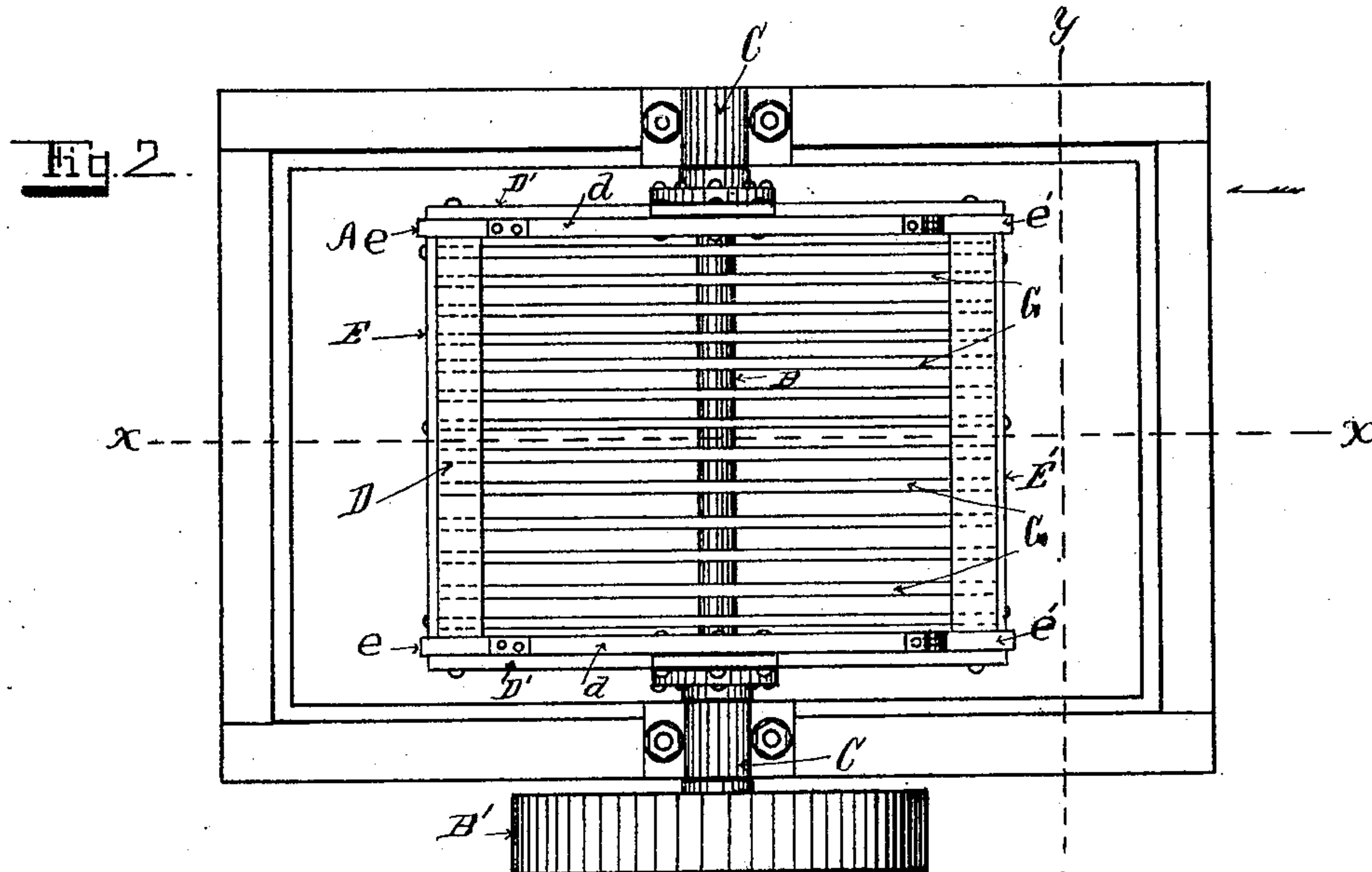
