

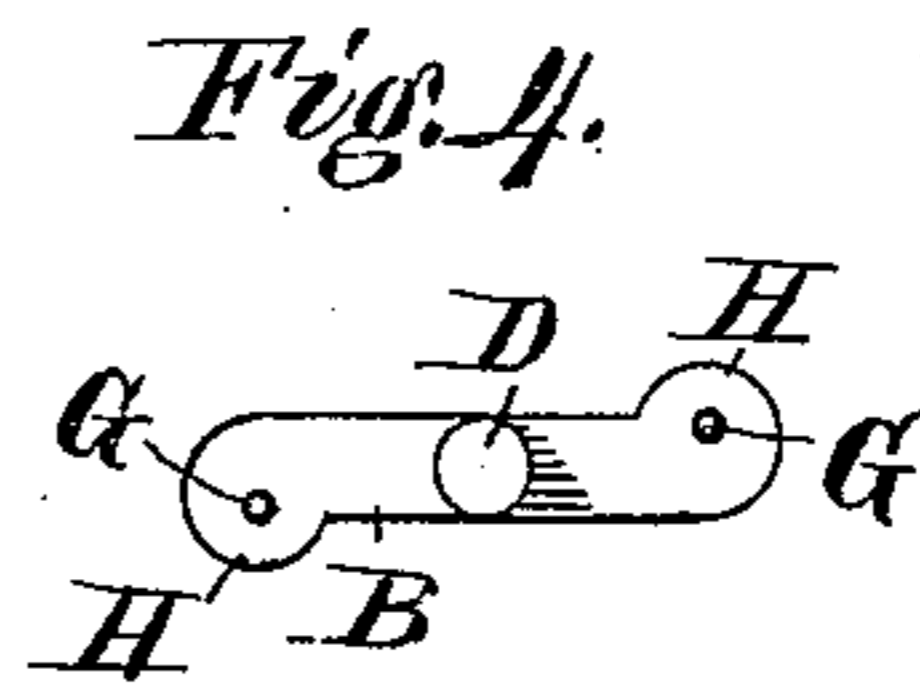
