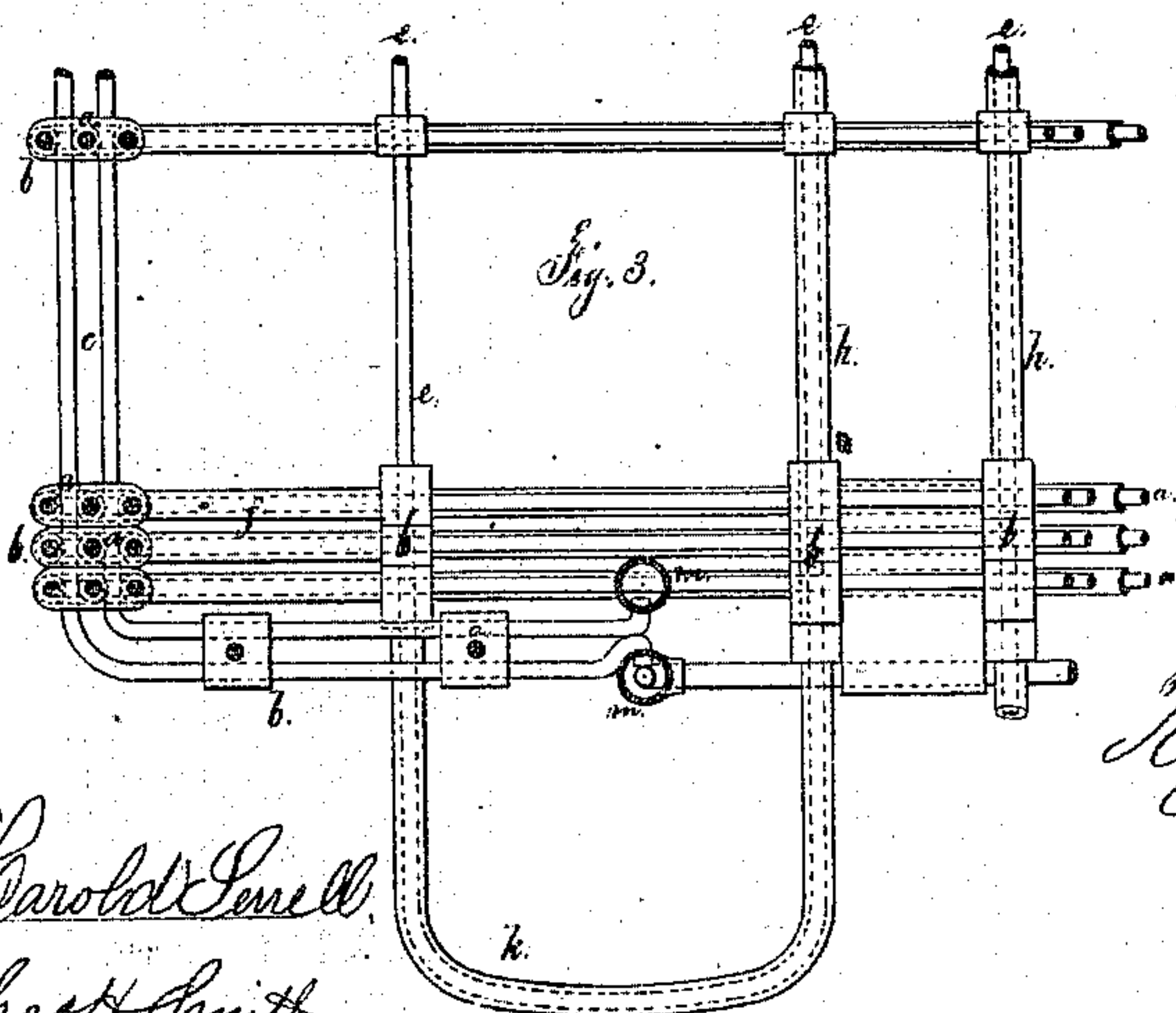
