

(No Model.)

2 Sheets—Sheet 1:

W. H. BOGGS.
WIRE CUTTING MACHINE.

No. 507,101.

Patented Oct. 24, 1893.

Fig. 1.

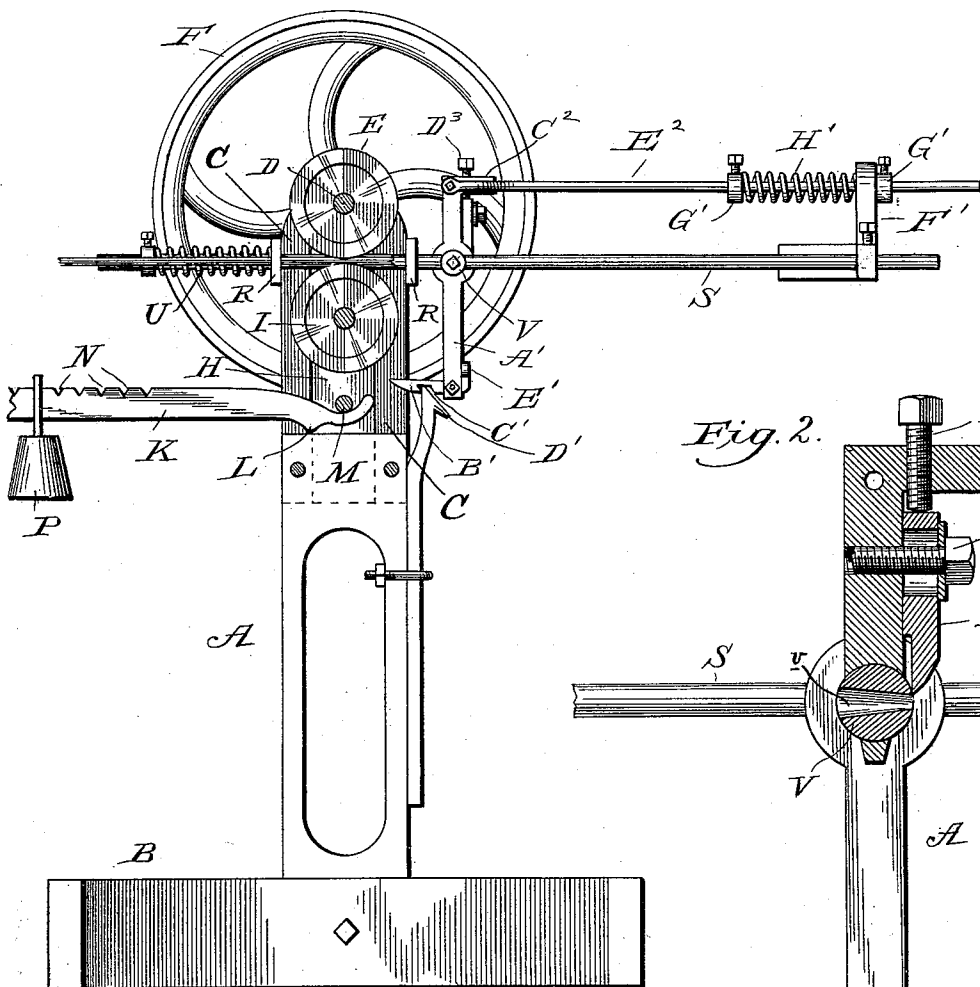
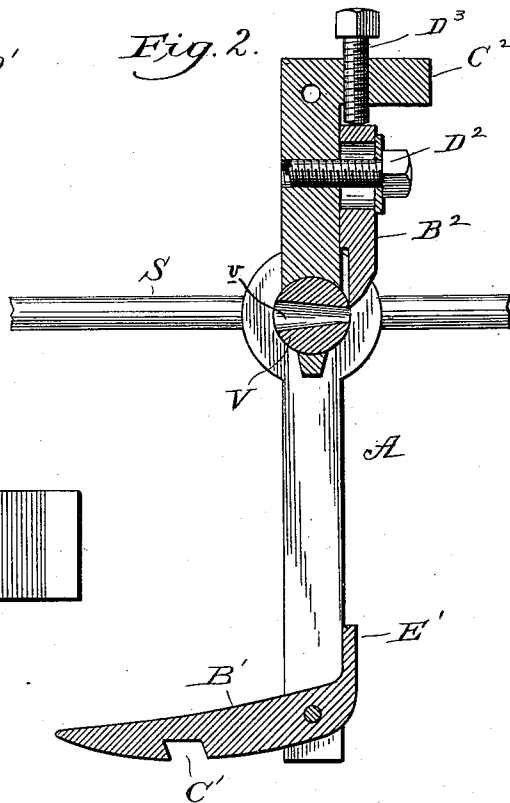


Fig. 2.



