

(No Model.)

G. F. SHAVER.  
DEVICE FOR INSERTING BRANCH LINES ON MECHANICAL  
TELEPHONE LINES.

No. 444,461.

Patented Jan. 13, 1891.

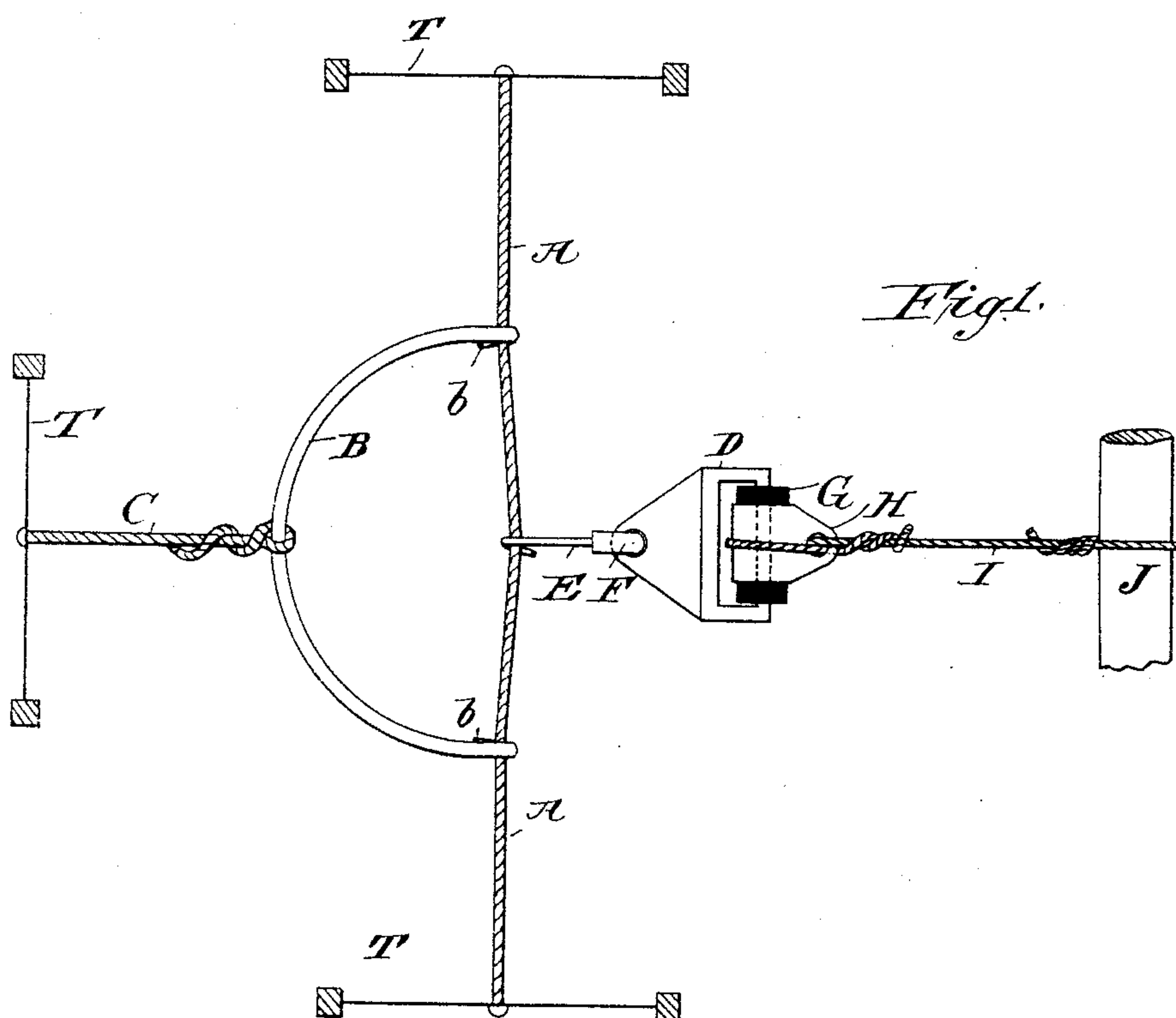
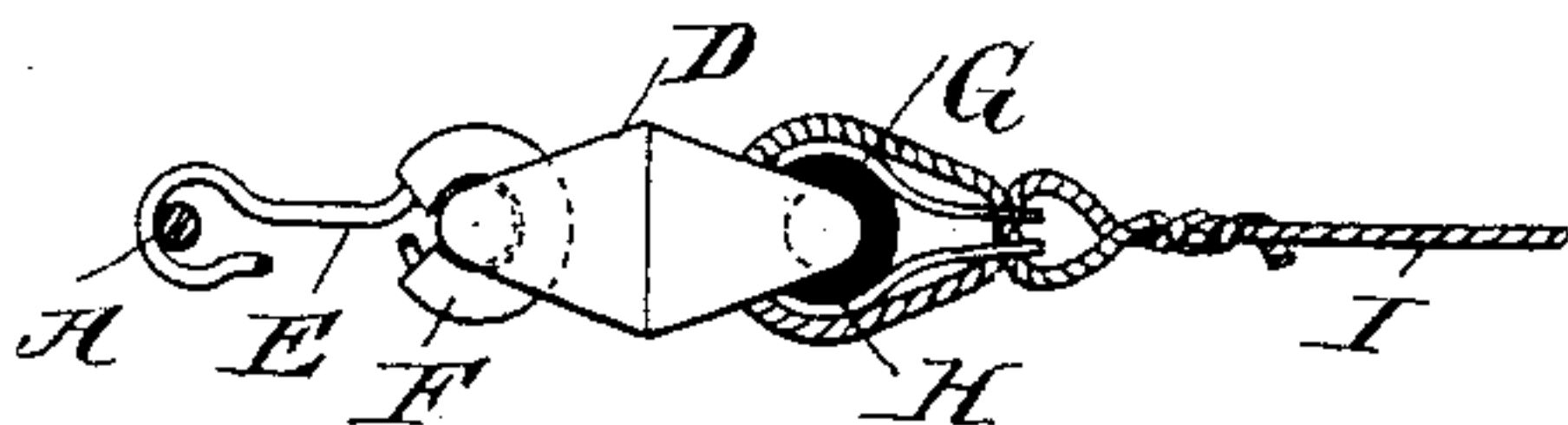


