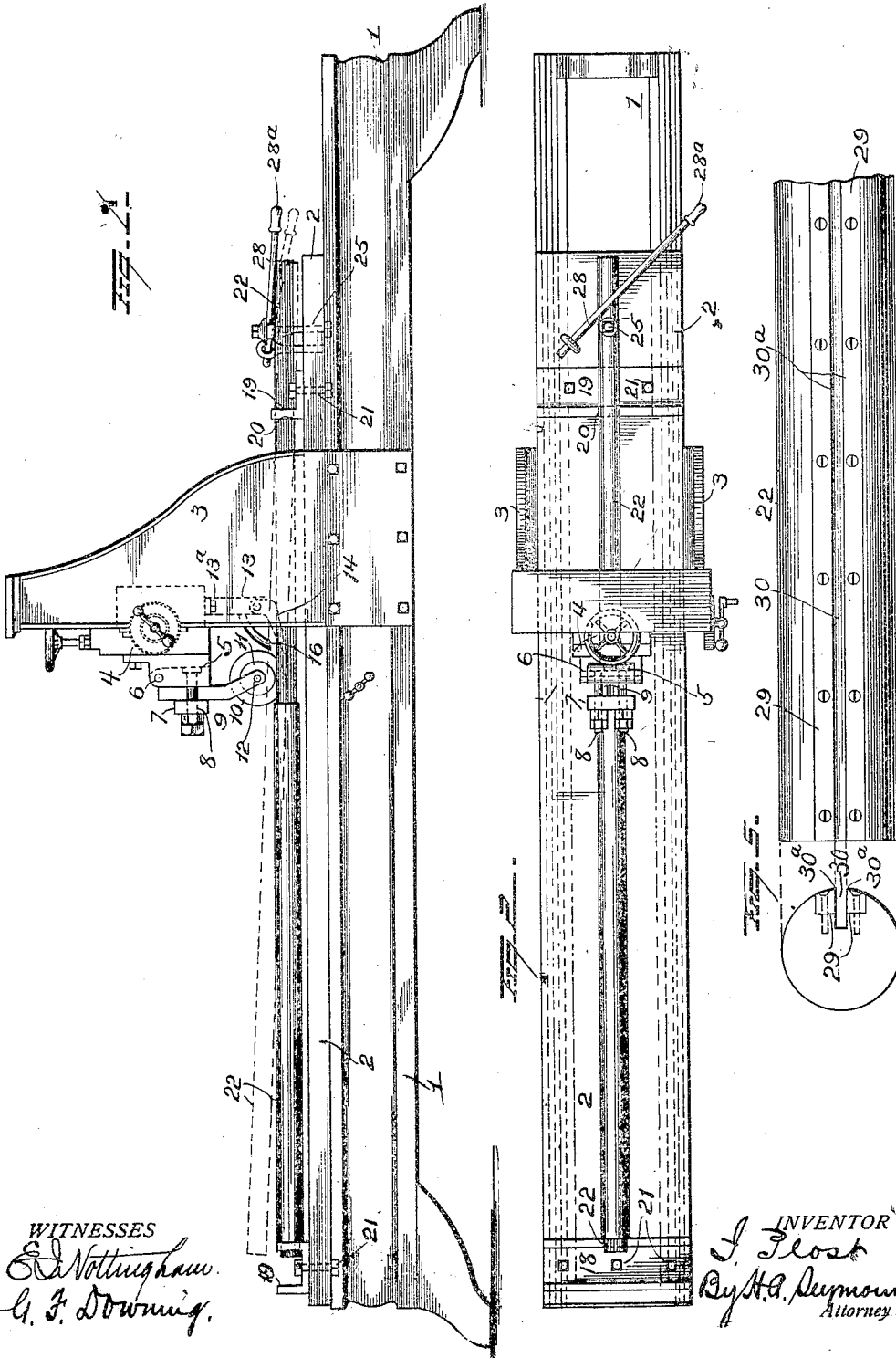


I. PLOST.
MACHINE FOR CUTTING METAL.
APPLICATION FILED AUG. 23, 1912.

1.054,143.

Patented Feb. 25, 1913.

