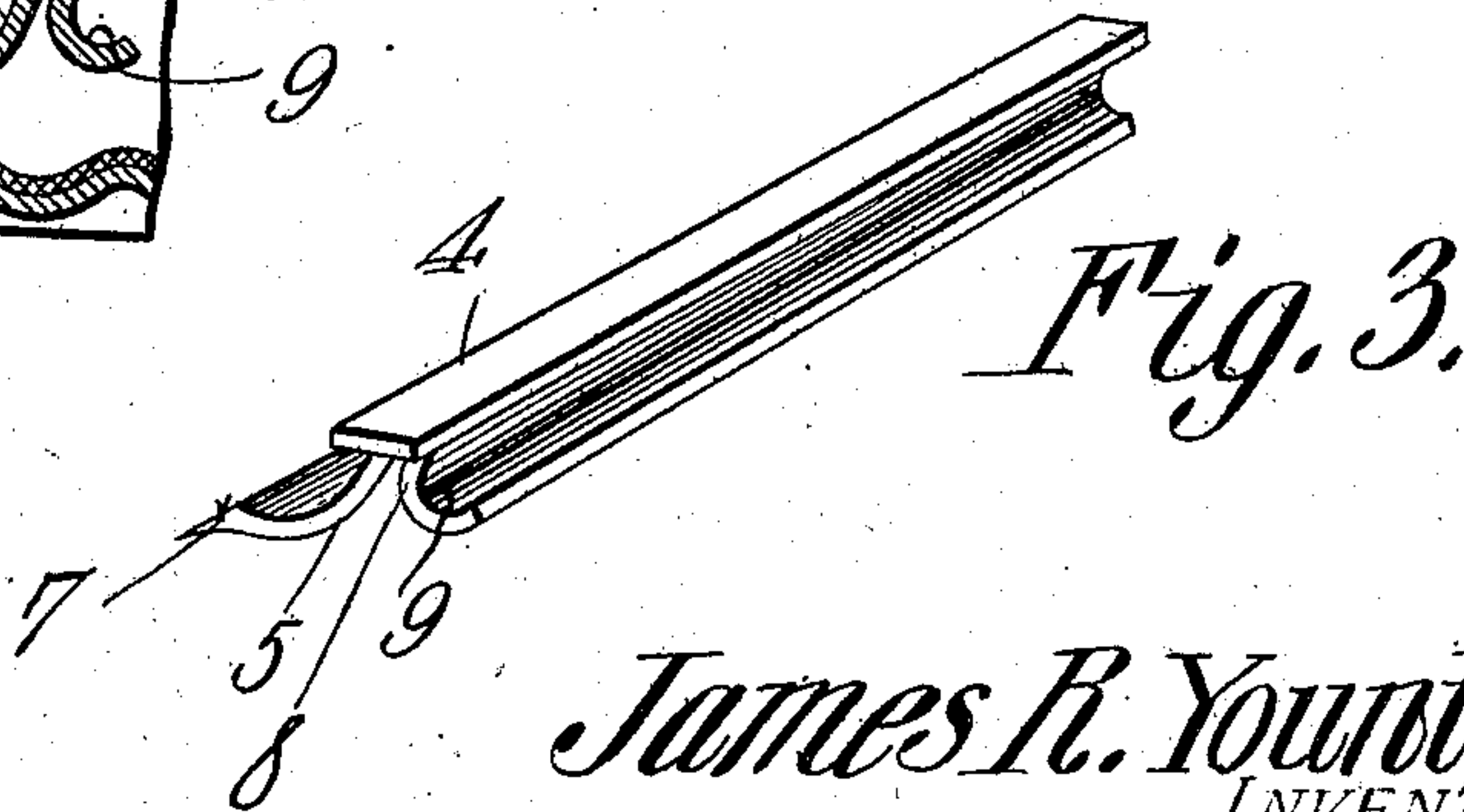
