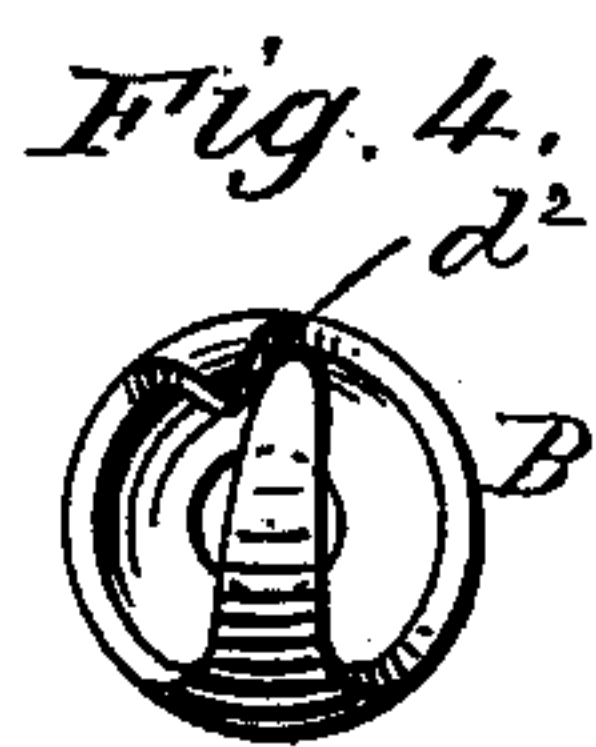
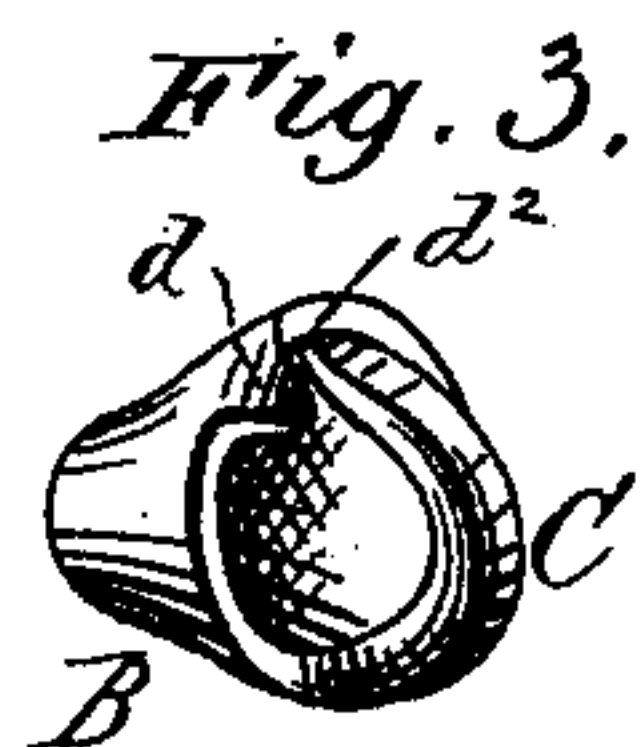
