

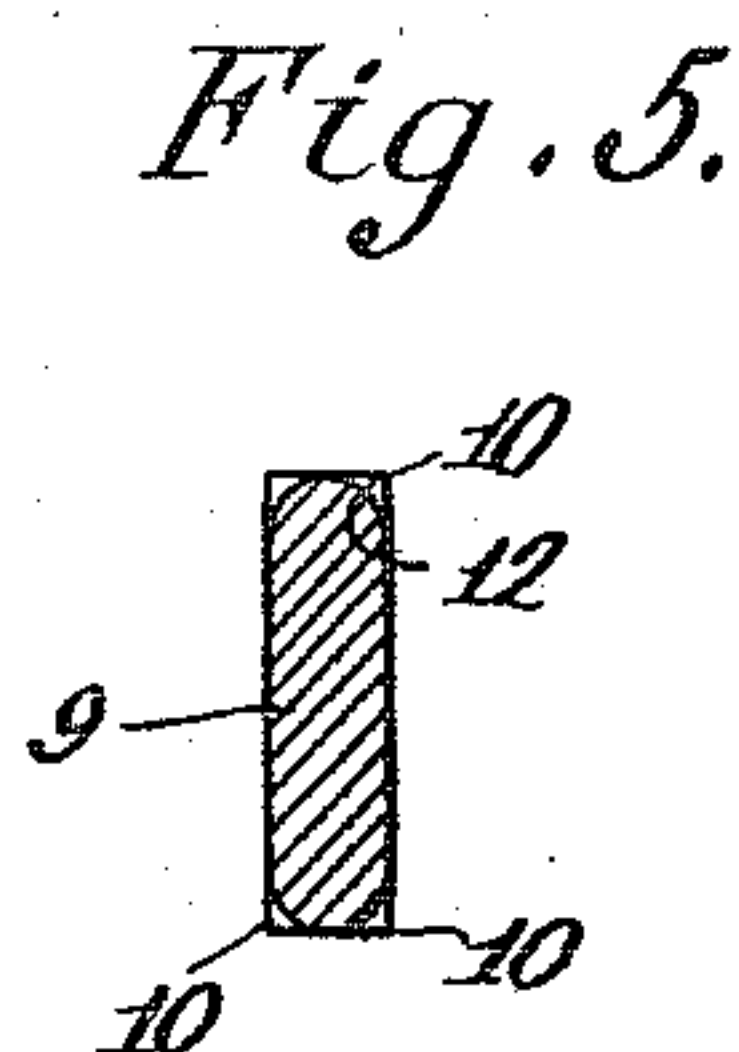
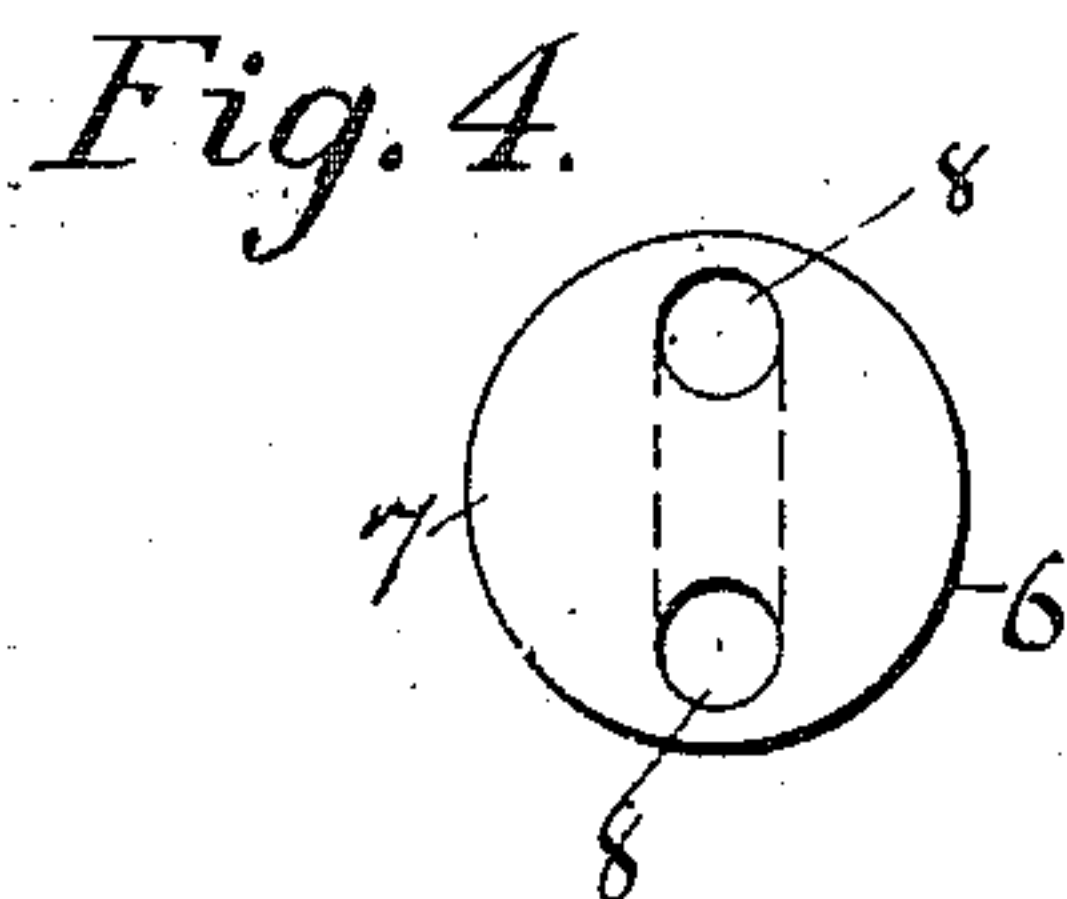
