

No. 696,753.

Patented Apr. 1, 1902.

S. D. ROBISON.  
DIE FOR MAKING FORKS.

(Application filed Dec. 18, 1901.)

(No Model.)

FIG. 1.

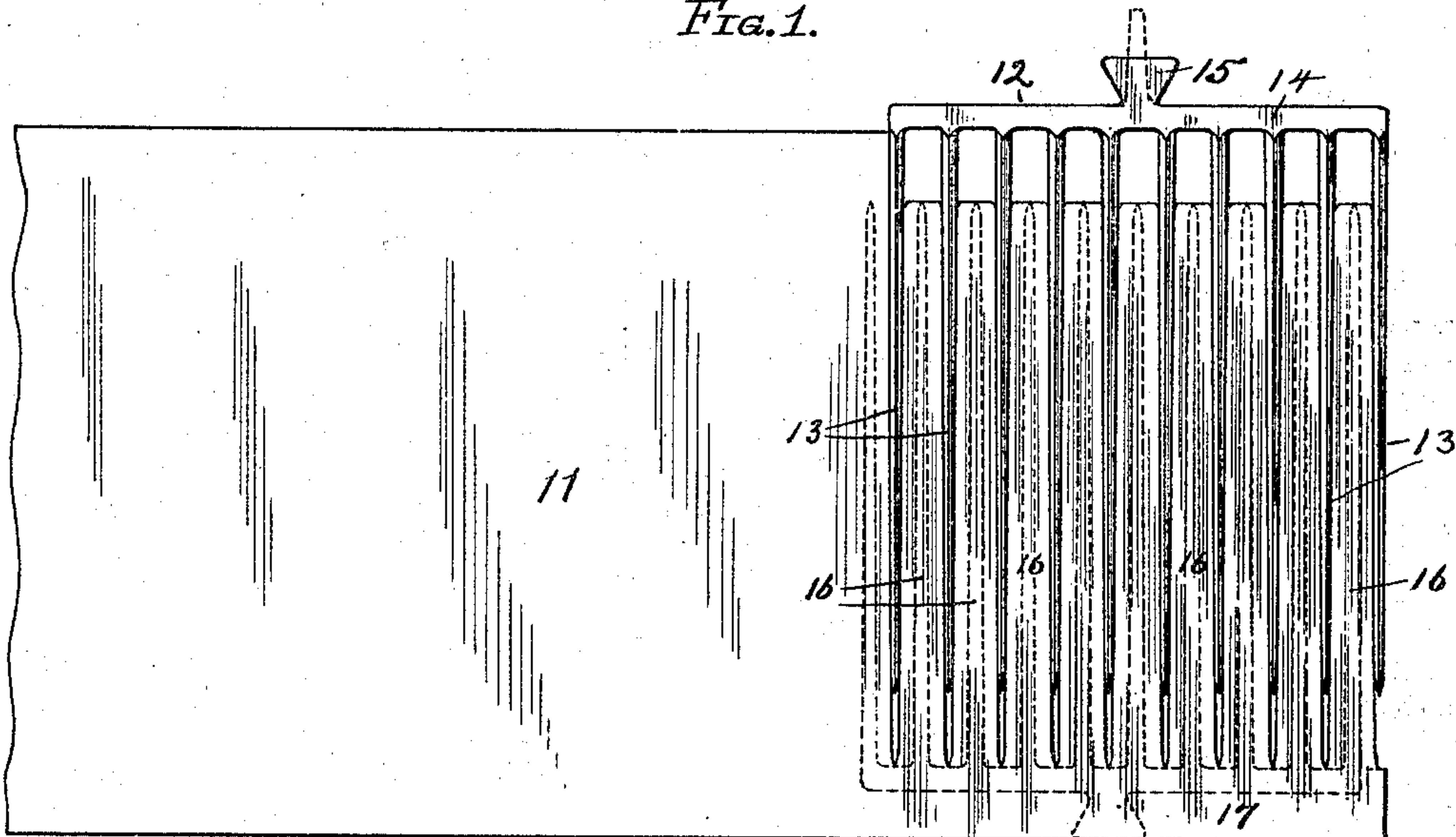


FIG. 2.

