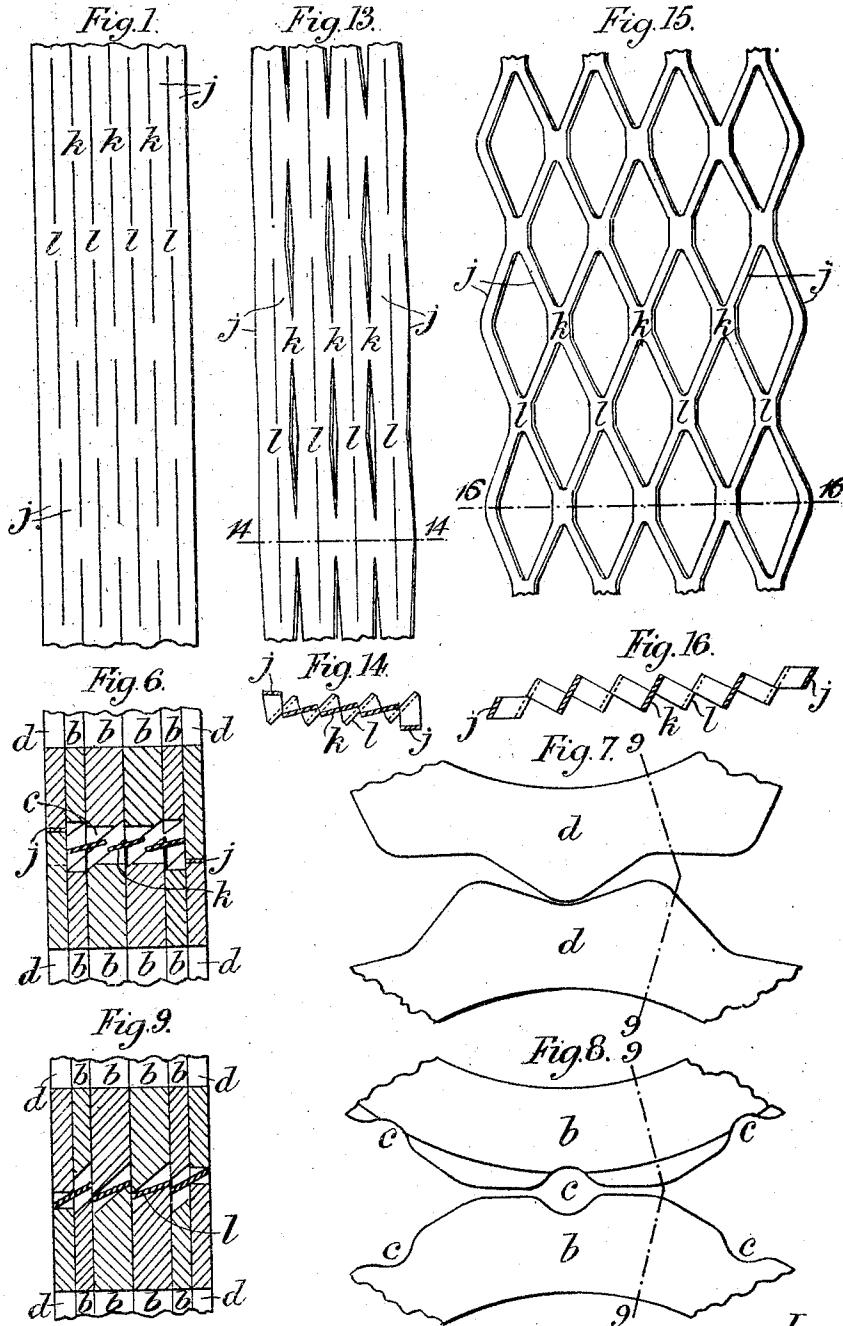


H. SALMON.
 APPARATUS FOR MANUFACTURING EXPANDED METAL.
 APPLICATION FILED JUNE 15, 1912.

1,043,541.

Patented Nov. 5, 1912.

3 SHEETS—SHEET 1.



Witnesses
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Fig. 2.

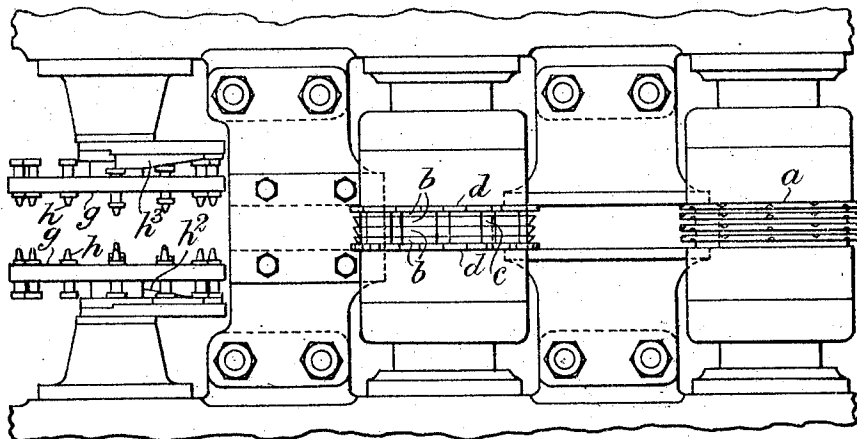


Fig. 3.