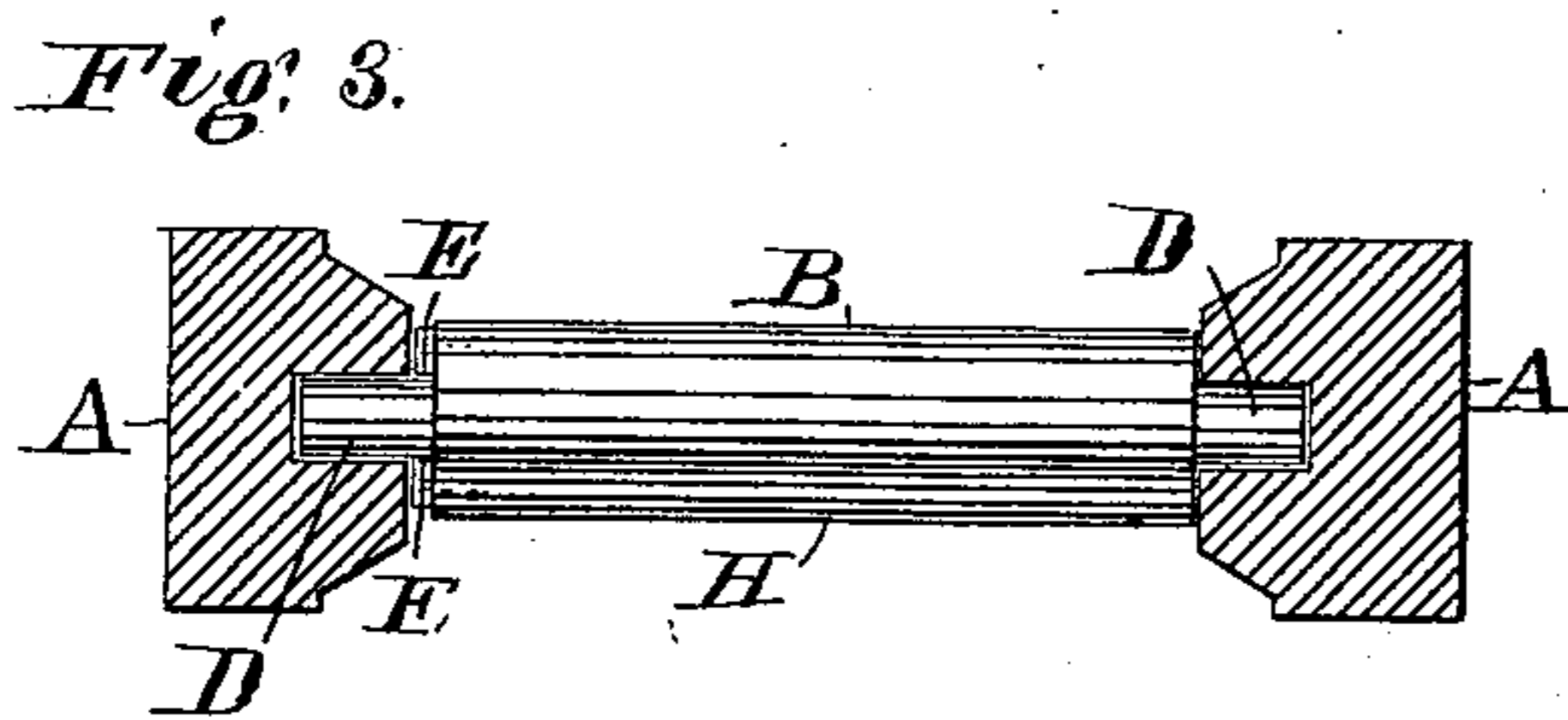
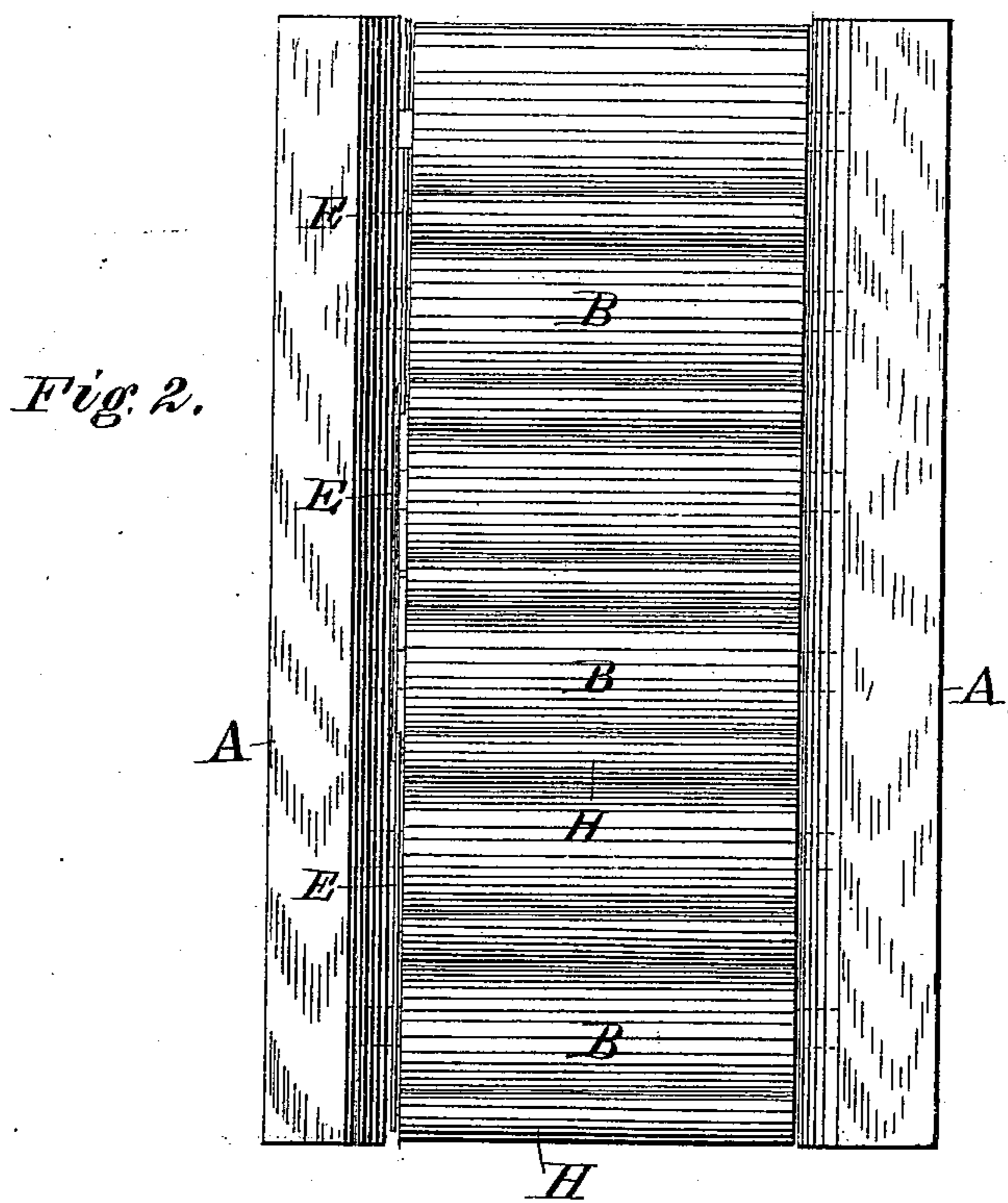