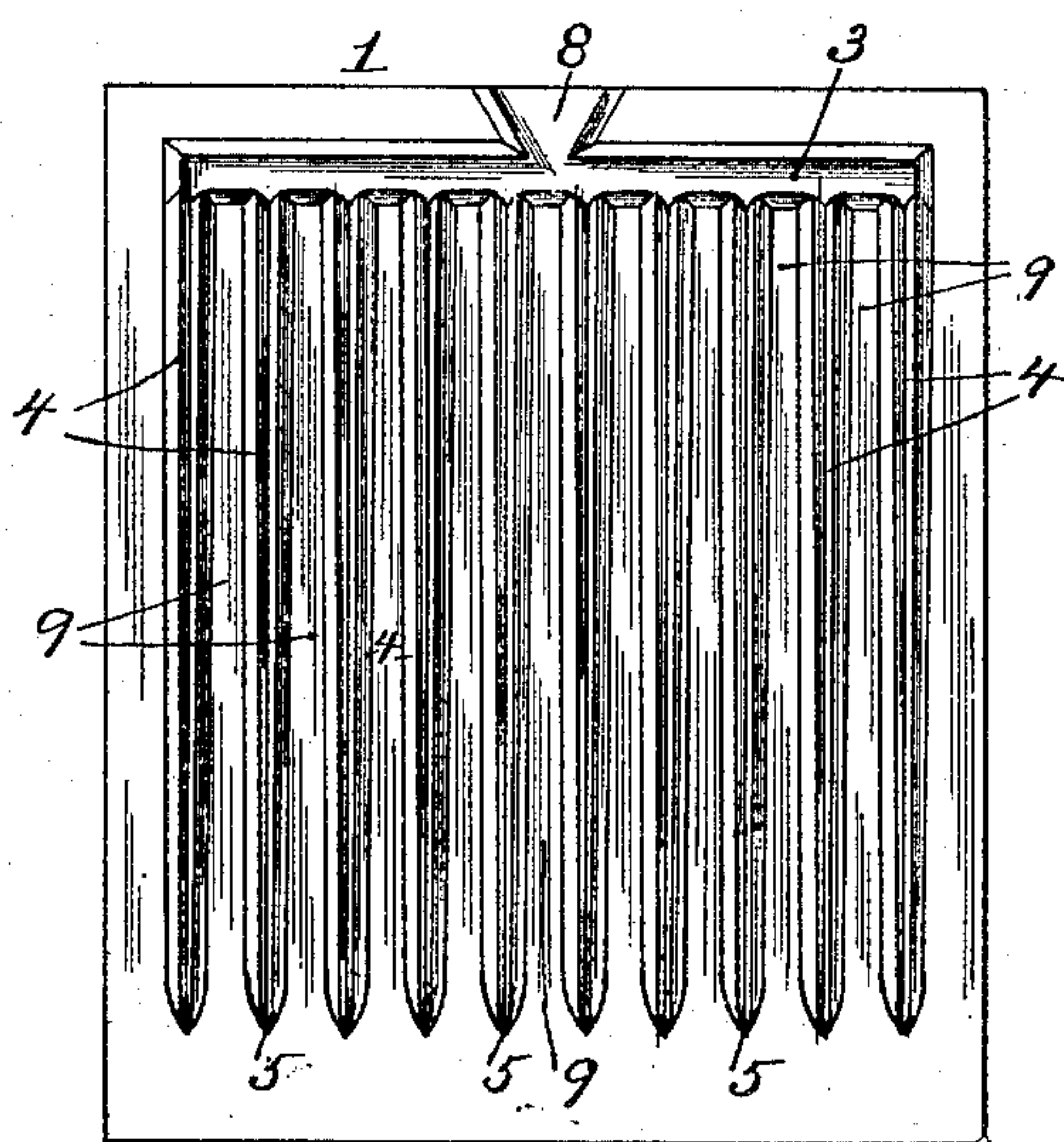


FIG. 3.