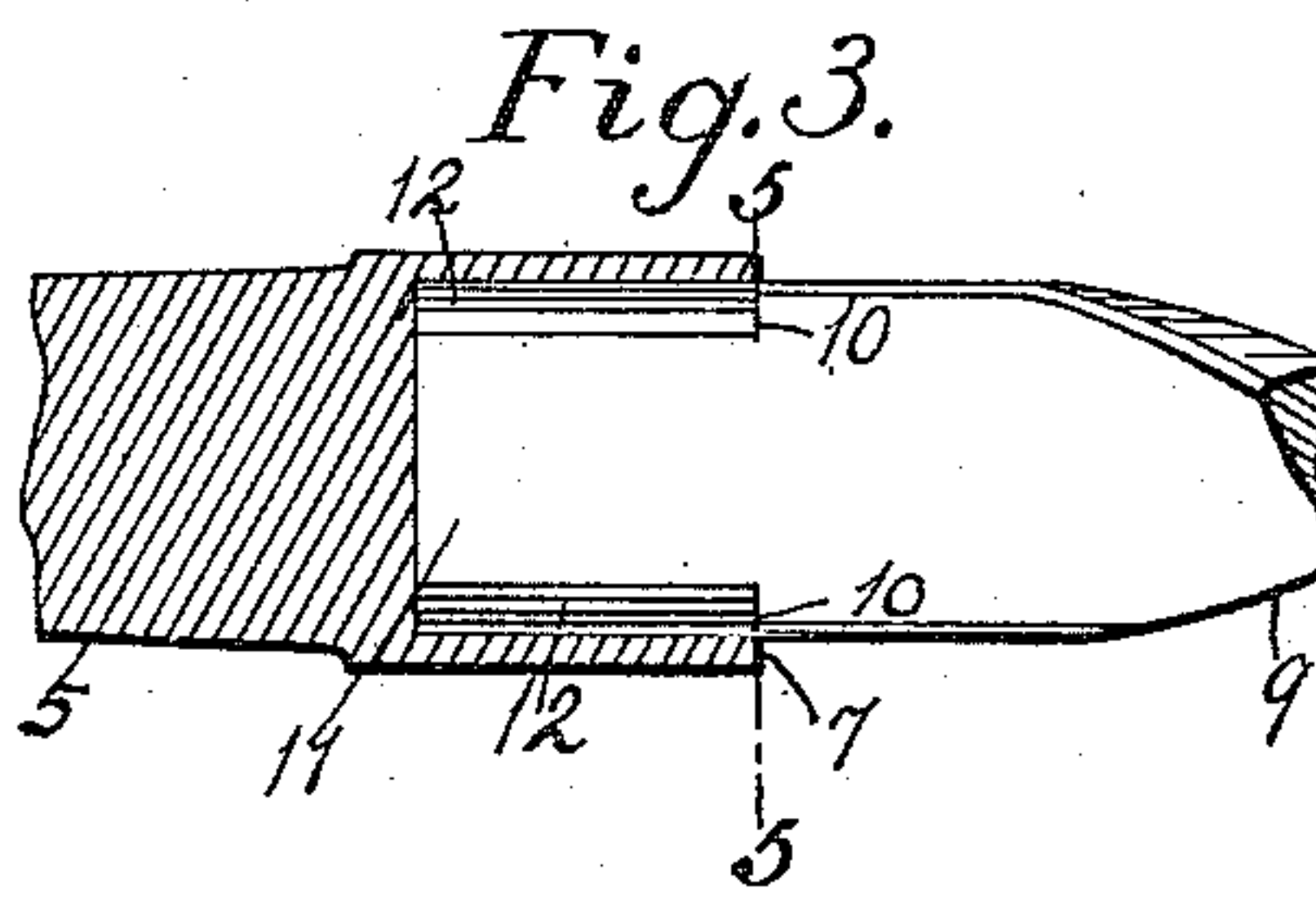
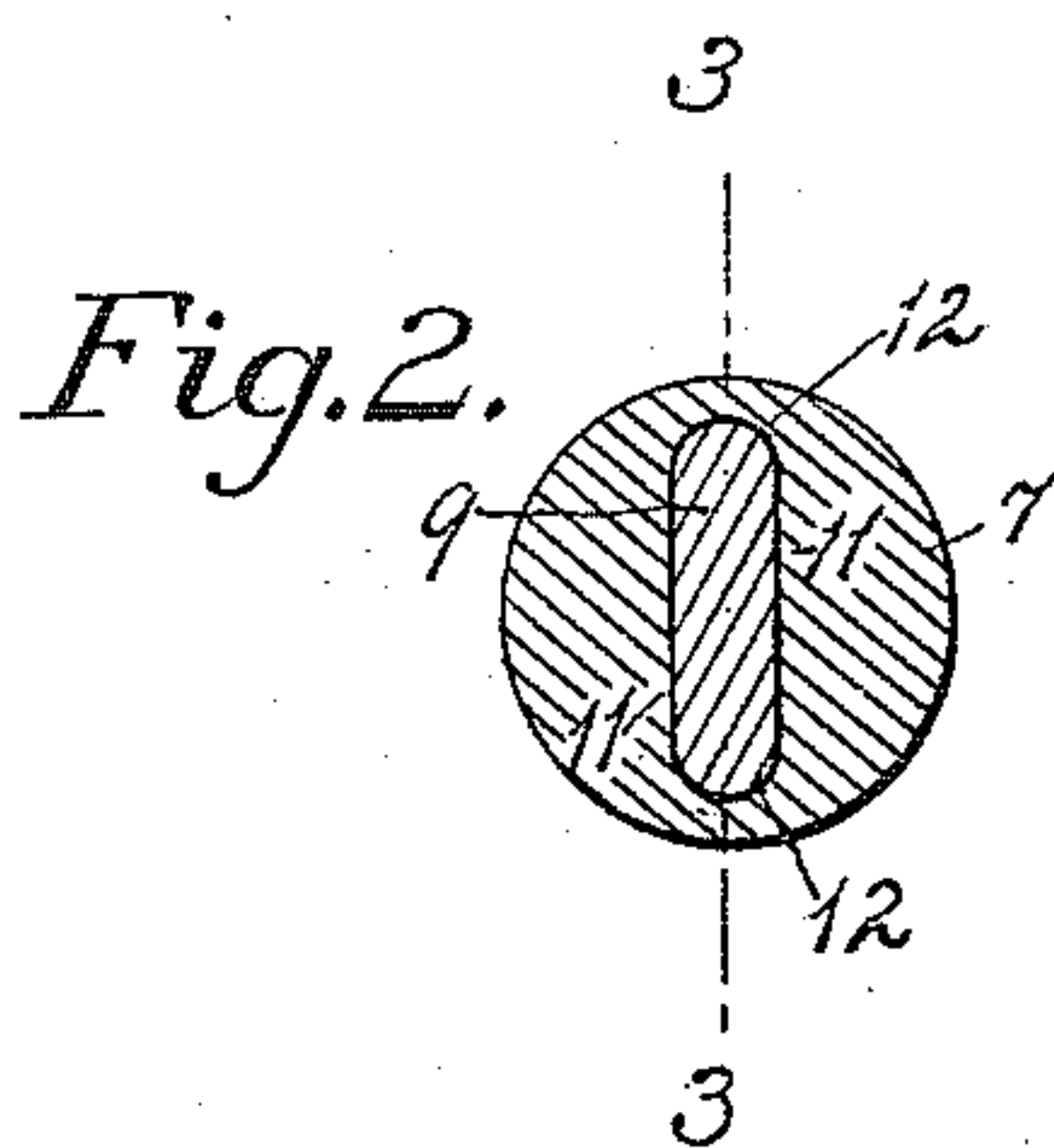