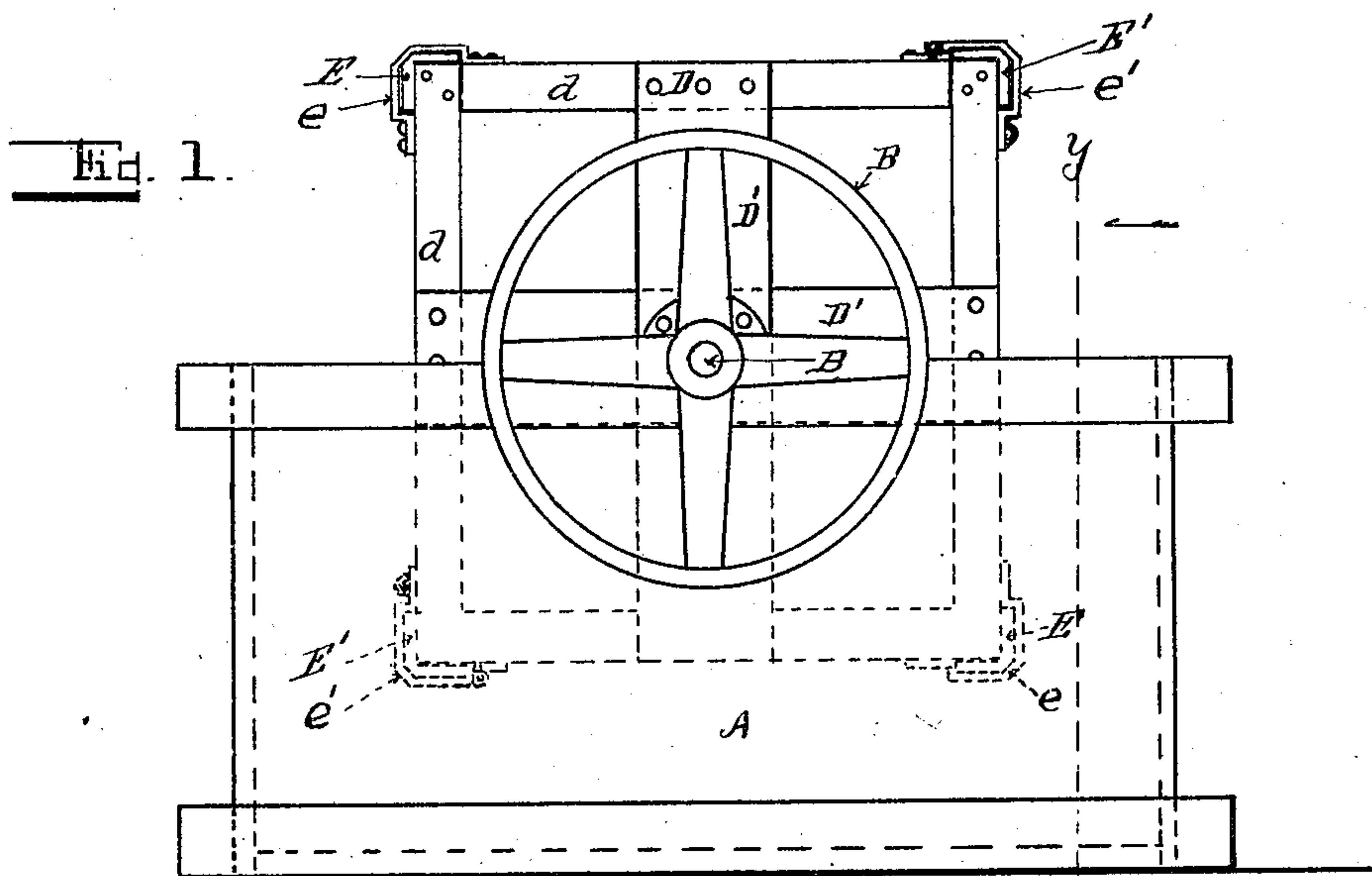


