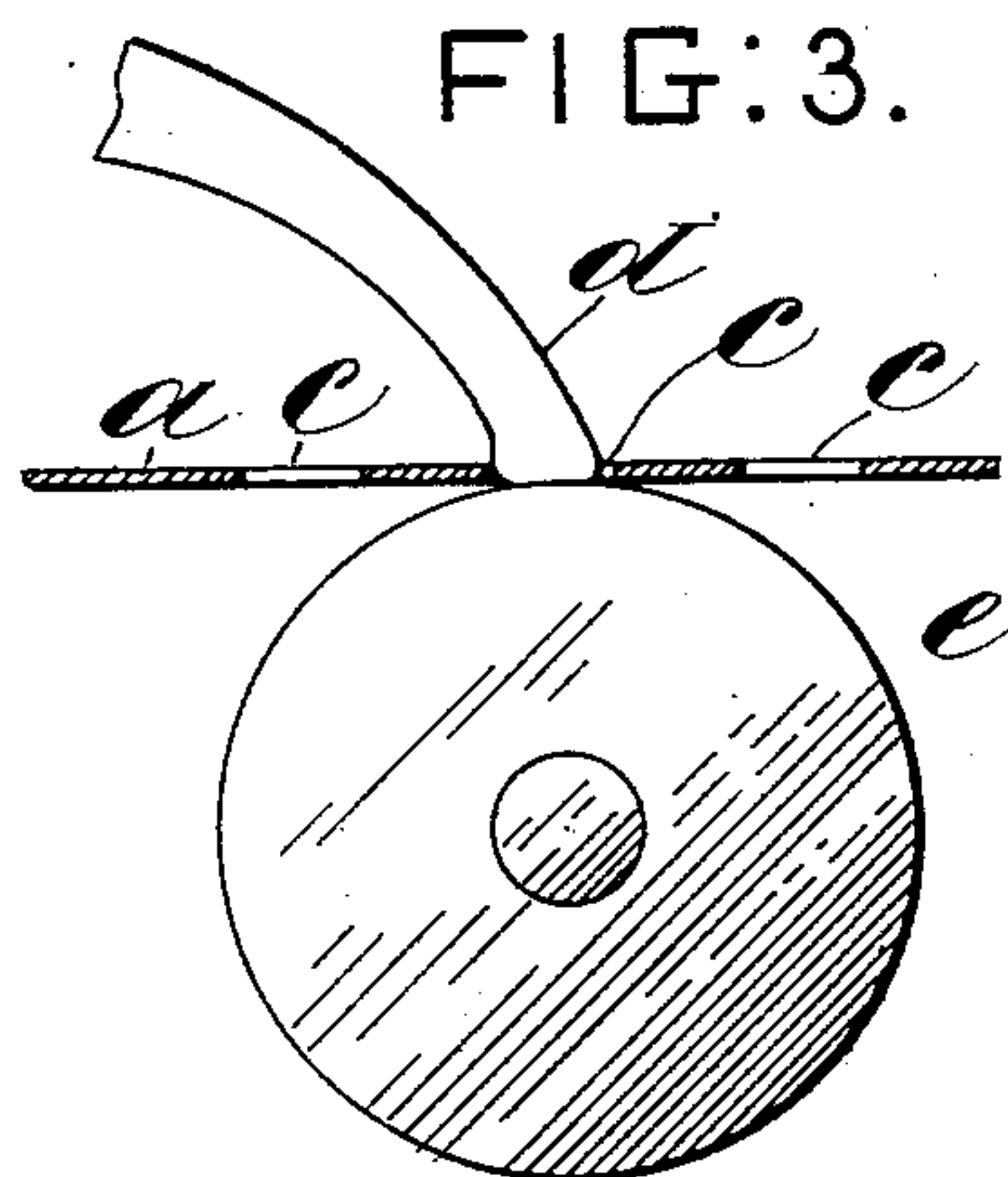
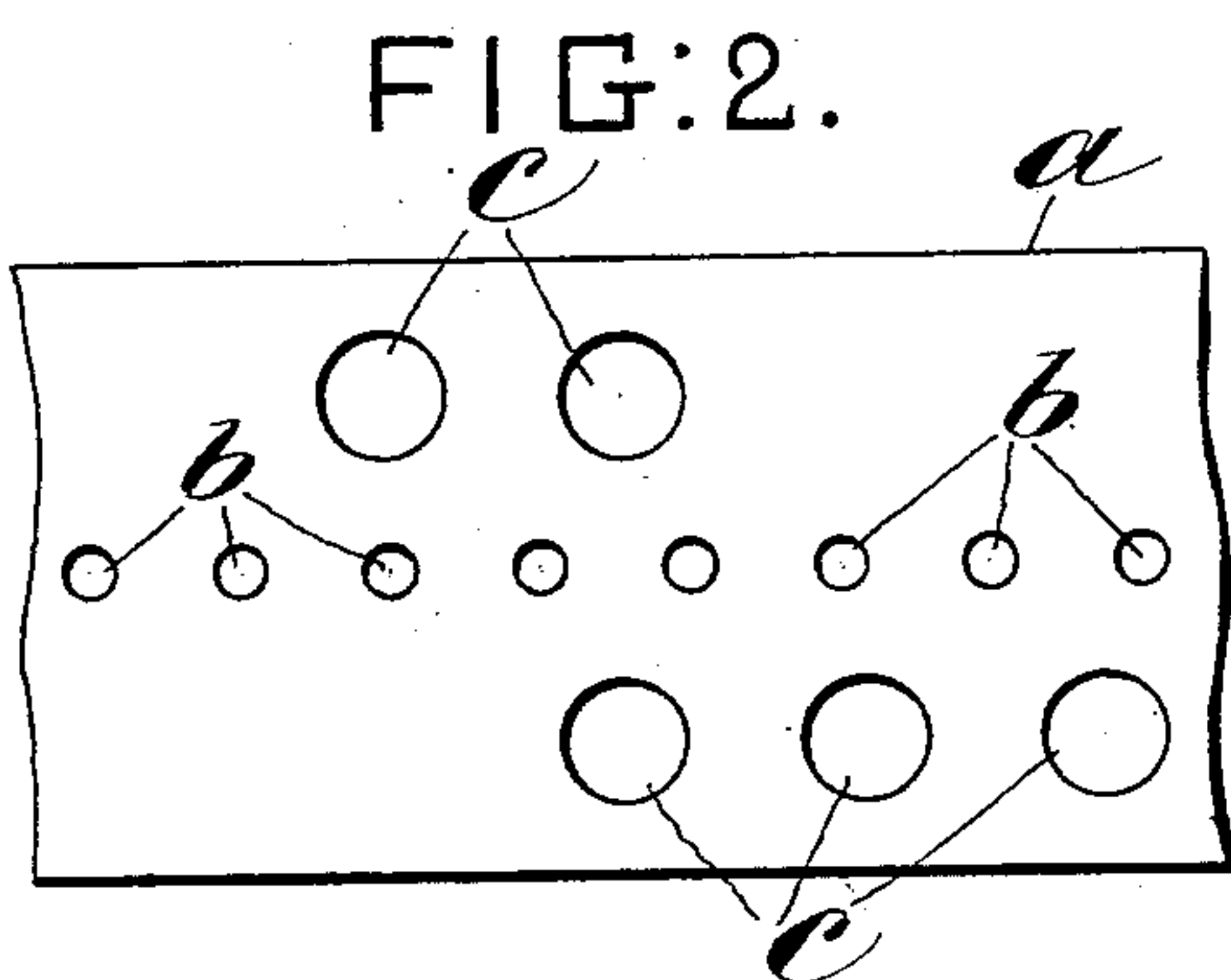
