

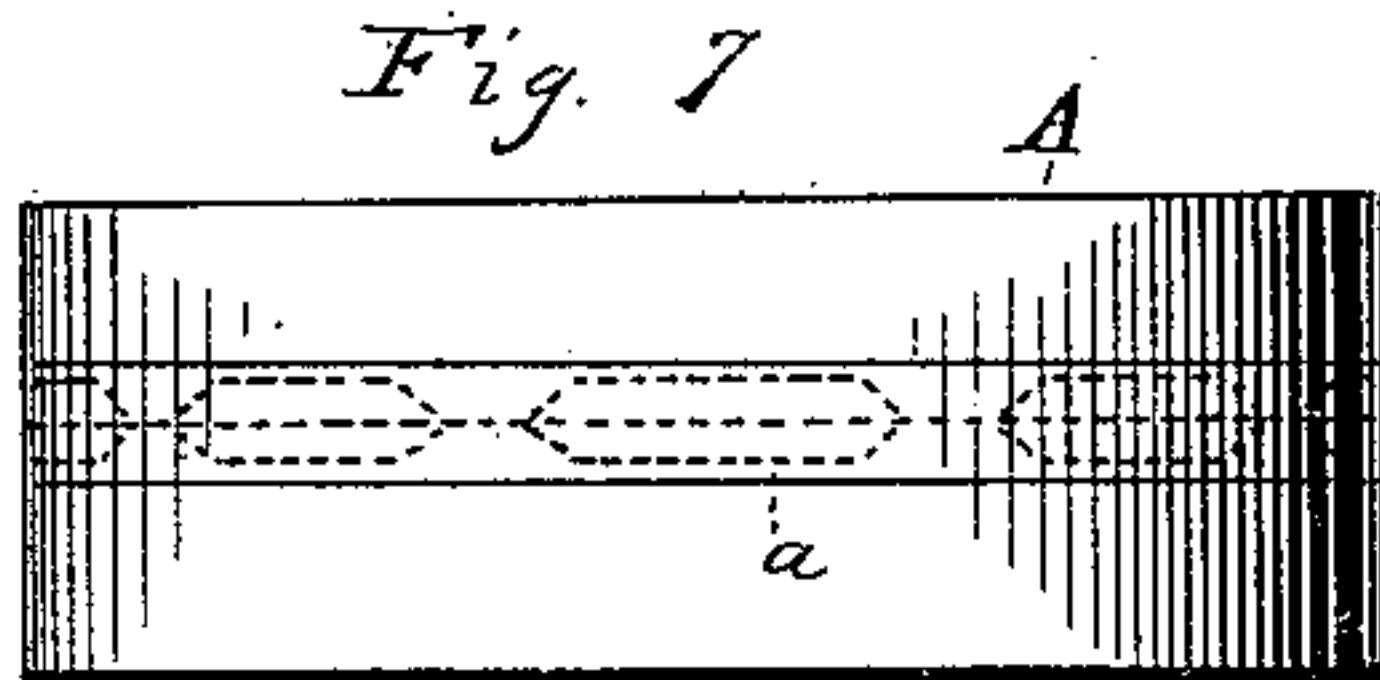
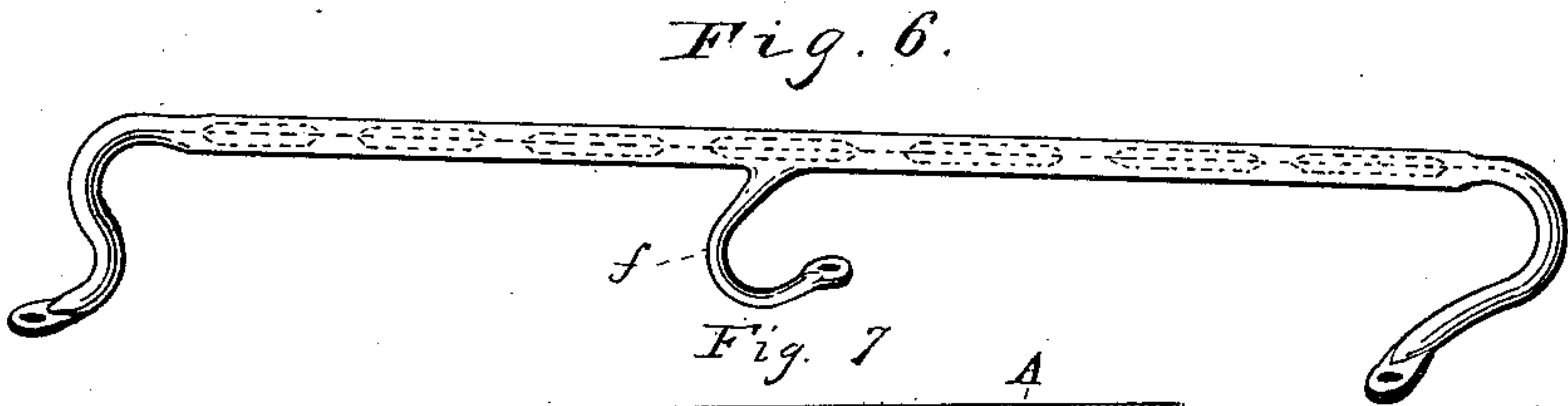
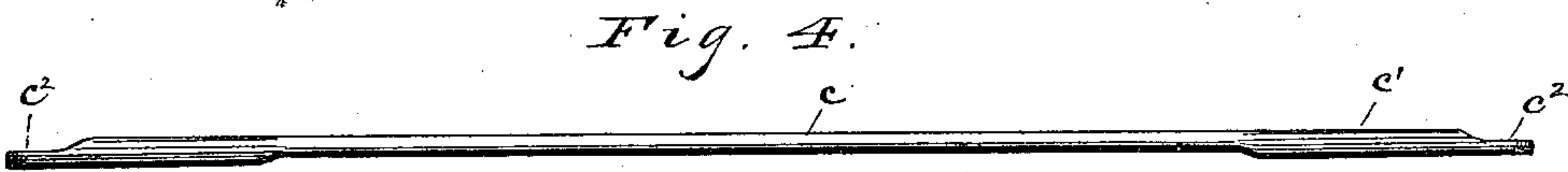
