

No. 684,377.

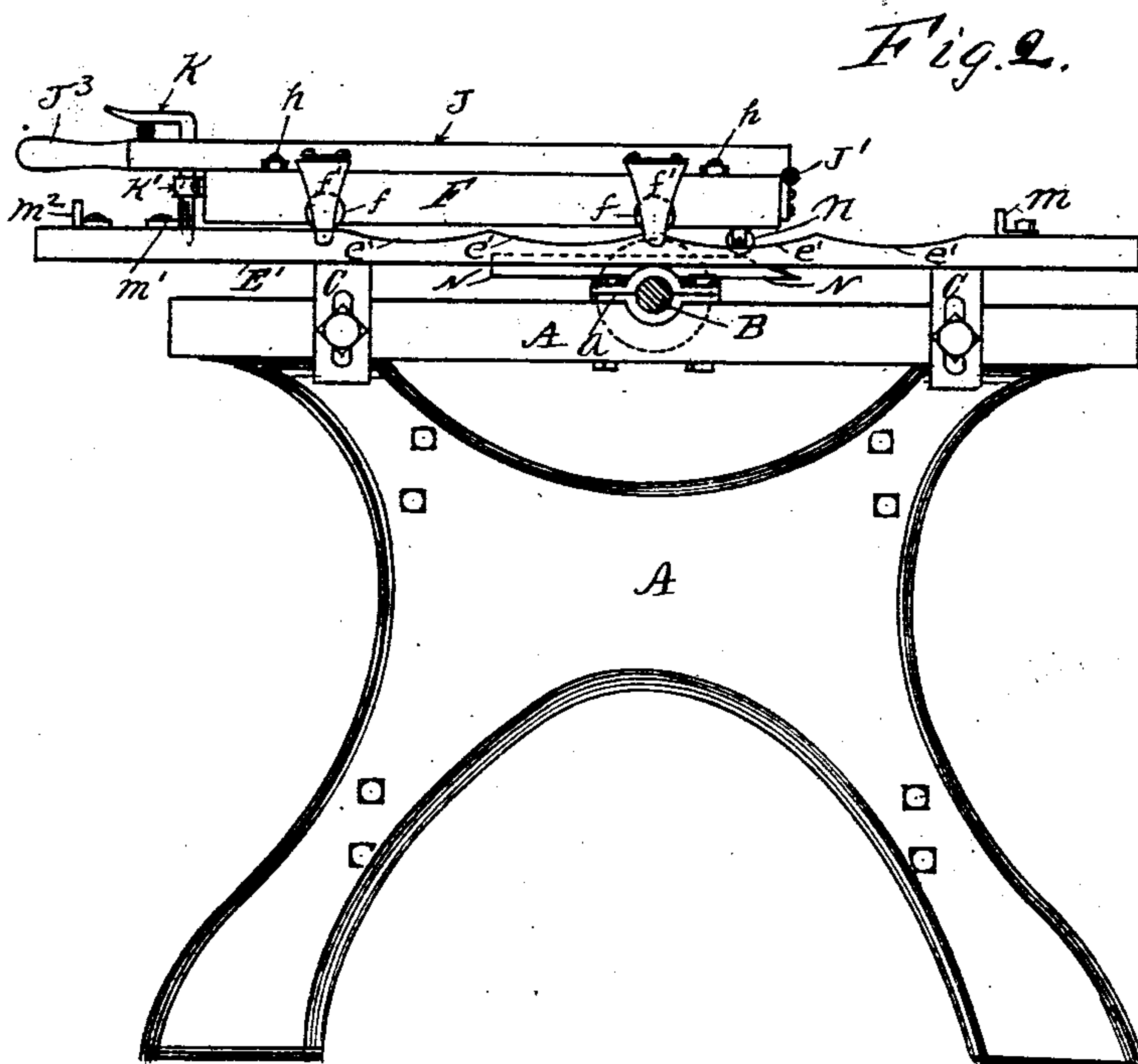