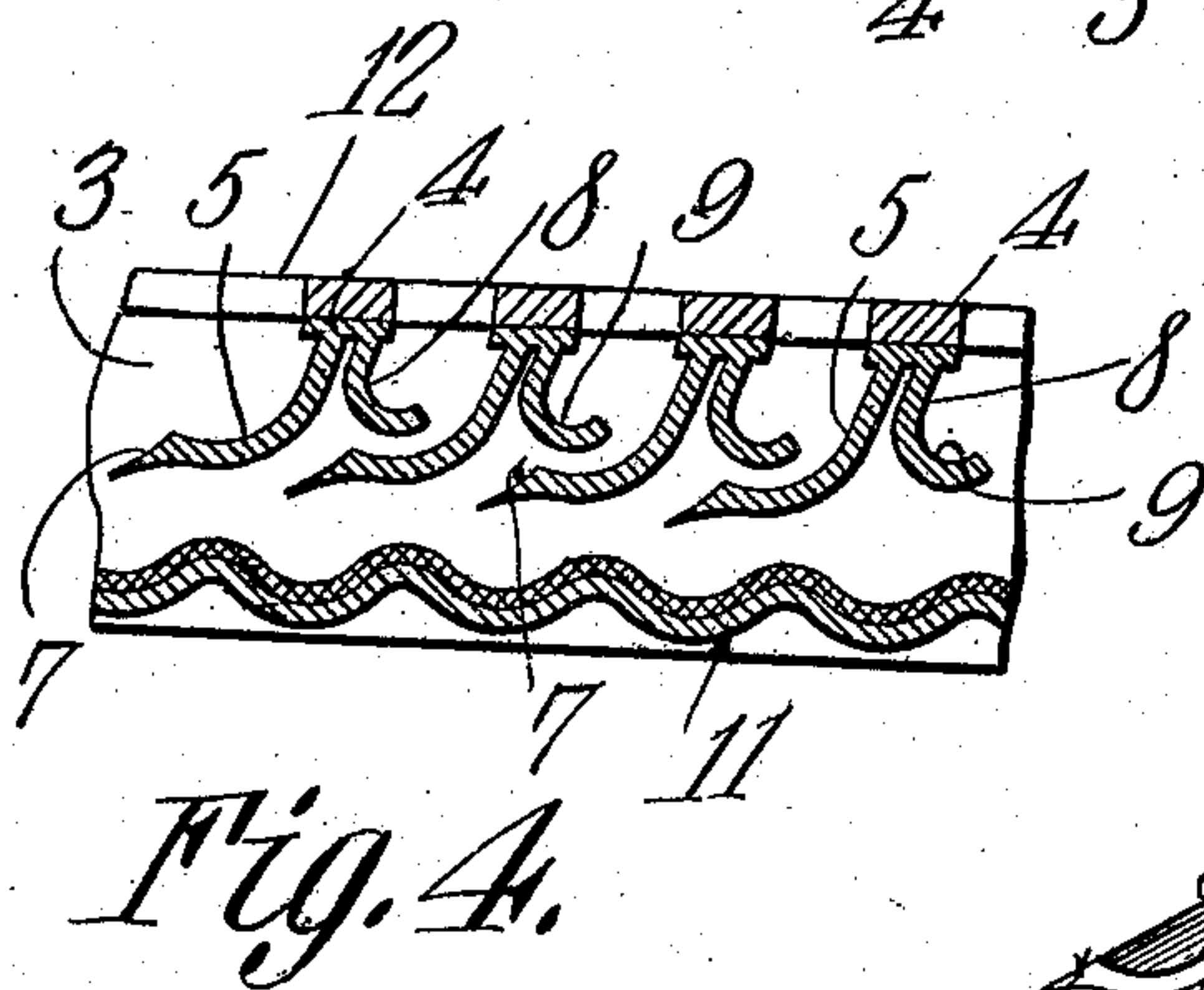
