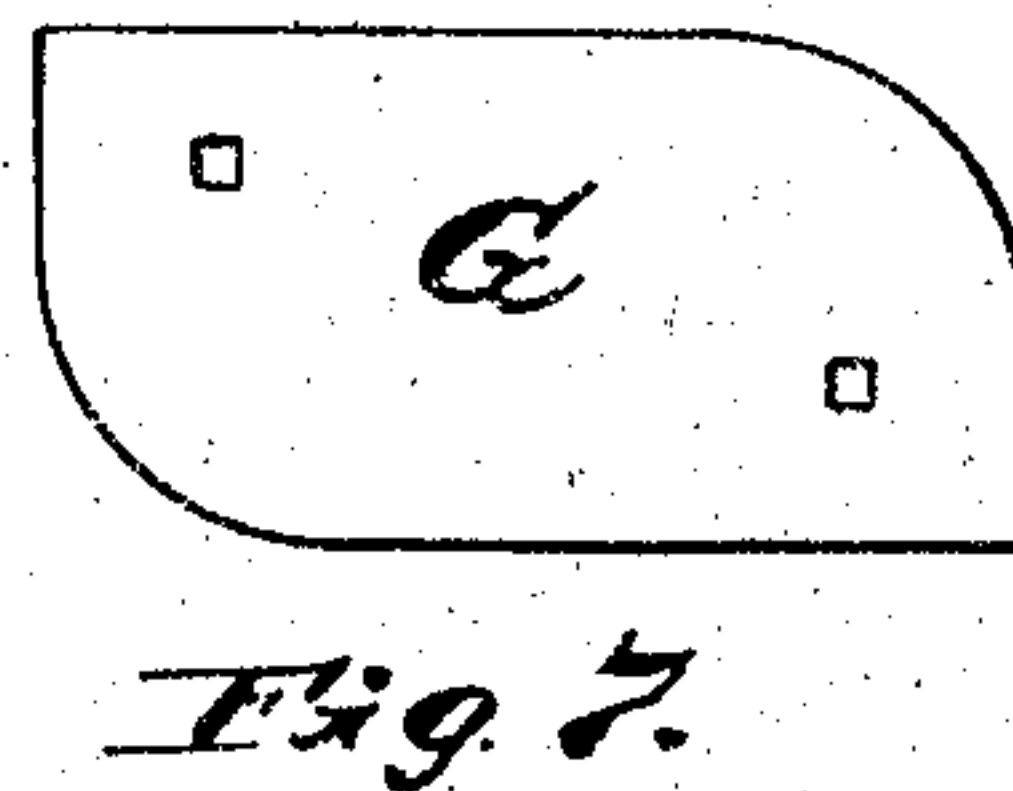
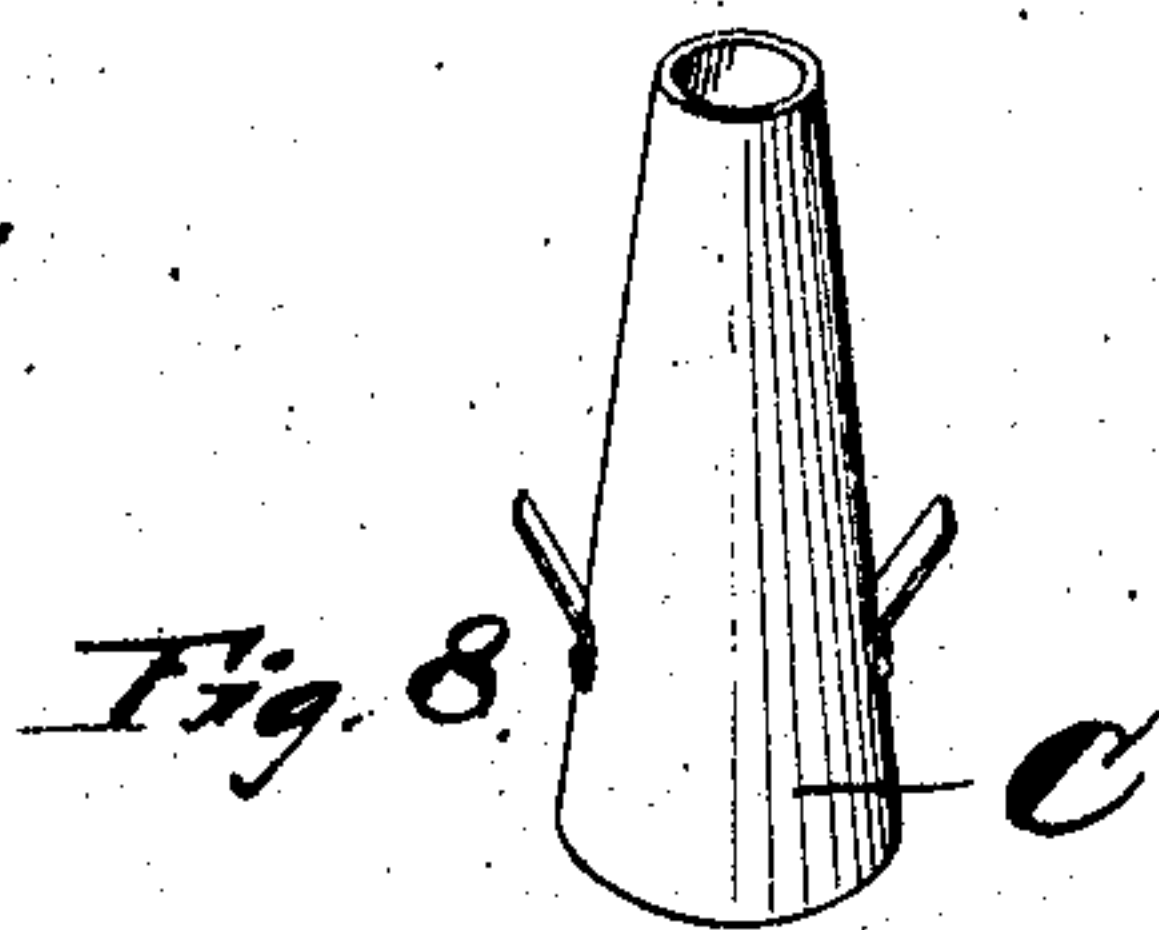
