No. 716,322. Patented Dec. 16, 1902.

C. C. WEBSTER.

STRIP METAL FINISHING MACHINE.

(Application filed Mar. 14, 1902.)

(No Model.) 2 Sheets—Sheet 1.

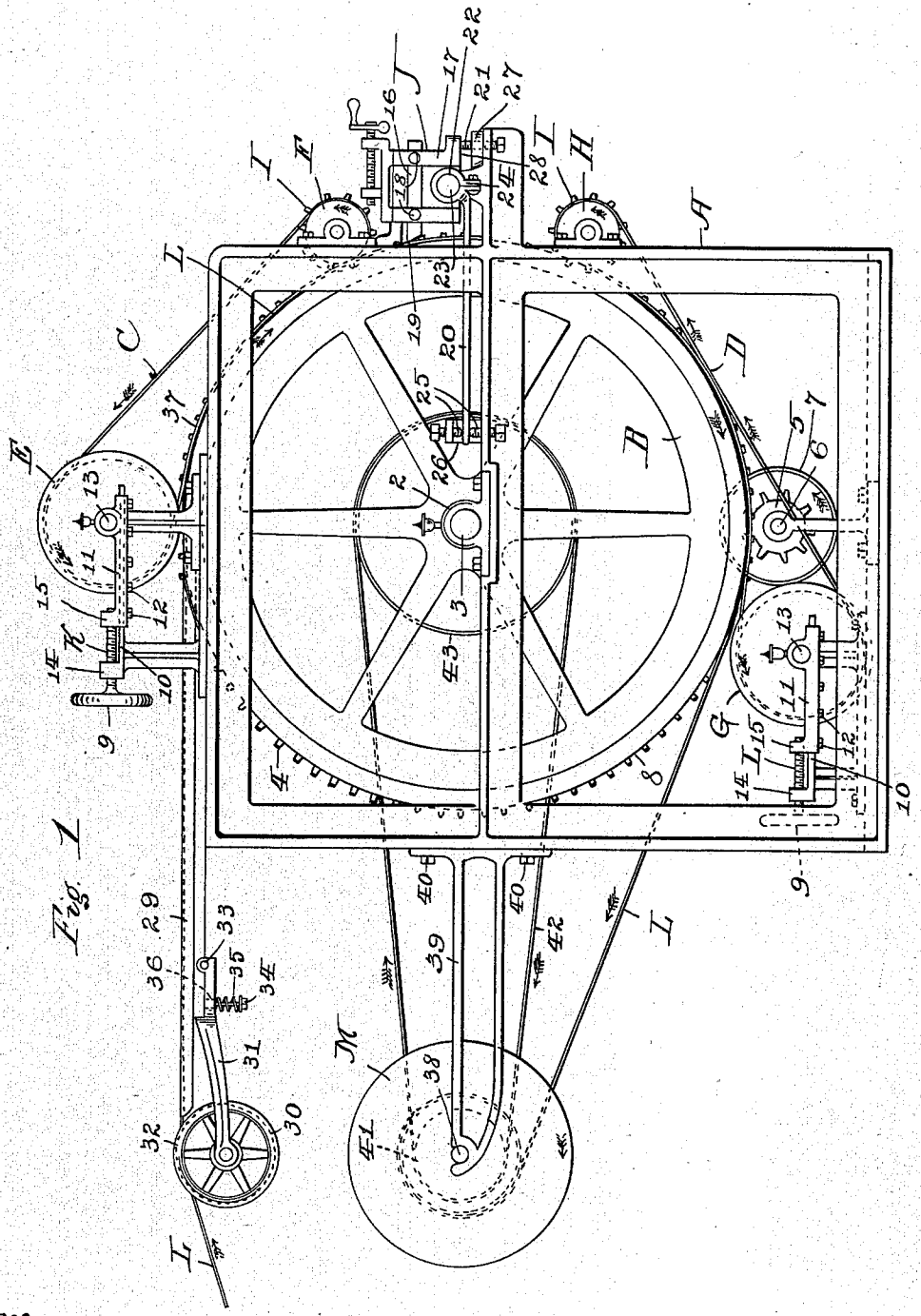


Fig. 1.

