

No. 620,499.

Patented Feb. 28, 1899.

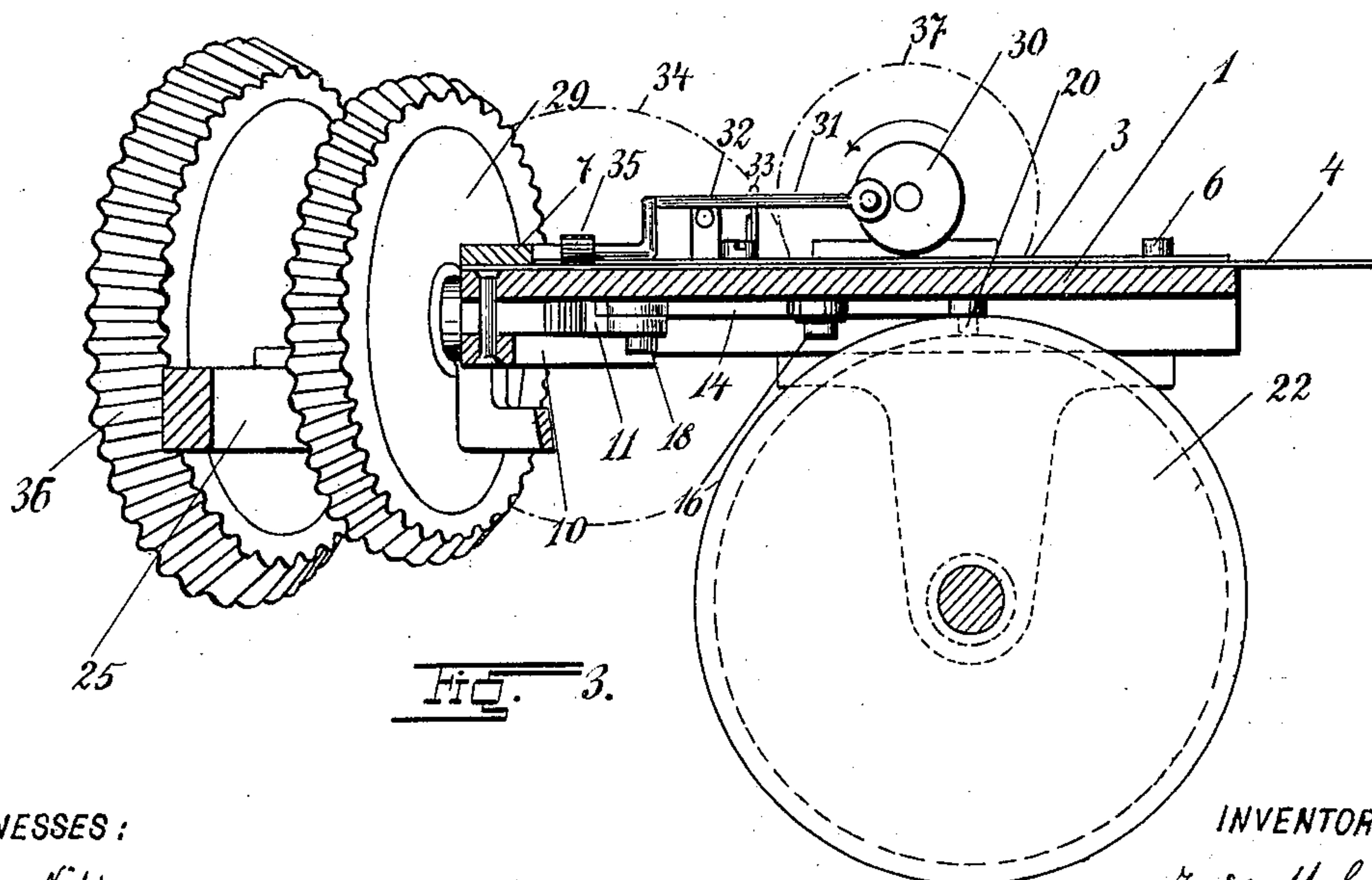