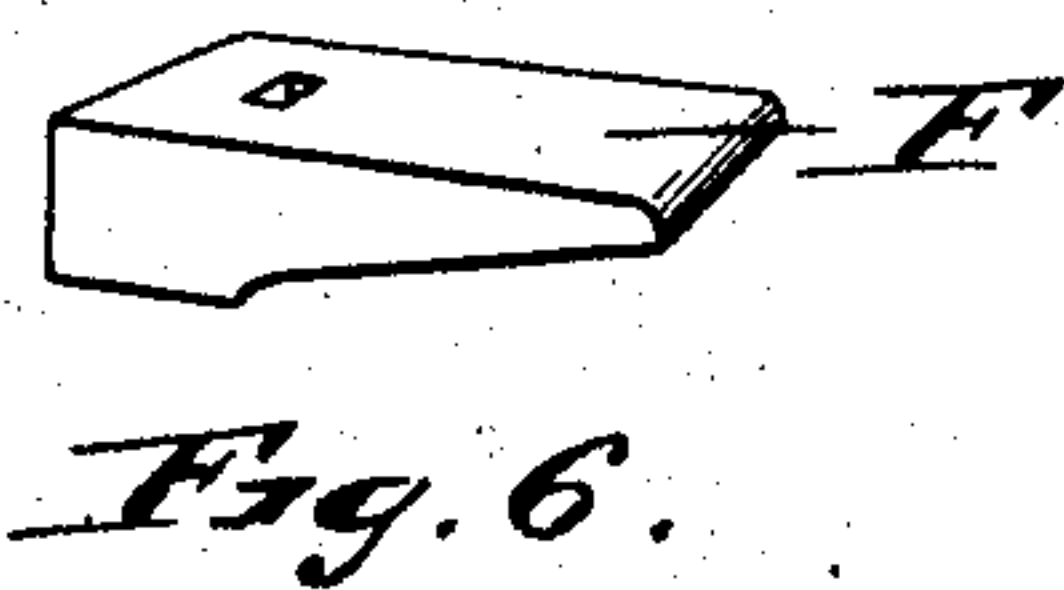