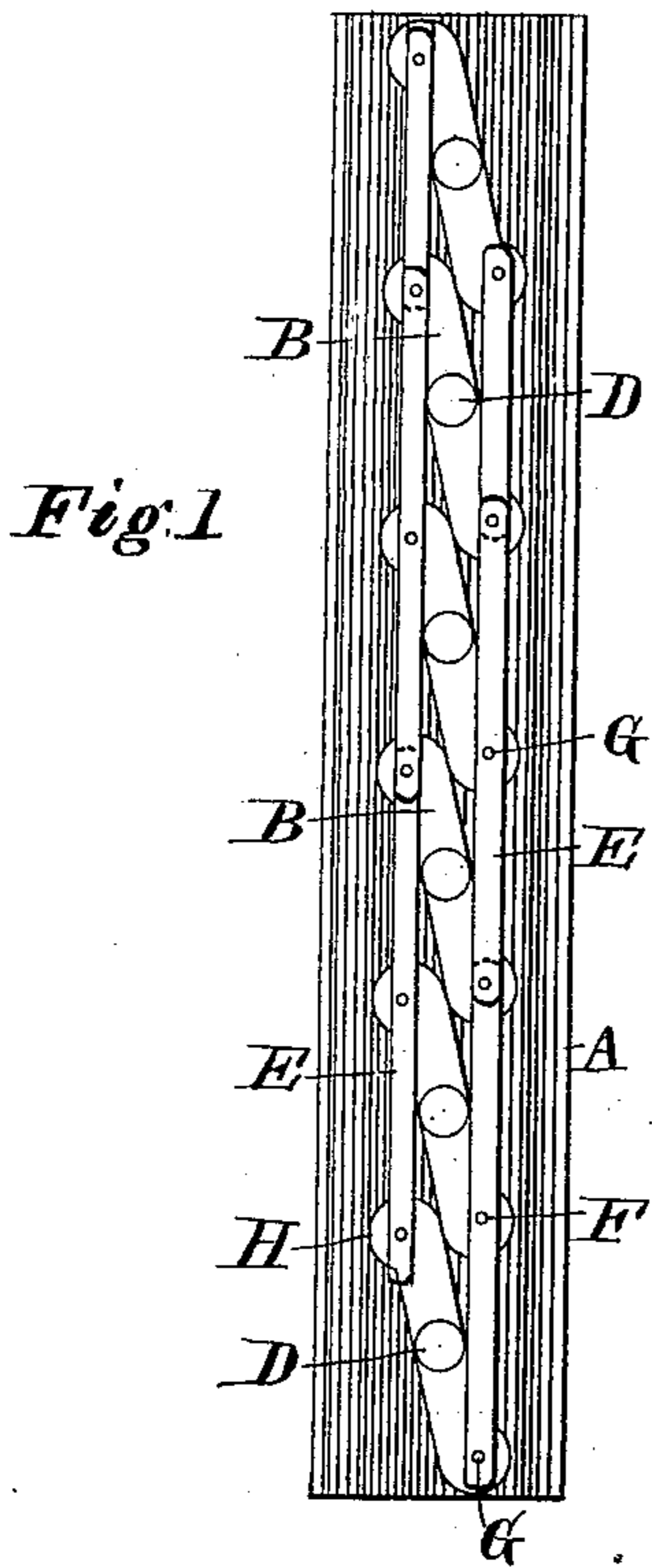
(No Model.)