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 APPLICATION FILED MAY 11, 1908.

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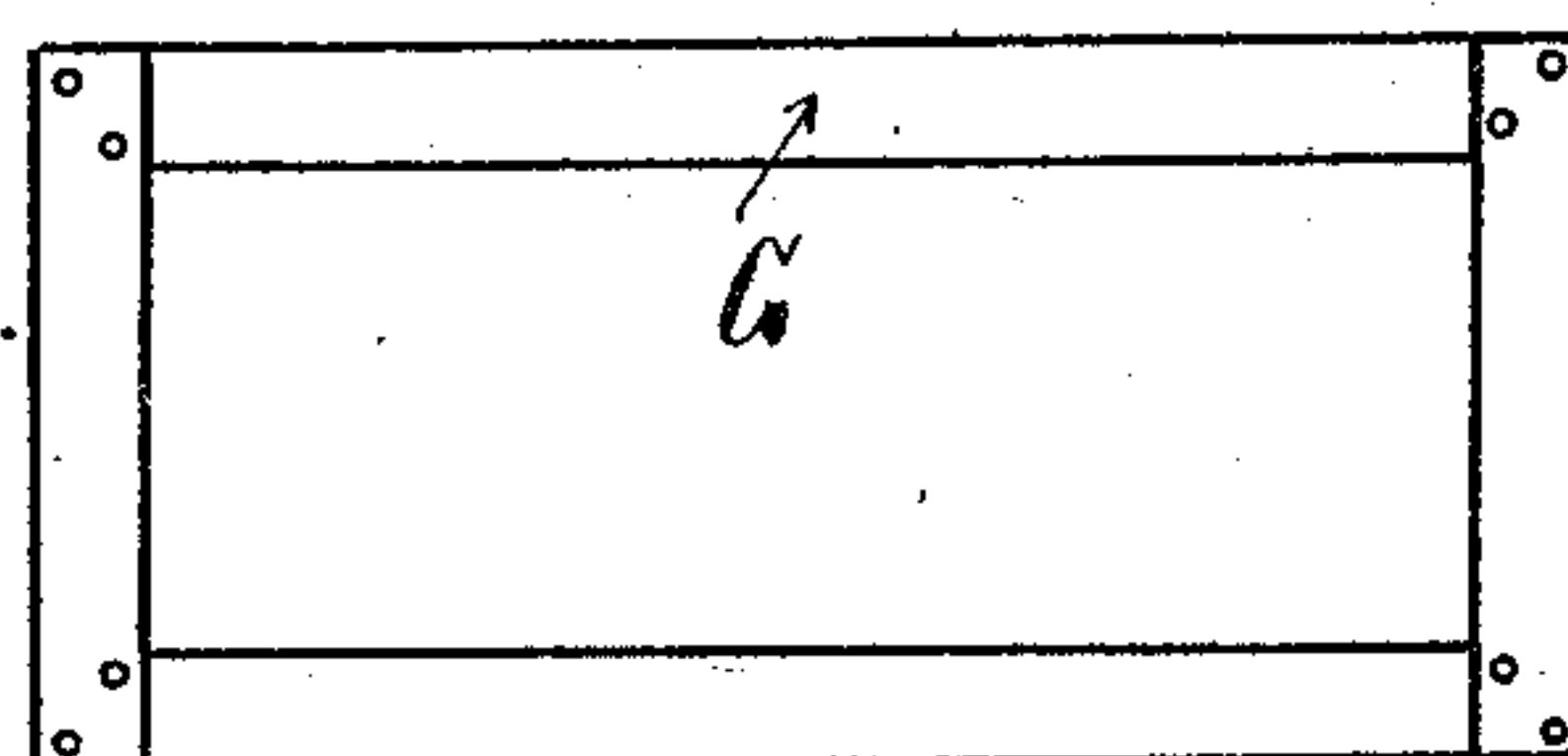
2 SHEETS—SHEET 1.



Witnesses.