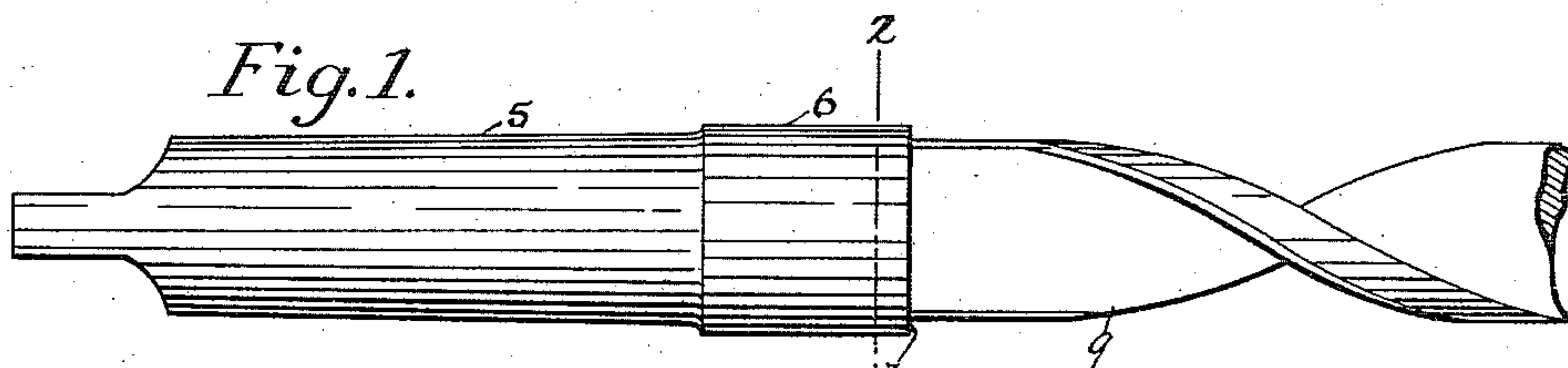
L. W. PRATT.

