No. 729,964. PATENTED JUNE 2, 1903.

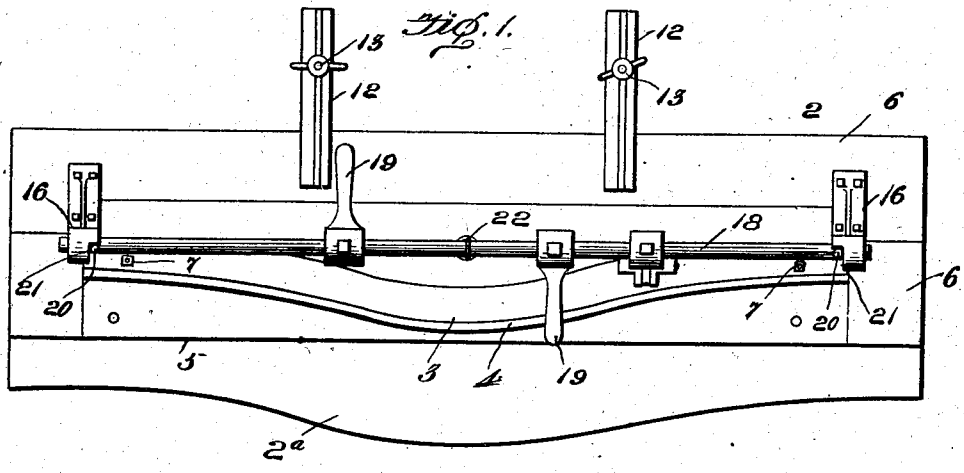
A. G. SCHERER.

MACHINE FOR CUTTING SHEET METAL.

APPLICATION FILED DEC. 18, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.



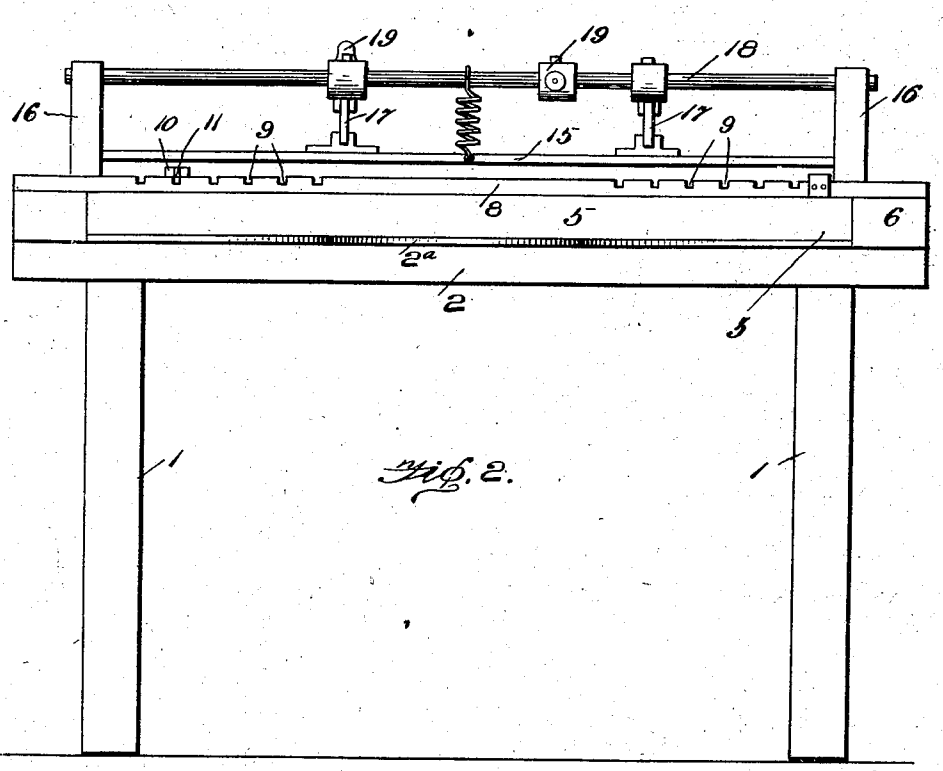


Fig. 2.

Witnesses
W. H. Crowley.
M. W. Johnson.

Inventor
Albert G. Scherer,
By Roodhouse & Moore.
Attorneys

No. 729,964. PATENTED JUNE 2, 1903.

A. G. SCHERER.

MACHINE FOR CUTTING SHEET METAL.

APPLICATION FILED DEC. 18, 1902.

NO MODEL. 3 SHEETS—SHEET 2.

