W. PATROSIO.

DEVICE IN CORING TOOLS FOR CUTTING CYLINDERS.

APPLICATION FILED DEC. 23, 1913.

1,115,010.

Patented Oct. 27, 1914.

2 SHEETS—SHEET 1.

Fig. 4.

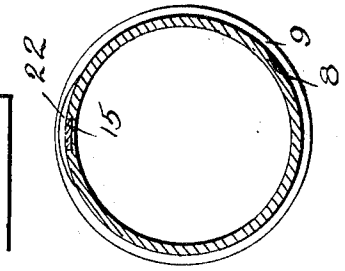


Fig. 1.

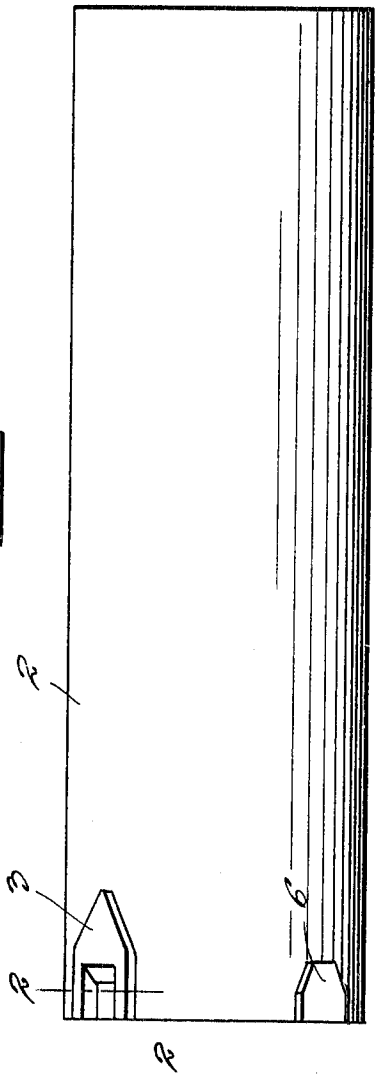


Fig. 3.

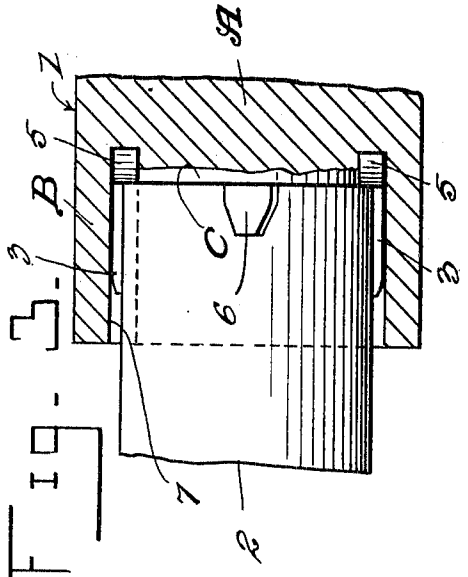
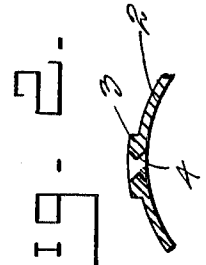


Fig. 2.