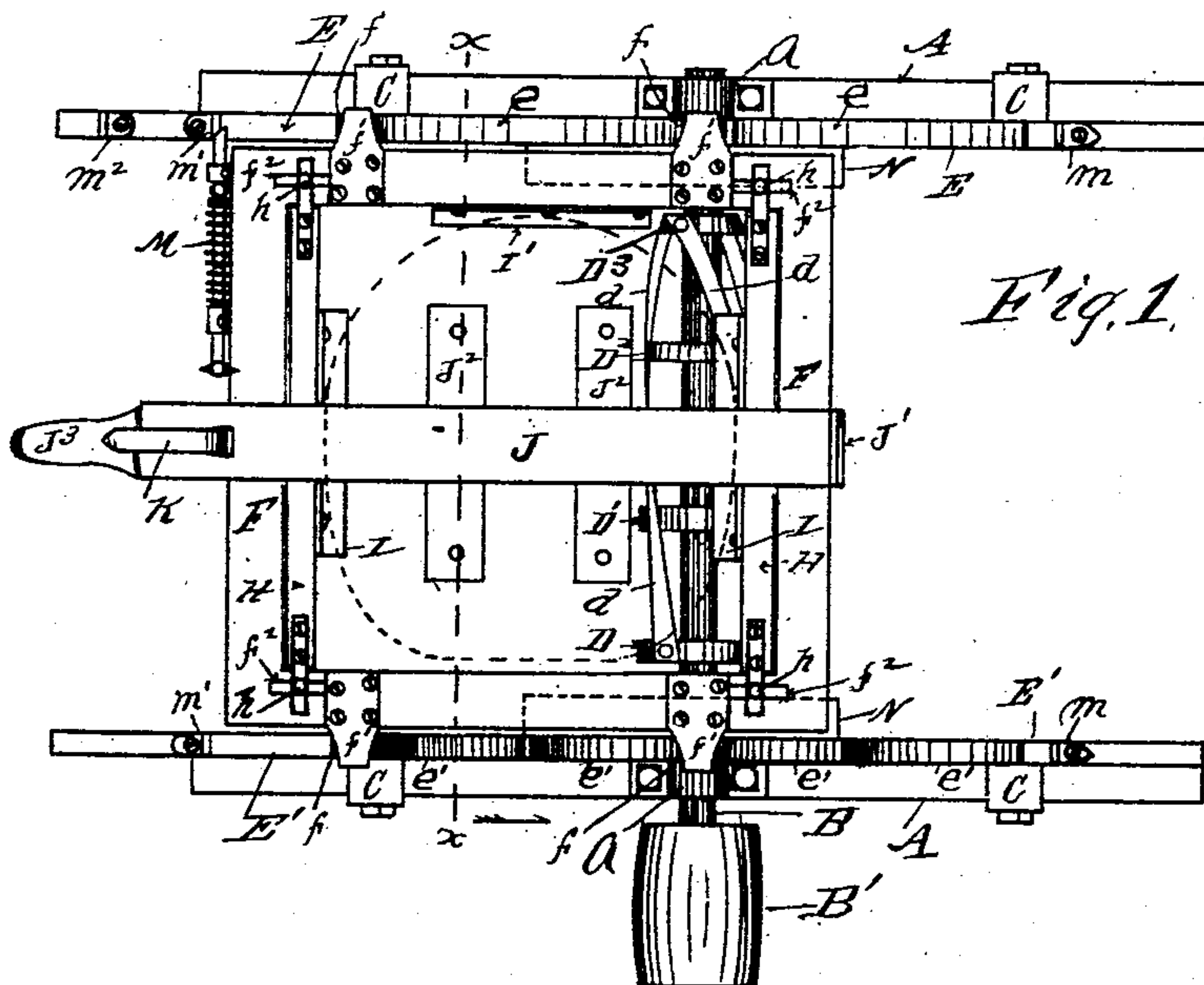
Patented Oct. 8, 1901.