Fig. 2.



Attest:  
J. M. Benjamin  
Notary Public

Inventor:  
George Frederick Shaver

# UNITED STATES PATENT OFFICE.

GEORGE FREDERICK SHAVER, OF NEW YORK, N. Y., ASSIGNOR TO THE  
SHAVER CORPORATION, OF NEW JERSEY.

DEVICE FOR INSERTING BRANCH LINES ON MECHANICAL-TELEPHONE LINES.

SPECIFICATION forming part of Letters Patent No. 444,461, dated January 13, 1891.

Application filed March 22, 1890. Serial No. 344,942. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE FREDERICK SHAVER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Devices for Cutting in Branch Lines upon Mechanical-Telephone Lines, of which the following is a specification.

10 The object of my invention is to provide the means for cutting in branch wires at right angles with the main trunk line of a mechanical-telephone line in such a manner that articulate speech and other sounds may be transmitted from the branch wire to the main line  
15 or from the main line to the branch wire without loss of power or impairing the articulation. The means whereby this end is attained is shown in the accompanying drawings, of which—

Figure 1 shows a plan view of the device adjusted upon a line-wire, and Fig. 2 represents an end view of a detail called the "counter-weight and insulator."

25 Like letters refer to like parts in both drawings.

T T T represent the diaphragms of three telephones, two of which being connected with the main trunk line A A, the other being connected to a branch wire C.

30 The branch line C is cut in upon the trunk line A A by means of a bow-shaped tempered steel-wire vibrator B, terminating at either end in hooks *b b*, which engage with the main trunk line A A.

35 A counter-weight and insulator D G is attached to the main line at a point midway between the terminal hooks of the vibrator B by means of a double hook E, one end of which engages the main line and the other passes through an aperture in the counter-weight D and is provided with an envelope of insulating material F, made, preferably, of soft rubber. The counter-weight D is made of  
45 cast-iron and is recessed at the end opposite the hook E, in order to receive a sleeve insulator of soft rubber G and a metallic band H. The guy-wire I is adjusted around both G and H.

50 The object of the band H is to prevent the

guy-wire I from cutting into the rubber sleeve G when tension is applied to the guy-wire.

The operation of the device is as follows: The trunk line A A is first erected and the tension applied in the usual manner, after  
55 which the branch wire C is erected and the vibrator B placed in position. The counter-weight and insulator D G is then placed in position and tension is applied to the branch line C and counter-weight by pulling upon the  
60 guy-wire I until the requisite tension is secured, after which the guy-wire is made fast by securing the same to the pole J or other rigid support. The action of setting tension  
65 upon the branch line C and counter-weight D imparts tension to the vibrator B and slightly elongates the same, thus bringing into action the resilience of the spring-steel vibrator B and causing it to become peculiarly sensitive  
70 to vibration imparted to it from the main or branch lines and to transmit vibrations received from either of the connected lines to the other without loss of power or distinctness of articulation. The action of the counter-weight D is to force the vibration to pass over  
75 or through the vibrator B to the branch line C, instead of mainly following the trunk line A A from end to end, as I have found in practice to be the case when the counter-weight is not used. The counter-weight also prevents  
80 the vibration from running off over the guy-wire and the consequent loss of vibratory power.

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

85 1. A cutting-in device for mechanical-telephone lines, consisting of a bow-shaped spring-vibrator interposed between a main trunk line and a branch line and forming a part of a trunk-line circuit, in combination with a  
90 tension-setting guy adjusted upon said main trunk line at a point opposite said branch line, substantially as herein set forth.

2. A cutting-in device for mechanical-telephone lines, consisting of a spring-vibrator  
95 provided with terminal hooks for engagement with a main trunk line at two separate points, in combination with a branch line attached to the center of said vibrator, and a counter-weight, insulator, and tension-setting guy at-  
100



tached to said trunk line at a point midway between the terminal hooks of the said vibrator, substantially as herein set forth.

5 3. In a cutting-in device for mechanical-telephone lines, the combination of the vibrator B, hook E, counter-weight D, insulator G, and tension-guy I with main line A and branch line C, substantially as herein set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of 10 March, A. D. 1890.

GEORGE FREDERICK SHAVER.

Witnesses:

H. J. FOOTNER,

M. CARSON.