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 Florence Stockert

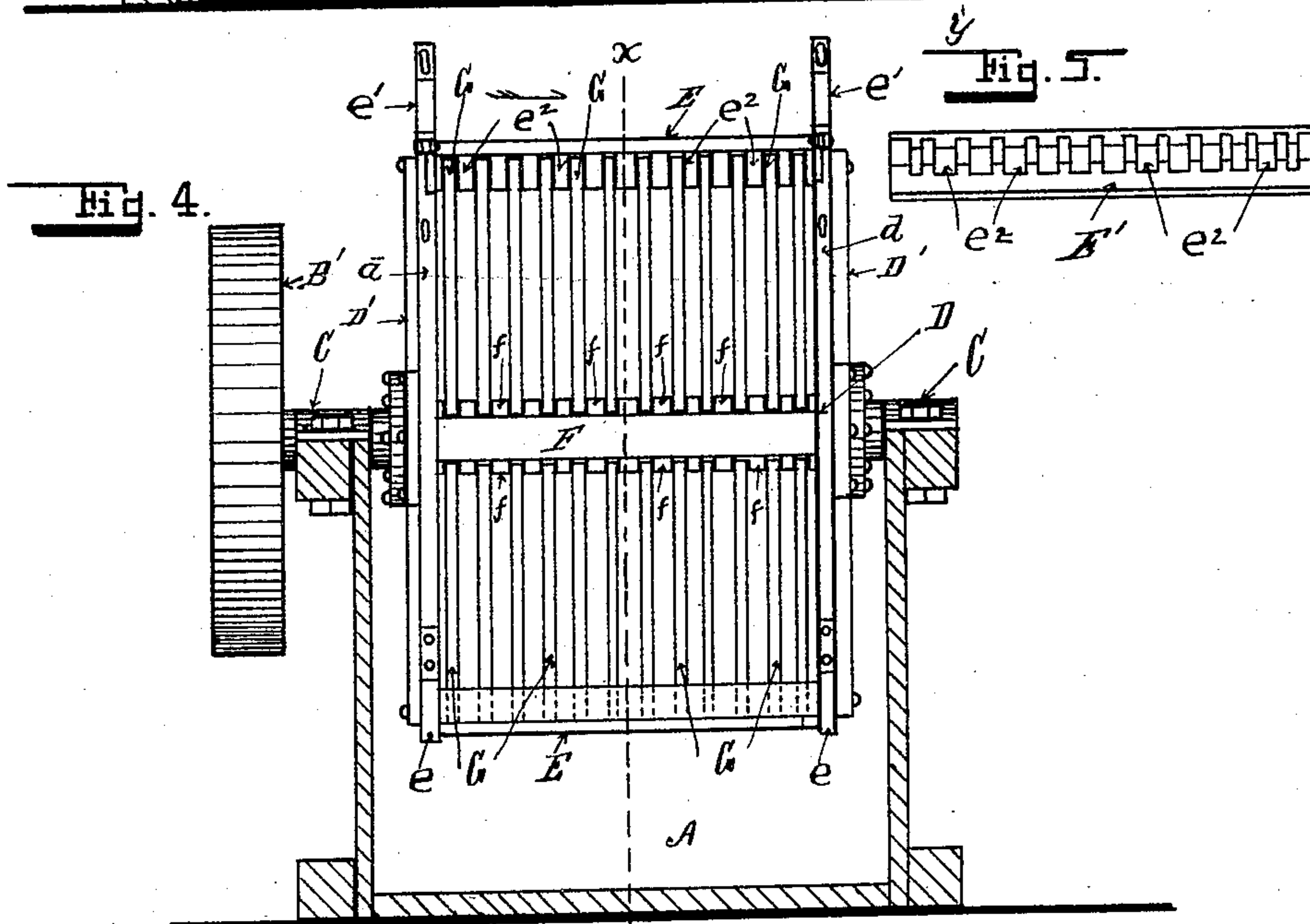
**Fig. 6.**



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917,370.

-2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

EDWARD F. SMITH, OF CORRY, PENNSYLVANIA.

## APPARATUS FOR TANNING HIDES.

No. 917,370.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed May 11, 1908. Serial No. 432,269.

*To all whom it may concern:*

Be it known that I, EDWARD F. SMITH, a citizen of the United States, residing at Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Tanning Hides; 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 tanning hides, and apparatus therefor.

In the tanning of hides particularly sole-leather, the thinner parts of the hides tan much quicker than the thicker parts thereof, and as the tanning thereof is now practiced, the thinner parts of the hide after the tannin has penetrated them, become more or less crinkled before the tannin has completely penetrated the thicker parts thereof, so as to complete the tanning of the hide, and therefore the crinkled portion of the side of leather so tanned is to a greater or less extent unfit for use as sole-leather.

The object of my invention is to overcome this difficulty and at the same time complete the tanning of the hide in much less time than that required to tan hides as it is done at the present time. To accomplish these results, I secure the hides to be tanned upon frames in a stretched condition, and immerse them into the tanning liquor and remove them therefrom at brief intervals, until the tanning process is completed. To do this I have devised a suitable apparatus, the features and operation whereof are hereinafter fully set forth and described, and illustrated in the accompanying drawings in which:

Figure 1 is a side view in elevation of my improved tanning apparatus. Fig. 2 is a top or plan view thereof. Fig. 3 is a vertical central section of the same on the line  $x-x$  in Figs. 2 and 4. Fig. 4 is a vertical section of the same on the line  $y-y$  in Figs. 1, 2 and 3. Fig. 5 is a view in elevation of one of the removable corner bars of the rotating portion of my apparatus. Fig. 6, is a side view in elevation of one of the removable frames of my apparatus, upon which the hide is secured in a stretched condition while being tanned.