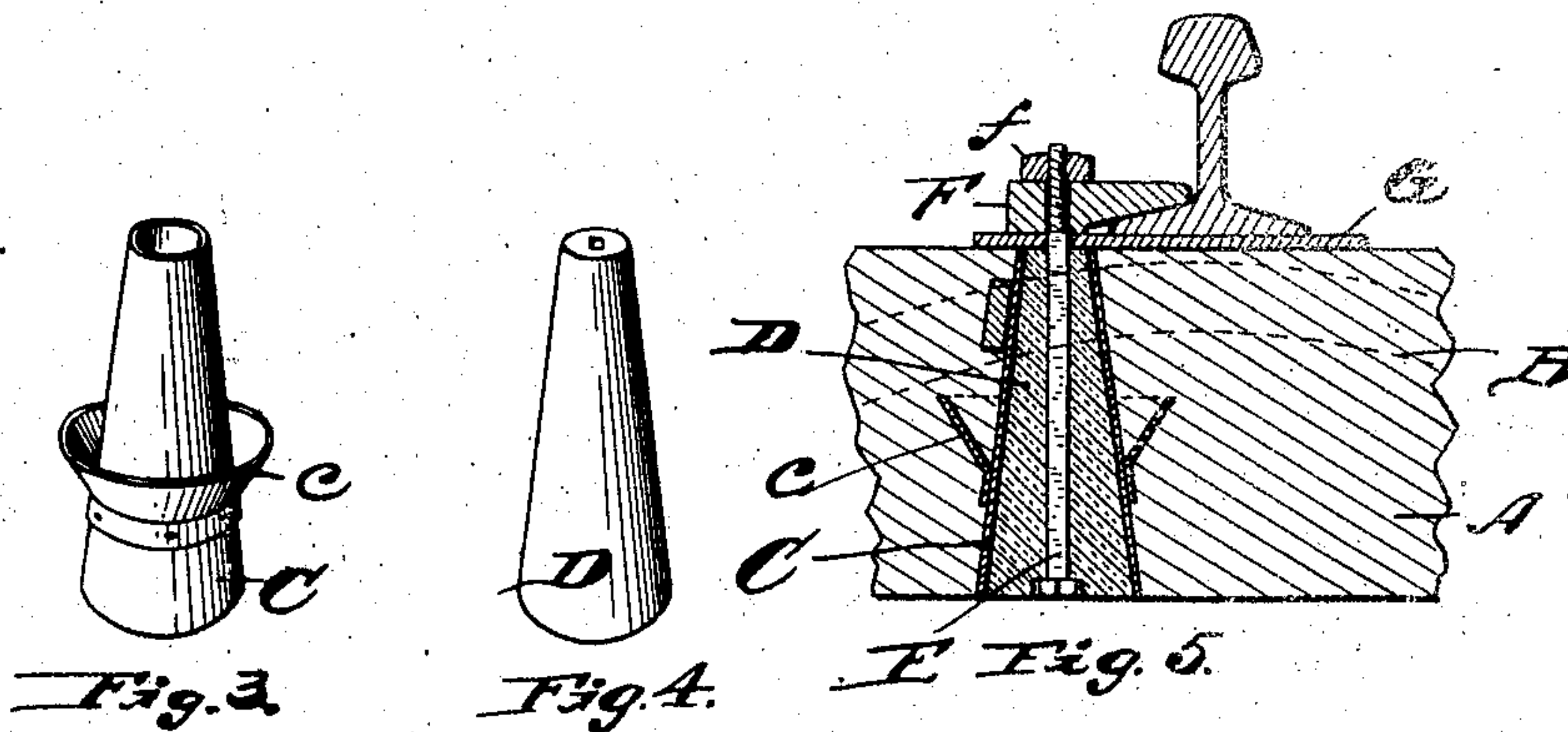
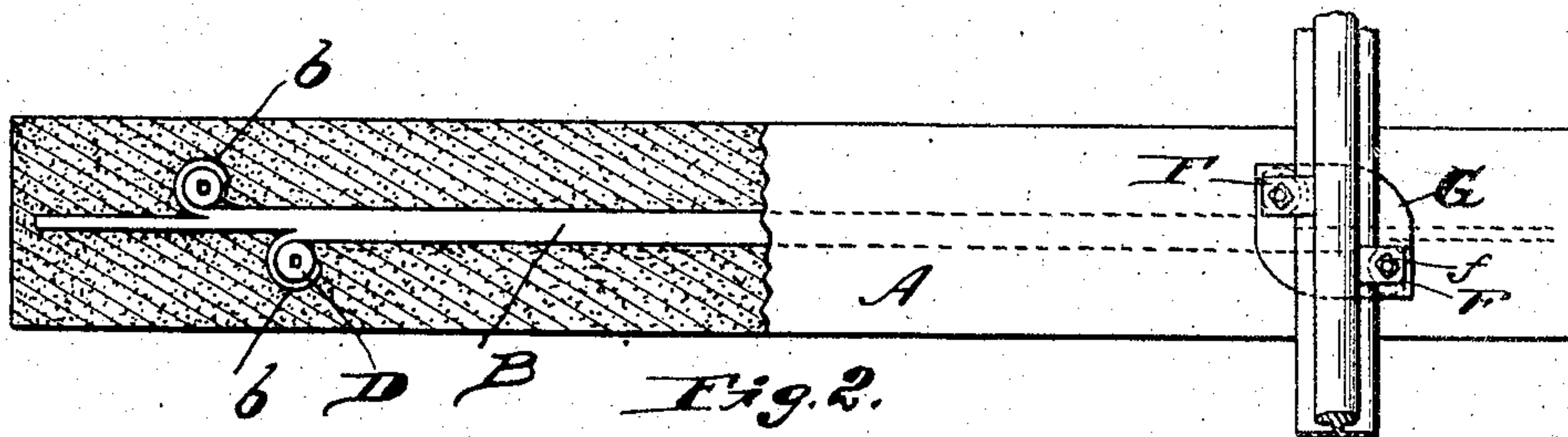