2 SHEETS—SHEET 1.



WITNESSES
E. Nottingham.
G. F. Downing.

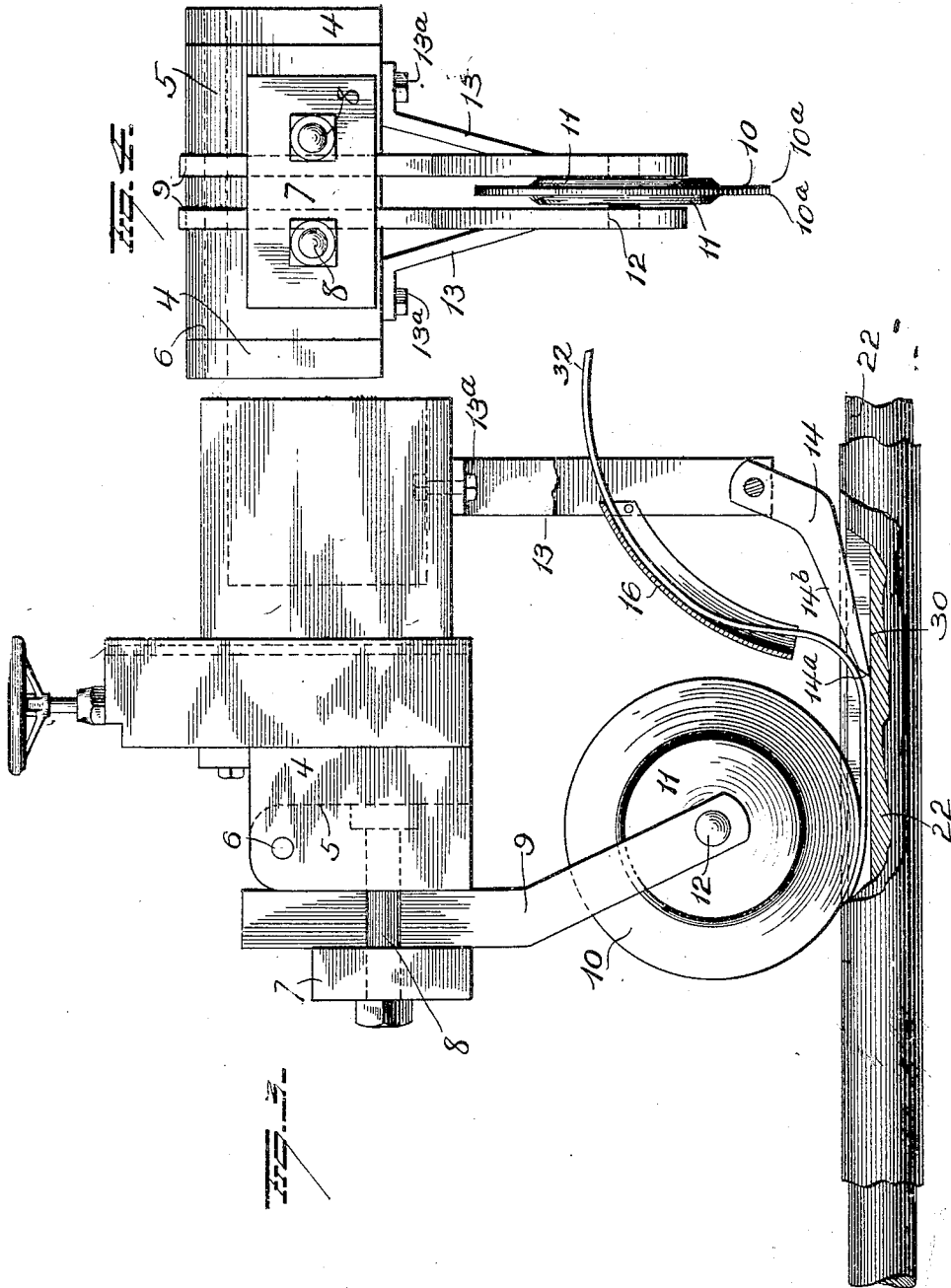
INVENTOR
I. Plost
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Attorney

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UNITED STATES PATENT OFFICE.

ISAAC FLOST, OF MARION, INDIANA.

