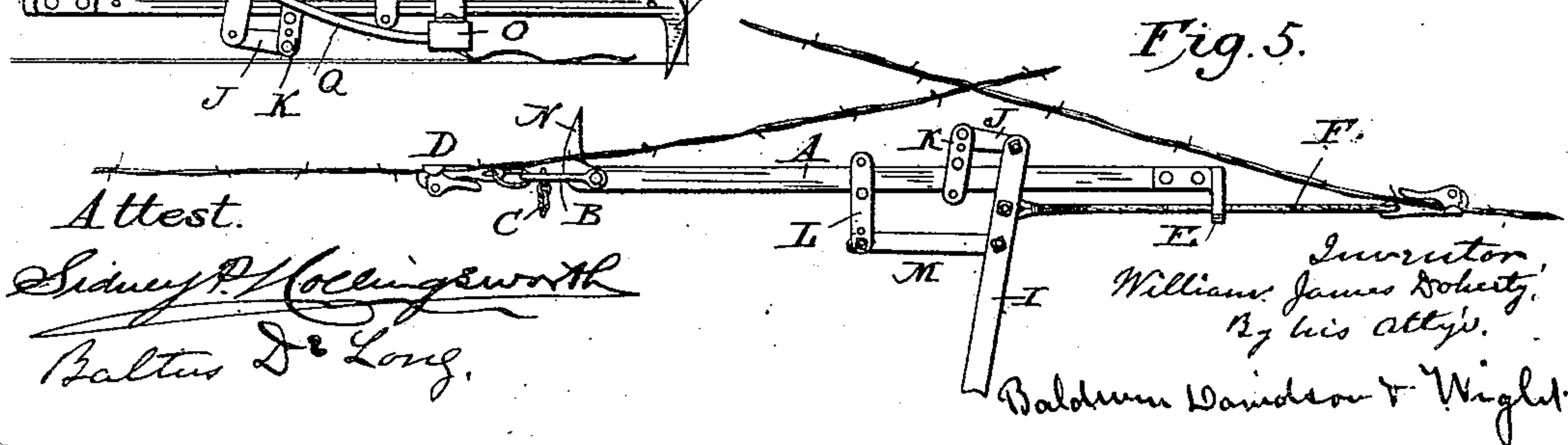
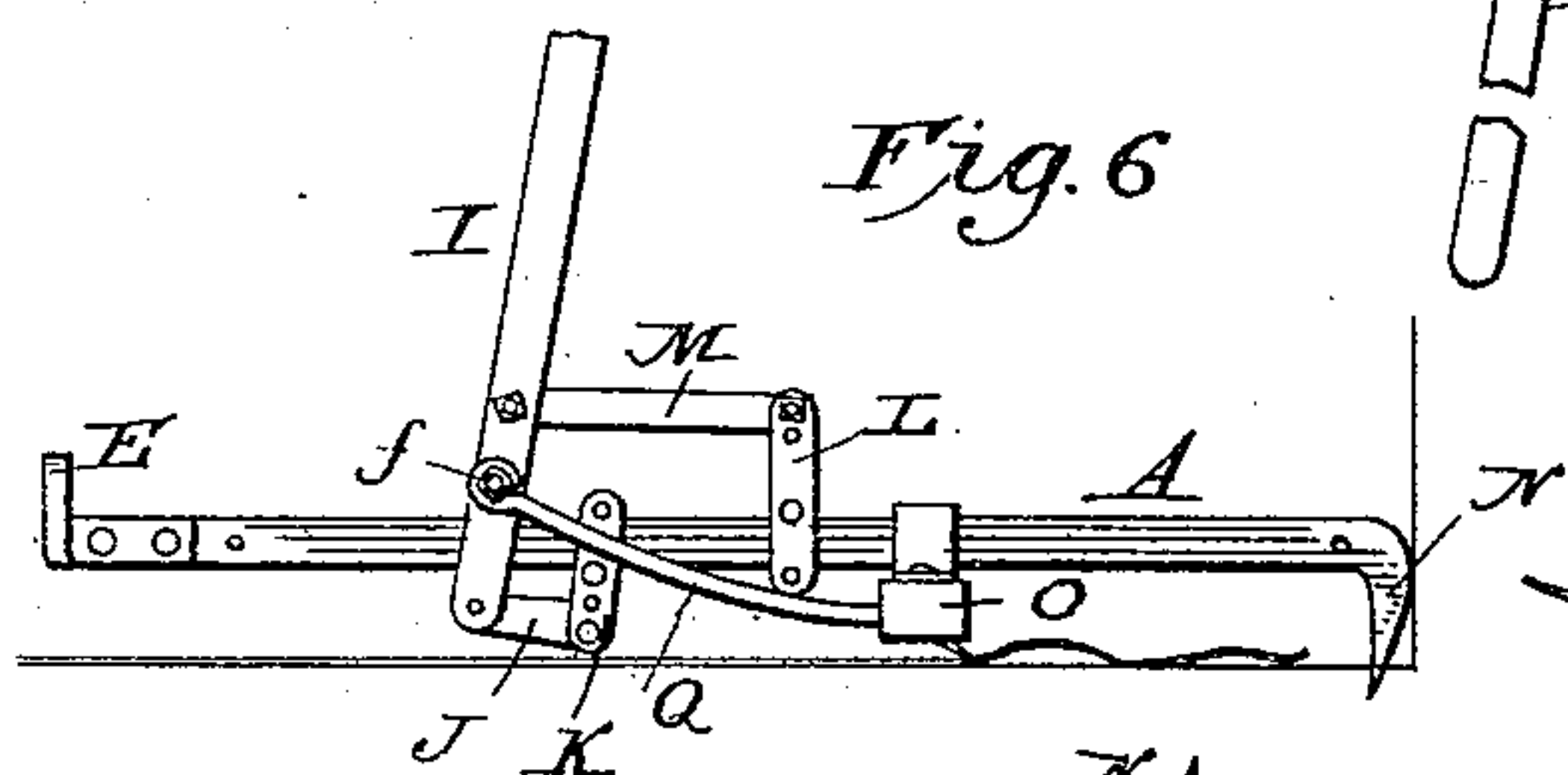