C. T. METZGER.  
CHAIR SEAT SURFACING MACHINE.

(Application filed Apr. 6, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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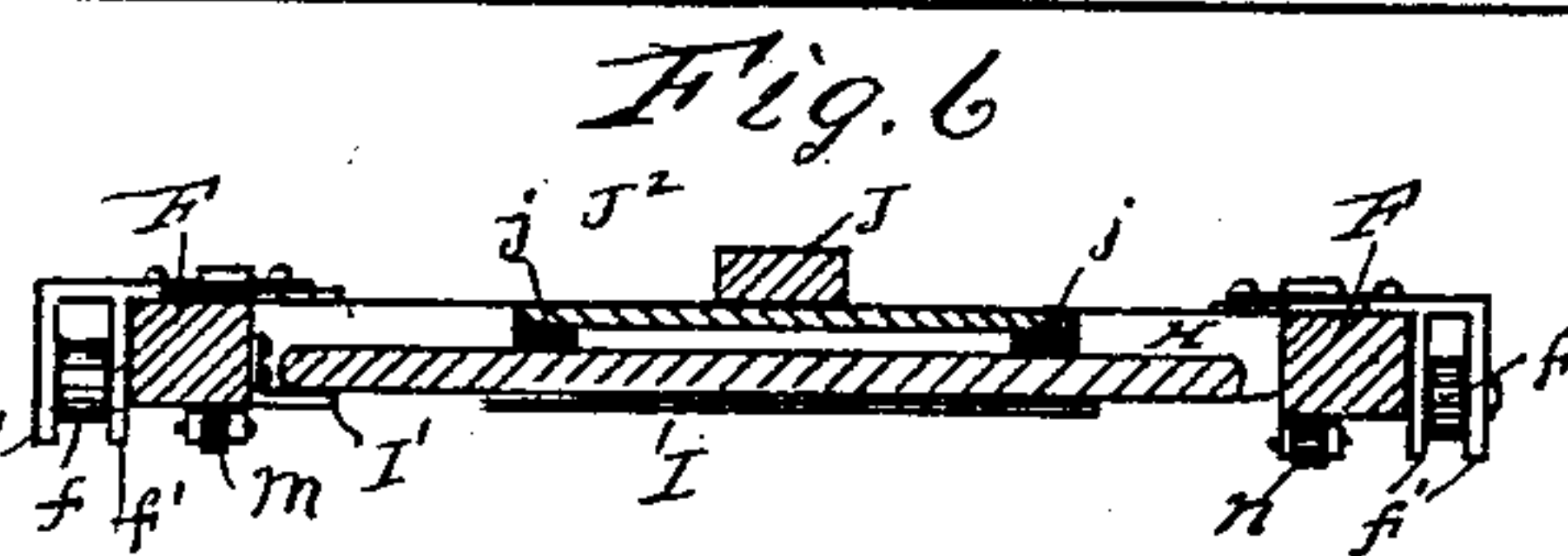
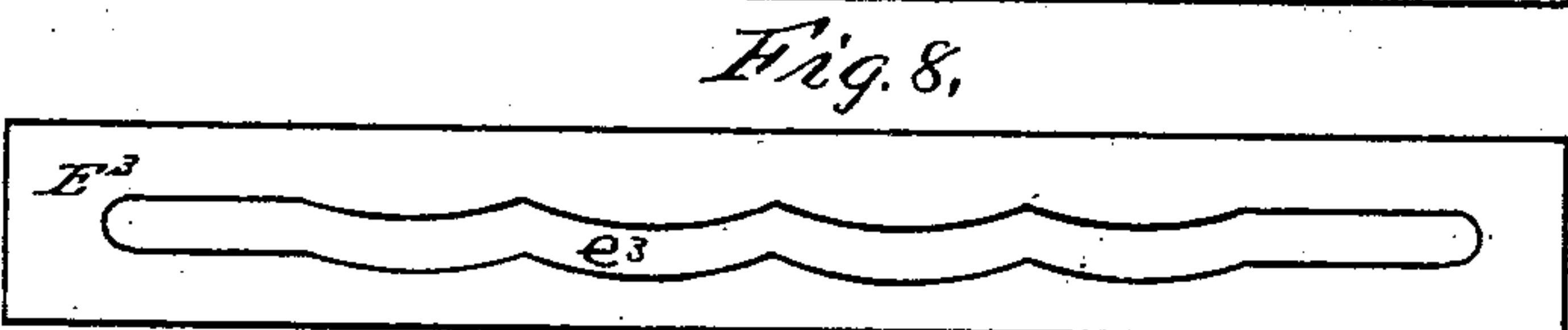
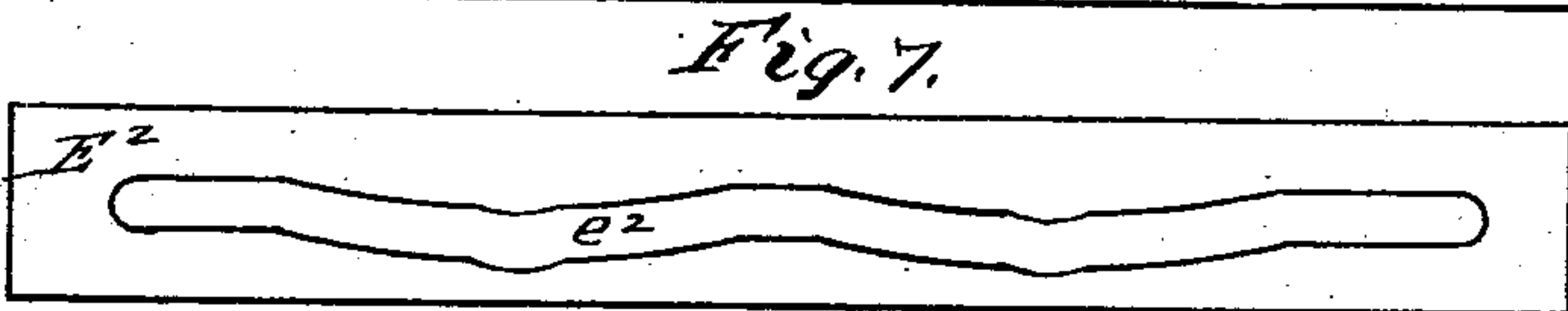
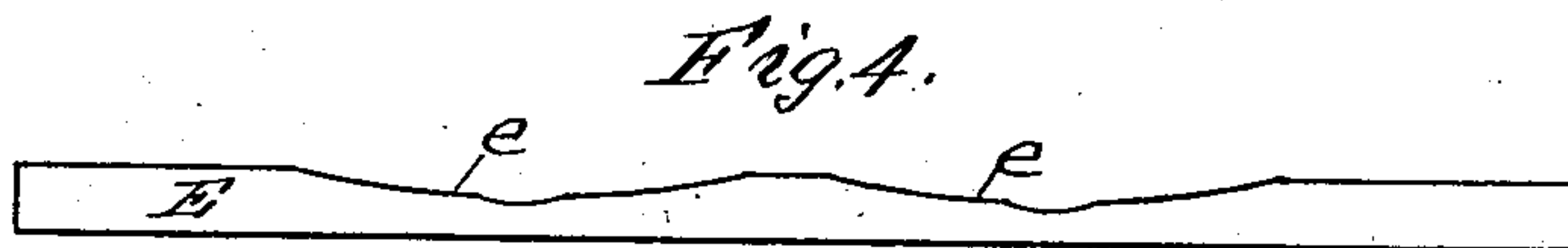