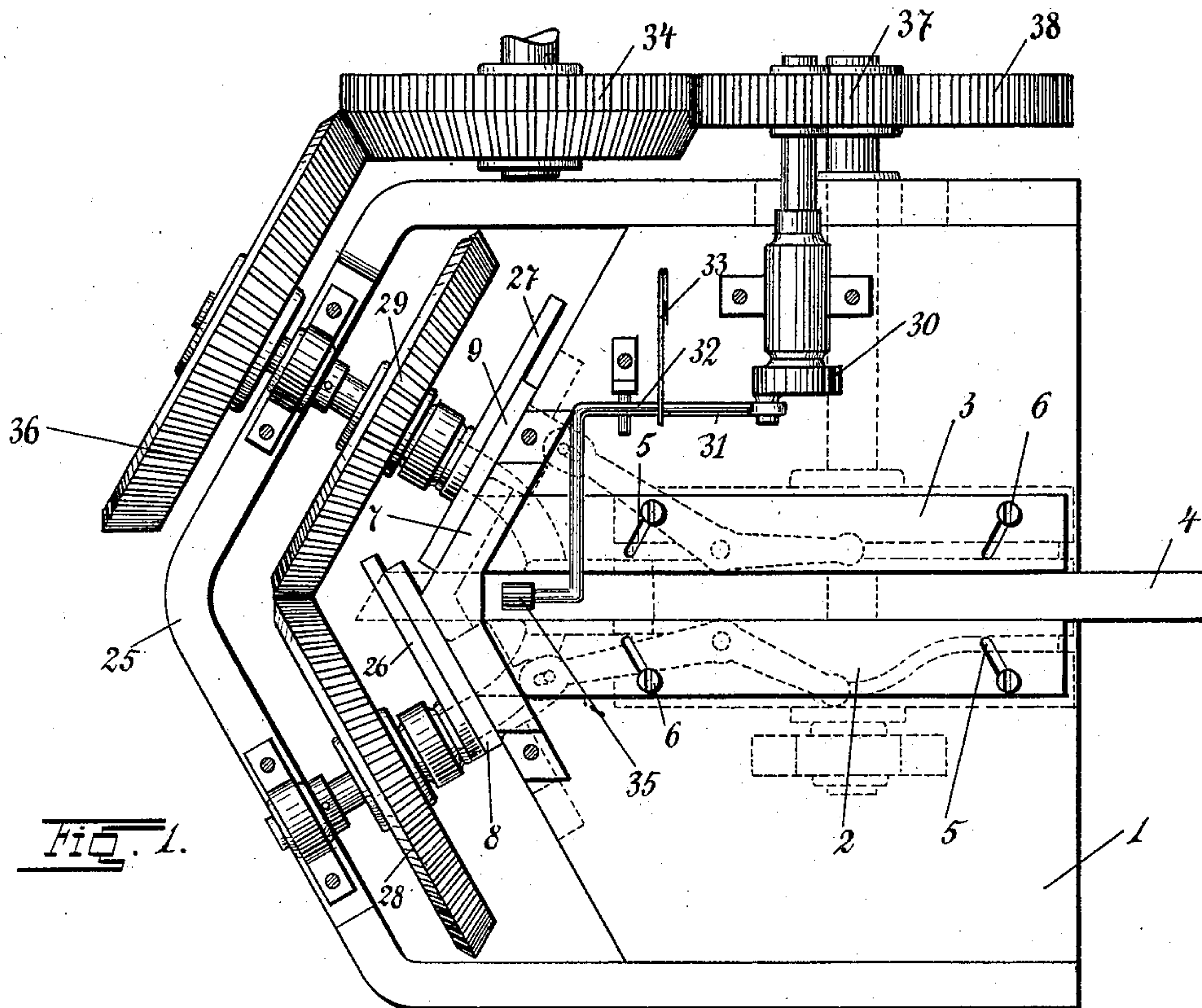
T. E. RICHTER-SIPS.

