

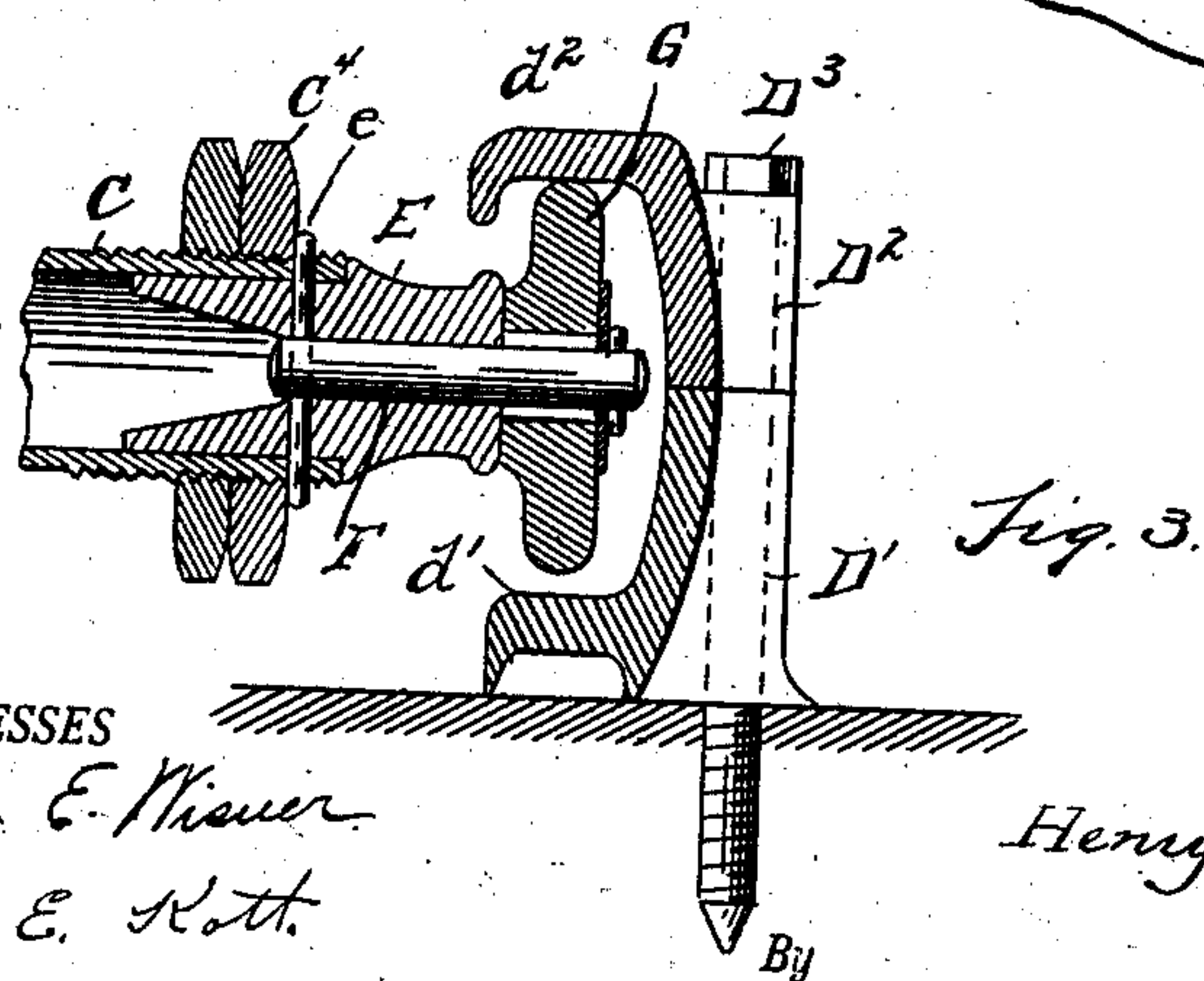
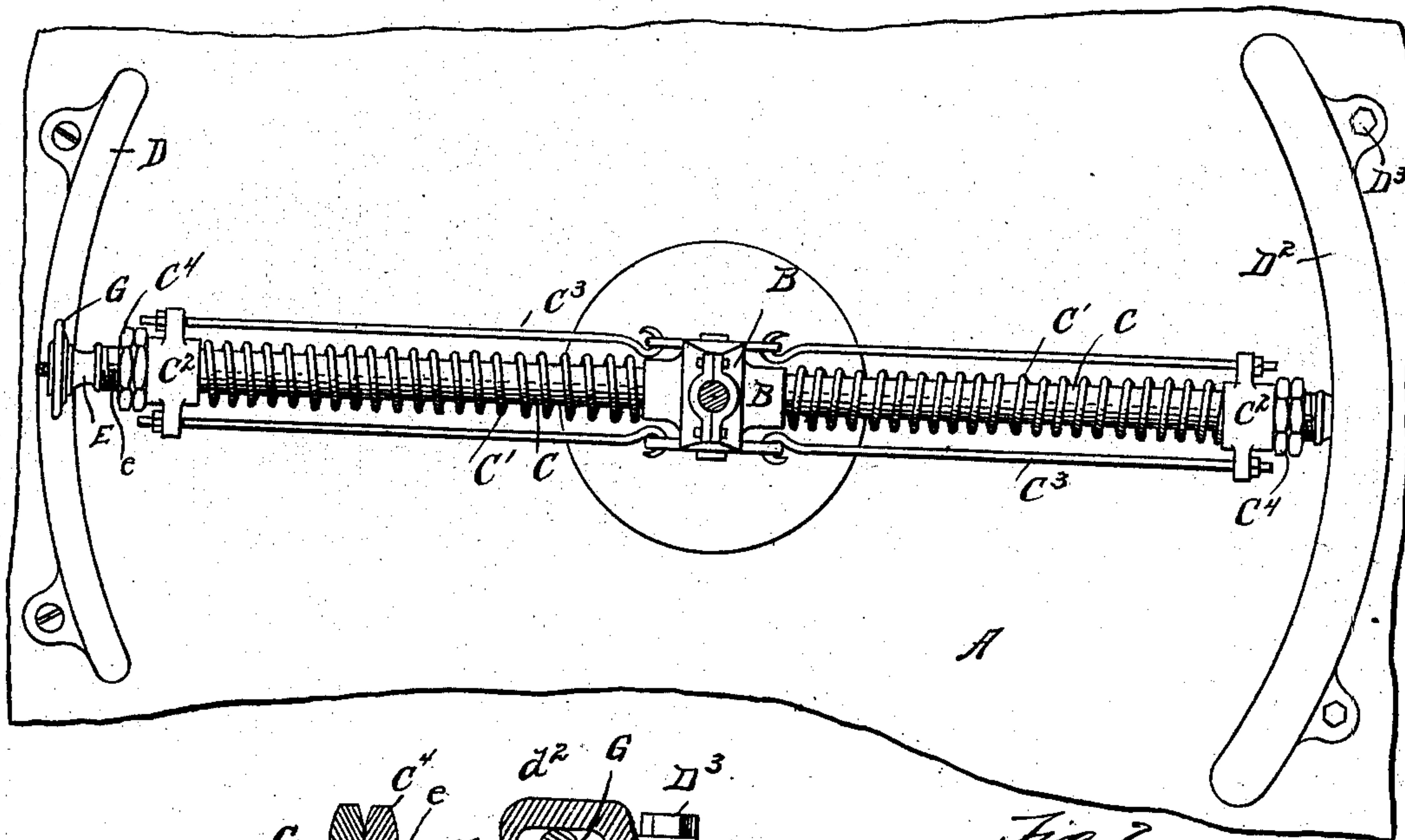