DRILL.

APPLICATION FILED JULY 26, 1909.

985,283.

Patented Feb. 28, 1911.



Witnesses.

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UNITED STATES PATENT OFFICE.

LLOYD W. PRATT, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO NEW PROCESS TWIST DRILL COMPANY, OF TAUNTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

DRILL.

985,283.

Specification of Letters Patent.

Patented Feb. 28, 1911.

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To all whom it may concern:

Be it known that I, LLOYD W. PRATT, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Drills, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in drills and particularly to drills having blades having parallel sides.

The object of the invention is to so provide a drill blade formed of flat material with a cylindrical shank without unduly weakening the shank or the point of juncture between the blade and the shank and without materially increasing the cost of the same.

The invention consists in the drill as hereinafter described and claimed.

Figure 1, represents an elevation of the improved drill, parts of the blade being broken away. Fig. 2, represents a sectional view of the same taken on line 2—2 Fig. 1. Fig. 3, represents a sectional view of parts of the same taken on line 3—3 Fig. 2, the portion of the blade being shown in full. Fig. 4, represents an end view of the shank to indicate the manner in which the socket is formed therein. Fig. 5, represents a sectional view taken on line 5—5 Fig. 3, looking in the direction indicated by the arrows.

Similar numbers of reference designate corresponding parts throughout.

Drill blades of the nature particularly referred to herein are generally constructed from expensive high grade steel and are adapted for high speed machine work. As a matter of economy, as well as to facilitate the process of manufacture, the blades are generally formed from approximately flat stock or stock having flat sides, the stock being twisted and the edges then finished and ground. In order to adapt these blades to the holding devices of well known construction in general use it is desirable that the blades should be furnished with cylindrical, preferably tapering, shanks. Owing to the high cost of tungsten or other special steel from which the blade is formed and to the exigencies of its use it is desirable that the drill shanks should be formed of a differ-

ent grade or quality of steel and that the blade should be rigidly fixed to the shank.

In carrying this invention into practice I take a shank 5 of any usual shape and size preferably having a conical taper and the cylindrical enlargement 6. In the end 7 of said enlargement I drill two holes 8—8; at distances from the periphery of the enlargement, and the material between these holes I cut away, preferably by milling, thereby forming a socket extending parallel with the shank and having flat sides and curved ends. I now take the blade 9, usually having approximately rectangular edges, and, at the shank end thereof, I grind or shape such edges to form a tang, beyond the squared shoulders 10—10, which tang has the flat sides 11—11 and the rounded edges 12—12 adapted to closely fit the corresponding parts of the socket above described. The tang of the blade 9 is now inserted in the socket of the shank 5 and said blade is driven home until its shoulders 10—10 bear against the end 7 of the shank after which these parts are brazed together. By this construction the tang of the blade 9 is embraced by a solid wall of the material of the shank and is held firmly in place by a single continuous body of material. In use torsional strain on the blade 9 is resisted not only by the tensile strength of the peripheral portions of the shank but by the solid bodies of material bearing against the sides of the blade tang.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A drill comprising a blade rectangular in cross section and terminating in a tang having rounded edges, located within the cross sectional area of said blade, and flat sides in the surface planes of the sides of said blade, whereby shoulders are formed on the end of said blade, and a shank having a socket having flat walls and curved end walls to receive and closely embrace said tang, said shoulders of the blade bearing against the end of said shank at points separated from each other.

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Witnesses:

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