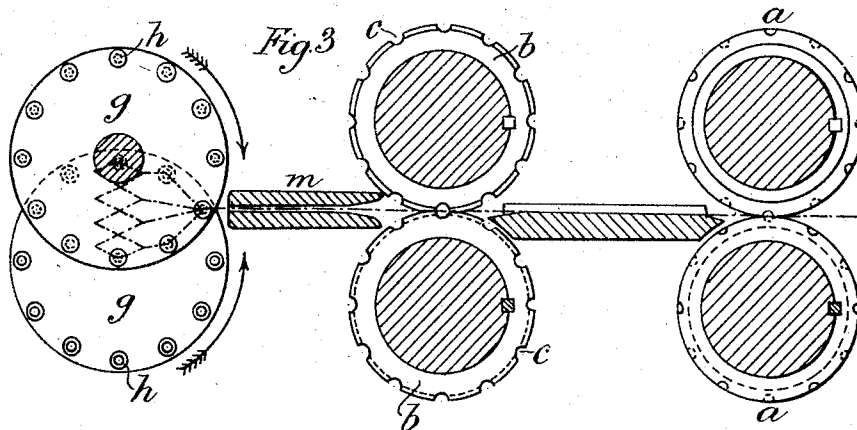
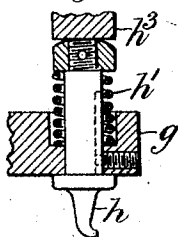


Fig. 10.



Witnesses

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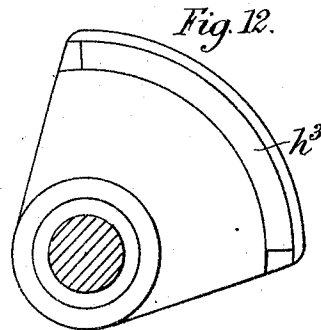
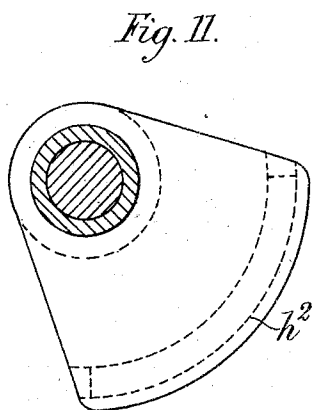
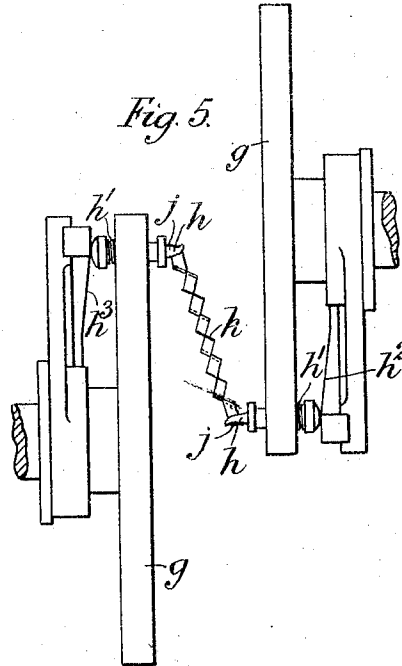
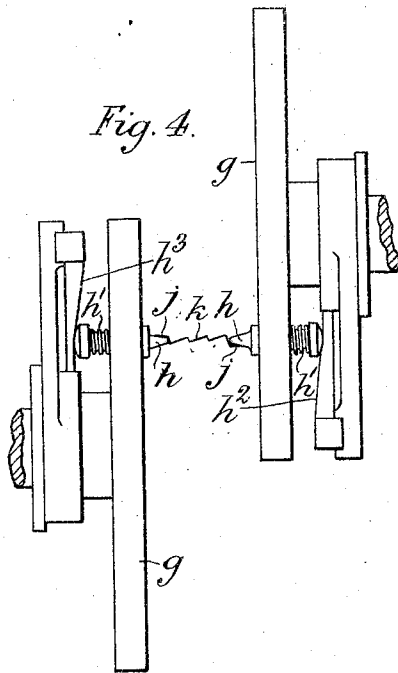
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3 SHEETS—SHEET 3.



Witnesses

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APPARATUS FOR MANUFACTURING EXPANDED METAL.

