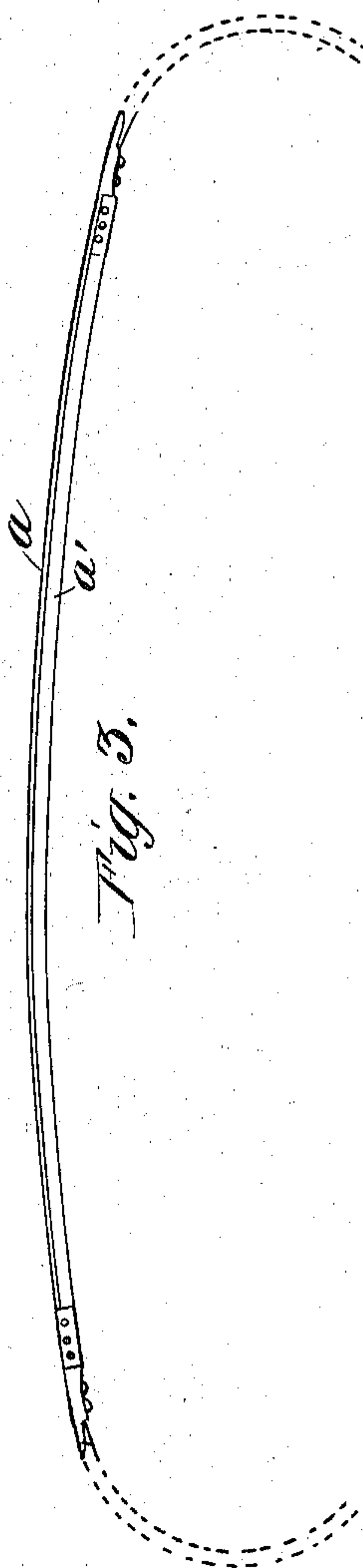
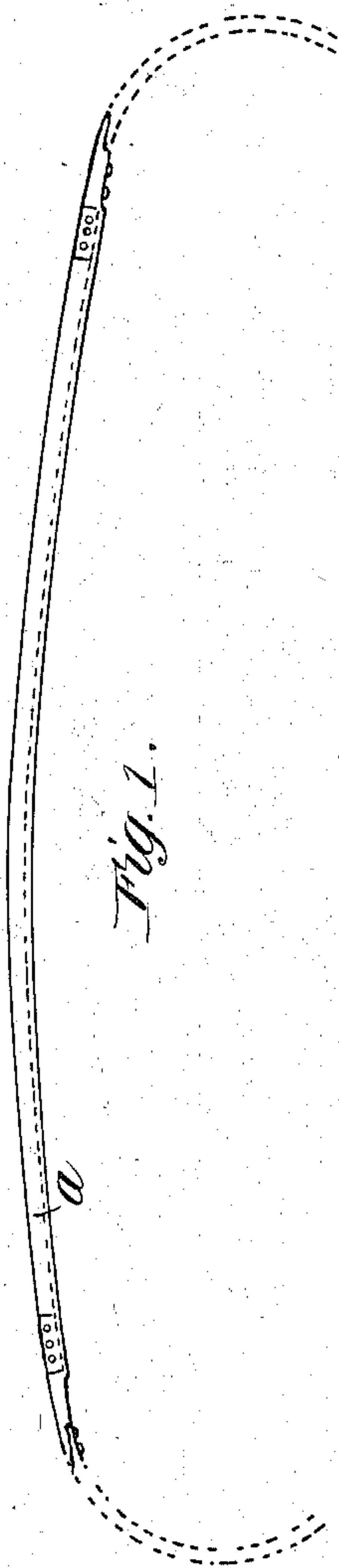