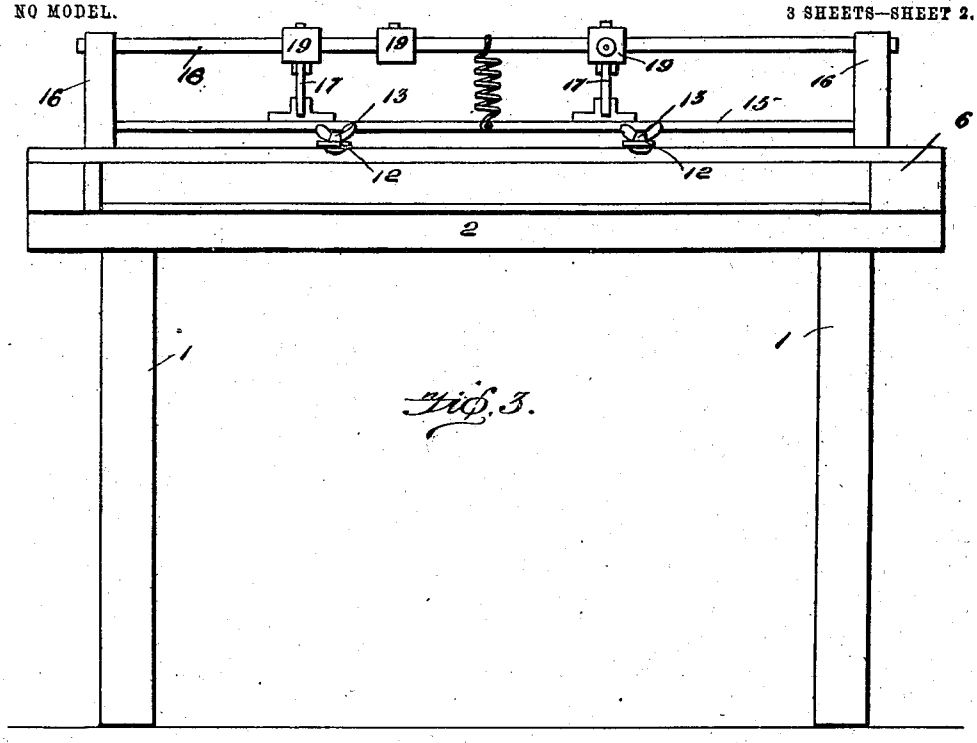


Fig. 3.

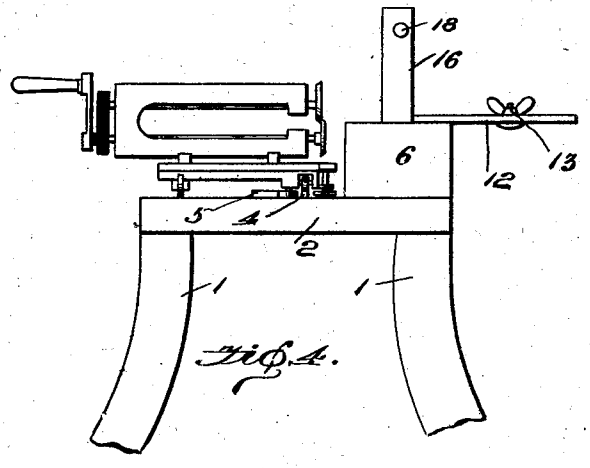


Fig. 4.

Witnesses

W. C. Crowley.

M. W. Johnson.

Inventor

Albert G. Scherer.

By Woodhouse & Moore.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 729,964. PATENTED JUNE 2, 1903.

A. G. SCHERER.

MACHINE FOR CUTTING SHEET METAL.

APPLICATION FILED DEC. 18, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 5.

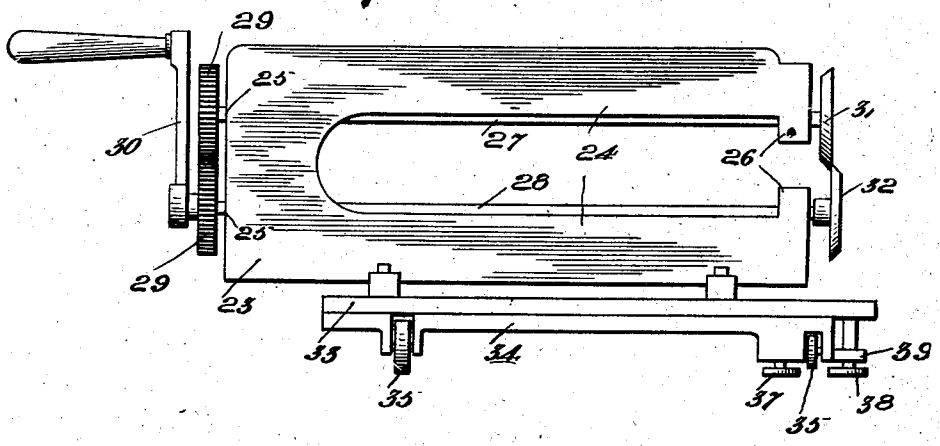
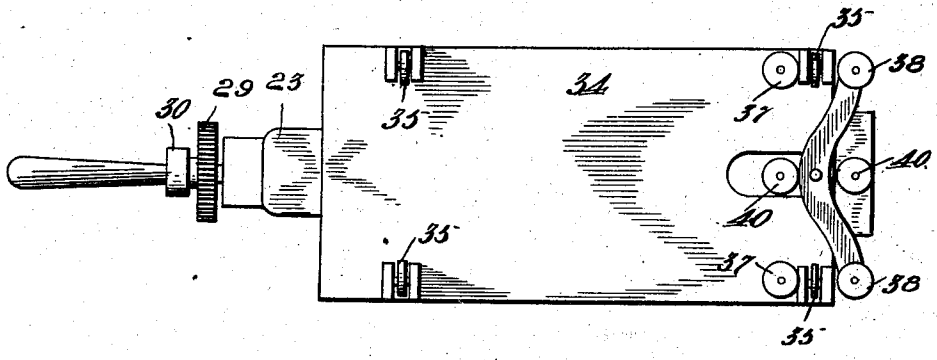