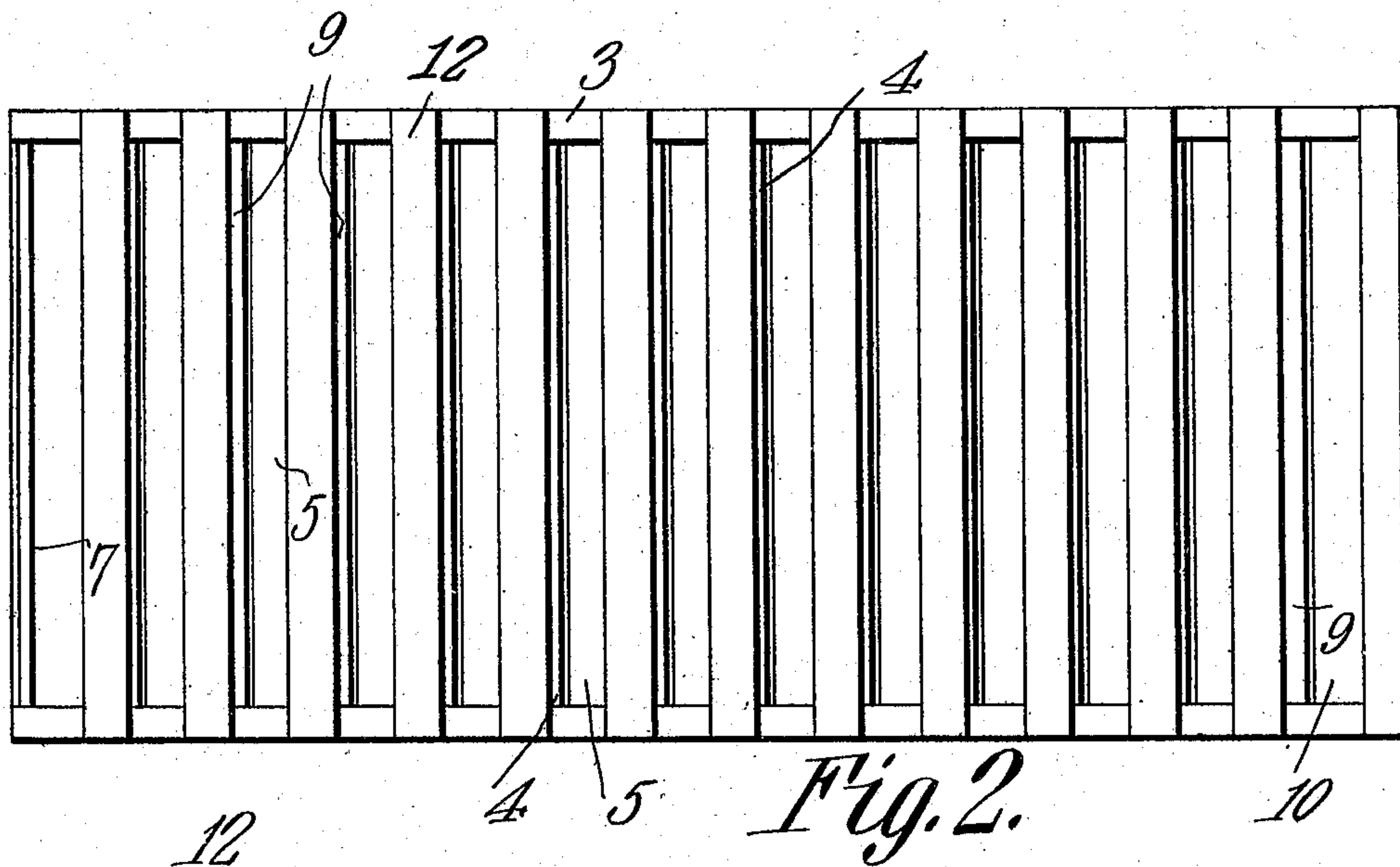