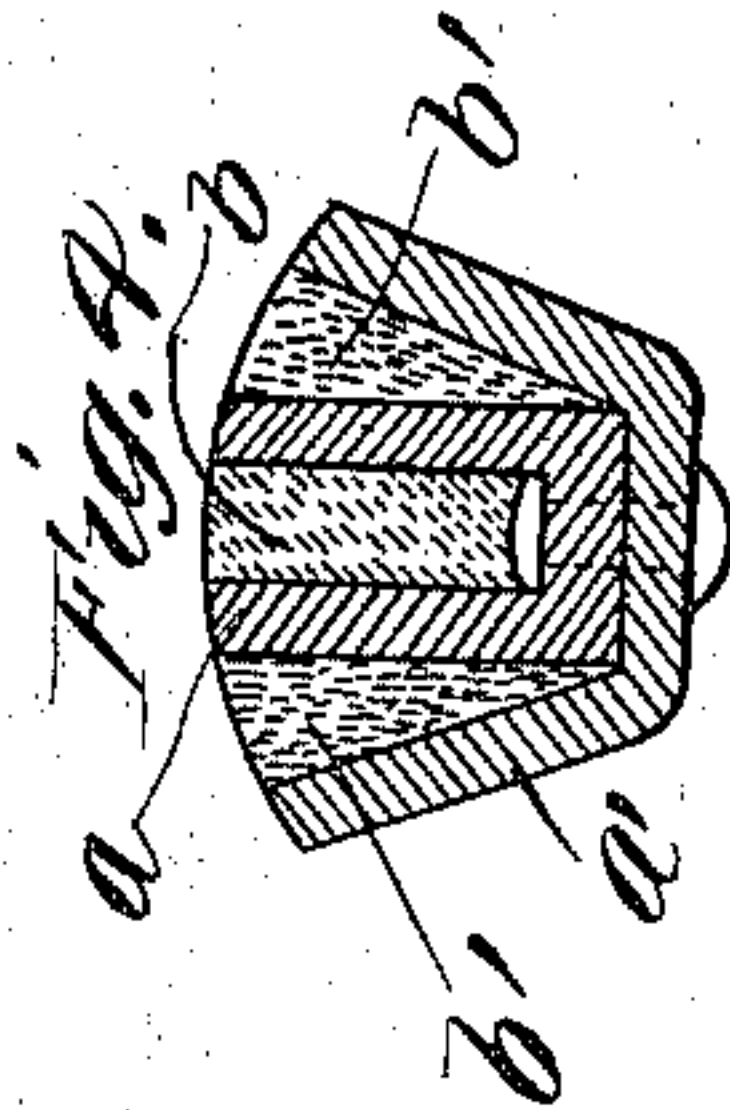
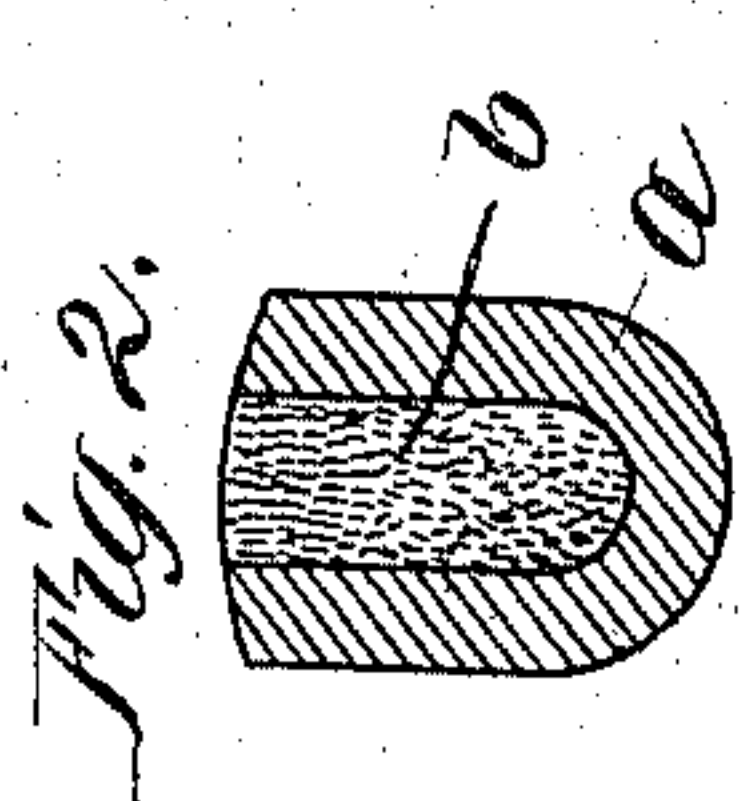