Fig. 6.



Witnesses

W. G. Crowley.

M. W. Johnson.

Inventor

Albert G. Scherer,

By Woodhouse & Moore.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 729,964. Patented June 2, 1903.

UNITED STATES PATENT OFFICE.

ALBERT G. SCHERER, OF CHICAGO, ILLINOIS, ASSIGNOR TO A. W. GLESSNER, OF CHICAGO, ILLINOIS.

MACHINE FOR CUTTING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 729,964, dated June 2, 1903.

Application filed December 18, 1902. Serial No. 135,829. (No model.)

To all whom it may concern:

Be it known that I, ALBERT G. SCHERER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting Sheet Metal, of which the following is a specification.

This invention relates to improvements in machines for cutting sheet metal; and the main object of my invention is the provision of a machine by which sheet metal may be readily cut in any pattern desired in a thorough and efficient manner, and to carry this object into force I have produced a novel construction of machine, as will presently appear.

My machine is particularly adapted to the cutting of sheet metal in long irregular curves, and I use it principally for cutting sheet metal in proper shape for sheet-metal elbows of large dimensions.

To this end my machine consists of novel features of construction and combination of parts, substantially as disclosed herein.

In the accompanying drawings, Figure 1 is a top plan view of the complete machine. Fig. 2 is a front elevation thereof. Fig. 3 is a back elevation thereof. Fig. 4 is a side elevation thereof. Fig. 5 is a detailed view of the cutters and their operating mechanisms, and Fig. 6 is a bottom plan view of the device shown in Fig. 5.

Referring to the drawings, the numeral 1 designates the legs carrying the table 2, which is provided with a curved front 2^a, as shown. Mounted upon the table is the pattern 3, which is a rectangular piece of wood or iron, to which is attached a track 4. When the pattern is in place in the machine, it is flush with the outer section of the table and entirely occupies the space between the outer section 5 and the raised back portion 6 of the table, upon which is mounted the mechanism for securing the metal in position to be cut. This pattern is secured to the table by means of the bolts 7. The mechanism for holding the metal in place while being cut is placed some distance above the plan of the front of the table and consists of the lower supporting-piece 8, provided with the slots 9, into which slip the plates 10, provided with the pins 11. These pins are guides to allow the metal to be placed in position readily and quickly, so that the metal can be cut in curves of varying length, and are adjusted properly when the patterns are changed. To the back of the supporting-piece and to the table are attached the strips 12, in which work the adjustable stops 13 for the purpose of regulating the width of the metal. I also employ an adjustable stop 14, which is used in connection with the stops 13 to properly locate the metal in the machine. Above the supporting-piece I place the clamping-piece 15, which is mounted in the lower end of the journals or standards 16 and is connected, by means of the levers 17, to the rock-shaft 18, which is mounted in the upper ends of the standards. This rock-shaft is operated by means of the handles 19, which turn the shaft a one-quarter circle. I provide a pin 20 in the end of the rock-shaft, which, in conjunction with the slot 21 of one of the standards, prevents the rock-shaft from being moved a greater distance than a one-quarter circle, and I employ a spring 22 to assist in the releasing and also the retaining of the clamping-piece 15 away from the supporting-piece when metal is not held in position for cutting.

To operate the machine, the metal is placed upon the supporting-piece and the handles on the rock-shaft are pulled forward and down. This causes the connecting-levers between the clamping-piece 15 and the rock-shaft to move downward and force the slidingly-mounted clamping-piece 15 down firmly on the metal, thus holding the metal in the proper position to be cut.

