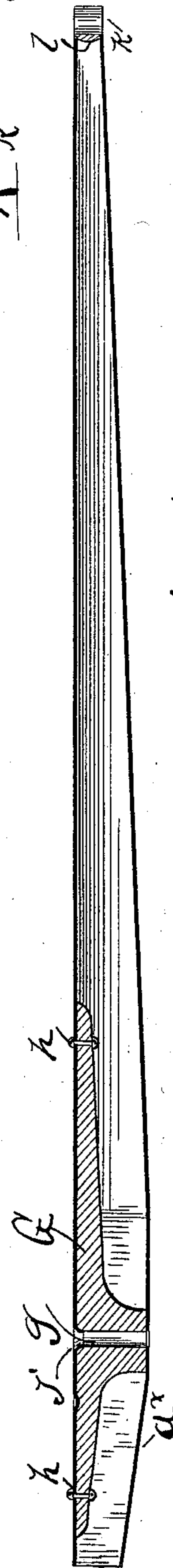
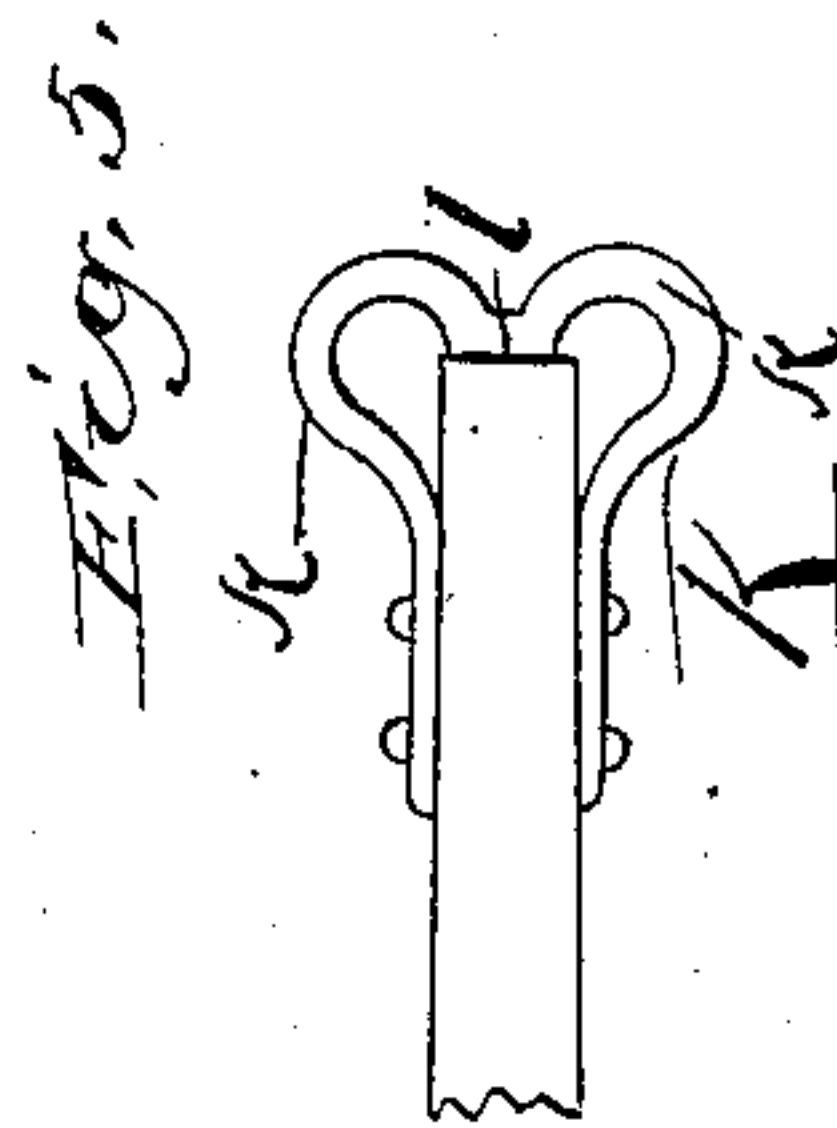
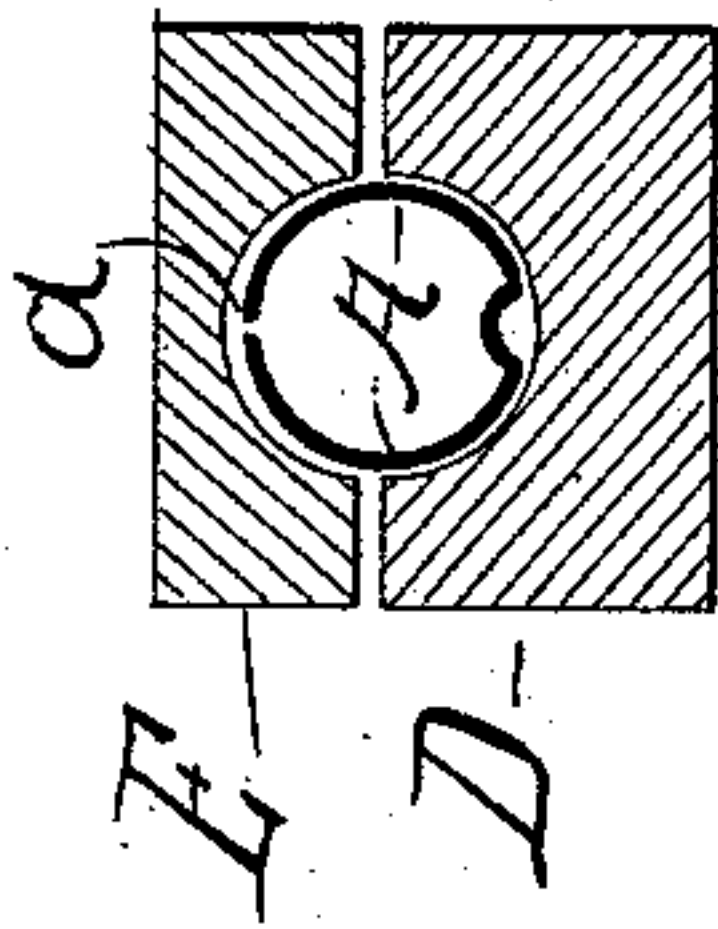
