

(No Model.)

2 Sheets—Sheet 1.

H. F. HAMBRUCH.

MECHANICAL MUSICAL INSTRUMENT.

No. 371,449.

Patented Oct. 11, 1887.

Fig. 1.

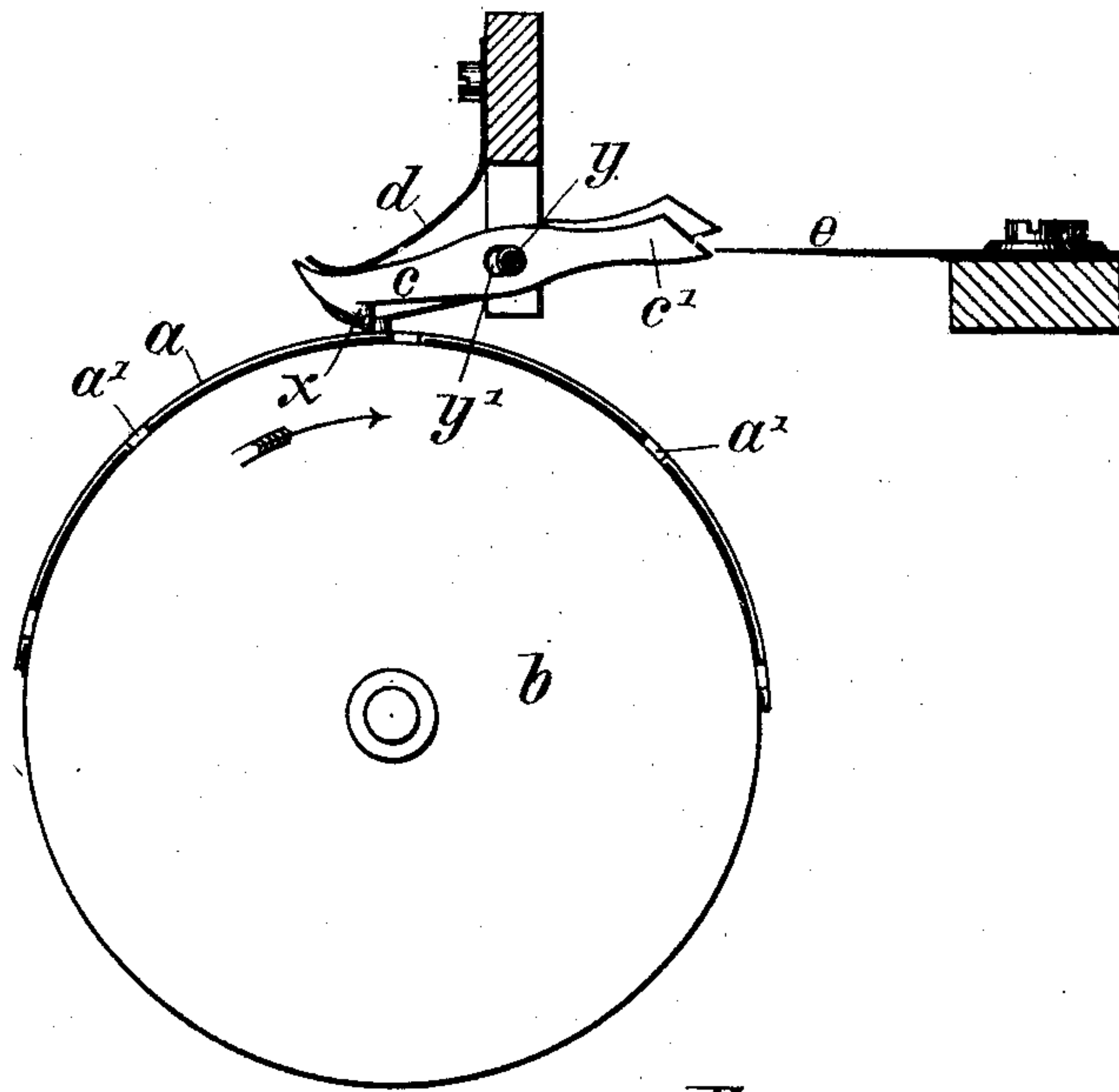
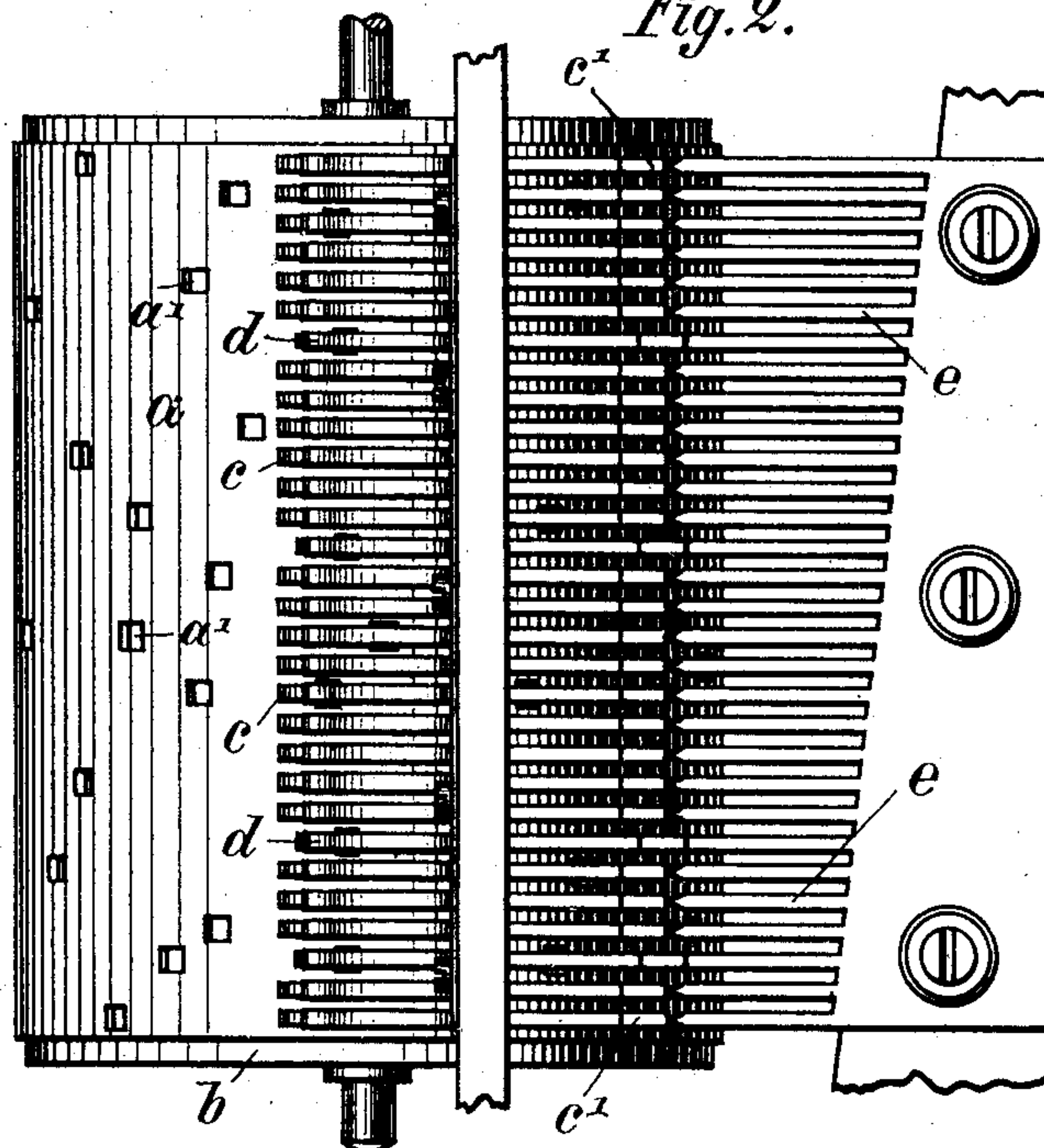