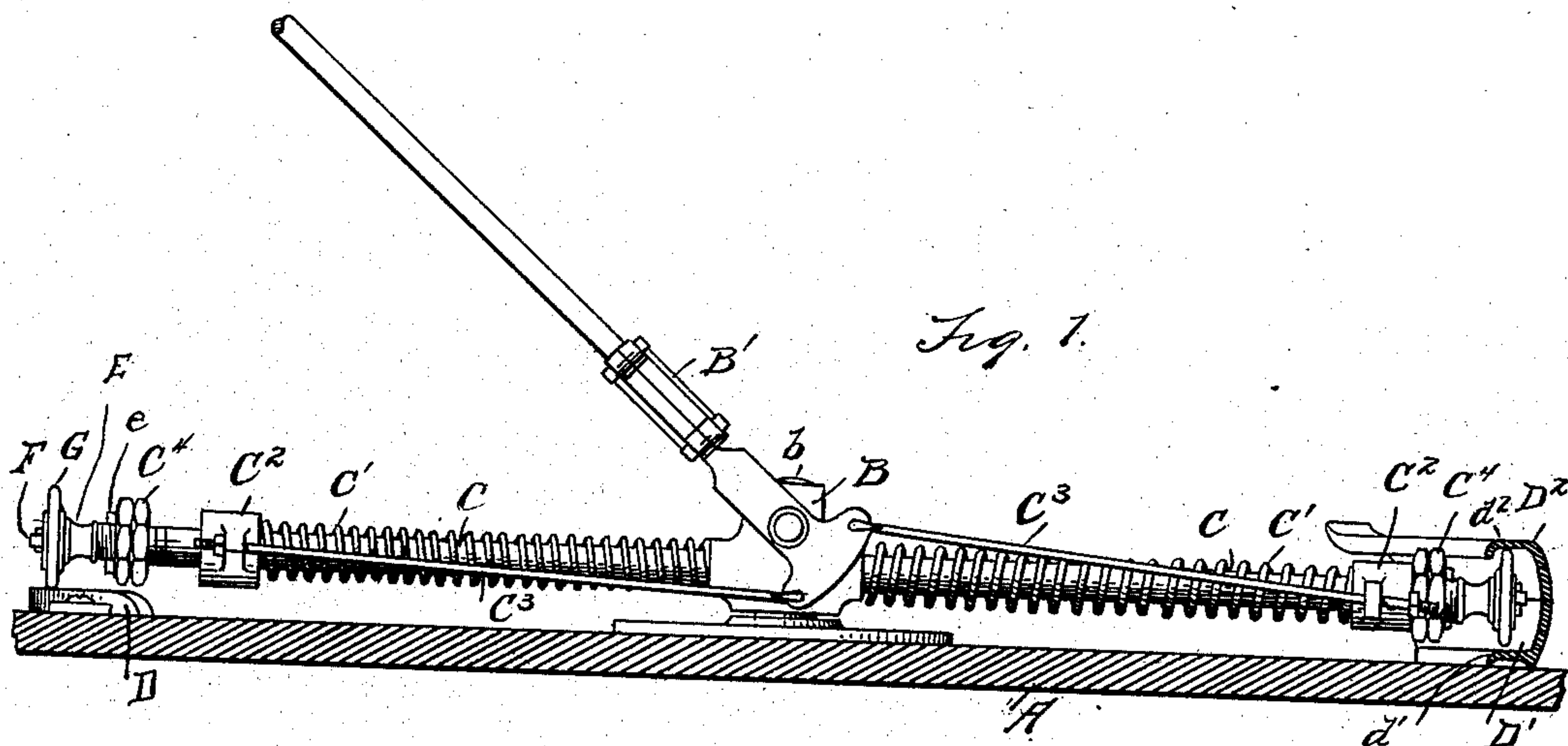
No. 717,401.