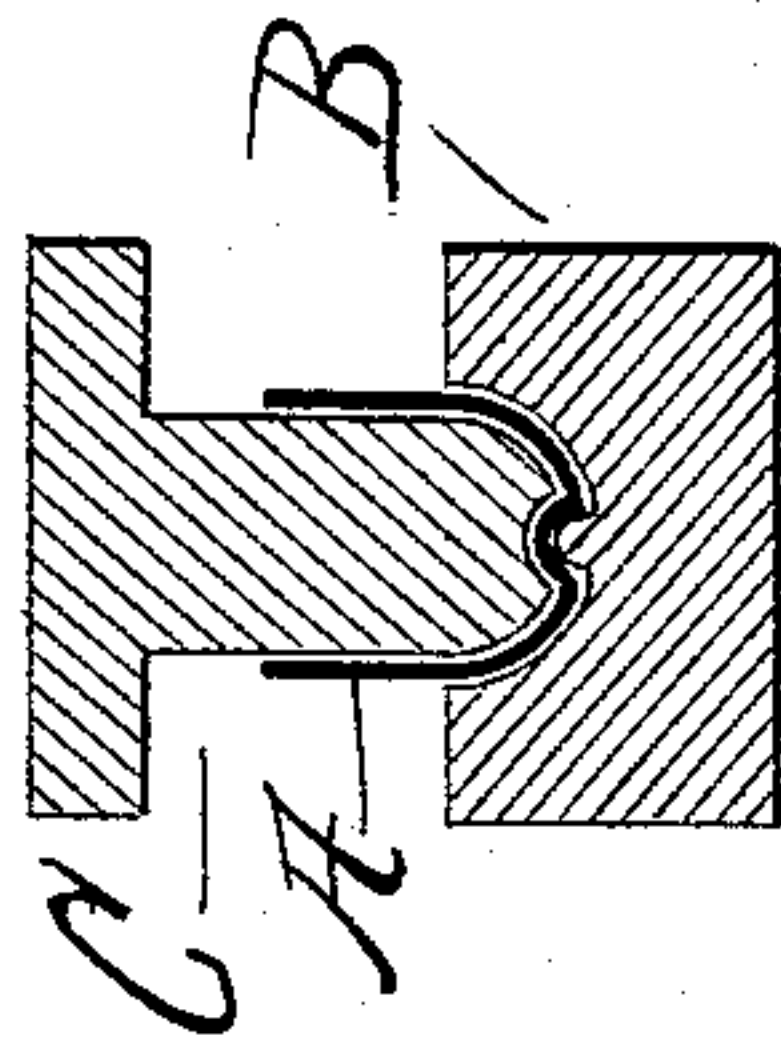
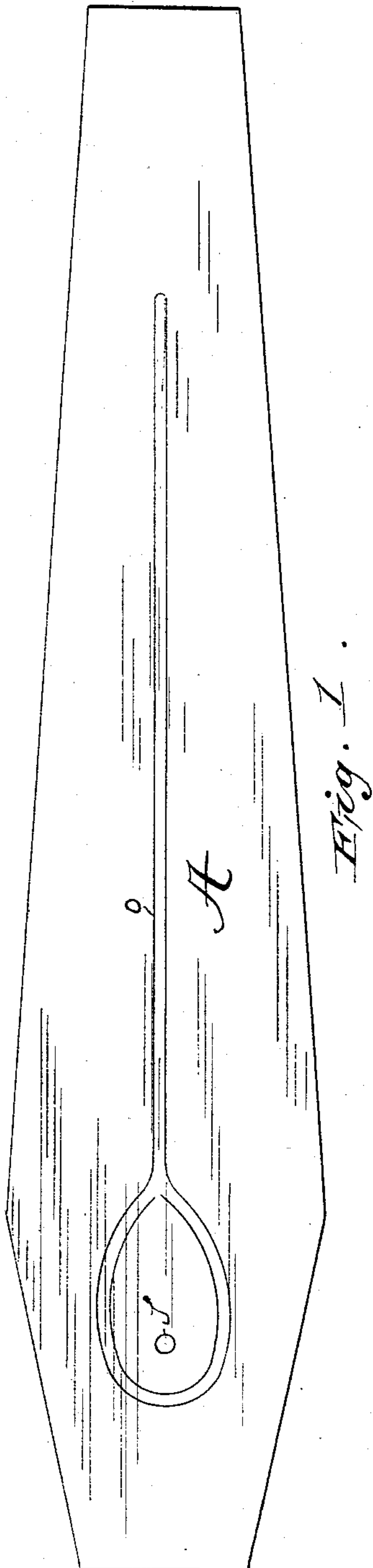