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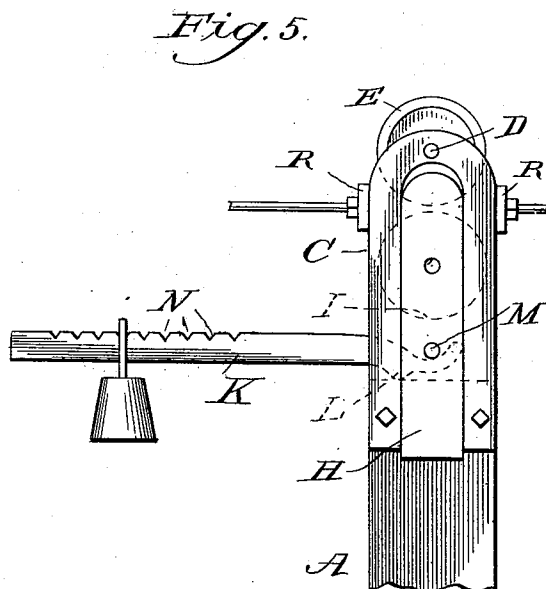
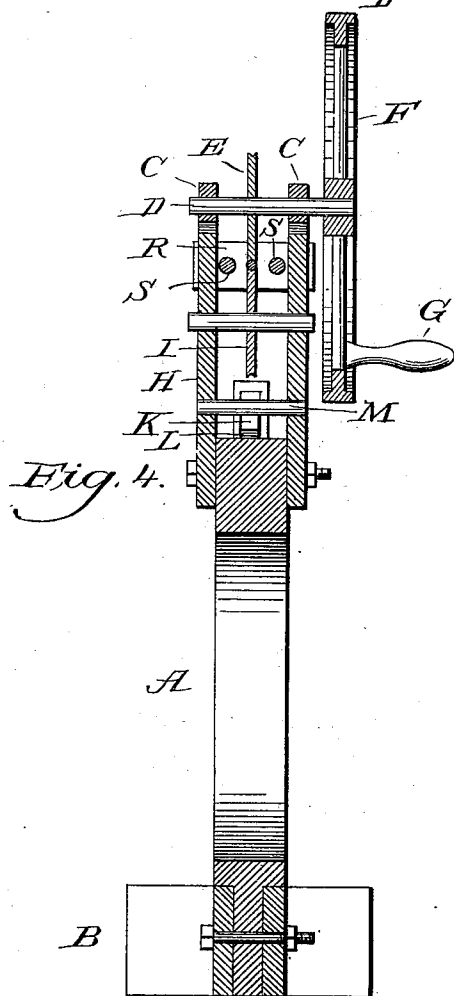
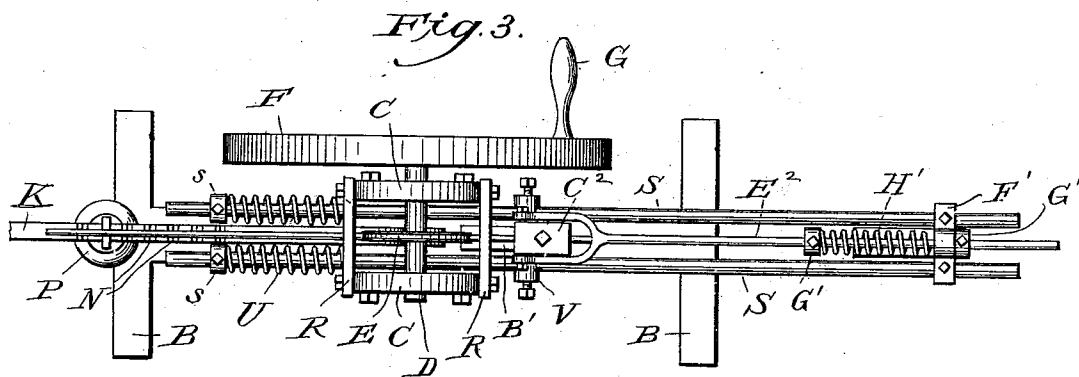
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UNITED STATES PATENT OFFICE.

