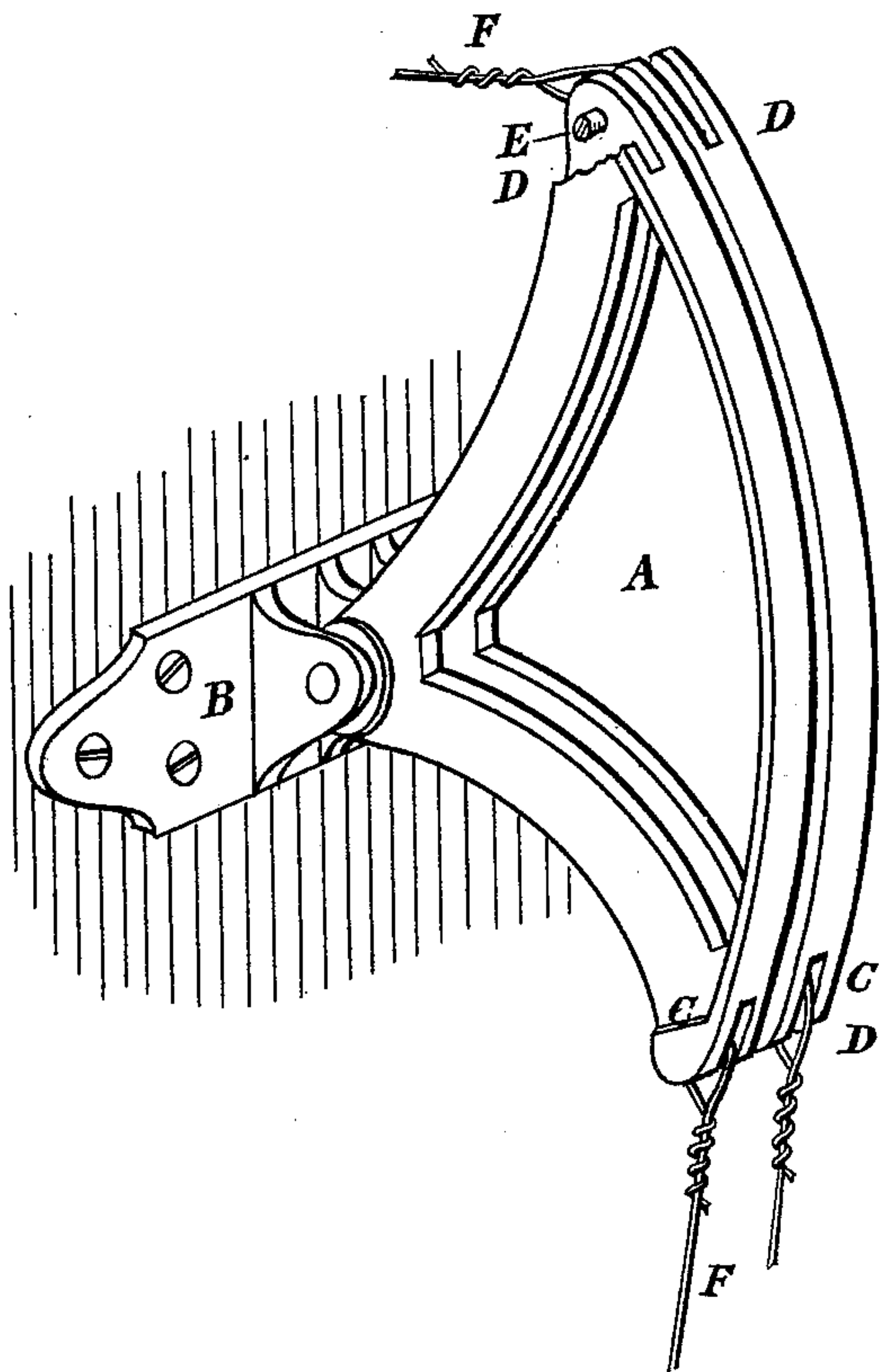


(No Model.)

E. W. VANDUZEN.
Angles for Bell Wires.

No. 229,566.

