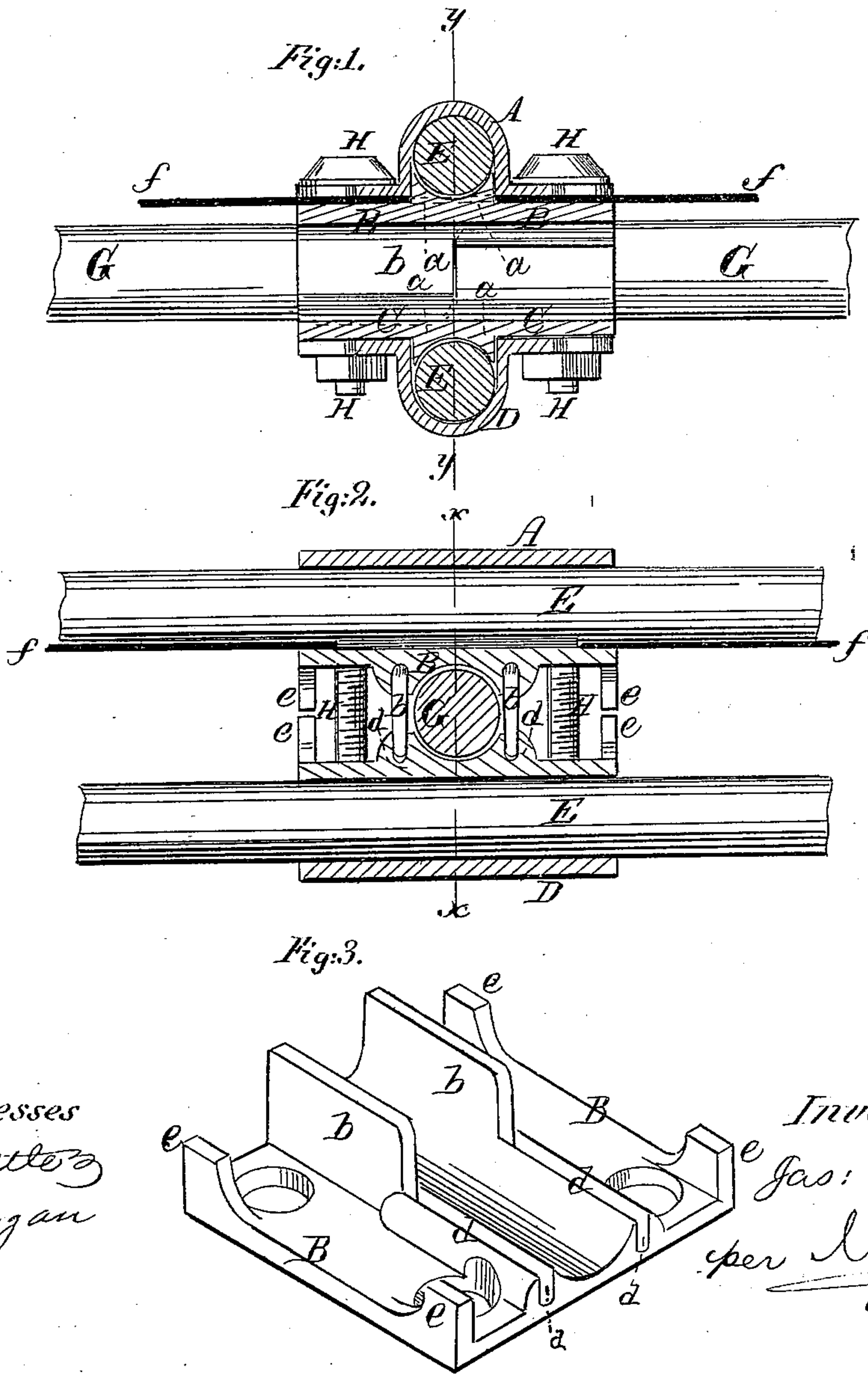


*J. M. Moorehead,
Truss Bridge.*

No. 82,738.

Patented Oct. 6. 1868.



*Witnesses
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JAMES M. MOOREHEAD, OF BROOKLYN, NEW YORK.

Letters Patent No. 82,738, dated October 6, 1868.

IMPROVED CLAMP FOR IRON STRUCTURES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES M. MOOREHEAD, of Brooklyn, in the county of Kings, and State of New York, have invented a new and improved Clamp for Crossed Rods or Tubes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a section of my improved clamp, through the centre of the horizontal rod held therein, the section being taken through the line *x x*, fig. 2.

Figure 2 is a section of the clamp through the vertical rods held therein, the section being taken through the line *y y* of fig. 1.

Figure 3 is a perspective view of the inner clamps.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a firm and easily-adjusted clamp, for the purpose of clamping the vertical and horizontal rods of engineering or other structures, when each crosses the other at right angles, and are sufficiently approximated at the line of their line of crossing to admit of being held in the same clamp.

The drawings represent the clamp when used in the construction of iron railway-cars, where two vertical rods and a horizontal rod are clamped together at different points on the top and bottom of the car.

In the construction of iron fire-proof cars, wood is excluded from the structure, and rods of iron are employed to confer stiffness to the sheet-metal plates, that form the sides, ends, top, and bottom of the car.

The clamp is composed of four plates, A, B, C, and D. The plates A and D are formed with circular recesses, for the purpose of clamping the vertical rods *E E*, as shown. The intermediate plates, B and C, are formed with semicircular recesses, for the purpose of clamping the horizontal rod *G*. This latter rod is shown in red at fig. 1, and is not shown within the recess of that figure, for the purpose of exhibiting the formation of the recess, which formation will be hereinafter duly described.

At each corner of all the plates, holes are formed for the four bolts *H*, which serve to hold the four parts of the clamp together. The recesses of the outer plates A and D are completed and made cylindrical by the circular concavities of the projections *a a a a*, forming part of the inner plates O, B, and C. These projections enter with fitting contact within the recesses in the outer plates, as shown, and thereby complete the cylindrical surface of the same.

The intermediate plates B and C are provided on their proximate faces with recessed projections, which consist of walls *b b*, fitting into correspondent grooves, *d d*, as shown. These parts are cast on the inner plates, and form part of the same, and the said walls and grooves being, respectively, opposite each other, and correspondent thereto, they unite to form a cylindrical clamp for the rod *G* when brought together.

The corner-projections *e e e e* serve to give a finished appearance to the clamp, by relieving the same of the otherwise flat angles, but in practice they should not be quite in contact, for they would then prevent the clamping-surfaces of the plates from impinging upon the rod *G*.

The rods, when clamped in the above-described plates, are held immovably, and prevented from working loose, as torsion or lateral movement of the plates is impossible, when the bolts are screwed up to a firm bearing.

The sheet metal composing the side of the car is clamped between the outer and inner plate, as shown at *f*. This clamp is also applicable to the construction of truss-bridges, where vertical and horizontal rods are employed.

These plates may be provided in quantity, and the correspondent plates taken indiscriminately and applied.

I claim as new, and desire to secure by Letters Patent—

The four plates A, B, C, and D, formed and combined substantially as shown and described, for the purpose of clamping crossed rods, all as set forth.

The above specification of my invention signed by me, this day of , 1868.

J. M. MOOREHEAD.

Witnesses:

ALEX. F. ROBERTS,

J. M. COVINGTON.