Patented Dec. 30, 1902.

H. HOLLAND.  
TROLLEY STAND.

(Application filed Mar. 7, 1902.)

(No Model.)



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

HENRY HOLLAND, OF DETROIT, MICHIGAN.

## TROLLEY-STAND.

SPECIFICATION forming part of Letters Patent No. 717,401, dated December 30, 1902.

Application filed March 7, 1902. Serial No. 97,045. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY HOLLAND, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Trolley-Stands; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to stands for trolley-poles, and specifically to trolley-stands which are pivoted at one point and which carry horizontally-extending springs supported by a part extending radially from said pivotal point; and the object of my improvements is to adapt that kind of stand to be more easily oscillated and by a means that is cheap to construct, enduring in character, and that may readily be applied to that kind of stand without materially altering the same.

Referring to the accompanying drawings, Figure 1 is a side elevation, partly in section, of a trolley-stand embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail section of the end of one of the radially-extending parts and the track.

A is the roof of a car.

b is a vertically-extending cylindrical rod.

B is the stand, pivoted upon the rod b.

B' is the trolley-pole, pivoted at the center of the stand B.

C C are parts extending radially from the center of the stand B. These parts are in this instance hollow cylinders.

C' C' are helical springs placed upon the cylinders C C and supported thereby.

C<sup>2</sup> C<sup>2</sup> are cross-heads adapted to be reciprocated upon the cylinders C C and acted upon by the spring C'.

C<sup>3</sup> C<sup>3</sup> are connecting-rods extending between the trolley-pole below its pivotal point and the cross-head C<sup>2</sup> C<sup>2</sup>.