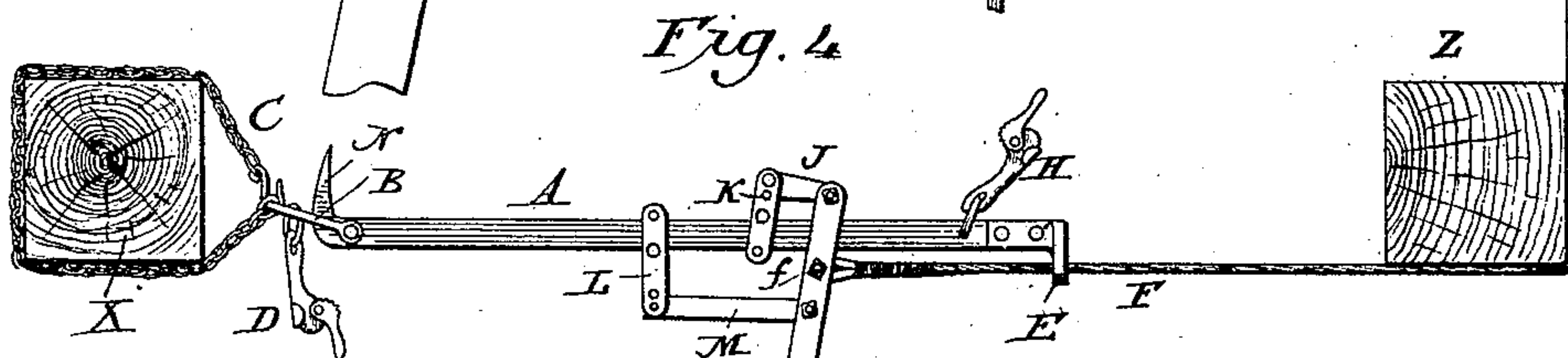