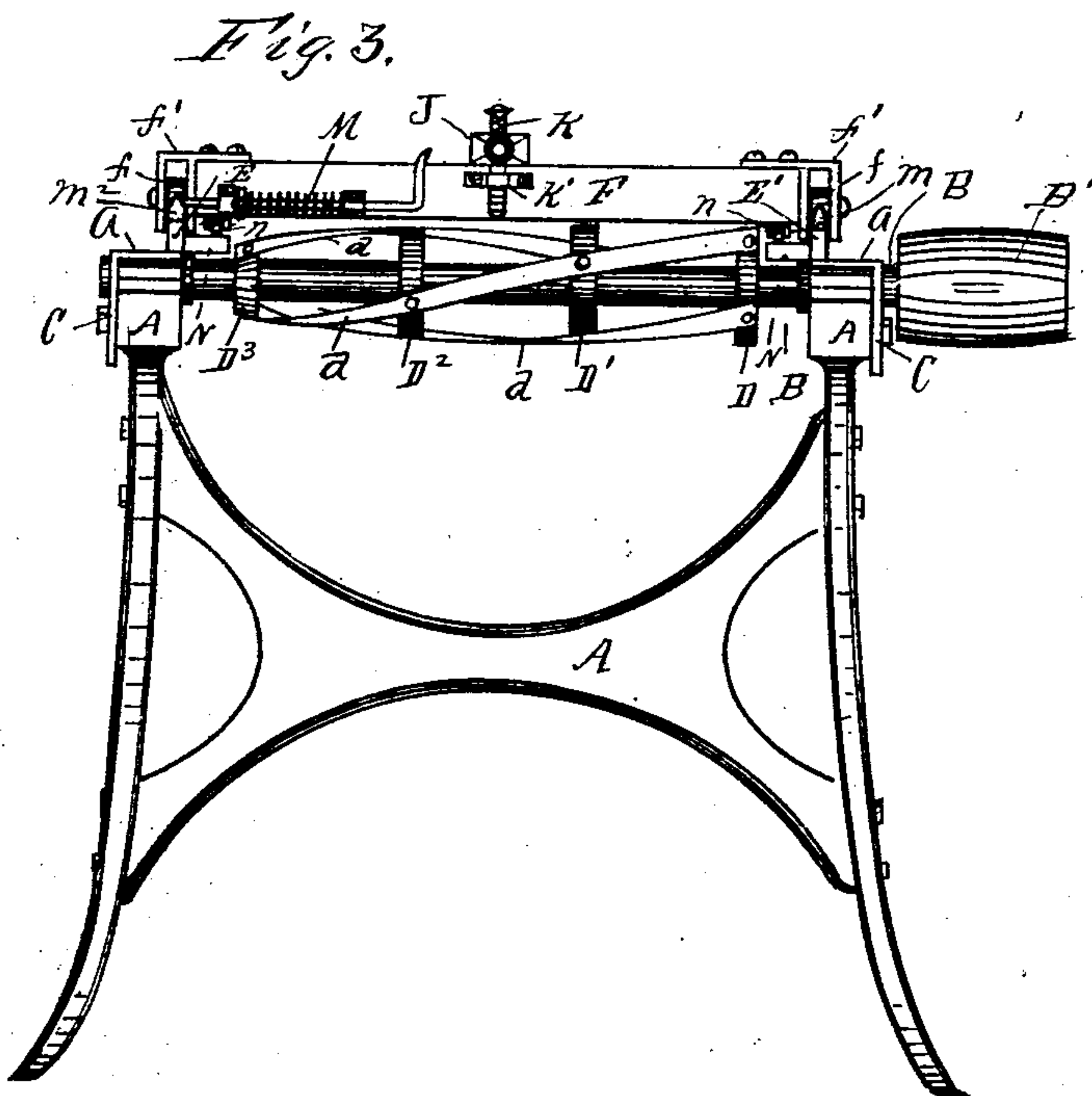
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(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