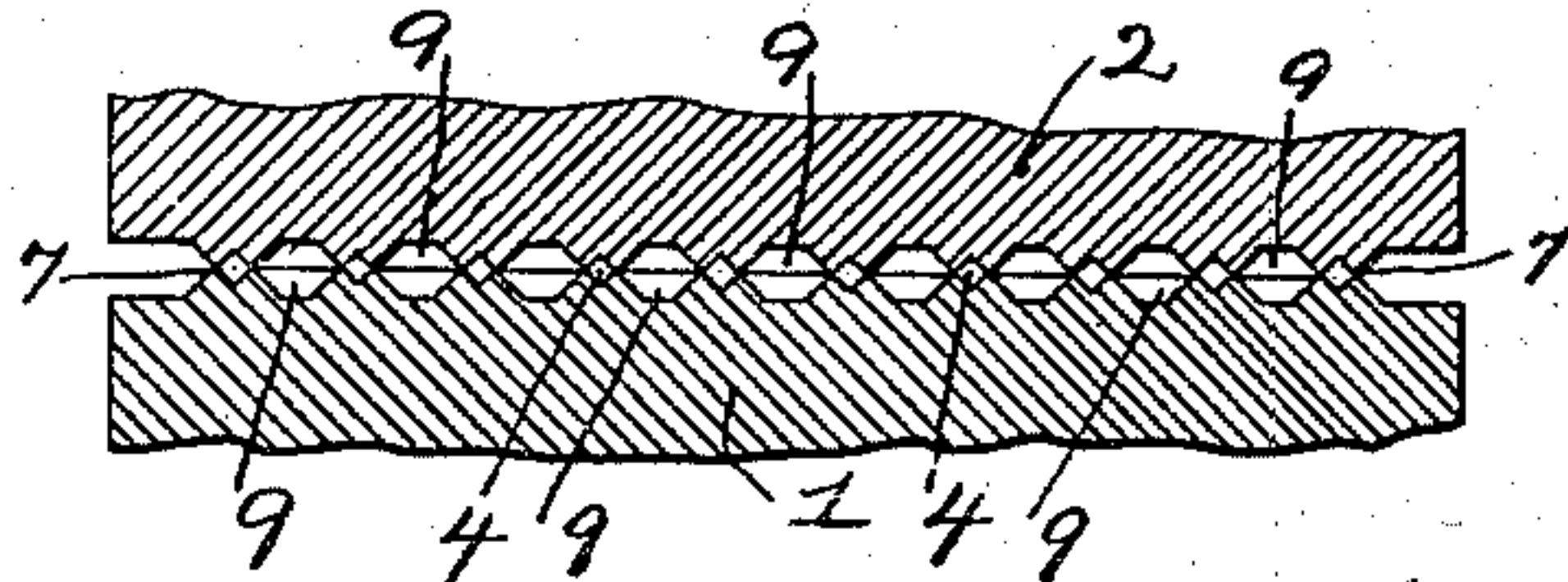


FIG. 4.