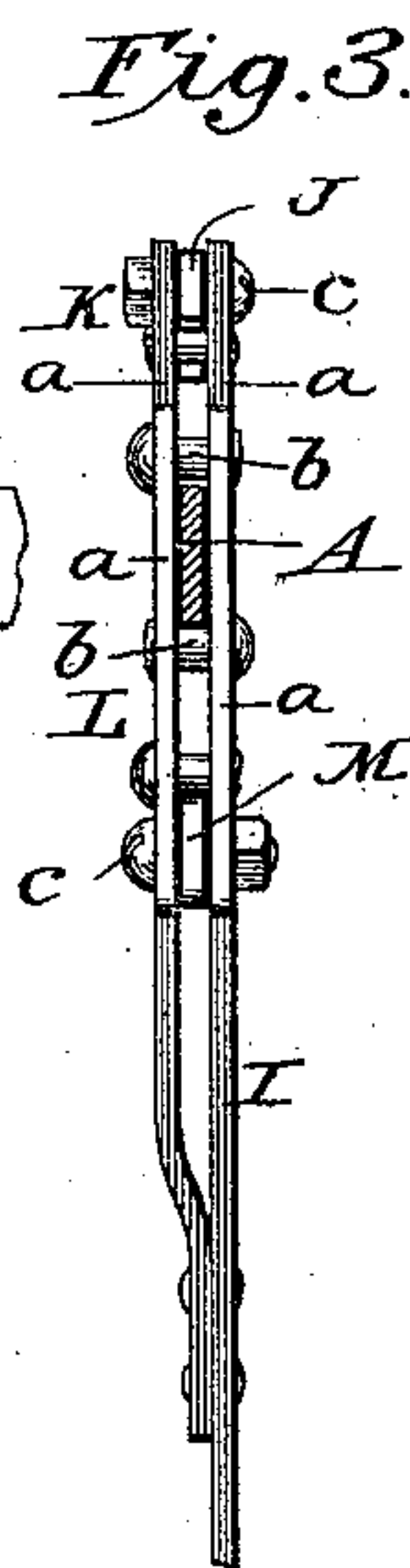
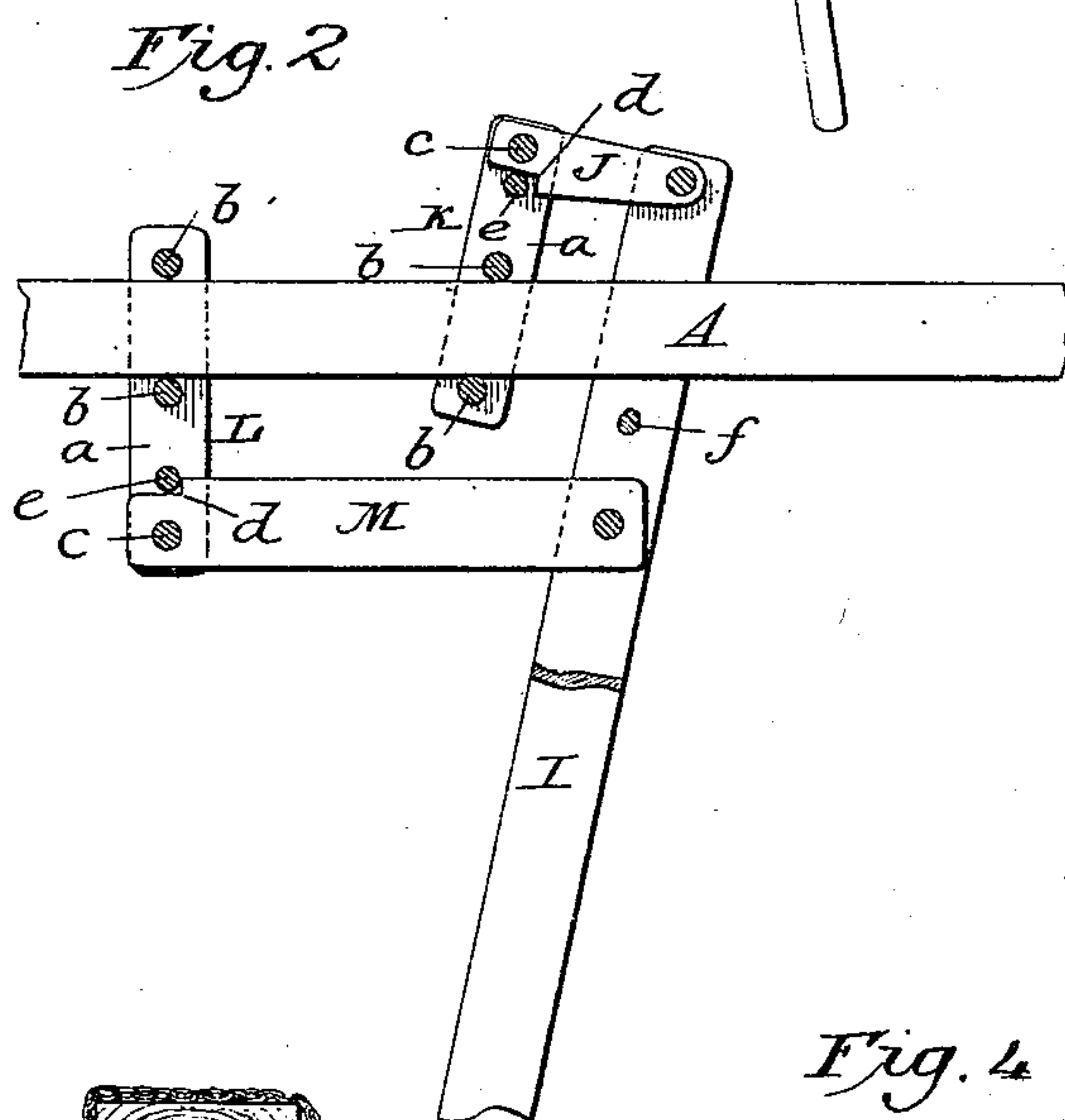