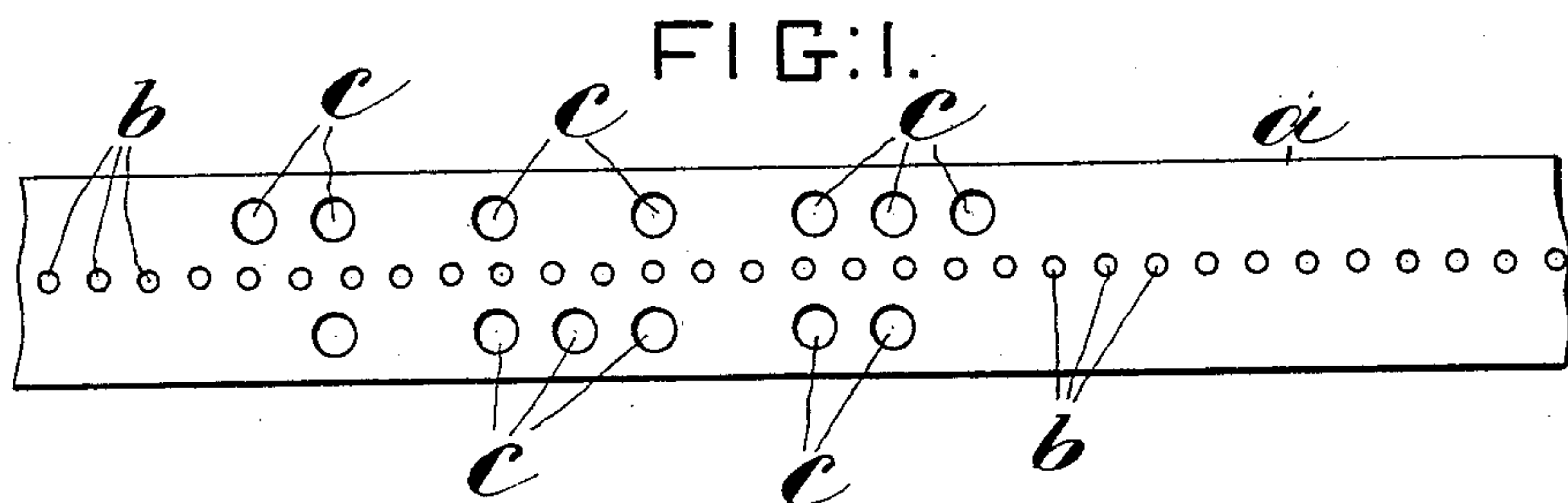