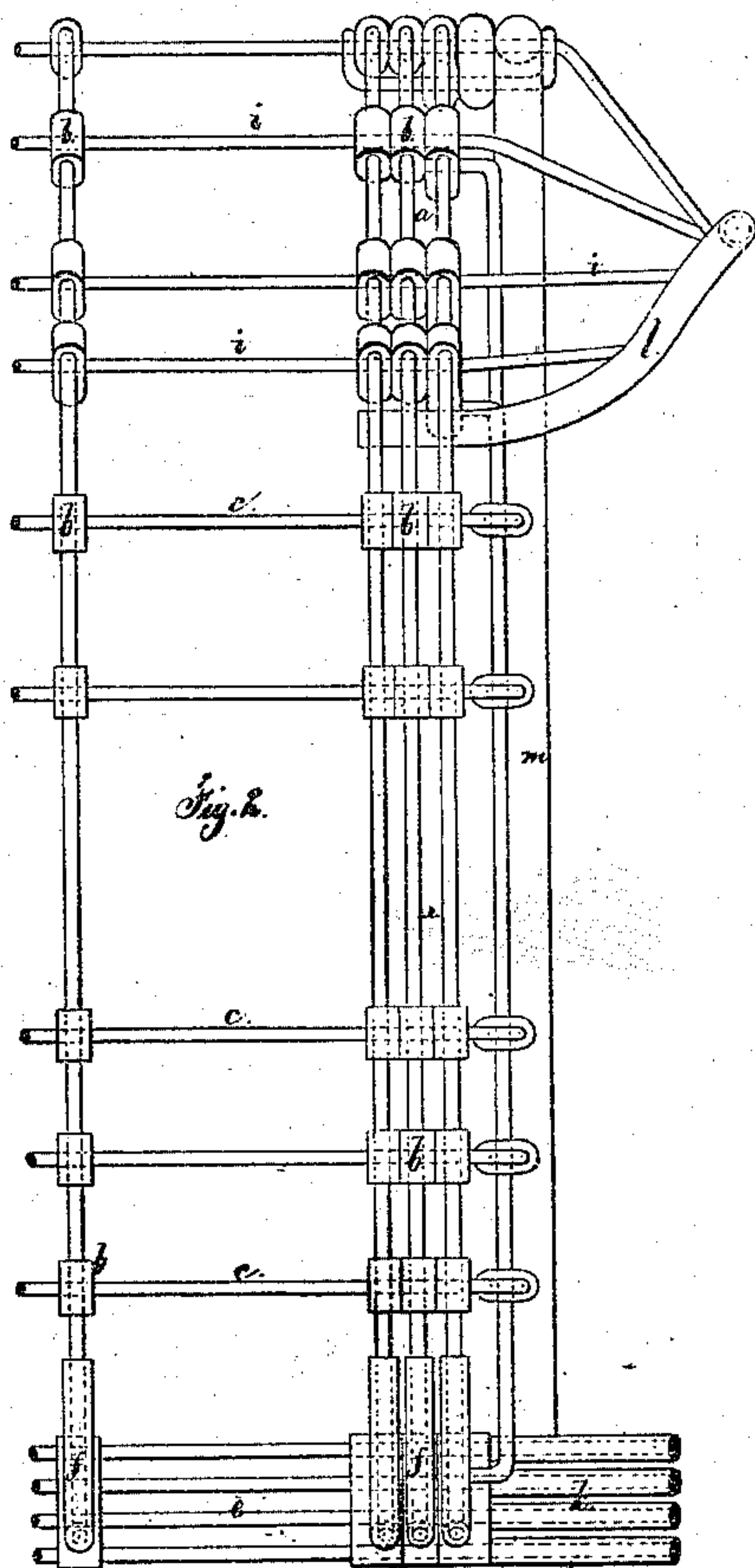