In these drawings A is a tanning vat for

containing tanning liquor, and B is a shaft mounted upon the central portion of the top of the vat A in suitable bearings CC, and provided with a suitable driving wheel B'. Upon this shaft B, I build a rectangular frame D adapted to be rotated in the vat A. The ends of the frame D, I preferably construct of spokes D' D', and end frames  $d d$ . These end frames  $d d$  are connected together, at opposite corners diagonally, by fixed transverse angle bars E E, and at the opposite corners diagonally, by removable transverse angle bars E' E'. The angle bars E are secured to the corners of the frames  $d d$  by means of metal straps  $e$  bolted to the corners of the frames  $d d$ , and the angle bars E' E' are secured to the corners of the end frames  $d d$  by means of hinged metal straps  $e'$ , so that the angle bar E' E' can be conveniently removed.

Between the centers of the frames  $d d$  on two opposite sides thereof I secure fixed transverse bars F F. On the inner faces of the transverse bars E and E', I secure space-blocks  $e^2$  and on opposite sides of the transverse bar F F, I secure like space blocks  $f$ , between which space-blocks  $e^2$  and  $f$  the frames G, hereinafter described, are slid into the frame D and held spaced apart, substantially as illustrated in Figs. 2 and 4. These frames G are made of four strips of wood secured together so as to form rectangular frames, of such size that they can be slid into place between the space-blocks  $e^2$  and  $f$  with the edges of one end filling the space between the angle bars E and the central bars F and the edges of the opposite ends filling the space between the removable angle bars E' and the central bars F, so that when the removable angle bars E' are secured in place the frames G will be held firmly in place in the frame D equidistant from each other.

In operation a hide to be tanned is tacked or otherwise secured upon the opposite sides of each of the frames G in a stretched condition, and the frames are then slid into place in the frame D and the removable angle bars E' secured in place. The vat A being filled with tanning liquor, suitable power is applied to the wheel B' to slowly rotate the frame D so charged with the hides to be tanned, which operation, alternately carries the hides secured in each side of the frame D, into and out of the liquor in the vat A at each revolution of the frame D, which operation is continued until the hides in said frame D are completely tanned. This operation of the mech-



anism hereinbefore described, operates at all times during the tanning of the hides secured in a stretched condition to the sides of the removable frames, which are so spaced apart  
 5 from each other in the wheel that as the rotation of the wheel alternately immerses the frames and the hides thereon into and removes them from the tanning liquor, the liquor passes freely between the frames and  
 10 the hides stretched thereon so as to contact with every part thereof and thereby facilitate the speedy tanning of the hides so treated.

Having described my invention so as to  
 15 enable others to construct and utilize the same what I claim as new and desire to secure by Letters Patent is:

1. The combination in an apparatus for tanning hides, of a vat adapted to contain  
 20 tanning liquor, a rotatable frame mounted on a shaft so that substantially one half of said frame is immersed in the tanning liquor in said vat, means for rotating said frame so that opposite sides thereof are alternately  
 25 immersed in and removed from the liquor in said vat, and rectangular frames, spaced apart from each other, to the sides of which hides can be secured in a stretched condition, removably secured in said rotatable frame  
 30 transversely to the shaft therein, substantially as set forth.

2. The combination in an apparatus for tanning hides, of a vat adapted to contain tanning liquor, a rotatable rectangular  
 35 frame mounted on a shaft so that substantially one half of said frame is immersed in the tanning liquor in said vat, means for rotating said frame in said vat so that the opposite sides thereof are alternately immersed

in and removed from the liquor in said vat, 40 rectangular frames, spaced apart from each other, to the sides of which hides can be secured in a stretched condition, removably secured in said rotatable frame transversely to the shaft therein, means between said remov- 45 able frames for separating them from each other, and means for removably securing said frames in place in the rectangular frame, substantially as set forth.

3. The combination in an apparatus for 50 tanning hides, of a vat adapted to contain tanning liquor, a rotatable rectangular frame mounted on a shaft so that substantially one half thereof is immersed in the liquor in said vat, means for rotating said 55 frame so as to alternately immerse and remove opposite sides of said frame from the liquor in said vat, rectangular frames, having an area of approximately one half of that of the rotatable frame, removably mounted in 60 said rotatable frame transversely to the shaft and at opposite sides thereof, means for separating and maintaining the removable frames apart and substantially parallel with each other when in place in the rotatable frame, 65 removable longitudinal bars at diagonally opposite corners of said rotatable frame for securing the removable frames in place therein, and means for securing said removable bars in place on the rotatable frame, substantially 70 as set forth.

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

EDWARD F. SMITH.

Witnesses:

FLORENCE STOCKERT,  
 H. J. CURTZE.