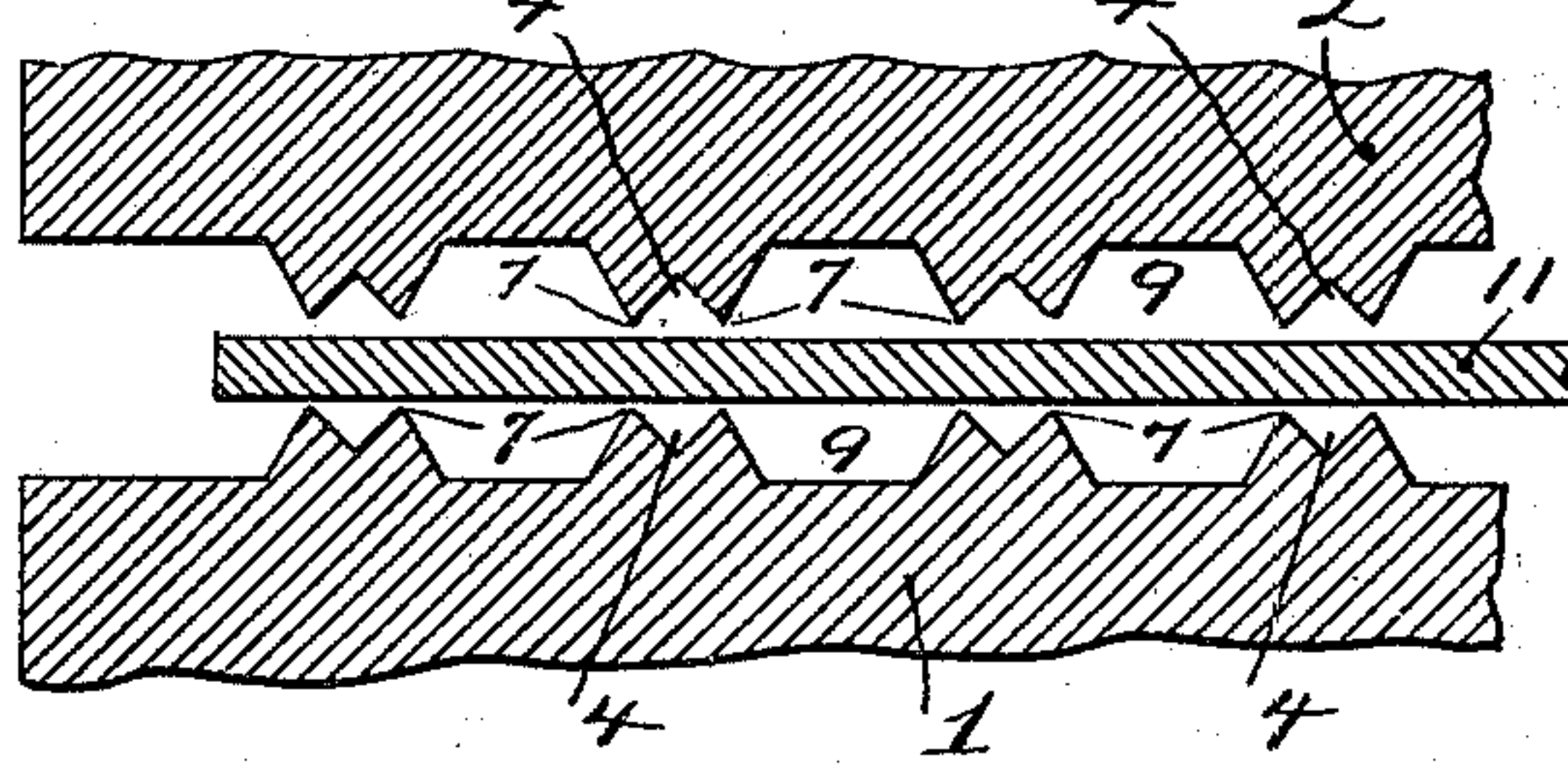
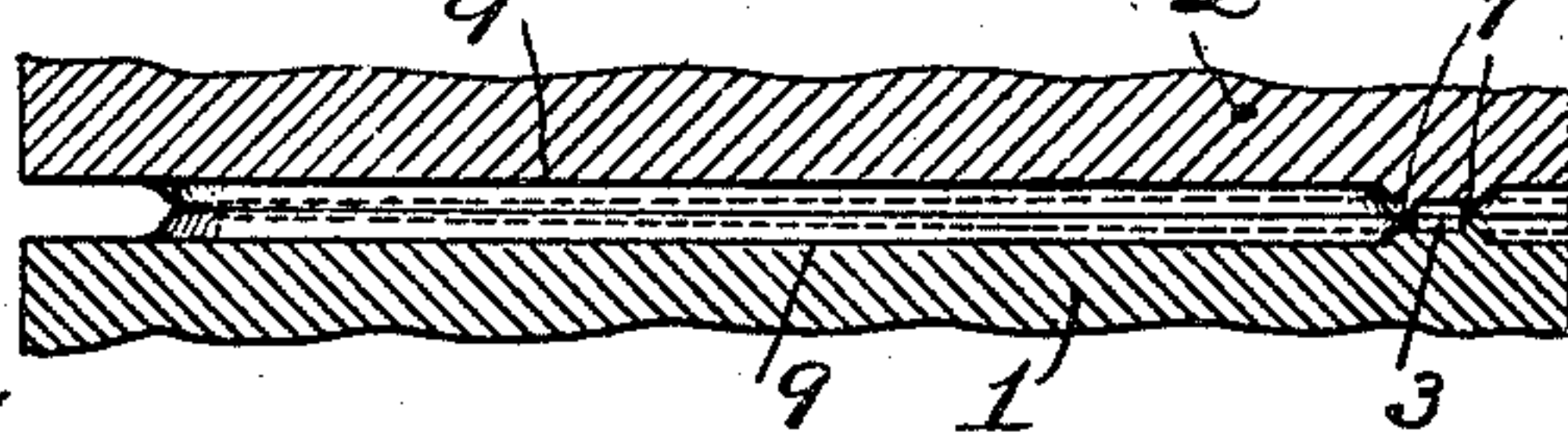