CHARLES T. METZGER, OF UNION CITY, PENNSYLVANIA, ASSIGNOR TO  
KEYSTONE CHAIR WORKS, LIMITED, OF SAME PLACE.

## CHAIR-SEAT-SURFACING MACHINE.

SPECIFICATION forming part of Letters Patent No. 684,377, dated October 8, 1901.

Application filed April 6, 1901. Serial No. 54,628. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES T. METZGER, a citizen of the United States, residing at Union City, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Chair-Seat-Surfacing Machines; and I do hereby 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in chair-seat-surfacing machines, and has for its object the construction of mechanism whereby the surface of a chair-seat can be hollowed out in any desired shape and surfaced at one operation. To accomplish this result, I construct a machine having a rotary cutter-cylinder having a portion thereof of less diameter than the remainder thereof, which cutter-cylinder is mounted upon a suitable frame, upon which frame there are ways or tracks which are provided with irregular surfaces, upon which a suitable carriage for holding a chair-seat travels. These ways or tracks are removable, so that tracks or ways having suitable surfaces for producing any desired shape of chair-seat surface may be used thereon.

The construction and operation of this invention are hereinafter fully set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of a chair-seat-surfacing machine embodying my invention. Fig. 2 is a side view in elevation of the same with the driving-pulley removed. Fig. 3 is a front end view of the same in elevation. Fig. 4 is a side view in elevation of a way or track adapted to be used on the left-hand side of the machine. Fig. 5 is a like view of a way or track adapted to be used on the right-hand side of the machine. Fig. 6 is a transverse section of the carriage traveling on said ways or tracks on the line  $xx$  in Fig. 1. Fig. 7 shows a modified construction of a way or track adapted to be used in lieu of the way or track shown in Fig. 4. Fig. 8 shows a modi-

fied construction of a way or track adapted to be used in lieu of the way or track shown in Fig. 5.

In the drawings illustrating my invention, A is the frame of the machine, and B the shaft of a cutter-cylinder secured thereon, which shaft is mounted in journal-boxes  $aa$  on the frame A and is provided with a suitable driving-pulley B'. Upon this shaft are secured four disks, two of which, D D', are of equal diameter, one, D<sup>2</sup>, of somewhat less diameter, and the other, D<sup>3</sup>, of less diameter than D<sup>2</sup>. Upon these disks I secure spiral cutter-blades  $d$ , so that they have preferably a quarter-turn thereon, and the disks D<sup>2</sup> and D<sup>3</sup> being smaller than the disks D' and D the cutter-blades gradually curve inward from the disk D', so that three-fourths of the length of the cutter-blades  $d$  form a curve gradually approaching the line of the shaft B and terminating at the disk D<sup>3</sup>. I can, however, use other forms of cutter-cylinders having different forms of curve in this machine, if desired.

Upon the left-hand side of the top of the frame A, I secure a way or track E, Fig. 4, by means of brackets C C, which can be adjusted up and down as desired, and on the right-hand side of the top of the frame A, I secure a way or track E', Fig. 5, by means of brackets C C, which can likewise be adjusted up and down as desired. The way or track E is provided with depressions  $ee$  on its upper surface, as illustrated in Figs. 1 and 4, and the way or track E' is provided with depressions  $e'e'e'e'$  on its upper surface, as illustrated in Figs. 1 and 2. The forms of the depressions in these tracks or ways may be varied and made in any shape required to produce such shape of depression in a chair-seat as may be desired, as the ways or tracks E E' may be at any time removed and other forms of ways or tracks having different-shaped depressions therein substituted therefor.

Upon the ways E E', I place a carriage F, provided with rollers  $f$ , secured between downwardly-projecting brackets  $f'$ , which extend down upon the sides of the ways E E', so as to prevent any lateral movement of the carriage F thereon, as the rollers  $f$  follow the



depressions  $e$  and  $e'$  in the top of the tracks  $E E'$  as the carriage  $F$  is moved forward and back thereon.

The carriage  $F$  is preferably made rectangular in shape and is provided with suitable cross-bars  $H H$  in the front and rear ends thereof, which may be adjusted inward or outward by means of bolts  $h$ , extending through slots  $f^2$  in the sides of the carriage, to suit different-sized chair-seats to be surfaced therein. On the lower edges of the insides of the cross-bars  $H H$ , I secure inwardly-projecting strips of sheet metal  $I I$ , upon which the edges of the sides of a chair-seat rests, and upon the inside of the left-hand side of the carriage  $F$ , I secure a like metal strip  $I'$ , upon which the edge of the rear end of the chair-seat rests, so that the chair-seat rests in the carriage  $F$  upon the metal strips  $I, I$ , and  $I'$ , as illustrated by the dotted lines in Fig. 1.