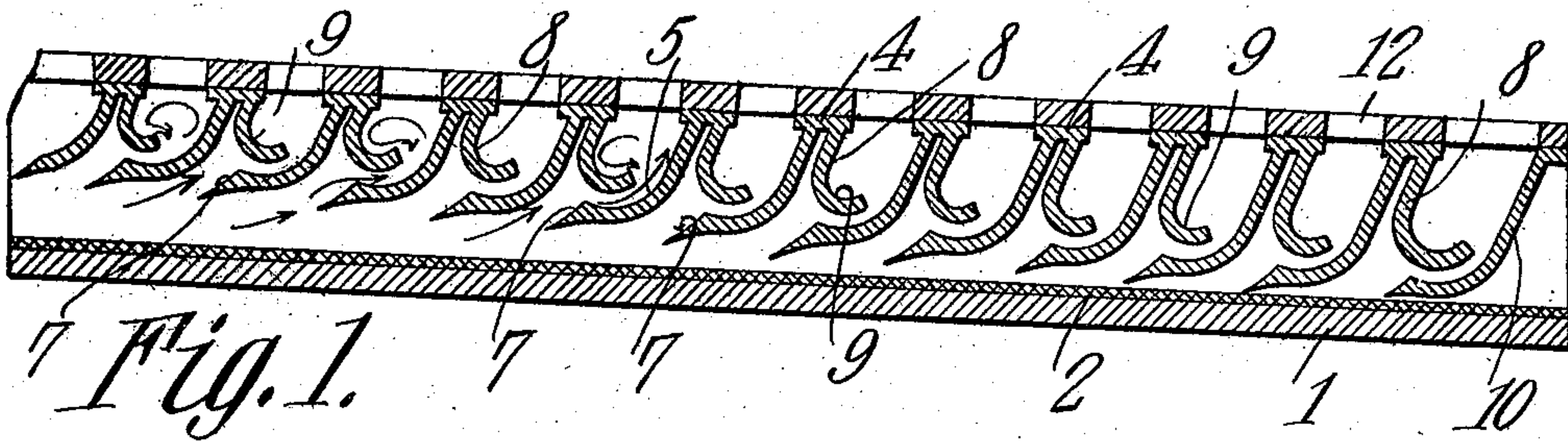