MACHINE FOR CUTTING METAL.

1,054,143.

Specification of Letters Patent. Patented Feb. 25, 1913.

Application filed August 23, 1912. Serial No. 713,701.

To all whom it may concern:

Be it known that I, ISAAC FLOST, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Machines for Cutting Metal; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in machines for cutting metal, either tubes or sheets, the object being to provide devices that may be readily attached to many metal planing machines as now commonly constructed, and which may also be built complete as a cutting machine.

I have shown the attachments applied to an ordinary planing machine, and have illustrated it equipped for cutting tubes.

The invention consists in the parts and combinations of parts and in the details of construction as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of an ordinary planing machine showing my improvements attached; Fig. 2 is a plan of same; Fig. 3 is an enlarged view of the cutter, plow and mandrel, showing the cutter severing a tube; Fig. 4 is a view in front elevation of the cutter showing the manner of mounting same, and Fig. 5 is a plan view of a section of the mandrel.

1 represents the frame or bed of a metal planing machine; 2 the traveling table and 3 the side brackets carrying the planer head 4. This planer head is provided with a block 5, hinged at 6 so as to permit the usual release and drag of the cutting wheel during the return movement of the table 2. The cutting wheel frame 9 may be attached to the hinged block 5, by any suitable clamp, and in the present instance I have shown it secured by the plate 7 and bolts 8. The table 2 travels horizontally lengthwise the frame or bed of the machine, and is provided on its upper side with the cross plates 18 and 19 which are secured to the table by the bolts 21. The cross plates are each provided with an edge flange having a recess or seat therein for the reception of the mandrel, and the latter is prevented from turning, and also from moving longitudinally by the bolt 25 which passes loosely through the

mandrel and is secured to the bed. The cross plate 18 preferably supports the rear end of the mandrel, while the front plate 19 is so located that the mandrel projects some distance at the front thereof, and the securing bolt 25 is preferably located intermediate the plate 19 and the front free unsupported end of the mandrel. The lower wall of the seat in cross plate 19 is rounded, as at 20, so as to form a rocker bearing on which the mandrel 22 may tilt and the latter may be tilted, as shown in dotted lines in Fig. 1, by the lever 23, fulcrumed in the table 2, and resting on the free unsupported end of the mandrel in front of the bolt 25, as shown in Figs. 1 and 2. By bearing down on handle 28^a of the lever 23 the mandrel will be tilted in a direction to elevate its rear end above the flange of cross plate 18, so as to permit a tube to be placed in position or a slitted tube to be removed therefrom.

The mandrel 22 is provided on its upper surface with a groove extending lengthwise thereof, the said groove being of any desired length and depth, and is preferably faced at its side edges by the die plates 29 having sharp cutting edges 30^a, and rigidly secured to the mandrel by screw or other fastenings.

The cutting wheel 10 is disk shaped, is reinforced centrally as at 11, and is provided with trunnions 12 mounted in bearings in the lower ends of the cutting wheel frame 9, which as previously explained is secured by the clamping plate 7 and bolts 8 to the planer head block 5. The rim of this cutting wheel 10 is at right angles to its sides, and the side cutting edges 10^a thereof coact with the cutting edges 30^a of the dies 29, and operate to sever from the tube or sheet, a strip or blank equal in width to the thickness of the cutting wheel, or rather to the width of the groove between the cutting edges 30^a of the dies 30. The sides of the cutting wheel from its cutting edge to the reinforcement 11 thereof, are parallel so that the said wheel may enter the groove in the mandrel sufficiently to permit of the complete severance of a strip or blank and its complete separation and removal from the tube or sheet.

Secured to the planer head 4, by bolts 13^a, are the brackets 13 to the lower ends of which the combined shear and plow 14 is pivotally secured. This plow is made of

tool steel and is bent as shown, and extends forwardly in advance of the brackets 13, with its front free end within and moving against the floor of the groove 30 in the mandrel 22. This combined shear and plow is in rear of the cutter, and its front beveled end 14^a, and its inclined top operate to elevate the strip or blank 32 severed from the tube or strip, while the curved shield 16 deflects the same rearwardly between the brackets. This plow and shear 14 is of the same width as the cutting member of the wheel 10, and its side edge 14^b and flat top operate to cut away any ragged edges left by the cutting wheel, and thus leave the severed edges of the tube or sheet clear cut and smooth.