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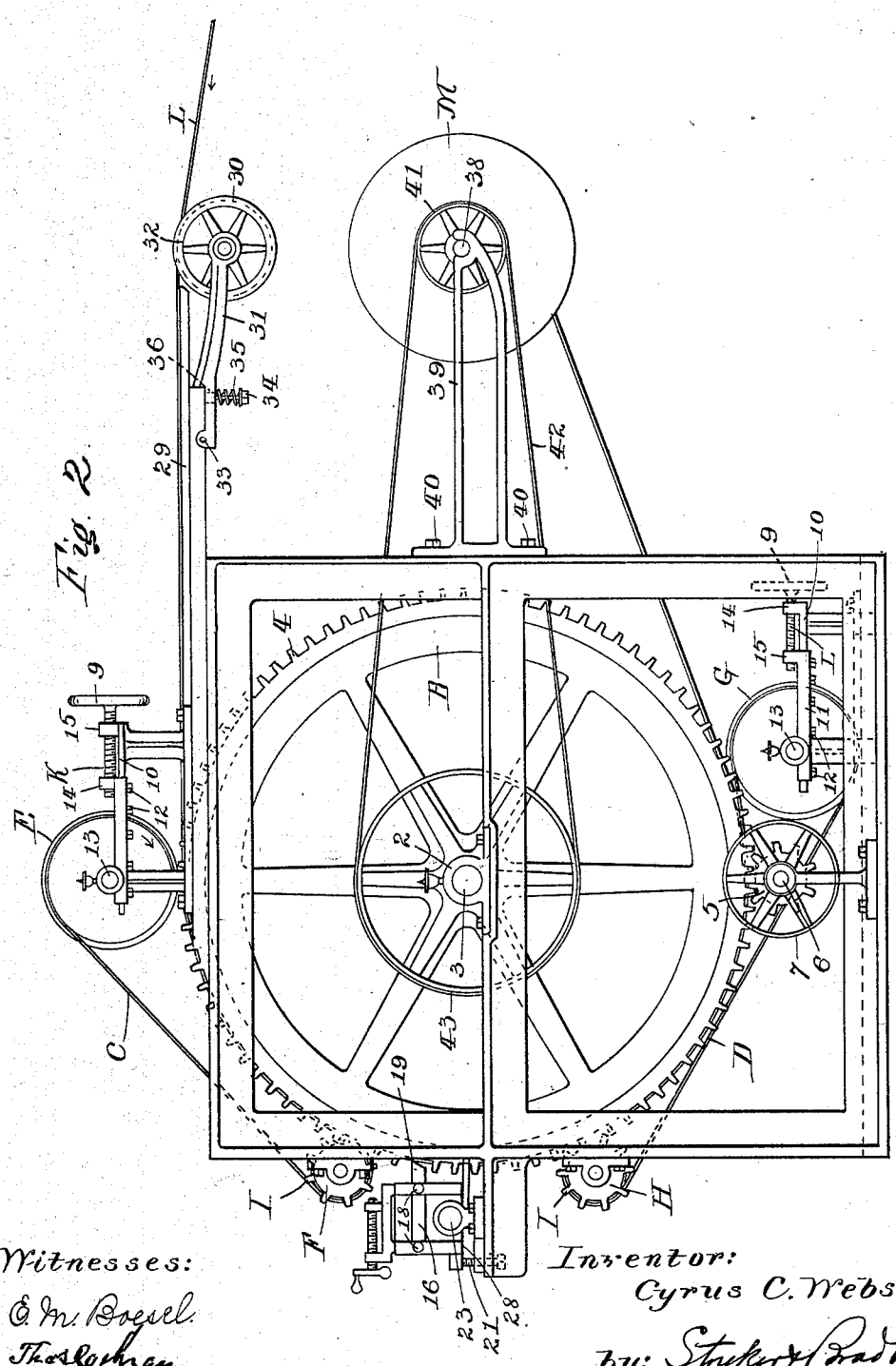
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Fig. 2.



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UNITED STATES PATENT OFFICE.

CYRUS C. WEBSTER, OF MINNEAPOLIS, MINNESOTA.

STRIP-METAL-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 716,322, dated December 16, 1902.

