

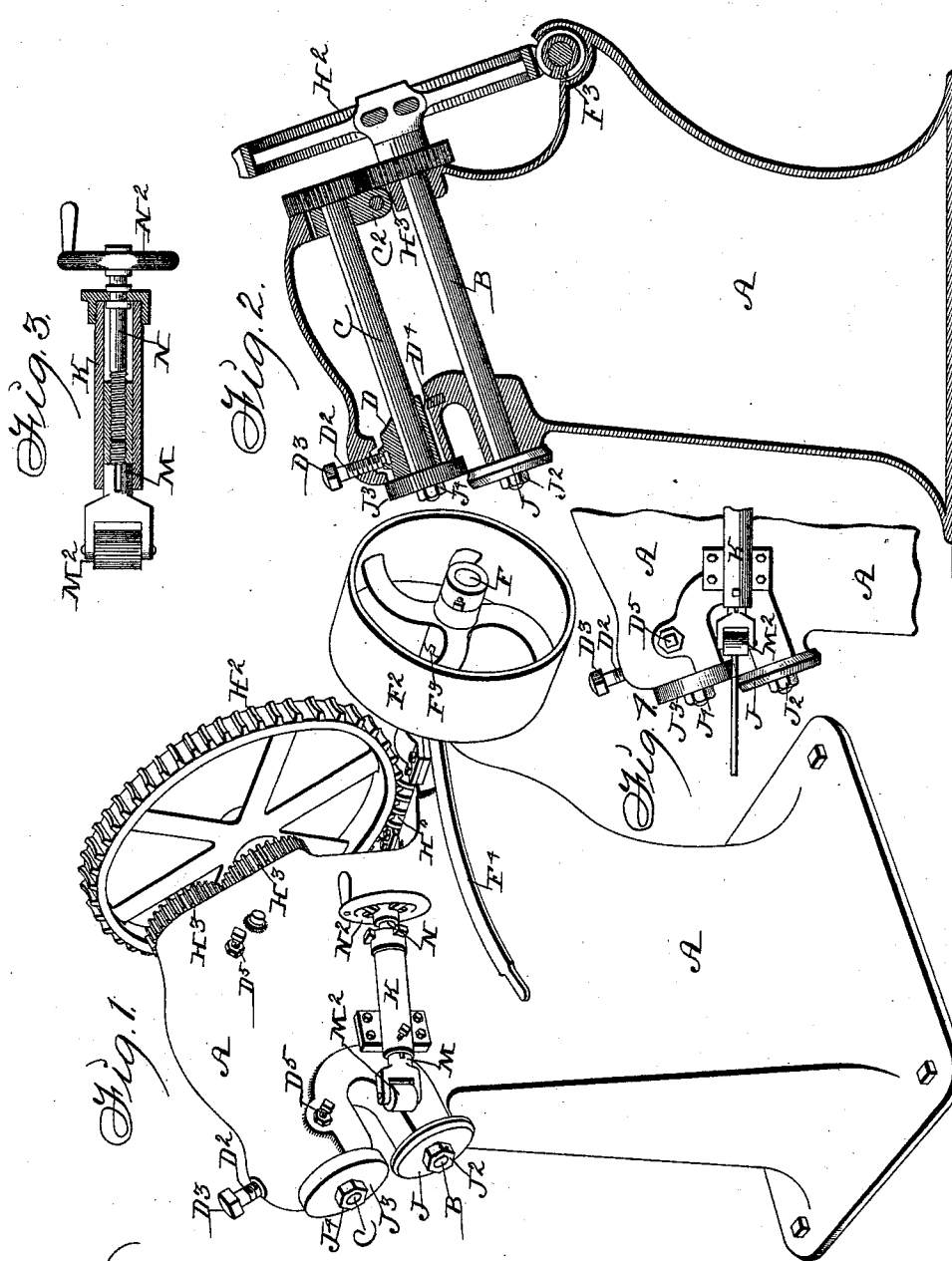
(No Model.)

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MACHINE FOR CUTTING BEVELED EDGES ON PLATE METAL.

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Witnesses:
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UNITED STATES PATENT OFFICE.

DAVID LENNOX, OF MARSHALLTOWN, IOWA.

MACHINE FOR CUTTING BEVELED EDGES ON PLATE METAL.

SPECIFICATION forming part of Letters Patent No. 527,178, dated October 9, 1894.

Application filed June 18, 1894. Serial No. 514,999. (No model.)

To all whom it may concern:

Be it known that I, DAVID LENNOX, a citizen of the United States of America, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a new and useful Machine for Cutting Beveled Edges on Plate Metal, of which the following is a specification.

The object of my invention is to provide a strong and durable machine adapted to be operated by any suitable power and into which plate metal such as boiler sheets, heads and the like may be placed and a beveled edge cut thereon, and my object is further to so arrange and construct the various parts of the machine that metal of varying thicknesses may be cut and also the incline of the bevel be accurately adjusted, and further to provide means whereby a cut may be made parallel with the edge of the sheet metal at any desirable distance therefrom whether said edge be straight or irregular, or a cut be made along any line.

With these objects in view my invention consists in certain details of construction, arrangement and combination of the various parts of the device, as hereinafter set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the complete machine. Fig. 2 is a vertical longitudinal sectional view, taken through an approximately central line. Fig. 3 is an enlarged detail sectional view of the device for guiding the plate metal. Fig. 4 is a detail side view of the cutting disks and accompanying parts, showing a piece of plate metal between them and the line of the bevel to be cut thereon, indicated by dotted lines.

Referring to the accompanying drawings the reference letter A is used to indicate the base and frame of the machine preferably made of cast metal complete in one piece, of an irregular contour, adapted to support the mechanism hereinafter described.