C<sup>4</sup> C<sup>4</sup> are nuts the threads of which engage the threads upon the cylinder C C at the outer end of said cylinder.

D' D<sup>2</sup> are pairs of tracks formed in the sector of a circle having its center at the pivotal point of the stand. The tracks D' D<sup>2</sup> are se-

cured together and to each other by a bolt D<sup>3</sup>, extending through lugs upon said tracks.

d' is a horizontally-extending part of the track D', and d<sup>2</sup> is a corresponding part of the track D<sup>2</sup>. The track D' is secured next to the car-roof, with the flat surface of the part d' upward. The track D<sup>2</sup> is secured upon the track D', as shown in Fig. 3, with the horizontal part d<sup>2</sup> upward. The outer edge of the part d<sup>2</sup> is bent downward.

Into the hollow outer end of a pipe C is placed a plug E, made to fit closely into the cylinder C. Said plug is secured in place by a cotter-pin e, which passes through holes in the cylinder C and in the plug E. The plug E is provided with a coaxial cylindrical aperture, into which is closely fitted a cylindrical rod F, which rod has diametrically-extending holes near each of its ends through which the cotter e may pass.

G is a wheel pivoted upon the rod F and secured thereon by a washer and a cotter passing through the diametrical hole in the outer end of said rod. The rod F is secured in place by the cotter passing through the diametrical hole in its inner end. The wheel G is located between the parts d' d<sup>2</sup>, and it has a diameter slightly less than the distance between said parts.

A pair of tracks D' D<sup>2</sup> may be placed when required at the outer end of each of the cylinders C, or a single track D may be placed at the outer end of one of said parts. The cotteners e may be held firmly in place by forcing the nut C firmly against them.

The operation of the above-described device is as follows: When the trolley-pole is forced down by its contact with the line-wire or otherwise into the position indicated in Fig. 1, the wheel G at the left of said figure is pressed down upon the track D and the wheel G at the right of said figure is raised up against the horizontally-extending part d<sup>2</sup> of the track D<sup>2</sup>, the lost motion at the pivotal joint at the center permitting this action. In this way the strain is taken completely off the center pivot and is replaced by a much smaller strain upon the frictional wheels G G, so that the stand will turn very easily and accommodate itself to the change of relative positions of the car and trolley-pole. The



friction-roller G at the right of Fig. 1 is placed between the horizontally-extending parts  $d'$   $d^2$  and is protected from water, snow, and ice, the downwardly-extending outer edge of the part  $d^2$  causing the water to fall beyond the joint, so that the wheel may be easily kept oiled.

What I claim is—

1. In a pivoted trolley-stand having a radially-extending spring-bearing arm, a wheel and shaft therefor, said wheel being pivoted upon said shaft, said shaft being adapted to be independently secured upon the outer end of said arm with its axis extending toward the pivotal point of said arm, and a track for said wheel adapted to be independently secured in place upon the roof of the car.

2. In a pivoted trolley-stand having a radially-extending spring-bearing arm, a wheel and shaft therefor, said wheel being pivoted upon said shaft, said shaft being adapted to be independently secured upon the outer end of said arm with its axis extending toward the pivotal point of said arm, and a track extending above and below said wheel, said track being adapted to be independently secured in place upon the roof of the car.

3. In a pivoted trolley-stand having a radially-extending spring-bearing arm, a pivoted wheel and support therefor, said support being adapted to be independently secured to

said stand so that said wheel shall be located toward the outer end of said arm, and a track for said wheel adapted to be independently secured in place upon the roof of the car. 35

4. In combination with a pivoted trolley-stand having a radially-extending hollow cylindrical arm, a plug adapted to fit into the end of said arm, a wheel having a bearing upon said plug and means for securing said plug in the end of said arm. 40

5. In combination with a pivoted trolley-stand having a radially-extending hollow cylindrical arm, having apertures through its walls near its end, a plug having an axial aperture therein and a diametrical aperture, said plug being adapted to fit into the end of said arm with its diametrical aperture in line with the apertures in the walls of said arm, a rod having diametrical apertures in its end, said rod being adapted to fit into the axial aperture in said plug, with its diametrical aperture in line with the like aperture in the plug, and a pin adapted to pass through the apertures in the walls of the arm and through said diametral apertures. 50 55

In testimony whereof I sign this specification in the presence of two witnesses.

HENRY HOLLAND.

Witnesses:

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