(No Model.)

H. W. MATHER.
ELECTRICAL CURRENT INTERRUPTER.

No. 591,861.

Patented Oct. 19, 1897.



WITNESSES:

J. H. Elman
Peter A. Ross

INVENTOR

Henry W. Mather
BY
Henry Conner
ATTORNEY.

UNITED STATES PATENT OFFICE.

HENRY W. MATHER, OF ROSEVILLE, NEW JERSEY, ASSIGNOR TO WILLIAM GARDAM AND JOSEPH GARDAM, OF BROOKLYN, NEW YORK.

ELECTRICAL-CURRENT INTERRUPTER.

SPECIFICATION forming part of Letters Patent No. 591,861, dated October 19, 1897.

Application filed February 17, 1897. Serial No. 624,118. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. MATHER, a citizen of the United States, residing at Roseville, Essex county, New Jersey, have invented certain new and useful Improvements in Electrical-Current Interrupters, of which the following is a specification.

My invention relates to the ribbon-like interrupting-stencils and strips for such stencils employed in telegraphing and the like, and particularly in the system of telegraphing known as the "Wheatstone." In operating under this system a strip or ribbon of paper is employed and from this ribbon an interrupting-stencil is formed by cutting in it, with a suitable punch, a series of holes or perforations which indicate letters of the telegraphic alphabet. This stencil-ribbon is then passed through the instrument and electrical metallic contact is effected at each perforation, the current being interrupted while the unperforated portion of the stencil is passing. This system is well known and I have briefly described it only to point out the more clearly a difficulty with these interrupters which my invention is designed to overcome. It is essential to the perfect operation of the electrical instrument that when the stencil-ribbon is passed through it, a positive metallic contact shall be effected at each perforation in the stencil, and with the paper heretofore employed I have found that the fibers of the paper used are never cut away entirely by the punch in forming the holes, but project more or less from the margins of the hole, thus forming an insulating medium which will often be interposed between the metallic parts in such a manner as to prevent the perfect contact necessary to produce good results. To overcome this defect, I have endeavored to discover a material for the stencil-ribbon which, while in all other respects perfectly satisfactory, shall be free from fiber, or sufficiently free therefrom, to permit the punch to cut a clean hole therein without danger of fibers projecting from its margin into the space where the contact is to be made. I have discovered that a good quality of paper which has been

treated with acids until a portion of its fiber has been destroyed, or, in other words, converted into "parchment paper," so called, will produce a good stencil, the hardening of the paper about the fibers that have not been destroyed permitting the punch to cut a clean hole through the strip. The action of the acid on the fiber is to dissolve it and this dissolved fiber solidifies in a mass about the remaining fibers, which enables the punch to shear off the latter. I may state that the dissolved fiber is at first a gummy mass which finally hardens into a hard, non-fibrous, structureless substance. After the paper has been treated for the purpose of destroying the fiber, and then dried, it will be, by preference, rubbed with some vegetable oil, as olive-oil, to impart flexibility to the material and remove the harshness caused by the acid treatment. This treatment with oil also lubricates the punches, thus lessening the wear on them and enables them to be operated the more easily. The prepared paper is then cut into strips or ribbons of the proper width and is ready for use.

In the accompanying drawings, Figure 1 shows a stencil strip or ribbon constructed according to my invention and of about the width commonly used with the Wheatstone instrument. In this view only a part of the strip is represented as made into a stencil. Fig. 2 represents a fragment of the stencil-strip on a larger scale; and Fig. 3 is a view on the same scale as Fig. 2, illustrating the use of the stencil. Fig. 4 is a view similar to Fig. 2, illustrating the defects of a stencil made from ordinary paper.

In the strip *a* are formed a row of perforations *b*, for feeding a row or rows of perforations *c*, which form the letters of the message to be sent. These perforations *c* are grouped in a well-known way. In Fig. 3 the metallic contacts *d* and *e* are shown. Electrical contact is made through the perforations *c*.

Fig. 4 illustrates the defect in the stencil that my invention seeks to obviate. When a hole or perforation *c* is punched in a strip of ordinary fibrous paper, some of the fibers *f* in Fig. 4 are left, which project into the

opening or perforation from its margins and will be of course interposed as insulations between the metallic contacts.

Having thus described my invention, I
5 claim—

1. A strip or ribbon for an electrical-current-interrupter stencil, made of paper having a portion of its fiber rendered structureless and forming a hard mass about the remaining fibers, substantially as and for the
10 purposes set forth.

2. A strip or ribbon for an electrical-current-interrupter stencil, made of paper having a portion of its fiber rendered structureless and forming a hard mass about the re-
15

maining fibers, said strip being oiled, substantially as and for the purposes set forth.

3. An electrical-current-interrupter stencil consisting of a ribbon or strip of paper which has a portion of its fiber rendered structureless and forming a hard mass about the remaining fibers, substantially as set forth. 20

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY W. MATHER.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.