(No Model.)

J. GRAVES.
WAGON POLE.

No. 539,897.

Patented May 28, 1895.



Attest:
C. W. Benjamin
P. A. Fay

Inventor:
John Graves
by Walter Brown
his atty

UNITED STATES PATENT OFFICE.

JOHN GRAVES, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND
LOUIS MONJO, OF SAME PLACE.

WAGON-POLE.

SPECIFICATION forming part of Letters Patent No. 539,897, dated May 28, 1895.

Application filed May 18, 1894. Serial No. 511,659. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRAVES, a citizen of the United States, and a resident of Brooklyn, in the county of Kings, State of New York, have invented a certain new and useful Improvement in Wagon-Poles, of which the following is a specification.

My invention relates to sheet metal wagon poles as a new article of manufacture to be substituted for the wooden wagon poles now generally used.

My sheet metal wagon pole is manufactured by pressing a sheet of metal in appropriate dies, and is, therefore, much cheaper than the wooden poles. It is also very strong and light, and its manifold advantages over the wooden pole make it an article of great utility.

Referring to the drawings, Figure 1 is a view of a sheet of metal shaped ready for the subsequent operations. Fig. 2 is a sectional view of the dies and pole at the end of the first operation of shaping the pole tube. Fig. 3 is a sectional view of the next set of dies and the pole at the end of the next operation of shaping the pole tube. Fig. 4 is a longitudinal section of the finished pole. Fig. 5 is a broken horizontal section of the front end of the pole, showing the fitting.

A sheet of metal A, preferably sheet steel, is first cut to the proper outline and about as seen in Fig. 1. Said sheet A, is then placed in a long female die B, and is bent to a U-shape by a male die or plunger C, (Fig. 2.) The partially formed tube is then removed from this die and placed in another long female die D, and compressed between said die D and a corresponding die E, by which the branches of the U are bent around and the tube completed, (Fig. 3.) The said dies B and C, D and E are tapered so as to give to the finished tube the form indicated in Fig. 4. The joint *a*, where the edges of the sheet meet when folded will be at the under side of the finished pole. If the dies D, E, are arranged as seen in Fig. 3, the pole will be merely turned over after being removed from the said dies, so as to bring the joint *a*, undermost.

As will be understood by sheet metal workers, the rear end of the finished pole, at the tapering part *a*^x, will be somewhat open on the under side and to provide a durable and

appropriate eye *f*, for the pin, I place in the rear end of the pole a block G, of malleable or cast iron, which is provided with a hole *g*, which is countersunk on the upper side. Said block G can be secured on the pole in any suitable manner, as by bolts or rivets *h*, *h*. After said block G, is in place, a hole *j*, is cut through the sheet metal and the rim of the hole turned down into the countersunk extremity of hole *g*, in the block G, as shown in Fig. 4. Finally the front end of the pole is furnished with a fitting K of malleable or cast iron, which is provided with eyes *k*, *k*, and a button *l*, that fits in and closes the end of the pole. Said fitting K, is fixed on the pole by bolts, *m*, *m*, or in any other suitable manner.

I may give additional stiffness to the pole by forming a corrugation *o*, thereon, as indicated in Figs. 2 and 3, and I prefer that said corrugation *o*, should extend from near the front end of the pole to near the hole *j*, and there branch forming a loop around the hole *j*. I have indicated the said corrugation in Fig. 1, although, of course, said corrugation appears in the pole only after the same has passed through dies.

Now, having described my improvement, I claim as my invention—

1. As a new article of manufacture, a wagon pole consisting of a tube of sheet metal, a block G secured in the rear part thereof and provided with a countersunk eye, a corresponding eye in the tube having its rim turned into the eye of the block G, and a fitting K provided with a button for closing the front end of the pole and with eyes *k*, *k*, substantially as described.

2. As a new article of manufacture, a wagon pole consisting of a tube of sheet metal provided at its rear end with an eye block G and at its front end with a fitting K, and said tube provided with stiffening corrugations *o*, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of February, 1894.

JOHN GRAVES.

Witnesses:

BERNARD J. ISECKE,
DAVID WALTER BROWN.