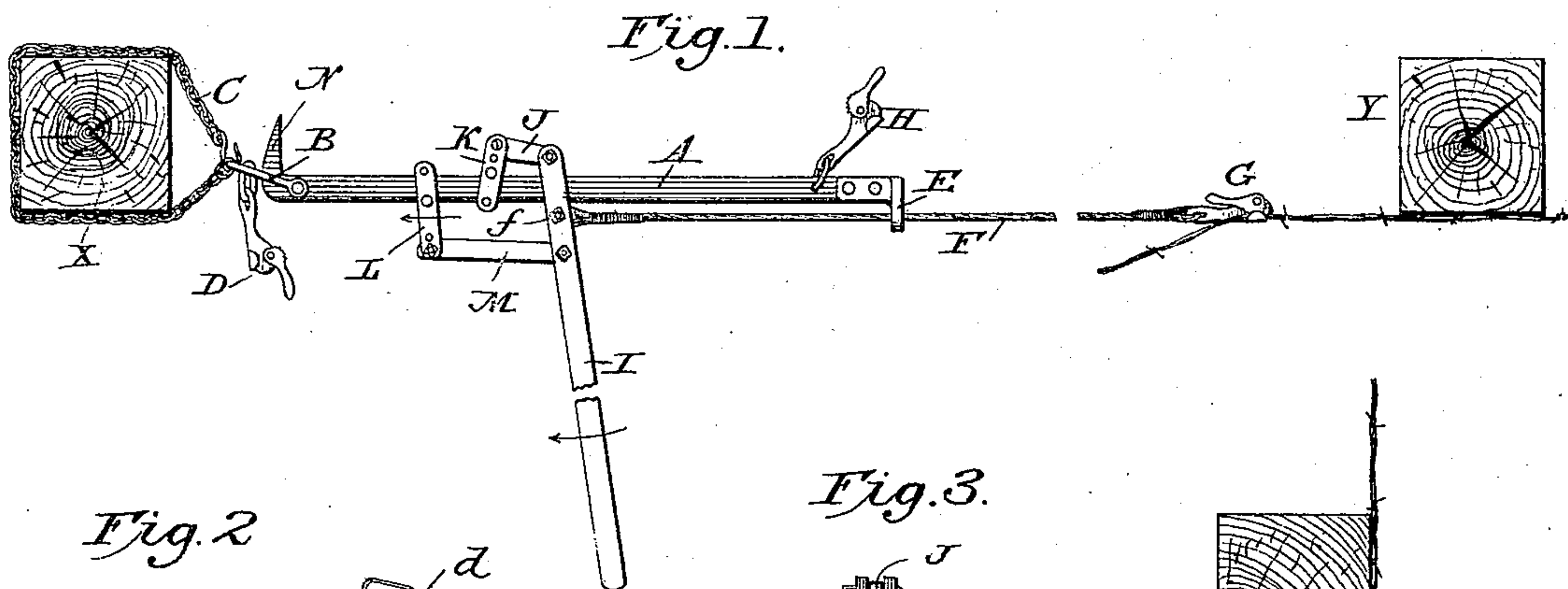