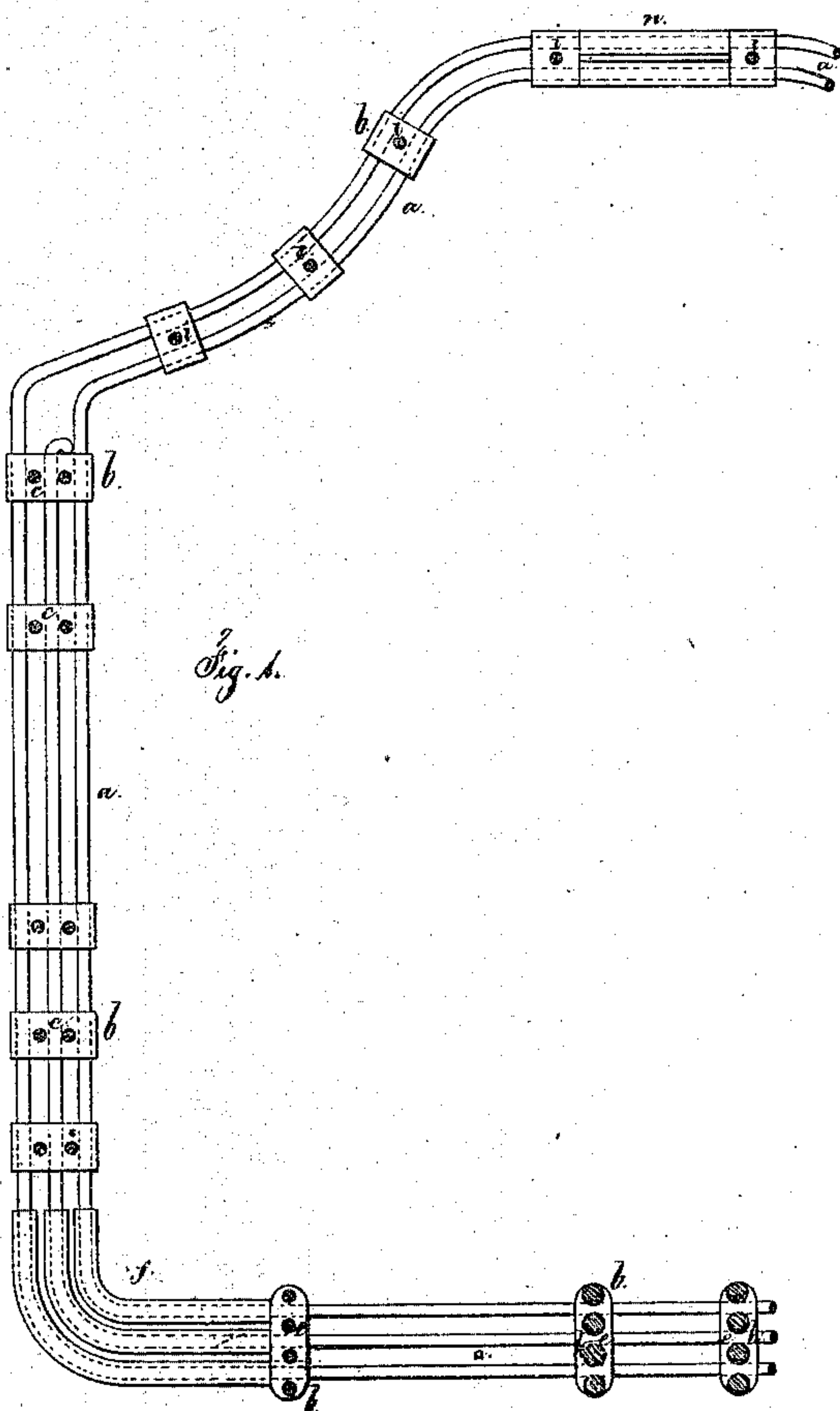