WILLIAM H. BOGGS, OF COVINGTON, OHIO.

WIRE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,101, dated October 24, 1893.

Application filed January 14, 1893. Serial No. 458,364. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BOGGS, of Covington, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Wire-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to an improved machine for cutting wire into suitable lengths, and it has for its object to provide a machine in which the wire, as it is fed through, will cause the cutting mechanism to be automatically operated to cut the successive lengths as the wire is advanced as more fully hereinafter specified.

The above mentioned object I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine, with one of the frames C removed. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a plan view thereof. Fig. 4 is a transverse vertical sectional view. Fig. 5 is a detail.

Referring to the drawings by letters:—A indicates an upright standard mounted upon a base B which is intended to set horizontally upon the floor of the room in which the machine is located. To the opposite sides of the standard are bolted or otherwise secured the frames C which are in the form of an inverted letter U as shown in the drawings (Figs. 1 and 5).

In the bends of the upper parts of the frame C are formed horizontal bearings for the shaft D of a grooved pulley or wheel E. The said shaft projects beyond its journal bearings, at one end and is provided with a fly wheel F and crank pin G, by means of which a uniform rotary motion may be imparted to the said grooved wheel.

Between the members of the U shaped frames are located movable blocks H H which are provided with bearings for the journals of the shaft of a lower grooved pulley or wheel I located beneath and in the same vertical plane as the upper pulley or wheel E before mentioned.

The letter K indicates a lever which is provided with a heel L which rests upon the tops

of the uprights between the U shaped frames, the heel forming a fulcrum for the said lever. The short arm of the lever sets under a pin M arranged transversely between the two blocks H H movably located between the members of the U shaped frames. The long arm of said lever extends outwardly and is provided with graduated notches N to hold the link of an adjustable weight P as shown in Fig. 1 of the drawings.

To the opposite edges of the U shaped frames are secured plates or supports R R through which pass the guide and gage rods S, S. On one extremity of the rods S, S, are placed adjustable collars s, s, between which and the plates R, R, are placed helical springs U which surround the rods and hold them normally. Upon the rods S, S, is adjustably mounted a short shaft V which has a central transverse wire guiding opening v, said shaft guiding the wire after it has passed between the wheels E and I. Upon said shaft is journaled the wire cutting mechanism, consisting of a lever A' which is fulcrumed or pivoted upon said shaft. The lower or long arm of said lever is bifurcated, and between its ends is pivoted a pawl B' which is notched as indicated by the letter C' so as to catch over the upper end of an adjustable detent D' when the parts of the machine are normally disposed. The rear of the pawl is provided with a lug E' which rests against the edges of the bifurcated portion of the lever when down, and limits its downward movement as shown particularly in Fig. 2 of the drawings.

To the upper portion of the lever A' is secured the cutting tool B². This is adjustably secured to the lever by a screw bolt D². The upper end of the lever is provided with an offset or lateral extension C² through which passes a binding set screw D³. This bears against the upper end of the cutting tool or knife and serves to hold it positively against the strain to which it is subjected while cutting.

To the upper or short arm of the lever A' is pivoted one end of a horizontal rod E². The said rod passes through an aperture in a gage arm F' secured to the rods S, S, before mentioned, which arm may be clamped thereon in such position as to regulate the length of the wire to be cut.

The adjustment of rod E^2 in arm F is effected by means of the movable collars G' clamped on said rod at opposite sides of the arm and the intervening spiral spring H' as shown in Fig. 1 of the drawings.

The shaft V is provided with a conical aperture through which the wire is projected by the grooved driving pulleys. This construction is clearly shown in detail in Fig. 2 of the drawings which represents a vertical sectional view of the "cutting mechanism" as before stated.