MACHINE FOR CUTTING TRIANGULAR PIECES OF TIN PLATE.

(Application filed May 14, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

*Brumm N. Alden*  
*Rudolph Fricke*

INVENTOR

*Ernst Gottlieb*  
*Richter-Sips*

No. 620,499.

Patented Feb. 28, 1899.

T. E. RICHTER-SIPS.

MACHINE FOR CUTTING TRIANGULAR PIECES OF TIN PLATE.

(Application filed May 14, 1898.)

(No Model.)

2 Sheets—Sheet 2.

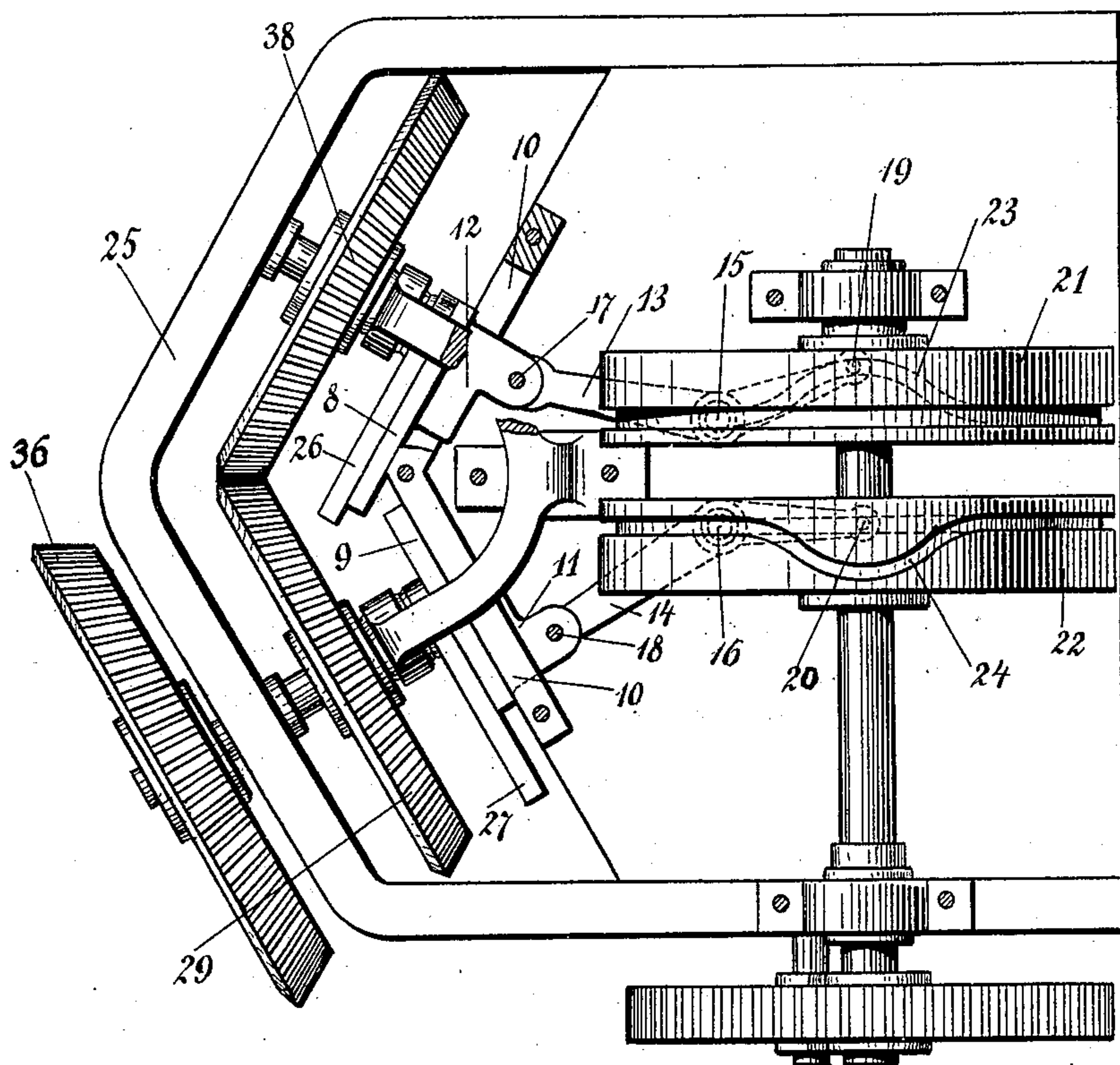


Fig. 2.

WITNESSES:

*James N. Alden*  
*Edw. J. Fiske*

INVENTORS

*Ernest J. Fisk*  
*Richter-Sips*



# UNITED STATES PATENT OFFICE.

TRAUGOTT EMIL RICHTER-SIPS, OF LEUTZSCH, GERMANY.

## MACHINE FOR CUTTING TRIANGULAR PIECES OF TIN-PLATE.

SPECIFICATION forming part of Letters Patent No. 620,499, dated February 28, 1899.

Application filed May 14, 1898. Serial No. 680,691. (No model.)

*To all whom it may concern:*

Be it known that I, TRAUGOTT EMIL RICHTER-SIPS, master locksmith, of Kürzestrasse 2, Leutzsch, in the German Empire, have invented a new and useful Improvement in Machines for Cutting Triangular Pieces of Tin-Plate or Similar Material, of which the following is a full and clear description.

Triangular pieces such as are used in the corners of window-frames in some systems of glazing have hitherto usually been punched or stamped out and as a result have had rough edges and have not been flat, which has necessitated subsequent rolling or pressing. By the use of this improved machine the triangular pieces are cut from a strip of metal by means of two knives which operate alternately at a suitable angle to each other and the severed portions are perfectly flat and have straight edges.