H. E. WILLER.

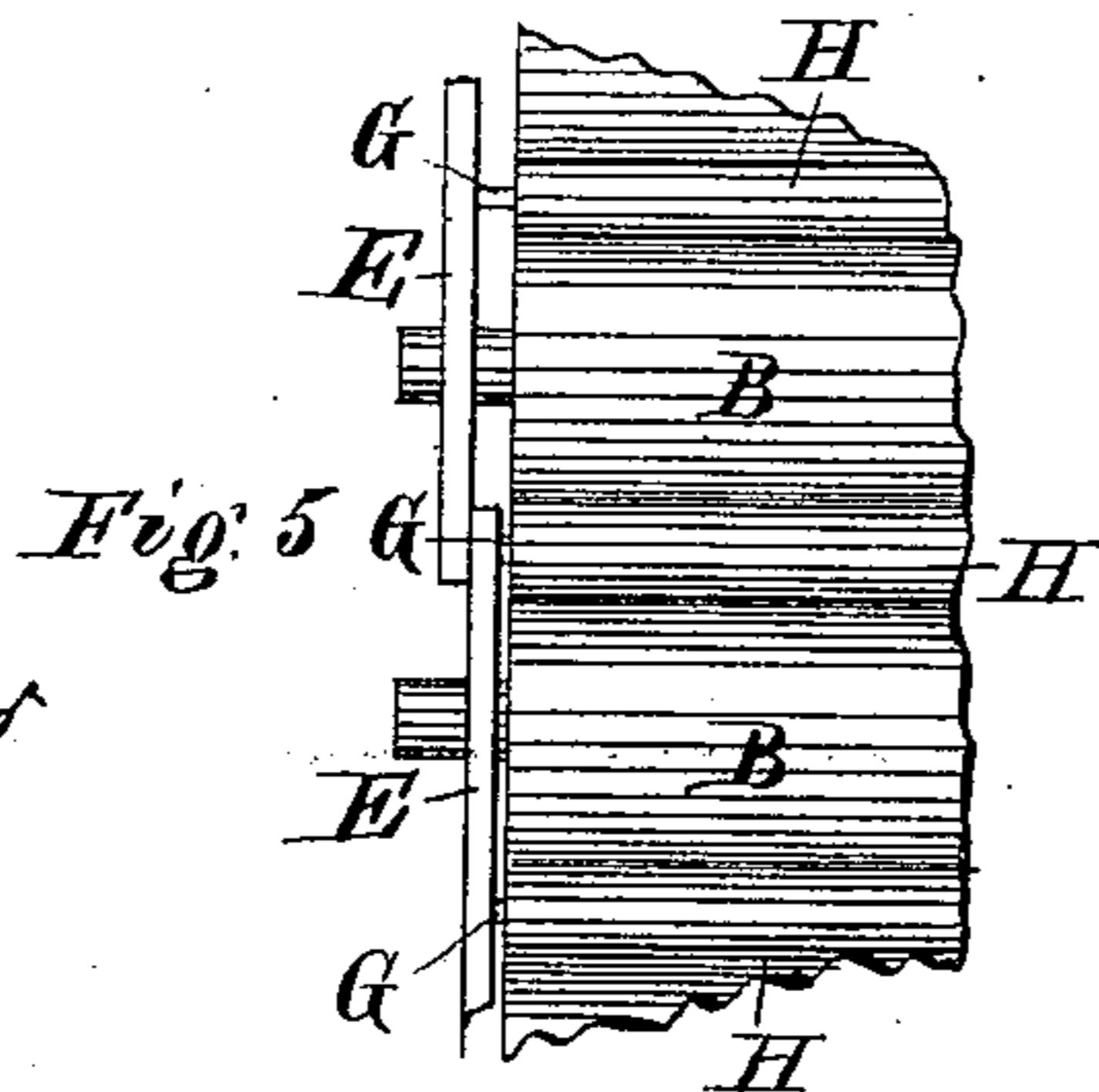
WINDOW SHUTTER.

No. 312,053.