For holding the seat in place thereon I hinge a lever  $J$  to the center of the rear of the carriage  $F$  at  $J'$ , which arm is provided with cross-bars  $J^2 J^2$ , on the under surface of the ends of which there are secured disks  $j j$ , of rubber or other resilient substance, as illustrated in Fig. 6. The lever  $J$  terminates in a handle  $J^3$ , which projects outward in front of the carriage  $F$  and is provided with a spring-actuated catch  $K$ , which engages a stop  $K'$  on the carriage  $F$ , so as to secure the lever  $J$  down upon a chair-seat placed in the carriage  $F$ .

On the ways or tracks  $E E'$ , I secure stops  $m m$  at the rear ends thereof and  $m' m'$  at the front ends thereof to limit the travel of the carriage  $F$  forward and back thereon. On the front end of one of the ways or tracks  $E$ , I secure another stop  $m^2$ , adapted to be engaged with a spring-actuated bolt  $M$  on the front of the carriage  $F$ , so as to prevent the carriage  $F$  moving forward until released.

Under the corners of the rear end of the carriage  $F$ , I place rollers  $n$ , adapted to engage supplementary tracks  $N N$  and carry the rear end of the carriage  $F$  over one of the depressions in the ways or tracks  $E E'$  during the latter portion of its backward movement, so that the rear end of the carriage will pass over the cutter-cylinder, which operates as a safety device during the placing of chair-seats in and removing them from the carriage.

In Figs. 7 and 8 I have shown modified forms of the ways or tracks used upon this machine, consisting of making the ways  $E^2$  and  $E^3$  with slots  $e^2$  and  $e^3$ , in which the carriage-supporting rollers  $f$  travel, which construction operates to prevent the carriage  $F$  from being raised off the ways or tracks. I can, however, use either construction of

ways or tracks I desire, as both types thereof accomplish good results. I prefer, however, the type of way or track  $E E'$ , as I can then utilize the safety mechanism hereinbefore described.

I have thus shown and described a construction of mechanism suitable for utilizing my invention. I do not, however, desire to confine myself to the exact construction thereof shown and described, as I am aware that many modifications can be made by those skilled in the art to which my invention appertains without departing from the spirit of my invention. Therefore

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a chair-seat-surfacing machine, of a frame, a rotary spirally-bladed cutter-cylinder mounted in said frame and having one end thereof of less diameter than the other, longitudinal ways or tracks secured to said frame having unlike faces thereon, a carriage having rollers thereon adapted to travel back and forth on the surfaces of said ways, supports in said carriage adapted to support a chair-seat, means for securing a chair-seat upon the supports in said carriage, a supplementary safety-track secured to said frame and rollers on the rear end of said carriage adapted to engage said supplementary track when the carriage is drawn back, substantially as and for the purpose set forth.

2. The combination in a chair-seat-surfacing machine, of a frame, a rotary spirally-bladed cutter-cylinder mounted in said frame and having one end thereof of less diameter than the other, longitudinal ways or tracks adjustably secured to said frame having unlike bearing-surfaces thereon, a carriage having rollers thereon adapted to travel back and forth on said ways, stops on said ways to limit the travel of the carriage, supports in said carriage adapted to support a chair-seat, an arm secured to said carriage adapted to secure a chair-seat down upon the supports therein, a spring-actuated catch on said arm, and a spring-actuated bolt on said carriage adapted to engage a stop on one of the ways or tracks, a supplementary safety-track secured to said frame, and rollers on the rear end of said carriage adapted to engage said supplementary track when the carriage is drawn back, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. T. METZGER.

Witnesses:

HARRY BROCKINGTON,  
C. B. MULKIE.