

(No Model.)

G. GROSS.
BICYCLE FRAME AND ART OF FINISHING SAME.

No. 546,446.

Patented Sept. 17, 1895.

FIG. 1.

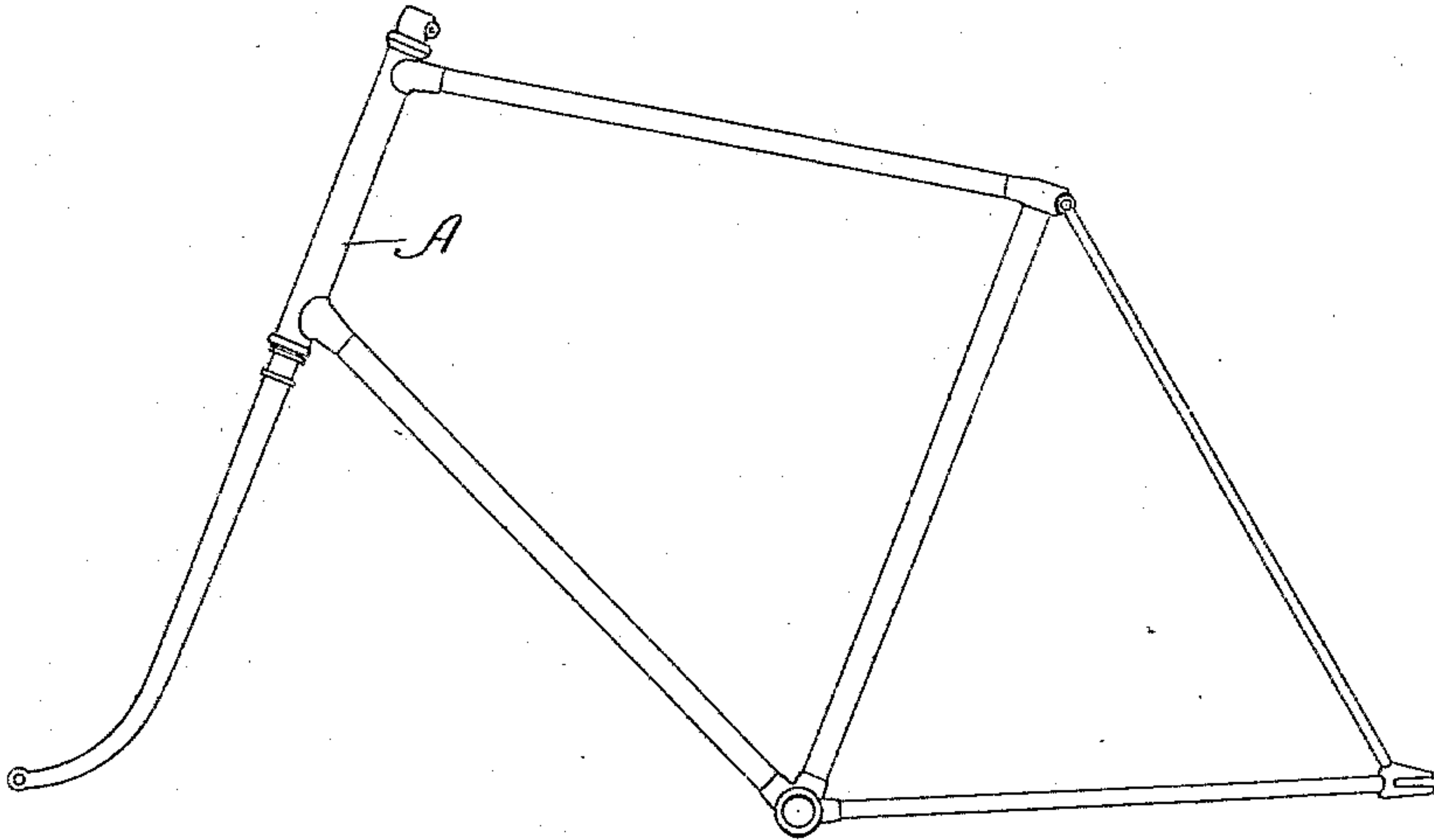
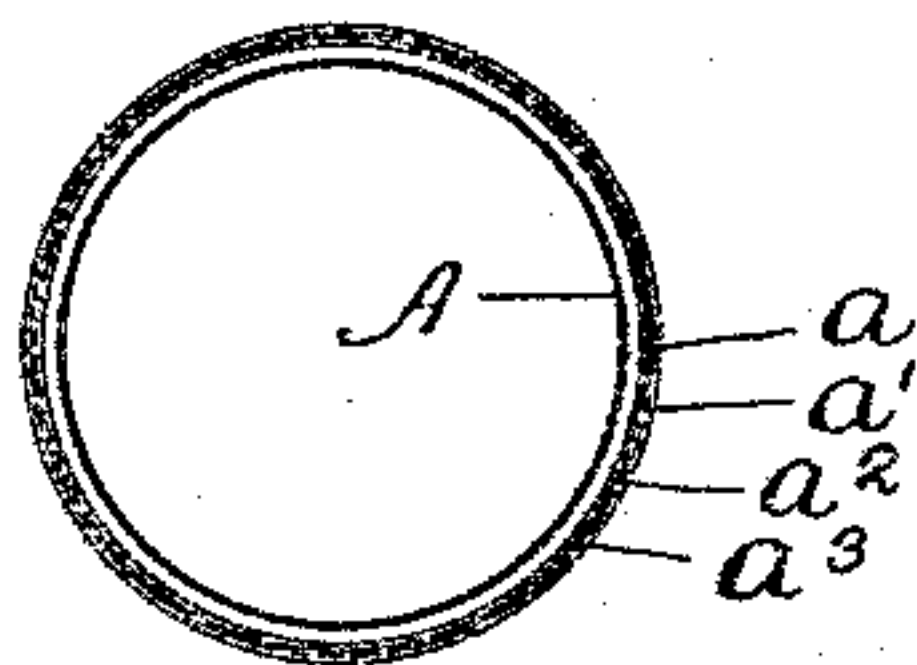