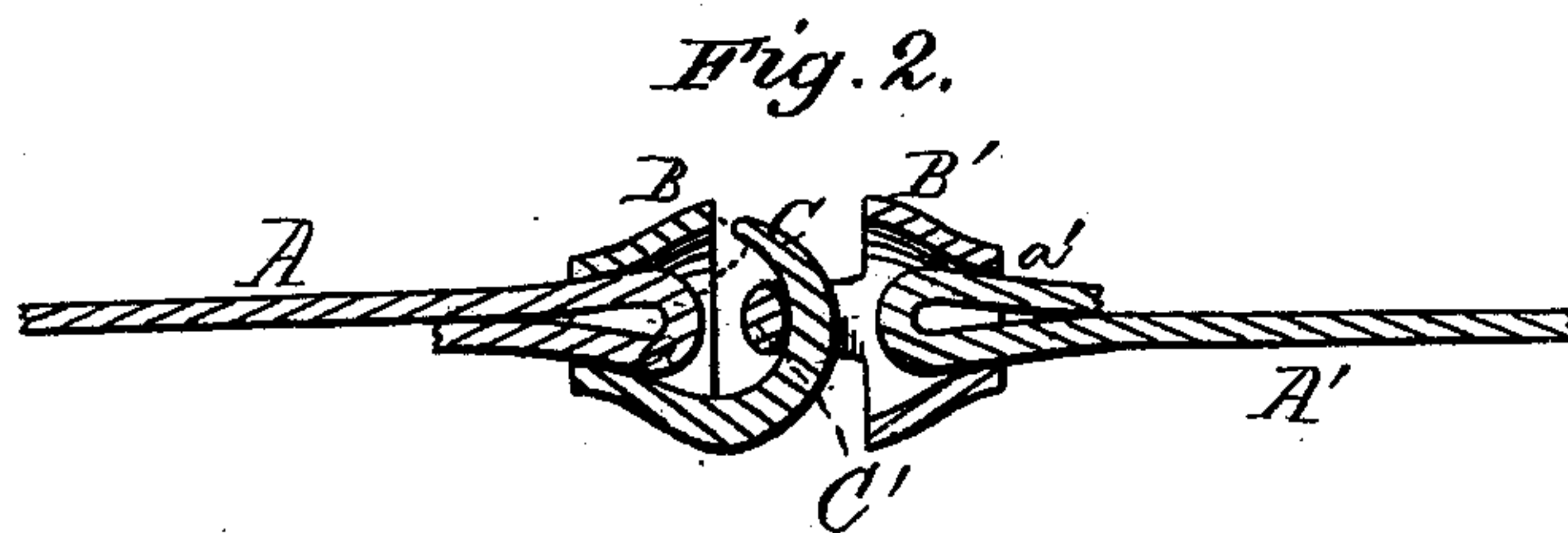
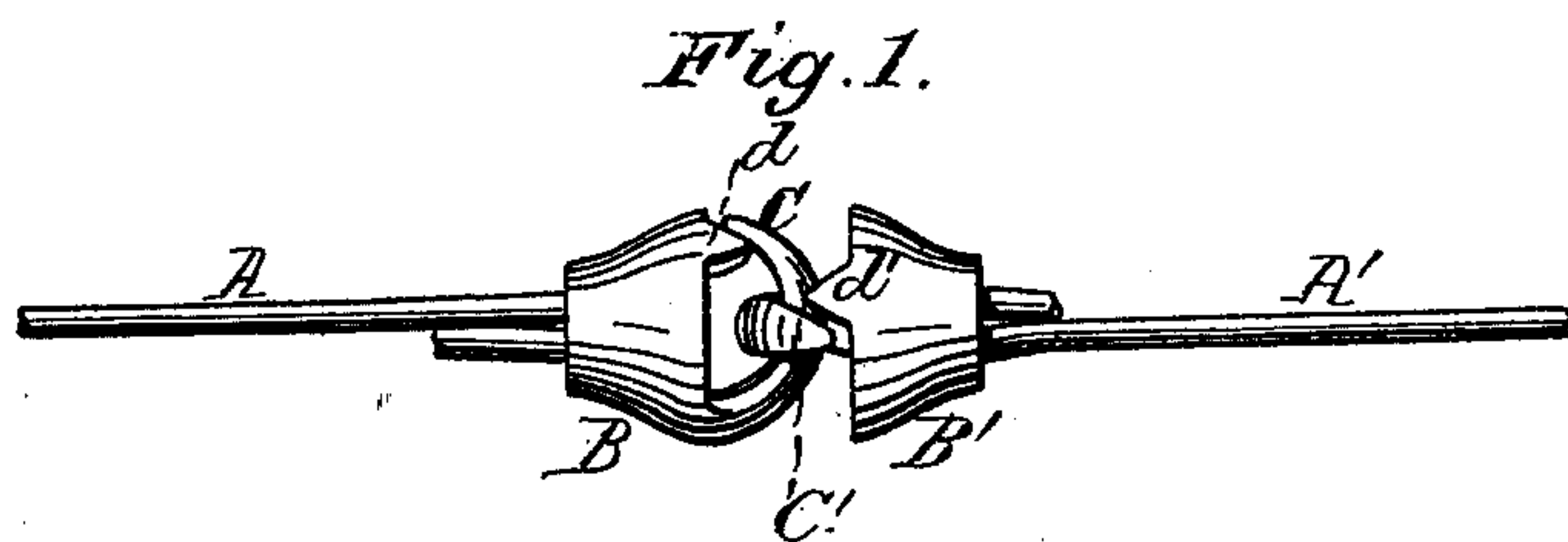