FIG. 5.



Witnesses:

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*By Kay & Lott*  
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# UNITED STATES PATENT OFFICE.

SAMUEL D. ROBISON, OF SEWICKLEY, PENNSYLVANIA.

## DIE FOR MAKING FORKS.

SPECIFICATION forming part of Letters Patent No. 696,753, dated April 1, 1902.

Application filed December 18, 1901. Serial No. 86,437. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL D. ROBISON, a resident of Sewickley, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Dies for Making Forks; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the manufacture of forks and similar articles; and its object is to provide dies whereby such articles can be formed from plate metal by a single stroke or operation.

A further object of my invention is to provide dies whereby forks can be formed from plate metal by a single operation and with a minimum amount of waste.

In the accompanying drawings, Figure 1 is a plan view of a plate, showing how the forks are cut out therefrom. Fig. 2 is a plan view of one of the dies. Fig. 3 is a transverse section of the dies. Fig. 4 is a similar section of a portion thereof on an enlarged scale, and Fig. 5 is a longitudinal section of the dies.

The dies employed comprise a bottom die 1 and a top die 2, one or both of which will be made movable by means of any suitable mechanism—such, for instance, as a power-cylinder. These dies are provided, near one end thereof, with a transverse cavity or groove 3, which is to form the head or back bar of the fork. Communicating with this transverse die-cavity are a series of longitudinal cavities or grooves 4, the number thereof corresponding to the number of tines of the particular fork being made. These longitudinal cavities 4 taper toward their outer ends, as at 5, to give the proper shape to the ends of the tines, and the side walls thereof will be shaped so as to give the desired contour to the tines. As shown in the drawings, they are beveled, so as to form substantially diamond-shaped tines, although, if desired, they may be curved so as to form round or oval tines, or they may be of any other desired shape. The side walls of the cavity 3, however, are practically straight, as shown in Fig. 5, so as to form substantially square faces on the head or back bar of the fork. All of these grooves or cavities are bounded by sharp cutting walls or edges 7, which serve to sever the plate, and the metal cut out by

these sharp walls is then pressed by the dies into the cavities 3 and 4 to the desired shape. The cavity or groove 3 is intersected at its middle portion by a cavity 8, which also is bounded by sharp cutting walls or edges 7. These edges cut out of the plate a portion which is afterward drawn out to form the tang of the fork. Between the grooves 4 the dies are cut away, as at 9, which cut-away portions in one or both of the dies are deeper than the grooves 3 and 4, so as to form spaces into which the remaining portions of the plate can pass during the cutting and shaping operation.

These dies can of course be modified considerably without departing from the spirit of the invention. For instance, instead of forming V-shaped cutting walls or edges 7 on the dies they may be formed substantially square, the edges on one die being arranged to pass those on the other in the manner of ordinary shearing-dies, as will be readily understood. Furthermore, the dies instead of being flat may, if desired, be formed curved, so as to not only cut and forge out the fork, but also bend it to the curved shape which is found in commercial forks.