B indicates a shaft extended longitudinally of the said frame near its top and at an incline from the rear of the machine downwardly in bearings that will permit it to freely rotate.

C indicates a like shaft extended parallel

with and directly above the shaft B. Its rear end is rotatably mounted in the bearer C² that is pivoted at its lower end to the frame A and capable of a slight movement relative thereto. Its front end is rotatably mounted in the block D which is made to be capable of a slight vertical adjustment relative to the frame A by the set screw D² rotatably and non-slidingly mounted in its top and extended through a screw-threaded bore in said frame, its top end D³ being made angular so that a wrench may be applied thereto. An extensible spring D⁴ is placed in a suitable portion of the machine frame to exert a yielding pressure in an upward direction upon the block D to normally hold it elevated and two set screws D⁵ are passed through the sides of the machine frame to engage the bearer C² and block D to firmly hold them in place when the shaft C has been accurately adjusted. These shafts are arranged to be driven in unison in opposite directions by means of the following mechanism:

F indicates a drive shaft mounted in suitable bearings in the machine frame and extended transversely thereof at its rear end.

F² is a belt wheel mounted on the one end and adapted to be thrown in and out of gear therewith by means of the clutch F³ operated by a lever F⁴.

H indicates a worm formed in said shaft; H², a gear wheel in mesh with said worm and fixed to the rear end of the shaft, B and H³ are gear wheels in mesh with each other and fixed to the shafts B and C.

J indicates a cutting disk having its periphery provided with a bevel on each side converging at its central portion, and detachably fixed to the shaft B by means of the nut J² and J³ is a cutting disk having a flat periphery detachably fixed to the shaft C by a nut J⁴ in such a position relative to the disk J that their inner edges will almost engage each other.

As clearly shown in Fig. 4, the plate or sheet metal is placed in a position to lay flat on the beveled or outer disk and when so placed the metal will be cut on the same angle as the difference between the incline of the surface of the beveled and the flat surface of the adjoining wheel so that the bevel

given to the sheet metal is proportioned to the incline of the periphery of the outer disk.

It will now be readily seen that if a piece of plate metal were passed between the cutting disks and resting upon the beveled surface of the lower disk and said disks rotated that said plate will be cut on a bevel, the degree of which will vary with the degree of the beveled periphery of the said cutting disk, and it will be observed further that by placing the shafts that operate said disks at an incline the plates may be presented horizontally and further that the mechanism for adjusting the upper shaft provides accurate means for adjusting the disks relative to each other and firmly holding them in position.

In order to firmly and accurately hold the plate metal so that a strip of uniform width may be cut from its edge, I have provided a tube K to be secured to the side of the machine frame to be extended horizontally in a line that would intercept the two cutting disks.

M indicates a hollow, internally screw-threaded bar, slidingly but non-rotatably mounted in the said tube and having its forward end bifurcated and an anti-friction roller M² pivoted therein in a vertical position.

N indicates a shaft having its forward end screw-threaded and inserted in the screw-threaded interior of the bar M and rotatably but non-slidingly connected with the said tube.

N² indicates a hand wheel fixed to its rear end by which the anti-friction roller M² may be adjusted to and from the cutting disks, to engage the edge of a piece of plate metal being passed therethrough. When the cut is to be made parallel with the edge of the plate the device is set in position and when it is desired to make an irregular cut the roller may be quickly and accurately adjusted by a manipulation of the hand wheel.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. A machine for cutting beveled edges on plate or sheet metal, comprising two parallel shafts rotatably mounted in a suitable frame, the one above the other, means for driving the shafts, a disk attached to the end of the upper shaft and having a cutting edge on its outer periphery and a disk on the lower shaft with a cutting edge on its inner periphery in approximate alignment with the aforesaid cutting edge and having its periphery inclined outwardly from said cutting edge divergent

relative to the axis of the disk, for the purposes stated.

2. A machine for cutting beveled edges on plate or sheet metal, comprising a suitable frame, two parallel, rotatable shafts in vertical alignment and inclined downwardly toward the front of the frame, means for driving said shafts in opposite directions, a disk fixed to the forward end of the upper shaft having a cutting edge on its outer periphery, a disk fixed to the lower shaft having a cutting edge on its inner periphery in approximate alignment with the cutting edge of the upper disk, and having a horizontal top surface, substantially as and for the purposes stated.

3. A machine for cutting beveled edges on plate or sheet metal comprising a suitable frame two shafts rotatably mounted therein, means for driving said shafts in opposite directions and a cutting disk having a beveled periphery fixed to the shaft and a second cutting disk having an angular forward edge on the periphery fixed to the shaft with said angular edge in close proximity to the inner edge of the beveled disk and an anti-friction roller located in the rear of said cutting disk and means for adjusting the same relative to the disks, for the purposes stated.

4. A machine for cutting beveled edges on plate or sheet metal comprising a suitable frame, two shafts rotatably mounted therein the one above the other and extended at an incline downwardly toward the front of the machine, means for vertically adjusting the upper shaft a cutting disk having a beveled periphery fixed to the lower shaft, a cutting wheel having a flat periphery fixed to the top shaft, a shaft rotatably mounted in the rear end of the machine frame, a belt wheel slidingly but non-rotatably mounted therein, a clutch for throwing said wheel in or out of gear, a worm formed on or fixed to said shaft, a gear wheel in mesh with said worm and fixed to one of the aforesaid shafts, two gear wheels in mesh with each other and fixed to said shafts and a tube fixed to the side of the machine frame, a bar slidingly but non-rotatably mounted therein and having a bifurcated end, a roller mounted on said end, a shaft rotatably but non-slidingly mounted in the opposite end of said tube and connected with said bar, and a hand wheel on the outer end of said shaft for the purposes stated.

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Witnesses:

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