The cutting mechanism consists of a casting 23, formed with the two terminals 24, which are provided with bearings 25 and 26 for the reception of shafts 27 and 28, which have mounted upon their inner ends the gears 29, which mesh with each other and are

adapted when rotated through the medium of the crank-arm 30 to revolve the said shafts 27 and 28, and consequently the cutting disks or wheels 31 and 32, the disk 32 having an oppositely-arranged cutting beveled edge and overlapping on the outer surface the disk 31. This casting is bolted to a sliding plate 33, which moves backward and forward in the carriage 34. This carriage runs on wheels 35 at its front and rear portions, the rear wheels being adapted to contact the front section of the table, while the foward wheels run on top of the track 4 in the pattern. The forward wheels are retained on the track of the pattern by the lateral wheels 37 and 38, the wheels 38 being carried on a swinging arm 39, so that there will be no binding as the carriage proceeds over the curves of the track. I also employ wheels 40, which are attached to the sliding plate 33, carried by the carriage, these wheels being adapted to keep the sliding plate and the cutting mechanism, which is bolted thereto, directly over the track of the pattern. It will be readily seen that if the knives were fixed directly to the carriage they would be carried off the line of the track as the carriage proceeded, and this mechanism is therefore the gist of my invention and the mechanism which I claim broadly.

From the foregoing description, taken in connection with the drawings, it is evident that I provide a machine for cutting sheet metal in any shape that may be desired, the operation of which is readily understood and is set forth as follows: The metal is placed upon the table after the desired pattern has been secured in place, and by means of the rock-shaft and clamping-piece the same is held in position while the shafts carrying the cutting-disks are revolved, the carriage supporting the cutting-disks moving along in the track-form on the pattern, and the sliding plate in said carriage and the cutting mechanisms carried thereby being kept directly over the line of the pattern the sheet metal is cut in a line which registers with the shape of the pattern.

What I claim as new, and desire to obtain by Letters Patent, is—

1. In combination with a supporting-table carrying an adjustable and removable pattern and means for holding the metal in place, of a carriage supporting a cutting mechanism guided in its movement by the pattern.

2. In combination with a supporting-table, mechanism for holding the sheet metal in place while being cut, and a pattern removably and adjustably secured to the table, consisting of a track of the proper shape secured on a base of convenient shape and dimensions, in combination with a carriage movably mounted upon the table, and in the track of the pattern, and means for cutting the sheet metal carried movably by the carriage.

3. In combination with a table having an adjustable and removable pattern and means for holding sheet metal in place thereon, of a cutting mechanism movably mounted upon the table and guided in its movements by the pattern.

4. In combination with a table, having an adjustable and removable pattern and means for holding the sheet metal in place mounted thereon, of a carriage mounted upon the table, and cutting mechanism adjustably mounted carried upon the carriage and guided in its movements by the track of the pattern.

5. In combination with a table, a pattern mounted thereon, consisting of a track of the proper shape secured on a base of convenient shape and dimensions and means for holding the sheet metal while being cut, of a carriage mounted upon the table, a frame adjustably mounted upon the carriage and means for cutting the sheet metal carried by the said frame, and guided in its movements by means of the track of the pattern.

6. In combination with a table having means for holding the sheet metal and an adjustable and removable pattern consisting of a track of the proper shape mounted upon a base of convenient shape and dimensions, of a carriage mounted upon the table and having one set of its wheels mounted in the track of the pattern, an adjustable frame carried upon the carriage, a pair of parallel shafts, journaled in said frame, means for revolving the shafts in unison and cutters carried by the shaft adjacent to the sheet of metal.

7. In combination with a table having means for holding the piece of sheet metal and a pattern, consisting of a track of the proper shape secured on a base of convenient shape and dimensions, of a carriage, a substantially U-shaped frame slidingly mounted upon said carriage, a cutting mechanism carried by the frame above and below the piece of sheet metal.

8. In combination with a table, an adjustable and removable pattern mounted upon the top thereof, consisting of a track of the proper shape secured on a base of convenient shape and dimensions, a pair of standards mounted upon the table adjacent to the track and above the same, a rock-shaft mounted in said standards, connected by means of levers with a clamping-piece, of a mechanism for cutting the pieces of sheet metal mounted upon the table and guided in its movements by the track of the pattern.

9. In combination with a table having an adjustable and removable pattern, consisting of a track of the proper shape secured on a base of convenient shape and dimensions, an elevation carried upon the top of the table parallel with the pattern, a pair of standards carried upon said elevation, a clamping mechanism for a piece of sheet metal mounted in the standards, of a mechanism for cutting the sheet metal mounted upon the table and

guided in its movements by the track of the pattern.

10. In combination with a table, an adjustable and removable pattern mounted thereon, consisting of a base, a track of the proper shape and dimensions secured on said base, and means for holding the sheet metal while being cut, of cutting mechanism removably mounted upon the table and guided in its movement by the pattern.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT G. SCHERER.

Witnesses:

ELIZABETH LANGE,

JOSEPH W. REES.