Patented Feb. 10, 1885.



Witnesses
G. M. Gridley
Matthew Schinner



Henry E. Willer
Inventor
By *Ernest Benedict*
Attorneys

UNITED STATES PATENT OFFICE.

HENRY E. WILLER, OF MILWAUKEE, WISCONSIN.

WINDOW-SHUTTER.

SPECIFICATION forming part of Letters Patent No. 312,053, dated February 10, 1885.

Application filed October 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. WILLER, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Window-Shutters; 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for opening and closing the slats of window-shutters, and is especially adapted to be used in those shutters which are constructed in sections, each section having a number of slats adapted to open and close uniformly and concurrently.

My device is intended as a substitute for the slat connecting and turning rods heretofore attached to the front edges of the slats, which rods thus located on the front of the slats do not secure perfect closing of the slats, and when used on shutters constructed to slide past each other do not permit of so close an adjustment of the shutters to each other as is desirable.

My invention will be readily understood by the following description, with a reference to the accompanying drawings, in which--

Figure 1 is a side view of one section of a shutter, one side rail being omitted to show the manner of attaching my device to the slats. Fig. 2 is a front view of a section of the shutter. Fig. 3 is a horizontal cross-section of a shutter. Fig. 4 is an end view of one form of slat to which my device may be readily applied; and Fig. 5 is a front view of a portion of the slats of a section, showing also how the ends of the rods of my device overlap each other.

Like parts are represented by the same reference-letters in all views.

A A are the side rails of the shutters. B B are the slats arranged in a series in each section of the shutter, and adapted to be opened and closed as blinds in the shutter.

D D are the cylindrical tenons projecting

from the slats centrally at each end, and having their bearings in recesses therefor in the side rails of the shutter, and upon which, in said recesses, they are supported and turn.

E E are the connecting and turning rods, constructed of short thin narrow strips of metal, having perforations F F as far apart as the slats in the shutter are from each other, which perforations permit the flat-headed loosely-fitting pins G G therethrough into the slats, and which rods overlap each other at their respective ends, as shown in Fig. 5, in a series of rods connecting together the slats of one section of a shutter. These connecting and turning rods, constructed of short pieces of metal, and used in a series on the slats in each section of the shutter, I have invented and now use to secure an easy movement and tight closing of the slats in each section of the shutter, and as a needed improvement over the one continuous rod shown and described in the application for a patent filed by me September 13, 1884, Serial No. 142,948, which continuous rod required great care in making and considerable skill in adjusting it on the slats so as to secure a free movement and a perfect closing of the blind. I preferably construct the slats B B with beads or projecting flanges H H, a bead on one side of each edge of every slat extending the entire length of the slat on diagonally-opposite edges and sides thereof, as shown in Fig. 4, which beads serve as a place of attachment for said connecting rods by and through the pins G G, driven therein. By means of these beads H H, I am enabled to so attach the rods E E with reference to the supporting-tenons D D that the slats may be readily closed tight without the rods E E coming in contact with the tenons D D, as they would if such rods were attached to the slats on the line of the long central cross-axis of said slats, and at no greater distance from the center of the tenons. It is necessary to use only a series of rods E E on and attached to one edge of the slats; but for greater security and strength I prefer to attach rods on both edges of the slats at one end, as shown in Fig. 1; but each rod can also be attached at both ends of the slats, if desired. The slats being thus connected together, it is obvious that the turning of one slat carries

with it, by means of these connecting-rods, the other slats of the section in harmonious and concurrent movement.

What I claim as new, and desire to secure by Letters Patent, is—

1. The series of short connecting-rods E E, having perforations F F, said rods being attached to the outer edge of shutter-slats B B by loosely-fitting pins G G through perforations F F, in combination with shutter-slats B B, supported and turning on their tenons in the shutter side rails, A A, substantially as described.

2. The series of short connecting-rods E E, having perforations F F, said rods being at-

tached to the outer edge of shutter-slats B B by the loosely-fitting pins G G passing through the perforations F F and driven into the beads H H on the edge of said slats, in combination with the shutter-slats B B, provided with the beads H H, said slats being supported and turning on their tenons in the shutter side rails, A A, substantially as described.

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

HENRY E. WILLER.

Witnesses:

C. T. BENEDICT,

MATTHEW SCHINNER.