B. J. La Mothe, 3. Sheets, Sheet. 1.

Metal Car.

No. 105699.

Patented July 26. 1870.



*Witness,
Harold Lane W.
Chas. H. Smith*

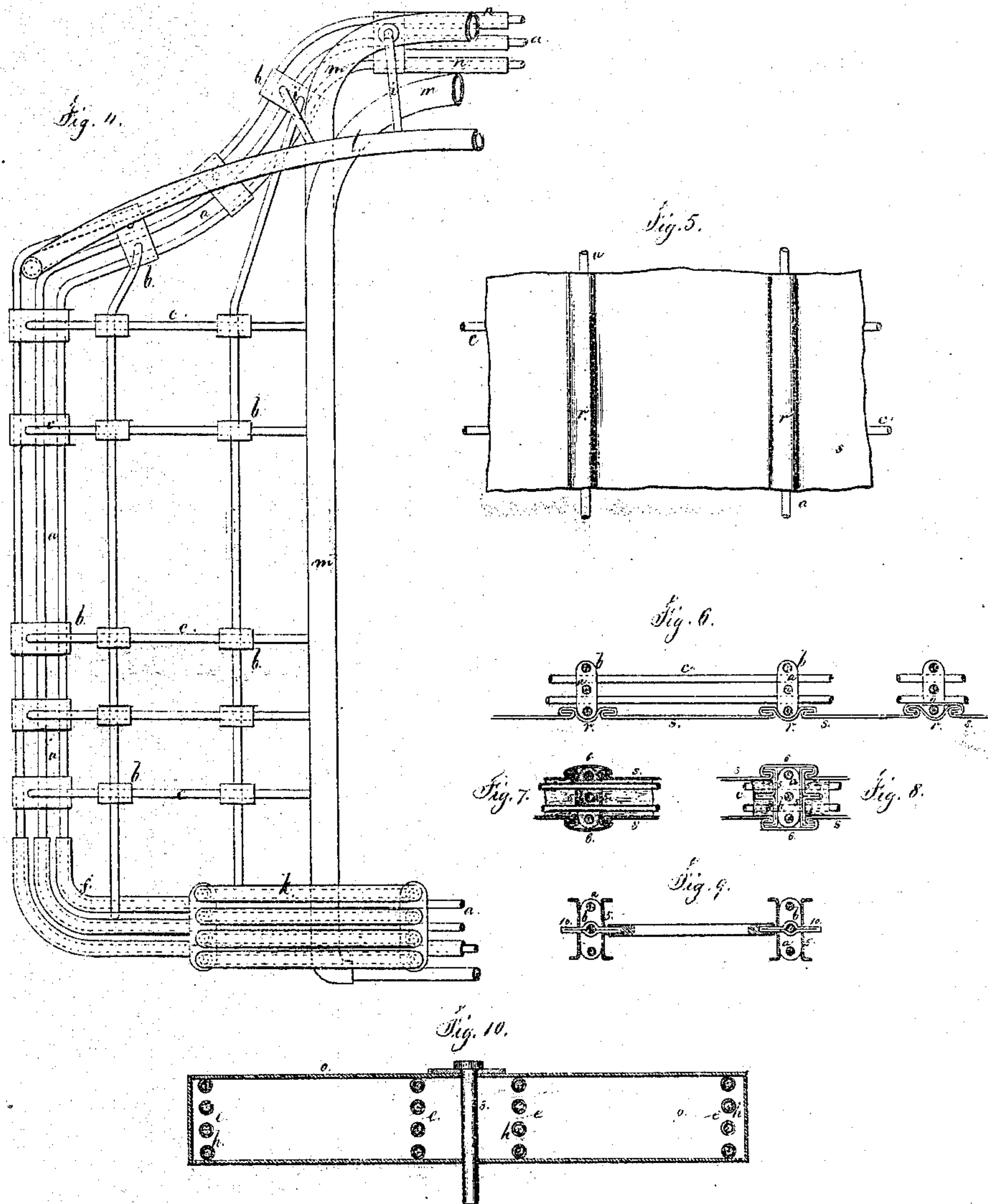
B. J. La Mothe

B. J. La Mothe, 3. Sheets. Sheet. 2.

Metal Car.

No. 105699.

Patented July 26. 1870.



Witness.