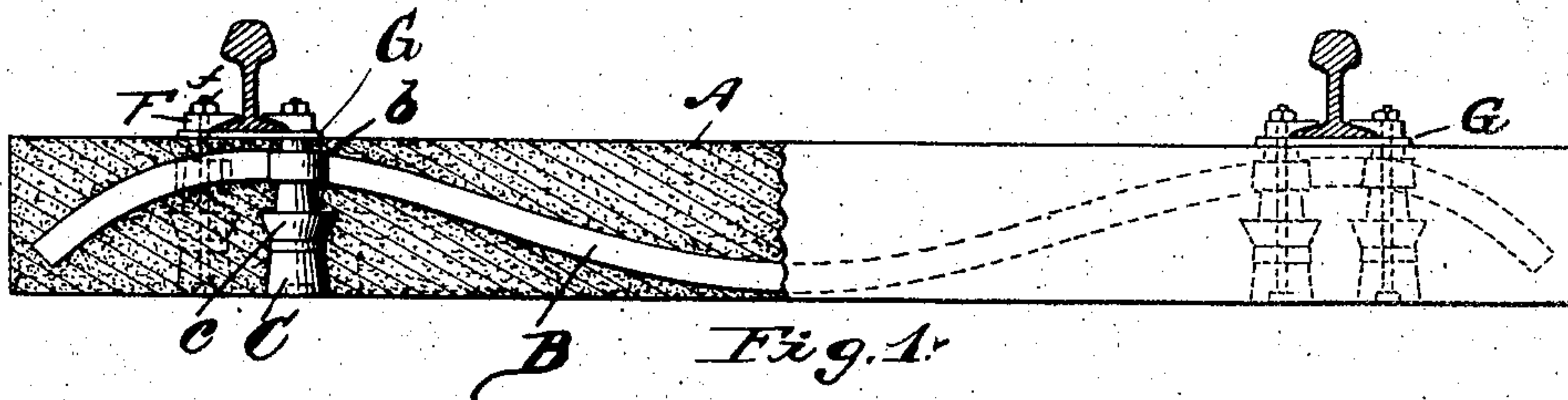