FIG. 2.



WITNESSES:

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HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE GROSS, OF PLYMOUTH, INDIANA, ASSIGNOR TO THE PLYMOUTH CYCLE MANUFACTURING COMPANY, OF SAME PLACE.

BICYCLE-FRAME AND ART OF FINISHING SAME.

SPECIFICATION forming part of Letters Patent No. 546,446, dated September 17, 1895.

Application filed September 15, 1894. Serial No. 523,120. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GROSS, a citizen of the United States, residing in Plymouth, in the county of Marshall and State of Indiana, have invented a new and useful Improvement in Bicycle-Frames and the Art of Finishing the Same, of which the following is a specification.

My invention relates to the art of finishing bicycle-frames.

Bicycle-frames are made of drawn-steel tubing, the surface of the same being bright and smooth or polished before the finish is applied, and in use the frames are exposed to mud and wet.

The object of my improvement is to provide, without the expense of electroplating with nickel or other metal, a durable, smooth, hard, high gloss or polished metallic finish, untarnishable and capable of withstanding exposure to mud and moisture. To accomplish this object or result I proceed as follows, and herein my invention consists:

The surface of the steel bicycle-frame tubing being first made perfectly clean and bright, I apply thereto with a camel's-hair brush a coating of size composed of the following ingredients, preferably in the following proportions: slow-baking varnish, one pint; boiled linseed-oil, two ounces; white lead, one-quarter pound. The admixture of the white lead in the size gives it additional body and also a slight tint of white, thus enabling the workman to coat the bright steel tubes evenly and perfectly throughout their whole surface, which could not well be done unless the perfect transparency of the size were in some way relieved or removed. The admixture of the white lead also tends to obscure or cover up the bright steel surface or luster of the tubes. I next bake the frame-tube so coated in an oven at a temperature, preferably, of about 150° Fahrenheit, for a period, preferably, of about fifteen minutes, until the size is given a strong tack and semi-hard body. The frame is then taken out of the oven and a coating of dry powdered aluminum bronze is dusted on or applied with a camel's-hair brush and afterward rubbed in thoroughly with a felt pad. The frame is then baked in an oven, preferably for about

three hours and at a temperature of about 225° Fahrenheit, until the coating of size and aluminum bronze is perfectly hard. The frame is then given one coat of pure white baking varnish, applied, preferably, with a camel's-hair brush. It is then baked in an oven at a temperature of 160° Fahrenheit, preferably for about four hours, and the frame then has a perfectly hard, smooth, high gloss and polished aluminum finish which is untarnishable and capable of being exposed to mud and water without injury.

In the accompanying drawings, forming a part of this specification, I have illustrated at Figure 1 a side elevation of a bicycle-frame composed of steel tubing provided with my improved aluminum finish. Fig. 2 is an enlarged cross-section of one of the tubes, indicating the several coatings of the finish.

In the drawings, A represents the bicycle-frame, composed of drawn-steel tubing having bright steel outer surfaces *a*.

a' is the coating of size first applied, *a*² the coating of aluminum bronze, and *a*³ the final coating of slow-baking varnish.

I claim—

1. The process of finishing bright steel tube bicycle frames consisting in first applying to the bright steel surfaces of the tubes a coating of size composed of slow baking varnish, boiled linseed oil and white lead in the proportion substantially as specified; then baking the frame tube so coated until the coating of size is given a strong semi-hard tack, then applying and rubbing in a coating of dry aluminum bronze powder, then baking in an oven until hard, then applying a coating of baking varnish, and finally baking for a third time in an oven, whereby the frame is given a perfectly smooth hard high gloss and polished aluminum finish, untarnishable and capable of being exposed to mud and moisture without injury, substantially as specified.

2. The process of finishing bright steel tube bicycle frames with a hard, smooth, untarnishable finish, capable of being exposed to mud and moisture without injury, said process consisting in first applying to the bright steel surfaces of the tubes a coating of size, then baking the same to produce a strong semi hard tack, then applying and rubbing in

- a coating of aluminum bronze powder, then baking in an oven until hard, then coating with varnish and rebaking, substantially as specified.
- 5 3. The bright steel tube bicycle frame provided with a hard, smooth, untarnishable aluminum finish capable of being exposed to mud and moisture without injury, said finish

being composed of a hard baked coating of size, a hard baked coating of aluminum bronze powder, and an outer hard baked coating of varnish, substantially as specified.

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Witnesses:

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