In carrying out my invention I take a plate 11 of the necessary width and thickness to form the desired forks. This plate, either cold or raised to any heat up to a good forging-heat, is placed between the dies 1 and 2, and said dies are then brought together, thereby cutting out of the plate the blank shown at 12 in Fig. 1, the same comprising the tines 13, head or back bar 14, and the projection 15, which is afterward drawn out, as shown in dotted lines, to form the tang of the fork. The dies first cut sufficient metal from the plate to form this fork, and as said dies are fully pressed together they will shape this cut-out metal by means of the grooves 3 and 4 to give the proper form for the tines and head. This single operation forms a blank which is practically a fork and becomes such as soon as the tines are given the proper curvature and the projection 15 is drawn out to form the tang. This operation leaves the plate with a series of fingers or projections 16, which have been cut away from between the tines of the previously-formed fork, these fingers being united at one side of the plate



by the strip 17. The plate can then be reversed and the dies again operated in the manner before described, thus cutting out another fork-blank from these remaining portions of the plate, as shown in dotted lines in Fig. 1. Thus two forks are cut out from a plate of sufficient size to form only a single fork and with a minimum amount of waste, the only metal wasted being small strips at each side of the tines last formed and small pieces at the head of the fork.

I do not wish my invention limited to the formation of forks from a long plate, such as the one shown at 11, as said plate before or after being heated can be cut into sections each of which will form two forks, as will be readily understood; neither do I wish my invention limited to the making of forks of the shape shown, as forks of various shapes and designs can be formed by the same processes.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A die for making forks and similar articles, the same comprising a body having a transverse cavity or groove for forming and shaping the head or back bar of the fork, and a series of longitudinal cavities or grooves communicating with said transverse cavity for forming and shaping the tines, said transverse and longitudinal cavities being bounded by cutting-walls, and the longitudinal cavities being separated by grooves or spaces of greater depth for receiving the cut-away portions of the plate.

2. Dies for making forks and similar articles, the same comprising bodies each having a transverse cavity or groove for forming and shaping the head or back bar of the fork, and a series of longitudinal cavities or grooves communicating with said transverse cavity for forming and shaping the tines, said transverse and longitudinal cavities being bounded by cutting-walls, and the longitudinal cavities on one of said dies at least being separated by grooves or spaces of greater depth for receiving the cut-away portions of the plate.

3. A die for making forks and similar ar-

ticles, the same comprising a body having a transverse cavity or groove for forming and shaping the head or back bar of the fork, and a series of longitudinal cavities or grooves communicating with said transverse cavity for forming and shaping the tines, said transverse and longitudinal cavities being bounded by cutting-walls, and the longitudinal cavities being tapered toward their outer ends to form the points of the tines and being separated by grooves or spaces of greater depth for receiving the cut-away portions of the plate.

4. A die for making forks and similar articles, the same comprising a body having a transverse groove or cavity having substantially straight walls for forming and shaping the head or back bar of the fork, and a series of longitudinal cavities or grooves communicating with said transverse cavity and having sloping or curved walls for forming and shaping the tines, said transverse and longitudinal cavities being bounded by cutting-walls, and the longitudinal cavities being separated by grooves or spaces for receiving the cut-away portions of the plate.

5. A die for making forks and similar articles, the same comprising a body having a transverse cavity or groove for forming and shaping the head or back bar of the fork, a cavity communicating with said transverse cavity at its middle portion for cutting out a portion to form the tang of the fork, and a series of longitudinal cavities communicating with the transverse cavity for forming and shaping the tines, all of said cavities being bounded by cutting-walls, and the longitudinal cavities being separated by grooves or spaces for receiving the cut-away portions of the plate.

In testimony whereof I, the said SAMUEL D. ROBISON, have hereunto set my hand.

SAMUEL D. ROBISON.

Witnesses:

F. W. WINTER,  
ROBERT C. TOTTEN.