Witnesses

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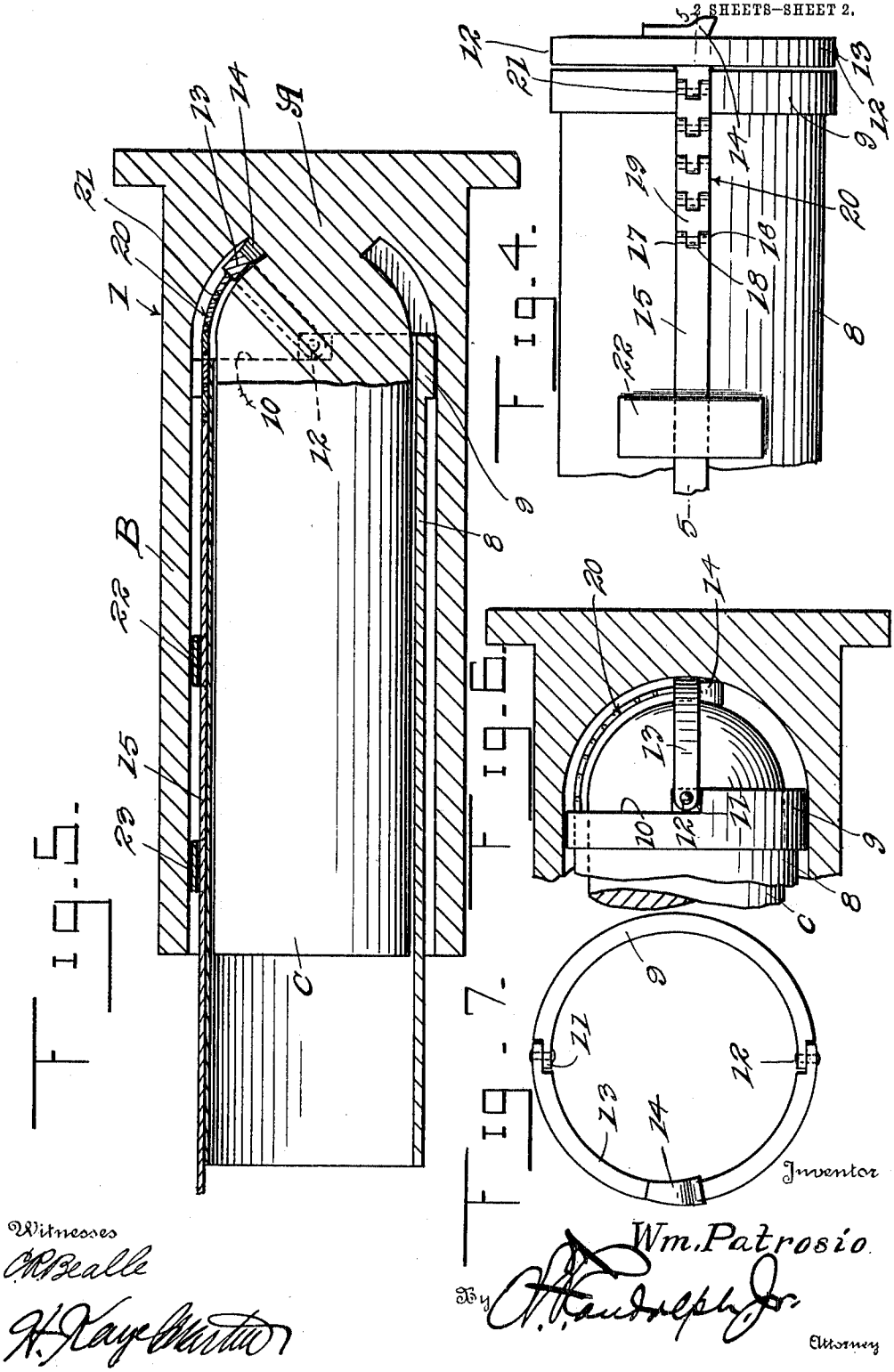
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DEVICE IN CORING-TOOLS FOR CUTTING CYLINDERS.

1,115,010. Specification of Letters Patent. Patented Oct. 27, 1914.

Application filed December 23, 1913. Serial No. 808,480.

To all whom it may concern:

Be it known that I, WILLIAM PATROSIO, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Devices in Coring-Tools for Cutting Cylinders; 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.

This invention relates to new and useful improvements in coring devices for cutting cylinders, and has for its object the provision of a cylinder cutting device by means of which the core of a cylinder may be removed with very little difficulty.

Another object of the invention, is the provision of a cylinder cutter by means of which the core within the cylinder may be automatically cut and the inner walls of the cylinder left relatively smooth.

Heretofore in the manufacturing of cylinders, much waste of material has been experienced through the fact that there has been no cutter perfected by means of which the inner end of the cylinder may be detached from the core, and therefore it has necessitated the drilling and boring out of the core which caused a great amount of waste of material, whereas the present invention has for its principal object the saving of the material forming the core and leaving the same in an integral piece, which may be easily and quickly withdrawn from its position within the cylinder without injuring the same in any way.

A still further object of the invention is the provision of a novel combination and arrangement of parts, by means of which the control of the cutting element for the inner end of the cylinder may be actuated and controlled at the will of the operator.

With the above and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a view in elevation of the primary cutter which is used in connection with the invention and is used to make the first cut of the cylinder, Fig. 2 is a detail sectional view of a fragment of the primary cutter taken on the line 2—2 of Fig. 1, Fig. 3 is a view of the primary cutter showing the same about to start the cut in the cylinder upon which the device is being used, Fig. 4 is a view in elevation of the secondary cutter showing the core-removing element in detail as well as the controlling element therefor, Fig. 5 is a longitudinal sectional view of a cylinder and of the cutter illustrated in Fig. 4, taken on line 5—5 thereof, and showing the cutter in the act of severing the core from the end of the cylinder, Fig. 6 is a sectional view of a fragment of a cylinder showing the same as it would appear with the cutter in place after the complete cut has been made, and Fig. 7 is an end view of the cutter showing the cutting element in detail. Fig. 8 is a cross sectional view of the invention.

Referring now to the drawings by characters of reference, the numeral 1 designates generally a stock, from which the cylinder is to be cut. The primary cutter, which is indicated generally by the numeral 2, is preferably formed of a seamless metal tube having at one end the enlargements 3, which are provided with the dove-tailed slot 4 in which the cutters 5 are removably secured. The enlargements 3 are preferably two in number and placed at diametrically opposite points from each other as clearly illustrated in Fig. 3, and it is to be understood that should it be desirable at any time, the number of cutters in the end of the tube 2 may be multiplied or decreased according to the work which is to be done. A plurality of enlarged portions 6 are also secured to the tube 2 intermediate the cutters 3 as clearly shown in Fig. 1. These enlargements are adapted to act as guides for the whole and prevent the cutters from coming out of alinement.