Patented July 6, 1880.



Witnesses:

A. Cady
W. H. Ellsworth

Inventor:

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UNITED STATES PATENT OFFICE

EZRA W. VANDUZEN, OF NEWPORT, KENTUCKY.

ANGLE FOR BELL-WIRES.

SPECIFICATION forming part of Letters Patent No. 229,566, dated July 6, 1880.

Application filed April 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, EZRA W. VANDUZEN, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Improvement in Angles for Bell-Wires, (Case C;) and I do hereby declare the following to be a full, clear, concise, and exact description of the same, sufficient to enable others skilled in the art to which my invention appertains to make and use it, reference being had to the accompanying drawing, forming part of this specification, wherein the figure is a perspective view, partly in section, showing my improvement in the construction of the angles.

Much difficulty has heretofore been experienced in the operation of a series of angles or bell-cranks used for changing the direction of bell-wires, particularly upon steamboats, where large angles are used, because of the liability of one angle to catch upon another, and thus sound two or more bells when only one should be rung. In steamboating this is sometimes attended with very serious consequences that cannot be guarded against by the engineer, who is guided by the bells in managing the engines. It is therefore easy to understand that wrong signals from the bells may result in loss of property and even life through collisions and other accidents.

The angles are generally quadrant-shaped, and pivoted side by side upon a plate adapted for attachment to a suitable support to sustain the angles in proper position, and the angles are placed so closely together as nearly to touch each other at the sides.

The bell-wires are either fastened to projecting side pins at the outer opposite corners or passed through lateral holes at such corners, and then the end of each wire twisted upon the main portion. These modes of fastening form projections upon each side of an angle, and when one bell-wire only is pulled the projections on one angle are liable to catch against those of the angle next adjoining and cause two bells to ring instead of one, or perhaps sound the wrong bell. The difficulty is increased after the bell-wires become stretched by frequent use, so as to cause the angles to hang unevenly beside each other, in which case the angle of a bell that is not to be sounded

may be pulled down and its bell rung before the angle of the bell that is to be sounded has been moved far enough for that purpose.

My invention is designed to overcome or avoid these objections, and to provide a series of two or more angles with such means for the attachment of the bell-wires that any angle of the series may be operated freely without the possibility of operating any of the others.

To this end the invention consists in so constructing the angles that the bell-wires can be attached without projecting from the sides, which are left plain and with uniform surfaces.

In the accompanying drawing, A represents the bell cranks or angles (two being shown) composing a series. They are pivoted close beside each other, between the ears of a base-plate, B, so that they shall be free to move upon the pivot. The sides of the angles are parallel, without projections to catch against each other, and widened considerably at the corners C. These widened ends or angles are each cast with an open slot, D, in the direction of the length of the bell-crank, and each slot is provided with a cross-bar, E, either cast with the angle or afterward applied thereto in any suitable manner. The bell-wires F are attached to these cross-bars, and the widened angles C form walls around the ends of the bars, which serve to hold the wires in place and prevent the twisted or knotted parts from projecting from the sides of the angles or bell-cranks. By this construction the angles are free to be moved on their pivot without catching into or against each other, and therefore all danger of operating one by the other is avoided.

I am aware that angles for bell-wires have been made with notches in their ends, each notch containing a pivoted arm projecting from the angle, and to which the bell-wires are attached; but I do not claim such construction, because it does not produce the result reached by my invention—to wit, the inclosure of the wire loops between the walls of the angle to prevent them from catching into an adjoining angle or bell-wire. Therefore

What I claim is—

The angles or cranks for bell-wires, constructed of uniform width on their outer sides

or faces, and with the widened angles C, having longitudinal slots, each containing a cross-bar, E, to which the bell-wires are directly attached, so that the loops of the wires shall be
5 contained within the slots and protected by the side walls, substantially as described, for the purpose specified.

In testimony of which invention I have hereunto set my hand this 30th day of March. A. D. 1880.

EZRA W. VANDUZEN.

Witnesses:

N. K. ELLSWORTH,
E. A. ELLSWORTH.