No. 833,851.

PATENTED OCT. 23, 1906.

W. O. SMITH.
RAILROAD TIE.
APPLICATION FILED JUNE 9, 1906.



WITNESSES:

Henry E. Villard
Adm. Secy.

INVENTOR:

William O. Smith
By J. E. Thomas

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM O. SMITH, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-THIRD
TO CHRISTOPHER J. SANNER, OF DETROIT, MICHIGAN.

RAILROAD-TIE.

No. 833,851.

Specification of Letters Patent.

Patented Oct. 23, 1906.

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To all whom it may concern:

Be it known that I, WILLIAM O. SMITH, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvements in Railroad-Ties; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in railroad-ties shown in the accompanying drawings and more particularly set forth in the following specification and claims.

In the drawings, Figure 1 is a side elevation of a concrete tie with parts broken away, showing the formation of the truss in reinforcing the tie, the rails being locked in position. Fig. 2 is a plan view of the tie, showing it broken away to expose the truss. Fig. 3 is a perspective view of one of the cone-sleeves embedded in the tie. Fig. 4 is a similar view of the cone. Fig. 5 is a longitudinal vertical section through a portion of the tie, showing details of construction. Fig. 6 is a perspective view of the rail-engaging clamp. Fig. 7 is a plan view of the wearing plate or shoe located between the rail and the tie. Fig. 8 shows a modification of the means employed to secure the cone-sleeve in the concrete.

The object of my invention is to construct a concrete tie in which great strength is obtained at a minimum cost of construction, the details of which will be hereinafter explained.

Referring to the letters of reference shown in the drawings, A is the concrete tie, and B a truss-shaped bar of steel embedded in the concrete.

C represents cone-shaped sleeves embedded in the concrete in line with the flange of the rail and encircled by arms *b*, preferably formed integral with the truss B. While I have shown the sleeves C embedded in the concrete cone-shaped, they may be hexagonal or any other approved form.

D represents cones, which may be metal, wood, or concrete, as desired, and provided with a central opening for the passage of the bolts E.

F indicates rail-fasteners or clamp through

which the bolt E passes, being secured by the nut *f*.

Attached to the cone-shaped sleeve C is an inverted annular cone *c* to rigidly secure the sleeve in the tie.

G is a wearing plate or shoe located between the rail and the tie.

While I have shown the arms *b* of the truss B closely embracing the sleeves C, they may merely encircle the sleeves, allowing for a wall or filling of cement between the sleeve and the arms. It will be observed that the peculiar shape of the bar B serves as a truss, giving great strength and rigidity to the tie.

The manner of assembling the parts to secure the rails to the tie will be readily apparent from the drawings.

In Fig. 8 I have shown a modification of the means for securing the cone-shaped sleeves in the concrete in which two or more projecting strips or fingers are secured to the wall of the sleeve in place of the inverted annular cone shown in Fig. 3.

Having thus described my invention, what I claim is—

1. A tie formed of concrete or cement, cone-shaped sleeves embedded in the tie, cones housed within the sleeves having central openings for the passage of bolts to secure the rails to the tie, the bolts, and clamping devices engaging the flange of the rail secured by said bolts, substantially as described.

2. A tie formed of concrete or cement, a suitable truss reinforcement, cone-shaped sleeves embedded in the tie, cones housed within the sleeves having central openings for the passage of bolts to secure the rails to the tie, the rail-retaining bolts, and clamping devices engaging the flange of the rail secured by said bolts, substantially as described.

3. In a railroad-tie formed of concrete or cement, a truss member embedded in the tie, cone-shaped sleeves also embedded in the concrete, said sleeves having annular inverted cones secured thereto to insure the sleeves against removal, a cone housed within each sleeve having a central opening for the passage of bolts for engaging the rail, the bolts, and suitable clamping devices secured by said bolts, substantially as described.

4. In a railroad-tie formed of concrete or cement, a truss member embedded in the tie, cone-shaped sleeves also embedded in the concrete, said truss member provided with

arms encircling the cone-shaped sleeves, cones housed within the sleeves provided with a central opening for the passage of a bolt, the bolts, and suitable clamping devices to engage the flange of the rail secured by said bolts, substantially as described.

5 5. In a railroad-tie formed of concrete or cement, a truss-shaped reinforcement embedded therein, cone-shaped sleeves embedded in the tie, cones housed within the sleeves having central openings for the passage of bolts to secure the rails to the tie, the bolts, clamping devices for engaging the rail secured by the bolts, the rail, and a wearing-plate between the rail and the tie provided with openings for the passage of the rail-retaining bolts, substantially as described.

15 6. A railroad-tie formed of cement or concrete, and a longitudinal reinforcement em-

bedded therein and provided with an arm at each end. 20

7. A railroad-tie composed of concrete or cement, a reinforcement embedded in the tie and provided with arms, elements embedded in the tie upon each side of said reinforcement, the aforesaid arms embracing said elements. 25

8. A railroad-tie composed of concrete or cement, sleeves embedded in the tie, each sleeve having a core, and a truss member embedded in the tie and having engagement with said sleeves. 30

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM O. SMITH.

Witnesses:

S. E. THOMAS,

C. J. SANNER.