Fig. 2.



Witnesses,
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Attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

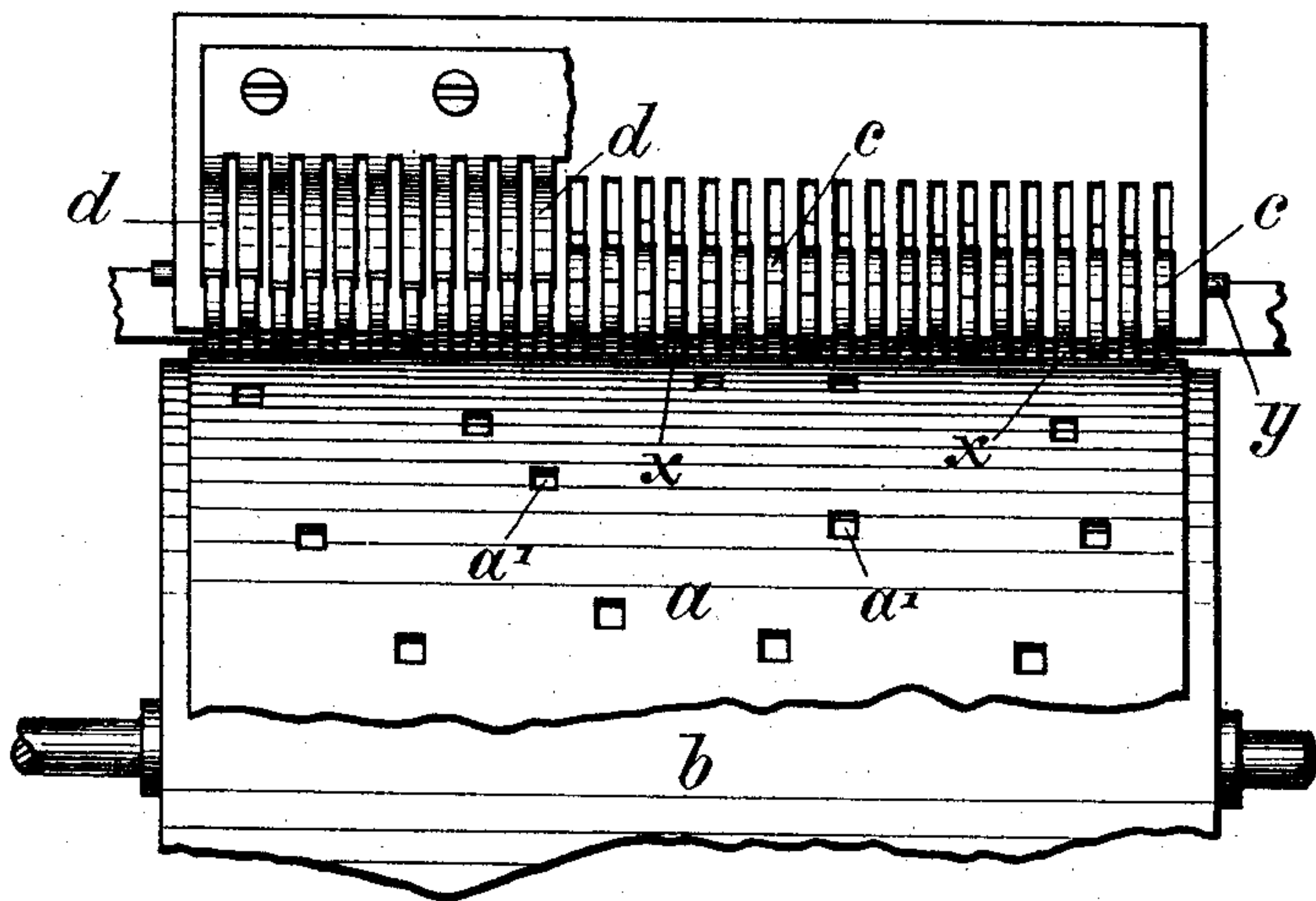


Fig. 4.