(No Model.)

F. W. N. E. HAYN.
CONTACT DEVICE.

No. 567,899.

Patented Sept. 15, 1896.



Witnesses:
A. M. C. Danner.
A. D. Lawrence

Inventor:
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UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM NIKOLAUS EMIL HAYN, OF BAHIA, BR. AZIL, ASSIGNOR
TO THE SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA, OF CHI-
CAGO, ILLINOIS.

CONTACT DEVICE.

SPECIFICATION forming part of Letters Patent No. 5637,899, dated September 15, 1896.

Application filed May 14, 1896. Serial No. 591,515. (No model.) Patented in Italy December 10, 1895, No. 40,352, and in Belgium December 12, 1895, No. 1,13,724.

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM NIKOLAUS EMIL HAYN, a subject of the Emperor of Germany, residing at Bahia, Brazil, have invented new and useful Improvements in Contact Devices, (Case No. 81,) of which the following is a specification, and for which Letters Patent have been granted in Belgium, No. 118,724, dated December 12, 1895, and in Italy, No. 40,352, dated December 10, 1895.

My invention relates to a contact device for electrical conductors, especially adapted for use with overhead trolley-wires.

The object of my invention is to provide a contact device that shall minimize the wear upon the current-conductor and reduce the sparking and noise without impairing the electrical contact.

The device of my present application consists of an aluminium contact-bar, which may be provided with longitudinal grooves adapted to be filled with lubricating material or soft metal.

I will describe my invention more particularly by reference to the accompanying drawings, in which—

Figure 1 is a side view of my device. Fig. 2 is a sectional view thereof. Fig. 3 is a view of my device wherein concentric contact-bars are employed. Fig. 4 is a sectional view of the same.

Like letters refer to like parts in the several figures.

The contact-bar of my invention is constructed of aluminium, which I find well adapted to this purpose by reason of its light weight and tensile strength. Furthermore, aluminium is a comparatively soft metal and will wear the current-conductor away very slowly. In its preferred form I provide in my aluminium contact-bar *a* a groove *b*, extending throughout its length, so that a section thereof is U-shaped. This groove I fill with one of the softer metals or some lubricating material, by which means I further reduce the wear and friction between the contact device and current-conductor. In some cases I have secured more advantageous results by constructing my contact-bar of two or more of these U-shaped alu-

minium bars *a a'*, fitting one within another and securing them together, so that continuous longitudinal spaces *b' b'* are maintained between the sides of said bars. These spaces and the groove *b* are filled with soft metal or lubricating material or part with metal and part with a lubricant. This form of current-collector I have found to be admirably adapted to the use for which it is designed.

By making my device of aluminium the weight thereof is reduced to a minimum, while the necessary rigidity of construction is maintained. The inertia of the device is slight, by reason of which the force tending to separate the contact from the trolley-wire, when the contact device is in operation, is materially reduced and the spring-pressure serving to force the contact-bar against the current-conductor may accordingly be greatly decreased, thus further reducing the friction and wear between the contact parts.

Additional good results attained by the use of the device above described are an entire absence of noise and the elimination of sparking to a large degree. After an experimental use, extending over a period of six months, the advantages above claimed for this device have been practically demonstrated. Throughout the tests the contact was found to be uniformly good, and the wear of the contact parts at the end of six months was scarcely appreciable.

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

1. In a contact device, the combination with a contact-bar constructed of aluminium a cross-section whereof is U-shaped and the edges thereof are adapted to engage the current-conductor and complete the electrical circuit therewith, of material adapted to reduce the friction and wear of the contact parts disposed in said device adjacent to the contact edges of the bar, substantially as and for the purpose specified.

2. In an electrical contact device the combination with the U-shaped aluminium contact-bar the edges of which engage the current-conductor and complete the electrical circuit therewith, of spaces or grooves pro-

vided in said bar adjacent to the contact edges and a filling therefor of material designed to reduce the friction and wear of the contact parts, substantially as described.

- 5 3. In a contact device, the combination with the U-shaped aluminium contact-bars *a a'* secured together, of longitudinally-extending grooves *b b' b'* provided therein and a filling for said grooves of material designed

to reduce the friction and wear of the contact device and current-conductor, substantially as described.

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

FRIEDRICH WILHELM NIKOLAUS EMIL HAYN.

Witnesses:

JOHN SCHREIBER,
JULIUS ROSENTHAL.