(No Model.)

W. J. DOHERTY.  
WIRE STRETCHER.

No. 437,485.

Patented Sept. 30, 1890.



*Attest.*

Sidney P. Hockingworth  
Baltus D. Long,

Ex Inventor  
Williams James Doherty.  
By his atty's.

Baldern Davidson & Wright.



# UNITED STATES PATENT OFFICE.

WILLIAM JAMES DOHERTY, OF DES MOINES, IOWA.

## WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 437,485, dated September 30, 1890.

Application filed May 26, 1890. Serial No. 353,214. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM JAMES DOHERTY, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Wire-Stretchers, of which the following is a specification.

My invention comprehends improved devices for stretching wire, particularly fence-wires; but parts of my improved apparatus are adapted for use in connection with an ordinary toothed bar for stretching carpets.

My improved wire-stretching apparatus is adapted to stretch wires from one post to another, to draw tightly together wires between two adjacent posts, so that they may be spliced, and also to draw wires tightly around the corner of a post without injury either to the post or to the wire.

The details of construction and the subject-matter claimed are hereinafter designated.

The accompanying drawings illustrate my invention.

Figure 1 is a plan view of my improved wire-stretching apparatus, showing, also, diagrammatically the method of working when stretching a wire from one post to another. Figs. 2 and 3 are detail views of the operating-lever and longitudinally-moving grip devices. Fig. 4 is a diagram view showing how a wire is stretched around a corner-post. Fig. 5 shows how wires from two adjacent posts are brought together and spliced. Fig. 6 is a side elevation of a carpet-stretcher embodying my invention.

The stretcher-bar or frame-bar A is provided at one end with a hinged loop B, to which is secured a chain C for attaching the stretcher to a fence-post. An eccentric grip-dog D is also flexibly secured to the bar A at this end. At its opposite end the bar is provided with a guide-lug E, through which extends a flexible cable or wire rope F, to the outer end of which a wire-gripping device G is attached. A similar wire-gripping device H is flexibly secured to the bar near the guide-lug E. Any approved kind of wire-gripping device may be employed. Those shown are simple and efficient and are preferred.

The operating-lever I is bifurcated at its inner end and embraces the stretcher-bar A.

To the inner end of the operating-lever on that side of the bar A opposite the handle is pivoted a link J, which is pivoted at its opposite end to the outer end of the grip-bar K, through which the bar A extends. A similar grip-bar L, projecting from the bar A in an opposite direction, is connected to the operating-lever I by a link M.