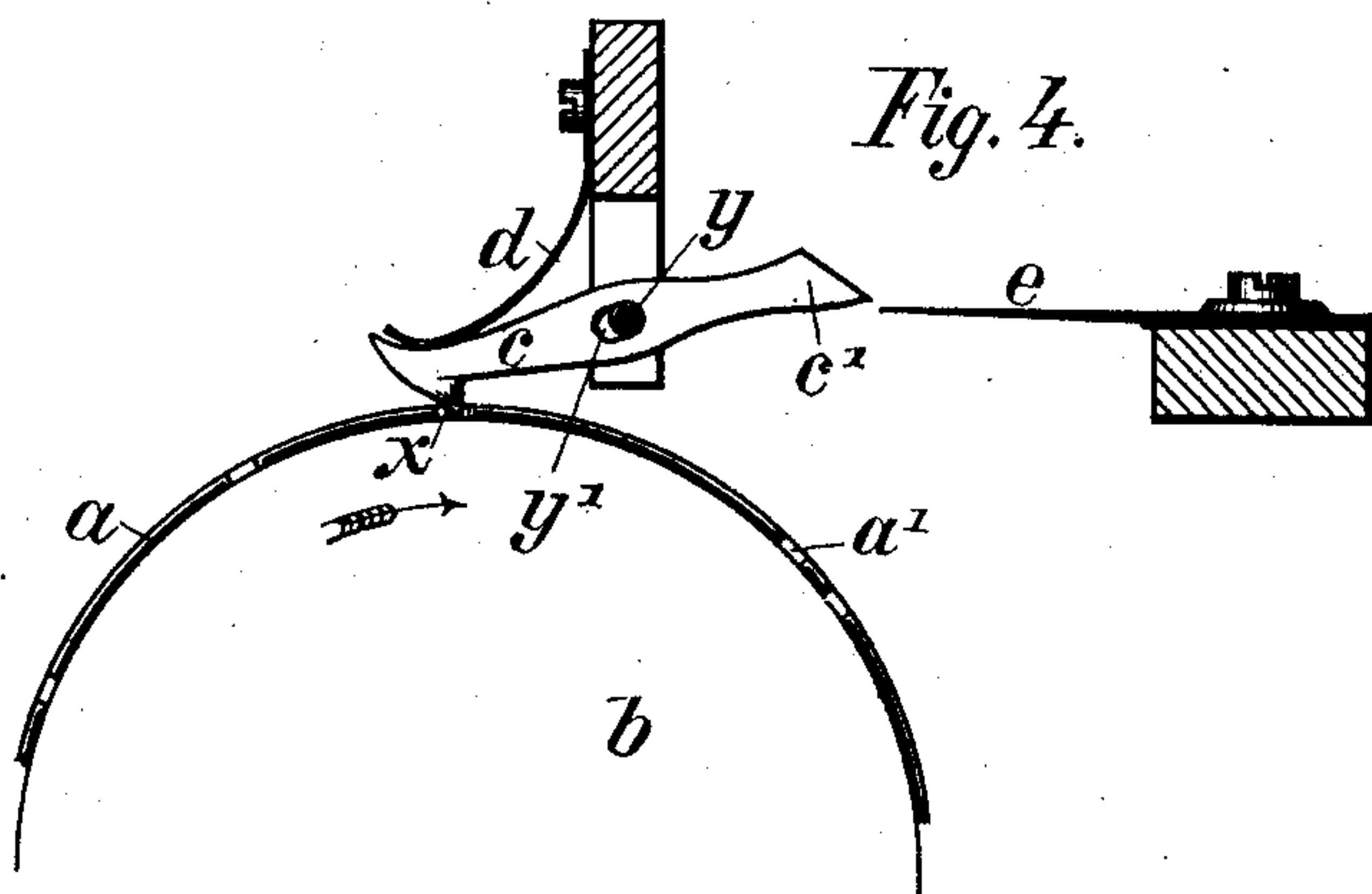
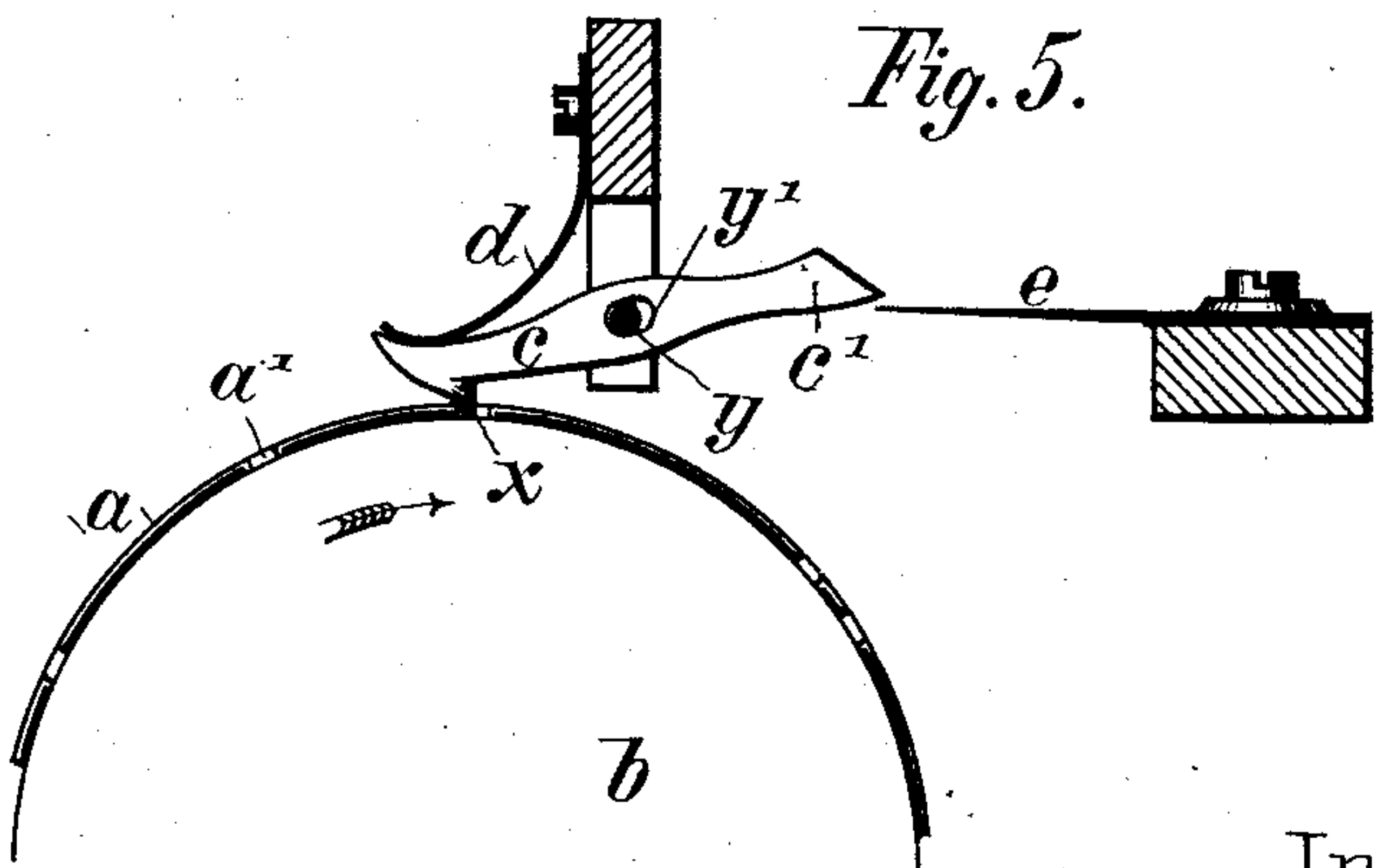