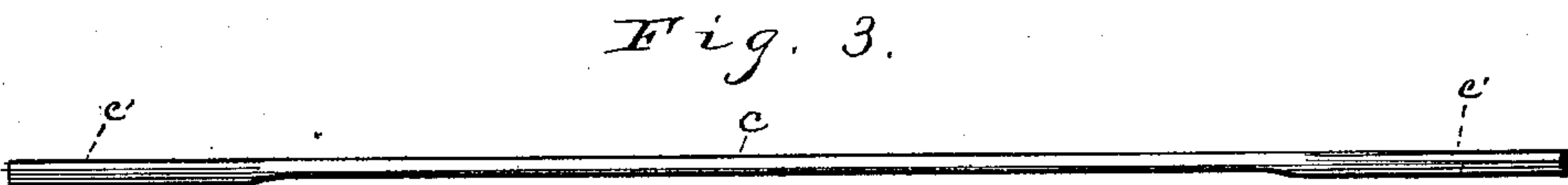
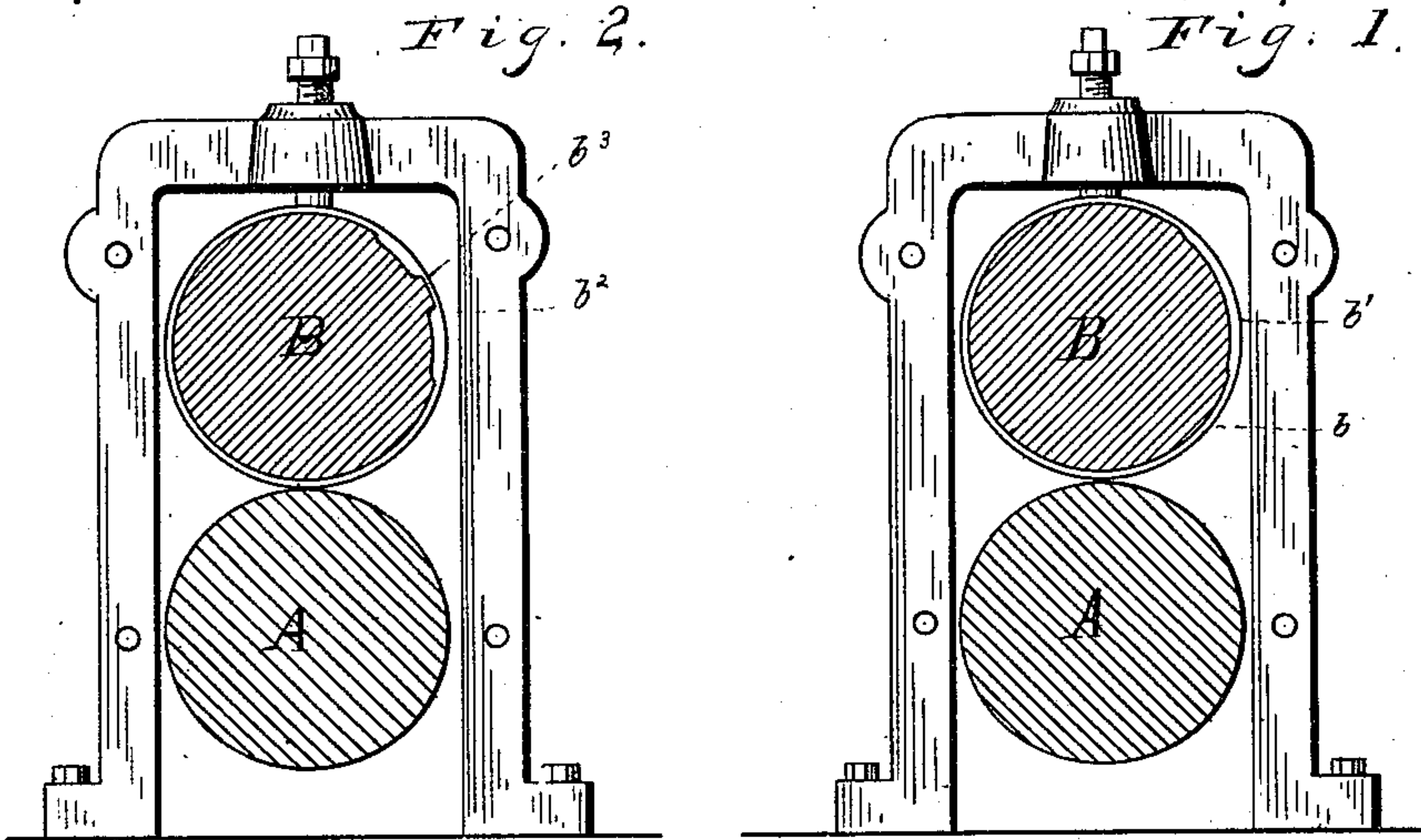
(No Model.)