No. 881,526.

PATENTED MAR. 10, 1908.

J. R. YOUNT.  
ORE SEPARATOR.

APPLICATION FILED JUNE 24, 1907.



WITNESSES:

*E. J. Stewart*  
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ATTORNEYS



# UNITED STATES PATENT OFFICE.

JAMES R. YOUNT, OF NYSSA, OREGON.

## ORE-SEPARATOR.

No. 881,526.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed June 24, 1907. Serial No. 380,536.

*To all whom it may concern:*

Be it known that I, JAMES R. YOUNT, a citizen of the United States, residing at Nyssa, in the county of Malheur and State of Oregon, have invented a new and useful Ore-Separator, of which the following is a specification.

This invention relates to ore separators and more particularly to means whereby fine or "float" gold may be separated from the undesirable material commingled therewith, the separation, being thoroughly produced in a simple and efficient manner.

One of the objects of the invention is to provide riffles of novel construction and arrangement designed to so direct currents of water as to thoroughly separate and retain free gold carried thereby.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a longitudinal section through a separator constructed in accordance with the present invention. Fig. 2 is a plan view thereof. Fig. 3 is a detail view of one of the riffles. Fig. 4 is a longitudinal section through a portion of a modified form of separator.

Referring to the figures by characters of reference, 1 designates a sluice, the bottom of which is preferably inclined and covered with a coarse fabric such as carpet, canvas, or the like and which has been indicated at 2. Suitably supported upon the side walls 3 of the sluice and depending between them are riffles of novel form. Each of these riffles consists of a top bar 4 the ends of which are preferably seated upon the walls 3 as shown particularly in Fig. 2. Extending downward from the bar is a deflecting member 5 integral with the bar and having its lower portion curved rearwardly and beveled at its extremity as shown at 7. Another member 8 is also formed integral with the bar 4 and depends therefrom, the lower portion of this member being curved forwardly and slightly upwardly to form a pocket 9 which is for the purpose hereinafter set forth. A deflecting member 5 extends below the pocket 9. Any desired number of these riffles are employed but all of them are of

different heights. The smallest riffle is placed adjacent the inlet end of the sluice and the riffles gradually increase in size toward the other end thereof. It will therefore be apparent that the distance between the bottom of the sluice and the riffles gradually diminishes toward the discharge end. The deflecting members 5 are preferably positioned with their lower extremities beneath the pockets 9 of the adjoining riffles and therefore passages are formed between every two adjoining deflecting plates, said passages extending over the pockets located between said plates. It is to be understood of course that the two members 5 and 8 extend throughout the width of the sluice so that it is only possible for water to pass beneath the riffles.

With the parts arranged in the manner shown and described the separation of the gold is effected by directing a stream of water bearing fine or "float" gold into the upper end of the sluice. A portion of the water will be directed against the members 5 and will be deflected upward thereby. A swirling action is therefore produced between each member 5 and the adjoining pocket 9 and the gold is precipitated within the pocket. It is of course to be understood that this swirling action occurs successively between the riffles inasmuch as the passage for the water is reduced in size by each successive riffle. Any "float" gold remaining in the water after the first riffle is passed will be carried into the second and successive riffles until all of it has been separated and deposited within the pockets 9. Heavy undesirable particles will be carried off under the last riffle and any values precipitated within the sluice will be retained by the fabric 2. It is of course to be understood that it is unnecessary to provide the last riffle, which has been indicated at 10, with a pocket 9.

Instead of forming the sluice with a flat bottom said bottom can be waved or corrugated as shown at 11 in Fig. 4. When the bottom is thus formed the separation will be facilitated because portions of the values will be retained within the grooves formed by the bottom and said serrations will also assist in directing the water upward between the riffles. With either of the constructions described a grizzly, such as indicated at 12, may if desired be placed over the riffles. This grizzly is of course removable so that



access may be readily had to the riffles for the purpose of cleaning them.

What is claimed is:

1. The combination with a sluice; of a plurality of riffles suspended therein, each riffle comprising a deflecting member and a pocket member, the deflecting member of each riffle being disposed below the pocket member of the adjoining riffle.
2. The combination with a sluice; of a plurality of riffles suspended therein, each riffle comprising a cross bar and depending oppositely curved members integral therewith, one of said members constituting a deflector and the other member constituting a gold retaining pocket.
3. The combination with a sluice; of a plurality of riffles suspended therein and forming a water passage thereunder, each riffle comprising a deflecting member curved toward the sluice inlet, and an oppositely extending member constituting a gold retaining pocket, each pocket being disposed above the deflecting member of the adjoining riffle.
4. The combination with a sluice having a fabric covering on the bottom thereof; of a plurality of riffles suspended within the sluice and forming a water passage there-

under gradually diminishing in size toward one end of the sluice, each riffle comprising a deflecting member curved toward the sluice inlet, and a shorter oppositely extending member constituting a pocket.

5. The combination with a sluice having a waved bottom and a fabric covering thereon; of a plurality of riffles suspended within the sluice and forming a water passage thereunder gradually diminishing in size toward one end of the sluice, each riffle comprising a deflecting member curved toward the sluice inlet, and a shorter oppositely extending member constituting a pocket, and a cover upon the riffles.

6. In an ore separator a riffle comprising a top bar, a depending deflecting member integral therewith and curved in one direction, and a shorter oppositely curved member integral with the bar and constituting a retaining pocket, said member being disposed to extend throughout the width of a sluice.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES R. YOUNT.

Witnesses:

HARRY L. POORMAN,  
L. A. MYERS.