In the operation of the machine the tube is placed on the mandrel while the latter is in a tilted position, and after it has been properly placed, the pressure on lever 28 is released thus permitting the mandrel with the tube thereon to drop into position shown in Fig. 1. When in this position the rear end of the tube bears against the flange of plate 18. The table 2 is now set in motion, and as the tube comes in contact with the cutting wheel, the latter acting in connection with the dies 29 severs a strip from the tube and forces it down into the groove, while the combined plow and shear ejects it from the groove and trims up the selvage edges of the tube. If it is desired to cut the pipe into two sections, it is simply necessary after the first cut has been made, to turn the pipe on the mandrel so as to bring the line on which it is to be severed in line with the cutting wheel and the operation repeated. The strips thus removed, are saved as a whole, and may be utilized in their original shape or reworked as may be necessary or desired. It will also be apparent that in cutting sheets or plates that the groove and dies instead of being in a mandrel, would be in the table itself, or in a plate or base secured to the table. It is also evident that other changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a metal cutting machine, the combination of a movable table, parallel dies fixed thereon, a cutting wheel the side edges of the periphery of which coact with said dies and a plow resting between said dies in advance of the cutting wheel for ejecting the strip severed from the metal by the wheel and dies.

2. In a metal cutting machine, the com-

bination of a movable table, parallel dies fixed thereon, a cutting wheel the side edges of the periphery of which coact with said dies, and a combined plow and shear located between the dies in advance of the cutting wheel for ejecting the strip severed by the wheel and dies and for trimming up the side edges of the metal from which the strip has been cut.

3. In a metal cutting machine, the combination of a movable table, parallel dies thereon, a hinged support, a wheel cutter carried by said hinged support whereby the cutter wheel may drag or trail on the return movement of the table, and a plow located in rear of the cutting wheel with its free end between the dies for ejecting the strip removed by the wheel cutter and dies.

4. In a metal cutting machine, the combination of a movable table, parallel dies carried thereby, a hinged support, a cutter wheel carried by said hinged support and located in a plane between the dies, and a hinged plow located in rear of the cutter wheel.

5. In a metal cutting machine, the combination of a movable table, parallel dies carried by the table, a cutter wheel hinged to a fixed support and located in a position to cooperate with the dies, a plow located in rear of the cutter wheel, with its toe intermediate the dies, and a shield located above the plow.

6. In a metal cutting machine, the combination of a movable table, a grooved mandrel mounted thereon, dies at the sides of the groove in the mandrel and a cutter wheel located in a position to enter the groove in the mandrel between the dies.

7. In a metal cutting machine, the combination of a movable table, a grooved mandrel mounted thereon, means for elevating one end of said mandrel, dies forming the side edges of the groove in the mandrel and a cutter wheel located in a position to enter the groove between the dies.

8. In a metal cutting machine, the combination of a movable table, a grooved mandrel, supports rigid with the table for loosely supporting the mandrel, means for securing the mandrel against endwise and turning movement, a cutter entering the groove in the mandrel and means for tilting the latter.

9. In a metal cutting machine, the combination with a grooved member adapted to move longitudinally, a rotary cutter adapted to cut a strip from the metal being cut and force it into the groove in said member and a combined plow and shear for ejecting the cut strip from the groove and for trimming the side edges of the metal from which the strip was cut.

10. In a metal cutting machine, the combination of a longitudinally movable table,

a grooved mandrel carried by same, means for tilting the mandrel, a cutter wheel co-operating with the groove in the mandrel and a plow for ejecting the cut strip from
5 the groove.

11. In a metal cutting machine, the combination of a longitudinally movable table, a grooved mandrel on same, means for tilting the mandrel, a wheel cutter carried by a
10 bracket hinged to a fixed support, a hinged

plow for ejecting the cut strip from the groove and a shield for guiding the ejected strip.

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

ISAAC PLOST

Witnesses:

GEORGE S. GRUNT,
EDWIN M. TROOK.