The grip-bars K and L are shown in the drawings as each consisting of two parallel plates *a*, connected on opposite sides of the bar A, and adjacent thereto, by bolts *b*, and to the links J and M by bolts *c*. The links J and M are formed with shoulders *d*, which engage with cross-bolts *e* when the clutch-bars are moved forward on the bar A. The flexible cable F, which passes through the guide E, is secured at its inner end to a bolt *f*, extending through the bifurcated end of the lever I near the bar A.

In operation wires are stretched from post to post, as shown in Fig. 1, by securing one end of the apparatus by means of the chain C to a post X, securing a wire to a post at a distance, and then attaching the grip-dog G to the wire. By then operating the lever I the wire may be drawn taut past the post Y. The back and forth movements of the operating-lever cause the grip-bars K and L to move along the bar A in the direction indicated by the arrow. As shown in the drawings, the lever I has reached the extremity of its movement to the right and is ready to be moved to the left. When moved to the left, the clutch-bar L slides freely on the bar A toward the post X, the shoulder *d* engaging with the cross-bar *e* and holding the clutch-bar at right angles to the bar A, allowing it to slide freely. The clutch-bar K remains stationary as the link J causes the bar to become inclined, so as to clutch or grip the bar between the bolts *b*. When the lever is moved in an opposite direction, the grip-bar K moves to the left, while the bar L remains stationary. In this way the wire is drawn very tight and held firmly until released. By attaching the grip-dog H to the wire and releasing the dog G a new hold may be taken on the wire, so as to draw it tighter, if desired, by moving the operating-lever I and the connecting parts to the right and securing the dog G to the wire at



another point. The flexible cable F enables me to draw a wire, either plain or barbed, around a corner-post, as shown in Fig. 4.

5 The operation of the apparatus and its attachments are substantially the same as above described, except that the cable F is carried around the corner-post Z, as indicated. To stretch two wires between adjacent posts and splice them, the apparatus is attached to the  
10 adjacent ends of the wires, as indicated in Fig. 5.

Instead of securing one end of the bar A to a post by the chain C, I attach one of the wires to the grip-dog D and the other wire  
15 to the grip-dog G, and then operate the lever I to stretch the wires. By applying the grip-dog H to the wire I may detach the dog G without slackening, and the wires may be  
20 connected so as to afford a tight and firm connection. The grip-bar A is shown as provided at one end with a tooth N, projecting at right angles. This tooth may be sometimes  
25 used to secure the bar to any desired object instead of the chain C; but it is especially designed for use when my apparatus is employed as a carpet-stretcher, as indicated in Fig. 6. When used as a carpet-stretcher, the  
30 dog H, guide E, dog G, and cable F may be removed. The chain C and dog D are also removed, and a transverse toothed bar O is applied to the bar A by means of a sliding loop P. The bar O is connected to the lever

I by means of rods Q, which are secured to the lower end of the lever above the bar A. By vibrating the lever back and forth the bar  
35 O may be made to move toward the end N and stretch the carpet to its desired position.

I claim as my invention—

1. The combination, substantially as here-  
inbefore set forth, of the stretcher-bar, the  
40 operating-lever, the longitudinally-moving grip devices connected therewith, a chain connected to one end of the stretcher-bar, a grip-dog also connected to the stretcher-bar at  
45 this end, a cable extending through a guide at the opposite end of the bar, a grip-dog on the outer end of this cable, and a grip-dog flexibly secured to the stretcher-bar near the cable-guide.

2. The combination, substantially as here-  
inbefore set forth, of the stretcher-bar, the  
50 grip-bars projecting in opposite directions from the stretcher-bar, links connecting the outer ends of the grip-bars with the operating-lever, and cross-pieces with which should-  
55 ders on the links engage, in the manner specified.

In testimony whereof I have hereunto subscribed my name.

WILLIAM JAMES DOHERTY.

Witnesses:

G. A. AVRILL,

O. F. PENFIELD.