Application filed March 14, 1902. Serial No. 98,190. (No model.)

To all whom it may concern:

Be it known that I, CYRUS C. WEBSTER, a citizen of the United States of America, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Strip-Metal-Finishing Machines, of which the following is a specification.

My invention relates to improvements in strip-metal-finishing machines.

The object of my invention is to provide means for reducing and smoothing the surface of continuous strips of lead or other metal with a minimum amount of labor and expense.

My invention consists, primarily, of a revolving carrying-wheel, a friction-belt carried upon the periphery of said wheel and adapted to coact with the wheel to move the strip past trimming mechanism, and of means for adjusting the working parts of the machine.

My present invention is an improvement on that described in my Patents No. 670,352, dated March 19, 1901, and No. 684,485, dated October 15, 1901, for strip-metal-finishing machines.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved machine, and Fig. 2 is a similar view taken toward the other side of the machine.

In the drawings let A represent the frame of the machine; B, the carrying-wheel, which is journaled at 2 by the shaft 3 upon the frame. The wheel is provided with the gear 4, with which the drive-pinion 5 meshes. This pinion is mounted upon the drive-shaft 6, which is journaled upon the frame and revolved by the drive-pulley 7. The carrying-wheel is adapted to move the strip forward on its periphery 8 by means of the friction-belts C and D. The belt C is passed around the pulleys E and F and the belt D around the pulleys G and H. These four pulleys are revolved by the gears I, which mesh with the gear 4. The object of the belts traveling forward upon the periphery of the carrying-wheel is to present the strip to the trimming mechanism J. The tension of the belts upon the carrying-wheel is regulated by means of the hand-screws 9, which are part of the adjusting mechanisms K and L. These adjusting devices are similar in construction and consist of the guide-bed 10, upon which the yoke-bars 11 are fastened by means of the bolts 12. The pulleys E and G are respectively mounted upon the shafts 13, which in turn are journaled on the yoke-bars. By turning the hand-screws 9, each threaded in the flanges 14 and socketed at 15 in the yoke-bars, the pulleys E and G are moved forward and backward upon the beds 10 and the tension of the belts is increased or decreased upon the periphery of the carrying-wheel.

The trimming mechanism J consists of the cutting-knife 16, which is fastened upon the carriage 17 by means of the bolts 18. The cutting edge 19 of this knife is adjusted toward the surface of the moving strip L by means of the lever-arm 20 and the bolt 21. The carriage 17 is pivoted upon the frame at 22. The lever-arm 20 is attached to the pivot-shaft 23 by means of the split collar and bolt 24. The free end of the lever-arm is adjusted by means of the screws 25, which pass through the frame and the bracket 26 and impinge against the arm. By turning these screws the carriage 17 is tilted, so as to adjust the cutting edge of the knife. The adjusting-bolt 21 passes through the frame at 27 and impinges against the lower face 28 of the carriage. The object of this bolt is to take up any lost motion of the carriage 17 or any spring on the part of the lever-arm 20, so as to more minutely adjust the cutting edge of the knife against the surface of the moving strip. I have found in practice that this adjusting-bolt 21 is an essential element in connection with the construction of the trimming mechanism shown in the drawings.

The strip L to be finished is received into the machine on the bed 29 and the antifriction-pulley 30. This antifriction-pulley is journaled upon the free ends of the arms 31 and provided with the flanges 32 to guide the strip upon the bed. The arms 31 are pivoted at 33 upon the bed and are held in normal position, so that the revolving peripheral surface of the antifriction-pulley is held in substantial alinement with the receiving-surface of the bed by means of the bolt and spring 34 and 35. The bolt 34 passes through the opening 36, and if by accident the moving strip be checked in passing into the machine the antifriction-pulley springs down and tends to prevent the straining and breaking of the strip. The surface of the bed 29 is also in

substantial alinement with the periphery of the forwardly-moving carrying-wheel.