The stock 1 from which the cylinder is to be cut, may be divided into three separate elements for the sake of the description, and will be referred to hereinafter by the characters A, which indicates the rough stock before the cut is made, B, which in-

dicates the cylinder after the cut has been made or partly made, and C, which will indicate the core which is to be removed. When it is desired to cut a cylinder, the stock A is placed in a lathe or other similar machine, and the cutter 2 properly adjusted so that the cutter blade 5 will travel in a circular path and it will be apparent that when pressure is applied against the ends of the stock and the end of the cutter, that the cutter blade will be forced into the stock and form the circular cut 7, thus roughing the cylinder and leaving the core C therein. After this cut has been made the secondary cutter, which will be more fully hereinafter described, is placed in position and the core will be easily and quickly severed from the rear end of the cylinder as will be more fully hereinafter described.

The secondary cutter which is illustrated in Figs. 4 to 7 inclusive, is preferably formed of the seamless tubing similar to the tubing 2 of the primary cutter, which is provided with the longitudinal groove, which will appear as the description proceeds. At one end of the tube 8 is preferably provided the collar 9 which is of substantially the same thickness as the width of the primary cut 7. This collar is cut away for substantially half of its distance around on the outer end as shown by the numeral 10, and is so formed as to provide the portion 11 which is of thinner material than the collar, the use of which will be more fully hereinafter described. The portion 11 is provided with a centrally located aperture through which the rivet 12 is adapted to extend, which pivotally secures the hinged member 13 carrying the cutter 14 to the body portion 8 of the secondary cutter.

Having described the primary cutter and the secondary cutter, it now remains to fully set out the controlling means for the pivoted member 13 which controlling means are slidable in the slot formed in the body portion 8, which was described in the previous paragraph. A suitable strip of material 15 which is preferably of the same width as the width of the slot formed in the body portion 8, is slidably mounted in said slot and provided at one end with a pair of spaced ears 16 and 17, as clearly shown in Fig. 4. These ears are so constructed as to receive the extension 18 formed on the end link 19 of the chain which is indicated generally by the numeral 20. The free end of which is pivotally secured as at 21 to the pivoted member 13 as will be clearly seen upon referring to Figs. 4, 5, and 6. A pair of short straps 22 and 23 are secured to the body portion 8 and are adapted to bridge over the groove formed therein to hold the strip 15 in the groove.

It will be clearly seen from the foregoing that after the primary cut has been made, which was previously described, the secondary cutter is inserted in the circular cut thus formed until the cutter 14 engages the inner end thereof. Upon rotating the cutter and exerting pressure against the strip 15, it will be evident that the cutter 14 will swing on the pivot 12 and thereby make a hemispherical cut on the end of the core and sever the same from the stock from which the cylinder is being cut as clearly shown in Figs. 5 and 6. After this cut has been made, it will be evident that the member 13 may remain in the position illustrated in Fig. 6, and upon exerting pull on the outer end of the body portion 8, the same will be withdrawn from its position in the cylinder and at the same time remove the core C, thus leaving a solid core, hollow cylinder, and saving material and time.

While in the foregoing I have shown and described the preferred embodiment of my invention, I wish it to be understood that I may make such changes in the combination and arrangement of parts as will fall within the scope of the claims hereto appended.

Having thus described my invention, what I claim is:

1. In a device of the character described, a tubular body, a cutter bearing elements pivotally secured to one end of said tubular body and adapted to swing across the end in a transverse plane, and a cutter carried by the pivoted element to cover the inner end of the core from the spot from which the same is being cut.

2. In a device of the character described, a tubular body portion, a semicircular member pivotally secured to the body portion at diametrically opposite points and adapted to swing inwardly and extend transversely thereof, a cutter carried by the semicircular member intermediate its ends and adapted to sever a core from the stock from which it is being cut and means to control the operation of the cutter.

3. In a device of the character described, a cylinder cutter comprising a tubular body portion, a semicircular member pivotally secured to the cylindrical body portion at diametrically opposite points and adapted to swing outwardly therefrom, a cutter secured to the semicircular member intermediate its ends, a flat chain secured to the semicircular member on the side opposite the cutter and means to control the operation of the chain to force the cutter outwardly and into engagement with the stock from which the cylinder is being cut.

4. In a device of the character described, a tubular body portion having a longitudinal groove extending throughout its entire length, a semicircular member pivoted to the body portion at one end and at diametri-

cally opposite points, a cutter carried by the semicircular member intermediate its ends, a chain pivotally secured to the semicircular member immediately in the rear of the cutter, a strip slidable in the groove and connected to the chain whereby the operation of the cutter may be controlled and a pair of spaced straps secured to the body portion and bringing the groove to hold the strip in place.

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

WILLIAM PATROSIO.

Witnesses:

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HUBERT SCHNUCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."