G. D. HAWORTH.  
Knots for Check-Row Wires.

No. 208,814.

Patented Oct. 8, 1878.



*Witnesses*

*N. B. Smith*

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*Attorney*

# UNITED STATES PATENT OFFICE.

GEORGE D. HAWORTH, OF DECATUR, ILLINOIS.

## IMPROVEMENT IN KNOTS FOR CHECK-ROW WIRES.

Specification forming part of Letters Patent No. **208,814**, dated October 8, 1878; application filed August 28, 1878.

*To all whom it may concern:*

Be it known that I, GEORGE D. HAWORTH, of Decatur, county of Macon, State of Illinois, have invented certain new and useful Improvements in Knots and Couplings for Check-Row Wire for Check-Row Corn-Planters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of the ends of two short sections or lengths of the wire connected together by my improved coupling. Fig. 2 is a longitudinal section of the same. Fig. 3 is a perspective view of one of the coupling-hooks, and Fig. 4 is a face view of the same.

Similar letters of reference denote corresponding parts in all the figures.

My invention consists, first, in a novel manner of connecting the sections of wire and coupling-hooks; and, second, in a novel construction of coupling-hooks, whereby they are adapted to be readily connected with each other, while at the same time accidental displacement or uncoupling is effectually prevented, as hereinafter explained.

In the accompanying drawings, A A' represent the sections of wire, which are cut into lengths conforming to the distance at which it is desired to plant the rows of corn, the ends of these sections being bent or turned back to form a loop or knot, as shown at *a a'*. B B' are the couplings, which also form the knots or stops for operating the check-rowing devices.

The hubs or sleeves of the couplings are made tapering or bell-shaped, as shown in the drawings, and are provided with central perforations, conforming in shape to the outer face, and through which perforations the wire is passed, the ends or knots *a a'* formed on the ends of said sections of wire serving to hold the ends connected with the coupling-hook.

C C' are the hooks formed or cast with the hub or sleeves, and *d d'* are spurs or projections extending from the outer rim of the hub, and upon the opposite side to that on which the hooks are formed these hooks are curved over toward the spurs or projections *d d'*, the sides or edges of the hook overlapping the sides or edges of the spurs, and said edges being nearly in contact with each other. The edges of the hooks, as also the spurs, are made beveled or tapering at this point, so as to leave a V-shaped opening, *d<sup>2</sup>*.

By the construction above described it will be seen that the wire can be readily attached to the coupling-hook and the coupling-hooks to each other, while at the same time they are securely held in place when so connected, and all liability of their becoming disconnected is obviated.

It will also be seen that by the construction described, the wire is adapted to conform readily to the pulleys in its passage over the machine, and all twisting or kinking of the wire at the coupling is effectually prevented.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The jointed or divided stops, knots, or buttons, having the coupling-hooks for uniting them, as described, in combination with the sections of wire, provided with looped ends for uniting them to the coupling-hooks, as described.

2. The jointed or divided knots, stops, or buttons B B', provided with the permanently-formed coupling-hooks C C', for uniting the sections of the check-row cord or wire, in combination with the beveled spurs *d d'*, overlapping the ends of the hooks, substantially as and for the purpose set forth.

GEORGE D. HAWORTH.

Witnesses:

F. P. LEWIS,  
J. W. PHILLIPS.