Harold Purcell
Chas. H. Smith

B. J. La Mothe

B. J. La Motte,

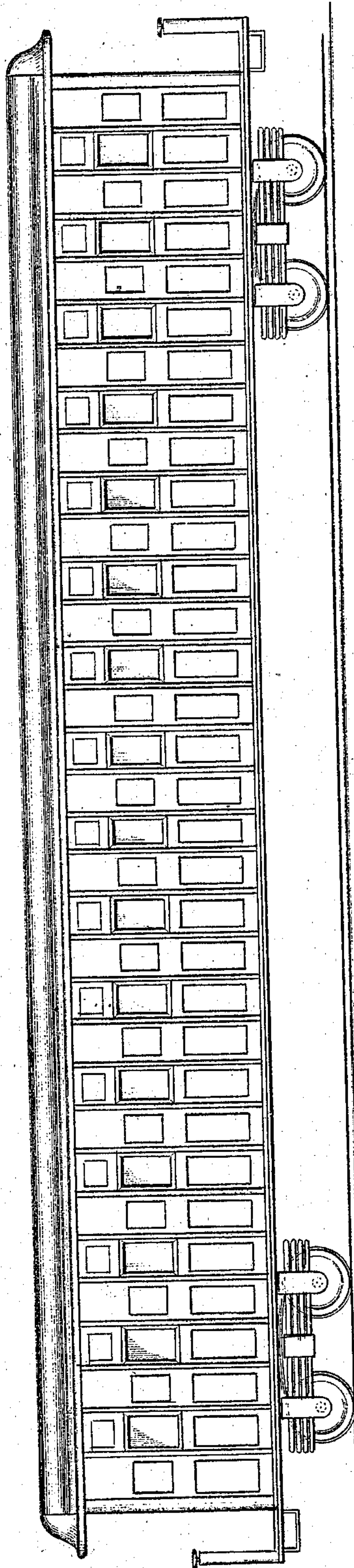
3. Sheets, Sheet 3.

Metal Car.

No. 105,699.

Patented July 26. 1870.

Fig. 11.



Witness.

*Harold Perrell
Chas. H. Smith*

B. J. La Motte

UNITED STATES PATENT OFFICE.

BERNARD J. LA MOTHE, OF NEW YORK, N. Y.

IMPROVEMENT IN METALLIC RAILWAY-CARS.

Specification forming part of Letters Patent No. 105,699, dated July 26, 1870.

To all whom it may concern:

Be it known that I, BERNARD J. LA MOTHE, of the city and State of New York, have invented an Improvement in the Construction of Metallic Railroad-Cars; and the following is declared to be a correct description thereof.

The object of my invention is the construction of railroad-cars and other vehicles in a manner that will render them, when compared with ordinary cars and vehicles, far more strong for resisting a crushing force, at the same time being far more durable, lighter in weight, fire-proof, more easily and rapidly constructed, and, if disabled from any cause, the parts may be again employed, more or less, in the reconstruction of the car.

The first part of my invention relates to the frame-work, which I construct from round or elliptic rods of metal, preferring those of soft steel, both for the longitudinal and transverse bars, and employ in both cases two or more of such rods, varying in size or number, according to the locality or position in the framing, as greater or less strength or stiffness is necessary at such part. This frame-work is composed and made of rods, placed a short distance from and parallel to each other, united by perforated metallic intersection-blocks, slipped over the rods, securing them in proper position. These tie-blocks have transverse perforations, through which the rods forming the cross-framing are passed, thus locking the frame-work at the intersections with great strength and simplicity, whereas in other cars the joints and intersections are not only expensive, but the weakest parts.

The second part of my invention consists in the method I employ for securing the covering to the frame-work. I cover the vehicle outside or inside, or both, with thin sheets of metal, or with leather or papier-maché, or with any two or more of said materials, and I fill the space between the said coverings with any suitable non-conducting substance, such as sawdust, light wood, or other proper material, which may be saturated by any method to render it non-inflammable.

In the drawing, Figure 1 is a vertical section, showing half of one of the transverse frames of the car. Fig. 2 is a side view of the frame at the end of the car. Fig. 3 is a plan of the platform and one corner of the car. Fig.

4 is an end elevation of the frame at the end of the car adjacent to the door. Fig. 5 is an elevation of part of the exterior of the car. The other detached views are separately referred to.

It is to be understood that my system of metal frame-work for railroad-cars and other vehicles is to be carried out to any desired extent, according to the dimensions and character of the car or vehicle, and in cases where greater strength is required the parts can be duplicated.

The transverse frames of the car are formed of rods *a a*, of steel or other strong, tough material, bent to the desired shape, and passing through the intersection-blocks *b b*, and these blocks *b b* are made with holes running at right angles to the holes for the rods *a*, and through these holes the horizontal tie-rods *c c* pass. If the rods intersect each other at any other than a right angle, the holes in the blocks are made accordingly.

The platform or bottom of the car is made of greater strength than the other portions of the structure, and for this purpose the longitudinal rods *e e* are more numerous than those in each intersecting transverse frame, and the blocks *b* are longer for receiving said rods.