Fig. 5.



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UNITED STATES PATENT OFFICE.

HEINRICH FRIEDRICH HAMBRUCH, OF HAMBURG, GERMANY.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 371,449, dated October 11, 1887.

Application filed July 22, 1887. Serial No. 214,986. (No model.) Patented in France October 23, 1885, No. 171,830; in England January 11, 1886, No. 428, and in Germany June 16, 1886, No. 32,816.

To all whom it may concern:

Be it known that I, HEINRICH FRIEDRICH HAMBRUCH, a subject of the German Emperor, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Mechanical Musical Instruments, (for which I have secured Letters Patent in Germany, No. 38,816, dated June 16, 1886; in France by addition, filed June 25, 1886, to Letters Patent No. 171,830, dated October 23, 1885, and in Great Britain, No. 428, of January 11, 1886.) of which the following is a specification.

My invention relates to that class of musical instruments in which tunes are played mechanically by means of metal tongs; and the object of my improvements is to produce such tunes by means of changeable sheets of cardboard, metal, or other suitable material, provided with perforations arranged according to the tune to be played. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical cross section of the apparatus. Fig. 2 is a plan thereof. Fig. 3 is a front view. Figs. 4 and 5 show the working parts in two successive positions.

Similar letters refer to similar parts throughout the several views.

According to the number of tongs of the steel comb employed in a music-box there is arranged above a transporting roller, *b*, a series of levers, *c c'*, which are allowed to oscillate around a pivot-pin, *y*. The oscillation of such levers is caused by means of perforations *a'*, which are made in a sheet of metal, cardboard, or other suitable material, and wherein the noses *x* of the levers *c c'* drop by the influence of springs *d*, arranged above the arms *c* of the said levers. Each lever *c c'* has a slit, *y'*, through which passes the pivot-pin *y*, Fig. 1.

When the nose *x*, by the action of the spring

d, drops into a perforation of the sheet *a*, the side of slit *y'* nearest to the lever arm *c'* will still touch the pin *y*, and the arm *c'* will pass from below the tong *e* without coming in contact therewith, Fig. 4. As soon as the body of sheet *a* is going to raise the nose *x*, the arm *c'* will touch the tong *e* and press it down until the lever *c c'* has been moved by action of the spring *d* so much that the end of the slit *y'* nearest to the arm *c* will bear against the pivot-pin *y*. The arm *c'* then slips off from the tong *e*, causing a vibration, and therefore a sounding of the latter. Thus each lever *c c'* makes a double motion by the influence of the perforated sheet, an oscillating one and a sliding one. The oscillating motion serves to cause the touching of the steel tong *e* when the arm *c'* descends, and the sliding motion prevents such touching when the arm *c'* swings upward.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In mechanical musical instruments, the combination of a changeable sheet of metal, cardboard, or other suitable material, provided with perforations arranged in conformity with the melody to be played, and a roller or other suitable means to cause a regular progress of the sheet with the lever *c c'*, provided with a slit, *y'*, and oscillating as well as sliding upon the pivot-pin *y*, substantially as described, and illustrated in the accompanying drawings.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of April, 1887.

HEINRICH FRIEDRICH HAMBRUCH.

Witnesses:

DIEDRICH PETERSEN,
ALEXANDER SPECHT.