1,043,541.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed June 15, 1912. Serial No. 703,950.

To all whom it may concern:

Be it known that I, HARRY SALMON, a subject of the King of Great Britain, residing at York Mansion, York street, in the city of Westminster, England, have invented new and useful Improvements in Apparatus for Manufacturing Expanded Metal, of which the following is a specification.

According to this invention the sheet is first slit in the ordinary way thus dividing it into parallel strips connected by junctions of uncut metal. The slit sheet is then passed through rolls by which the strips are turned in pairs in the same direction to an angle to the plane of the sheet and at the same time holes are formed at the two edges of the sheet. Finally the sheet thus prepared is expanded by means of a pair of wheels revolving in opposite directions and provided with teeth which enter the holes, the axes of such wheels being arranged one above and the other below the plane of the sheet.

The drawings show a machine arranged to deal with a slit sheet consisting of eight parallel strips but it will be understood that the machine can be readily adapted to deal with any width or thickness of sheet.

Figure 1 shows the slit sheet. Fig. 2 is a plan of the rolls and wheels and Fig. 3 is a sectional elevation of Fig. 2, the gearing for driving the rolls and wheels is well understood and is not shown. Figs. 4 and 5 are end elevations of the expanding wheels showing the positions of the sheet at the commencement and termination of the expanding operation. Fig. 6 is a longitudinal section showing to a larger scale half of each of the preparing rolls. Figs. 7 and 8 are elevations of the outer and inner portions of the rolls (Fig. 6). Fig. 9 is a section similar to Fig. 6 on the lines 9-9, Figs. 7 and 8. Fig. 10 is a section of one of the teeth to a larger scale. Figs. 11 and 12 are side elevations of the cams operating the teeth. Fig. 13 shows the sheet after it has passed through the preparing rolls and before it has been expanded. Fig. 14 is a section on the line 14-14, Fig. 13. Fig. 15 shows the expanded sheet and Fig. 16 is a section on the line 16-16, Fig. 15.

a are the slitting rolls the details of which are well known and do not require any description. Each of the preparing rolls is built up of four inner rolls b (which are

conical in form and have notches c in them at regular intervals to receive the junctions of the slit sheet) and two outer rolls d . The rolls d are of corrugated form their edges being parallel to their axes. The expanding wheels e have teeth f projecting from their side faces. These teeth are not fixed to them but pass through them from side to side.

h are springs tending to draw the heads of the teeth toward the wheels and h^2 and h^3 are stationary cam surfaces which force the teeth outward.

The drawings for simplicity only show a single tooth on each of the wheels but it will be understood that they have teeth all around them at regular intervals.

The method of operation is as follows:—A sheet of metal is passed through the rolls a and is slit as shown at Fig. 1 being divided into parallel strips j connected by junctions k and l , there being three junctions k in a row and four junctions l . The slit sheet travels on to the preparing rolls and in passing through them the junctions k are received in the notches c and are not materially acted on but the two strips j at the sides of these junctions are bent by the rolls d upward and downward out of the plane of the sheet without being turned. The junctions l are acted on by the conical part of the rolls b and are turned to an angle to the plane of the sheet as shown at Fig. 9. The sheet thus prepared passes through the guide m , Fig. 3, on to the wheels e , the teeth f of which enter the holes formed as above described between the outer strips and the junctions j the teeth being forced out away from the wheels by the cams h^2 and h^3 . When the teeth are respectively vertically above and below the axes of their wheels they come to the ends of the cams and are suddenly withdrawn by their springs thus freeing the expanded sheet. By varying the length of the cams so that the teeth are withdrawn somewhat sooner the amount of expansion can be regulated.

What I claim is:—

1. The combination of means for slitting a sheet of metal, means for turning the inside strips in pairs to an angle to the plane of the sheet, means for bending the outer strips upward and downward from the plane of the sheet without turning them, a pair of wheels revolving in opposite direc-

tions, and teeth on the wheels engaging with the outer strips.

2. The combination of means for slitting a sheet of metal, means for turning the inside strips in pairs to an angle to the plane of the sheet, means for bending the outer strips upward and downward from the plane of the sheet without turning them, a pair of wheels revolving in opposite directions, and teeth projecting from the side faces of the wheels engaging with the outer strips.

3. A roll for preparing a slit sheet for expanding consisting of a number of conical rolls each provided with notches at regular intervals around its circumference and hav-

ing at each end a corrugated roll having its edge parallel to its axis in combination with a cooperating roll and means for operating said rolls.

4. Apparatus for expanding a slit sheet of metal consisting of the combination of a pair of wheels lying in different planes each having teeth projecting from the side which faces the other wheel, springs tending to draw the teeth toward the wheels and cams forcing the teeth away from the wheels.

HARRY SALMON.

Witnesses:

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JAS. T. NICHOLSON.