At the junction of the bottom and sides of the car the rods *a* of the transverse frames are passed through tubes, as at *f*, previous to being bent, so that the parts are strengthened along the edges of the floor and where there is strain from the sides and upper part of the car.

The rods *a* are grouped together at the ends of the car, to give sufficient strength to prevent one car running into another in case of collision or accident. In this manner great protection is afforded, especially in passenger-cars.

The longitudinal rods *e e* of the platform receive the end thrust in backing, and also the tension in drawing the train. I therefore stiffen these rods by lengths of pipe between the blocks *b b*, through which the rods *e* pass, as seen at *h*.

The portion of the platform projecting outside the car should also be stiffened, which I accomplish by the tubes *k*, through which the rods *e* may run.

The roof portion of the car can be made of

a less number of rods than the sides, as shown, and the longitudinal rods *i i* of the roof are to be extended and connected to the rod or tube *l* around the edge of the hood over the platform.

The tubes *m* form the pillars of the doorway, and to these the horizontal rods *c* are connected.

The rods *a*, forming the transverse frames of the cars, should be continuous, or united together near the center of the roof of the car, and for this purpose may be passed into tubes *n* and secured by cross-pins, or be passed through a metal block, and the ends bent so as to prevent their drawing apart; or they may be welded together.

The car is provided with a bearer or transom, *o*, (see section, Fig. 10,) carrying the king-bolt 3, and resting upon a truck of any desired construction. This bearer may be of wood in a metal case, and through this bearer the rods *c* pass.

The floor of the car is to be made of suitable material; but I prefer to employ metal plates above and below the metal rods, attached in any convenient manner; and the intervening space is to be filled with non-conducting material, such as sawdust, and a surface of felt, wood, leather, or other material, may be provided for the inside of the car, including the floor.

For the outside of the car I make a covering, in which folded strips of sheet metal are employed to connect with each other, and also with panels or plates of metal, felt, papier-maché, water-proof paper, or other suitable material.

Figs. 6, 7, and 8 illustrate the mode of making the metallic connecting-strips and covering-plates.

In Fig. 6 the strips *r* are shown with returned folded edges, taking similar folds upon the edges of the plate *s*, and these are held to the frame by the sheet-metal hooks 4, or otherwise.

Fig. 7 shows the interlocking strips 5, through which the rods *c* pass, and an interlocking cap-strip, 6, is slipped over to secure the strips 5 and plates *s* together.

There may be a filling of felt or other material, as illustrated in Fig. 7, between the outside and inside coverings to the car-frame.

In Fig. 8 the same parts are shown as in

Fig. 7, with the addition of the strips 8, that serve to aid in holding the felt filling material to place.

It is to be understood that the interior of the car may be lined with metal plates, papier-maché, or other material, in the same manner as the outside.

Fig. 5 illustrates the appearance of the surface of the metal plates. These plates may be ornamented to any desired extent by dies or otherwise.

In order to furnish guides for the window to slide upon, I fold plates of metal, as seen at 10, Fig. 9, and corrugate the same, so as to pass the rod *a* through it to hold it in place, and this plate 10 passes through mortises in the plates 5. Thereby the parts are held firmly and a straight slide for the window is formed. The window itself is to have a groove in the vertical slides of the frame, to sit upon these plates 10.

Fig. 11 is an elevation of my car complete.

I claim as my invention—

1. The metallic frame for vehicles, made of bars passing through holes in the solid intersecting tie-blocks *b*, as specified.
2. The short tubes around the rods *c*, interposed between the tie-blocks, to serve as stops or stays, as specified.
3. The platforms, made by projecting the bars of the longitudinal sills and frame beyond the ends of the car, said bars being stiffened and connected by bent tubes, as specified.
4. The roof of the platform, formed by the longitudinal rods of the roof, terminating and secured to the curved tube coping, as specified.
5. The folded interlocking strips or sheet-metal hooks for attaching the covering of sheet-metal or other material to the metal frame of the car, as specified.
6. The metallic slide for the window-sash, formed and attached in the manner specified.
7. A group of rods and intersection-blocks at the angles of the car ends, to prevent one car sliding into another in cases of accident, as specified.

Signed this 13th day of April, A. D. 1870.

B. J. LA MOTHE.

Witnesses:

HAROLD SERRELL,
GEO. T. PINCKNEY.