The operation of my invention is as follows:—The wire passes from a reel between the upper and lower pulleys or wheels E and I and is positively fed forward thereby. Its end passes through the opening in shaft V and contacts gage F and then forces the latter forward thereby carrying forward rods S, S^2 , and E^2 , and shaft V, and the upper portion of the lever A' is consequently tilted forwardly as its lower end is stopped by the pawl B' engaging the latch D' . At this time the shaft V, it will be observed, is moving with the wire; as it thus moves, the lever A' is tilted so much that it causes the knife B^2 to sever the wire, shearing it off against the side of shaft V. After the wire has been cut the springs U and H' recoil and return the cutting lever and knife to a normal position, the pawl B' automatically riding over the end of the detent D' so as to dispose the parts of the machine for further operation. The weighted lever and the lower pulley which it carries serve to not only advance the wire, but to straighten it as it is passed through the machine.

One great advantage in my machine is that the wire is cut while moving, thus making no interruption in the operation of the device.

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

1. In a wire cutting machine the combination of mechanism for forcibly feeding the wire, a movable cutting device through which the wire passes, a movable gage arm adapted to be contacted by the end of the uncut wire and moved thereby, connections between said gage arm and cutting device whereby the latter is caused to move with the former, and devices substantially as described whereby the cutting device is caused to sever the wire while moving therewith, substantially as set forth.
2. In a wire cutting machine the combination of a wire guide and a gage mounted on longitudinally movable supports which operatively connect the same, and a cutter attached to said guide and movable therewith; with means for feeding a wire through said guide and against said gage whereby the latter is caused to move and thereby move the guide and cutter along with the wire, and means whereby the cutter is caused to sever the wire while moving with the guide, substantially as and for the purpose described.
3. The combination in a wire cutting machine, of the wire feed wheels, a longitudinally movable device, a wire guide and a wire cutting gage on said device adapted to be contacted by the end of the infed wire and thereby caused to move said device, and a cutter mounted on said guide, substantially as described.

chine, of the wire feed wheels, a longitudinally movable device, a wire guide and a wire cutting gage on said device adapted to be contacted by the end of the infed wire and thereby caused to move said device, and a cutter mounted on said guide, substantially as described.

4. In a wire cutting machine the combination of mechanism for feeding the wire, a cutting device, a gage for regulating the length of wire to be severed, and mechanism whereby the cutting device is caused to travel with the wire while cutting it, substantially as and for the purpose specified.

5. The combination of the wire feeding wheels, the movable rods, the wire guide thereon, the lever fulcrumed on said guide and carrying a cutter, the detent for locking the lower end of said lever, the gage on said rods, and the connection between the upper end of said lever and the gage whereby the infed wire is caused to move said rods and the parts thereon, and the wire severed while the cutter is moving along with it, all constructed and arranged to operate substantially as described.

6. In a wire cutting machine the combination with an automatically tilting or rocking lever provided with a knife, of mechanism whereby the wire is positively fed into the machine and caused to move said lever and suitable mechanism for tripping the lever and severing the wire while the cutting parts are moving with the wire, substantially as and for the purpose described.

7. The combination in a wire cutting machine of a suitable frame furnished with means for positively feeding the wire, a tilting lever having a knife thereon, and a tripping and retracting mechanism, all so constructed and arranged that the outer and advancing end of the wire will cause the lever to move with the wire and simultaneously cut it, substantially as and for the purpose set forth.

8. In a wire cutting machine the combination of a tilting lever carrying a cutting knife, with mechanism for advancing the knife along with the wire during the cutting operation, and a suitable gage to regulate the length of the wire to be cut, substantially as and for the purpose specified.

9. The combination in a machine for cutting wire, of the upright standard, the U-shaped frames secured to the upper part thereof, the upper pulley and the lower pulley adjustably mounted and adapted to bear against the wire so as to carry or advance it, and a tilting lever having a knife thereon, all constructed and adapted to operate, all substantially as described.

10. The combination in a wire cutting machine of the upright or standard, the parallel side frames secured thereto, the upper wire carrying pulley, the lower adjustable pulley, the movable gage rods and gage arm secured thereto, the latter adapted to be moved by

the end of the wire to operate the mechanism for automatically cutting a proper length of wire by means of a tilting knife while the wire is moving, all substantially as and for the purpose described.

5 11. The combination in a machine for cutting wire, the upright standard, the upper and lower wire carrying pulleys, the tilting lever carrying the cutting tool, a wire guide,
10 and mechanism for tripping and retracting

the tilting lever, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WM. H. BOGGS.

Witnesses:

CHAS. W. SEVILLE,
JAMES R. MANSFIELD.