In operation the driving parts of the machine are revolved and the strip moved in the direction indicated by the arrows. The strip L is drawn into the machine by the antifriction-pulley and the receiving-bed 29 and moves between the portion 37 of the friction-belt C and the periphery of the carrying-wheel B. The surface of the strip is then cut by the knife 16, which is part of the finishing mechanism J. The strip continues to move between the periphery of the wheel and the belt D and is finally delivered from the wheel and wound upon the spool M. This spool is journaled by means of the shaft 38 on the bracket 39, which is attached to the frame by means of the bolts 40. The shaft 38 carries the drive-pulley 41, which is revolved by means of the belt 42. This belt passes around the pulley 43, which is mounted upon the shaft 3 of the drive-wheel from which the spool M receives its motion.

Having described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. A machine of the class set forth, consisting in combination with a carrying-wheel, of a belt adapted to travel upon the periphery thereof, pulleys for the belt, a frame upon which said wheel and pulleys are journaled, means for adjusting the tension of said belt, means by which the pulleys and carrying-wheel are revolved forward, a trimming-knife at the delivery end of said belt, a carriage to which said knife is attached, said carriage being pivoted upon said frame, a lever-arm attached to the carriage, means for adjusting the free end of said arm and means for taking up lost motion between said carriage, arm and frame.

2. A machine for finishing strips of metal, consisting in combination with a carrying-wheel journaled upon a frame, of a plurality of belts in feeding contact with said wheel, means for adjusting the tension of said belts, a trimming-knife between the belts, pulleys around which the belts are passed, said pulleys being journaled on said frame, means for revolving said wheel and pulleys, a carriage pivoted upon said frame to which said trimming-knife is attached, a lever-arm by which the carriage is tilted so as to adjust the cutting edge of the knife with relation to the periphery of the wheel, and means for adjusting the carriage to take up lost motion of the carriage and lever, for the purposes specified.

3. A machine for finishing metal strips, consisting of a carrying-wheel suitably journaled, a conveying-belt adjoining the periphery, and adapted to travel upon the surface, of said wheel, means for driving said wheel and belt at equal surface speed, a surface-cutting knife adjoining the belt and peripheral surface of the wheel, and means for adjusting said cutting-knife, for the purposes specified.

4. A machine for making metal strips, consisting of a pair of resilient friction-belts, a wheel coacting with the surface of said belts, a cutter directed toward the surface of said wheel, means for adjusting the cutter for taking up lost motion between the parts, and means for driving said wheel and belts forward so as to move the strip past said cutter, for the purposes specified.

5. A machine of the class described, consisting in combination of a carrying-wheel journaled upon a frame, a pair of belts in feeding contact with the periphery of said wheel, means for adjusting the tension of said belts, a trimming-knife directed toward the surface of said wheel, means for adjusting and taking up lost motion of the trimming-knife, a spool for receiving the strip, and means for revolving said spool.

6. In a machine of the class described, the combination with a carrying-wheel, of a belt traveling upon the periphery thereof, pulleys by which said belt is revolved, means for adjusting the tension of said belt, a guide-bed, for delivering the strip, between the belt and wheel, an antifriction-pulley adjoining said guide-bed, a frame pivotally mounted upon said guide-bed to which frame said antifriction-pulley is journaled, a spring for holding said antifriction-pulley, normally in position to deliver the strip onto said bed, and permitting the pulley to recede under excessive tension of the strip as it passes into the machine, means by which the belt, pulleys, and carrying-wheel are revolved, trimming mechanism, at the delivery end of said belt, directed against the strip, as it moves forward upon the periphery of said wheel, and a supporting-frame upon which said revolving parts are journaled.

7. A strip-metal-finishing machine, consisting in combination of a revolving carrying-wheel, a belt in feeding contact with said wheel, pulleys around which said belt is passed, a frame upon which said pulleys and wheel are journaled, means for driving said belt and wheel forward, a trimming-knife adjoining the delivery end of said belt and having its cutting edge directed against the surface of the strip as the strip is revolved on the periphery of said wheel, a carriage upon which said knife is attached, said carriage being pivoted upon said frame, a lever-arm attached to the carriage, a pair of adjusting-screws impinging against the free end of said arm, and a bolt impinging against the carriage, said lever-arm being adapted to adjust the cutting-knife by tilting the carriage, and said bolt, to take up any spring of said arm or lost motion of the carriage, for the purposes specified.

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

CYRUS C. WEBSTER.

Witnesses:
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