S. E. BROWN.

ROLLS FOR ROLLING TOE RAILS.

No. 335,268.

Patented Feb. 2, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL E. BROWN, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND
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ROLLS FOR ROLLING TOE-RAILS.

SPECIFICATION forming part of Letters Patent No. 335,268, dated February 2, 1886.

Application filed September 28, 1885. Serial No. 178,340. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. BROWN, a citizen of the United States, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Rolls for Rolling Toe-Rails; and I do hereby declare the following to be a description of the same, and of the manner of constructing and using the invention in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, forming a part of this specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

The object of my invention is to provide a toe-rail for carriages as the product of a rolling process through a roll-pass. Such rails are commonly cast or forged, and not made by the agency of rolls.

My invention consists of a set of rolls for the making of said rails.

Figure 1 is an end elevation showing the rolls in cross-section. Fig. 2 is a similar view of rolls, somewhat different in construction, of the shape of groove from the former. Fig. 3 is a side view of a rail-blank after its issue from roll-pass of Fig. 1. Fig. 4 is a side view of a rail-blank after its issue from roll-pass of Fig. 2. Fig. 5 is a face view of a rail issued from roll-pass of Fig. 1. Fig. 6 is a similar view of a rail issued from the roll-pass of Fig. 2 after it has been additionally handled. Fig. 7 is a detail view representing a portion of the lower roll-surface provided with prick-punches.

A in Fig. 1 is the lower roll having its working-face smooth, with the exception of the small prick-punches *a*, formed on it. B, the companion roll, has on its working-face the circumferential groove *b*, with its bottom concave, and so about half-spherical in contour, with the exception of portion *b'*. Said portion *b'* is of less width and greater depth than the remaining portion of the groove, so that a passing rod will no longer at that point forcibly impinge on roll A, as in the other portions of said groove.

C, Fig. 3, is a side view of a rail after it has issued from pass of Fig. 1, and shows its main

body portion convex on one side and flat on its opposite side, and with its end portions, *c*, substantially round. Fig. 5 is a face view of the same rail, showing the projecting spurs *d* formed by the prick-punches.

In Fig. 2 a portion, *b'*, of groove *b* is shown provided with the portion *b''*, extending not quite to the peripheral surface-line of roll B, and having its top *b'''* flat.

This modified form of my invention is adapted to flatten the parts of the rolling rod which form the extremities of the toe-rail, as said rolled rod is suitably severed to form said rails. Portion *b''* of the roll-groove is hence of less width and less depth than the main portion of said groove *b*.

Fig. 6 is a face view of a rail issued from this modified form of rolls, and forged to a desired shape for application to a vehicle. Said rail is oppositely convex and flat in its main body portions *c*, substantially round at its ends *c'*, and flat on both sides at the extremities *c''* of said round portions.

f is an additional strengthening-strap, forged onto said rail, preferably near its middle portion.

In practice a bar of iron is reduced or modified, in previous roll-passes not here shown, until it is at the desired size and shape, the latter being substantially round for use in my invention. It is then entered between rolls A and B, and issued in any preferred lengths, showing different shapes and forms in different portions of its extent.

It is to be understood that the portion *b'* of groove *b* is of dimensions corresponding substantially with the dimension of the rod as it first enters the pass, so that the dimensions of said rod are not reduced in said portion.

Roll A may have its prick-punches *a* formed in any suitable design, so as to produce the desired pattern on the face of the toe-rail.

What, therefore, I claim is—

The combination, with roll B, grooved substantially as set forth, of roll A, provided with prick-punches *a*, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 19th day of September, A. D. 1885.

SAMUEL E. BROWN.

Witnesses:

T. B. HALL,
J. G. HALL, Jr.