The improved machine consists, essentially, of three parts—viz., means for conveying or feeding the strip of tin-plate, two longitudinally-movable knives or supports for the plate, and two rotating knives, both the rotating knives and the supporting-knives being arranged at suitable angles with each other.

In order that my invention may be more readily understood, I have hereto appended a sheet of drawings, to which I will hereinafter refer and which illustrate a machine constructed to embody my improvements.

Figure 1 represents the machine in plan. Fig. 2 shows it as seen from underneath. Fig. 3 illustrates a longitudinal section.

On the table 1 are arranged the two guide-rails 2 and 3, between which passes the strip of tin-plate 4, from which the triangular pieces are to be cut. The distance between the rails may be varied to suit different widths of strips by means of the slots 5 and the screws or bolts 6. At the front end of the table is a cross rail or piece 7, between which and the table there is just room for the passage of the strip 4, which is thus held more securely.

At the front end of the table two knives or cutters 8 9 are arranged at an angle to each other, and each is longitudinally movable in a horizontal direction. They are provided with extensions or projections 11 and 12, which extend under or through the guide-rails 10,

by means of which the knives are alternately pushed under and withdrawn from the strip of metal 4.

The required horizontal motion is imparted to the knives by means of the bent levers 13 and 14, which are pivoted at 15 and 16 and are connected to the knives, one to each, at the points 17 and 18. The free ends of the levers carry pins or bowls 19 and 20, which engage with cams or grooves in the peripheries of the disks 21 and 22. These grooves are in one plane for the greater part of their lengths; but each is provided with a swell or cam 23 or 24, the cam in one disk being arranged at an angle of one hundred and eighty degrees with the cam upon the other disk. It will be easily seen on reference to the drawing that the rotation of the disks, which are mounted upon a common shaft, will effect the alternate reciprocation of the knives.

Mounted upon or within the frame 25 are the two rotary knives or cutters 26 and 27, which are secured to suitable shafts geared together by the bevel-wheels 28 and 29. The two knives are mounted at an angle of one hundred and eighty degrees apart and are so arranged that each of them forms a pair of shears with one or other of the reciprocating knives 8 or 9. The cutting of the pieces from the strip of tin is effected by feeding the strip forward to the desired extent over one of the reciprocating knives—for example, 8—which occupies its most forward position under the strip. The rotary knife 26 then comes down and shears off the triangular piece. The knife 8 is then withdrawn, the rotary knife 26 moves away, the strip is fed forward, the knife 9 moves forward and comes under the strip, and the knife 27 comes round and cuts the piece from the strip. The knives on each side of the strip thus alternately come into action, the strip of tin being fed forward intermittently.

The apparatus for feeding forward the strip of tin is constructed and arranged as follows: A crank-disk 30 has attached to it a link or rod 31, which passes over a pin or support 32 and is pressed constantly down toward the table by a spring 33. The front end or part 35 of the link is preferably covered with india-rubber and comes over the strip of tin. When the disk 30 rotates in the direction of



the arrow and after the link 31 has been moved forward to its farthest position, as indicated by Fig. 3, continued rotation depresses the attached end of the link 31 and raises the outer end 35. Owing to the engagement of the disk the link is withdrawn, with its end 35 raised. During the next half-rotation, however, the end 35 of the link is pressed downward upon the tin strip, which is thus fed forward. If desired, the strip 4 may be mounted upon rollers to facilitate its movement. The crank-pin of the disk 30 may be adjustable relatively to the center of the disk, so as to vary the amount of throw and consequently the feed of the strip.

When the machine is to be used, a strip of tin is placed between the guide-rails 2 and 3 and is pushed forward under the cross-rail 7. The main wheel 34 is now rotated and drives the bevel-wheel 36, by means of which the rotary knives 26 and 27 are operated, as well as the wheels 37 and 38, for driving the strip-feeding device and the grooved disks 21 and

22. The different wheels are so proportioned and geared together that the knives 26 and 27 and the disks 21 and 22 perform one revolution while the crank-disk 30 completes two.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In a machine for cutting triangular pieces of tin-plate and the like, the combination of a device for feeding the strip of tin intermittently in a forward direction with two reciprocating and two rotary knives which together form two pairs of shears in the described manner and for the purpose mentioned.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

TRAUGOTT EMIL RICHTER-SIPS.

Witnesses:

BRUNO NALDING,  
RUDOLPH FRICKE.