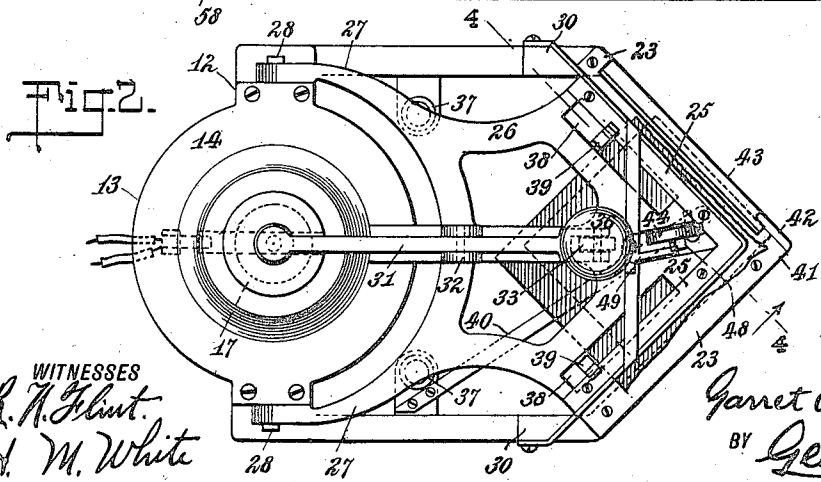
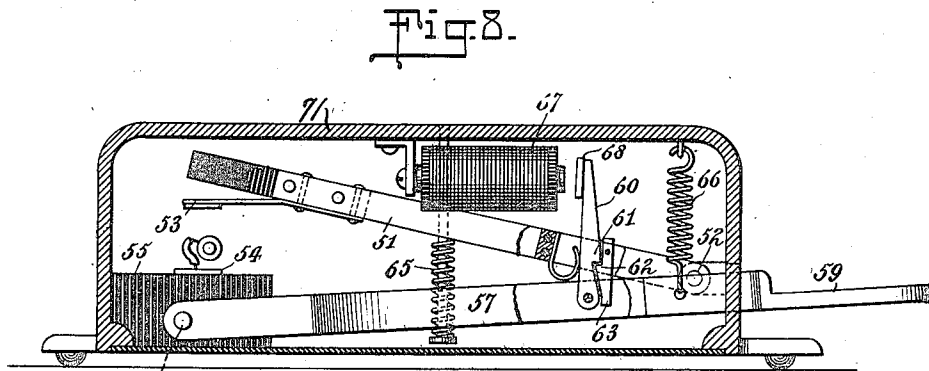
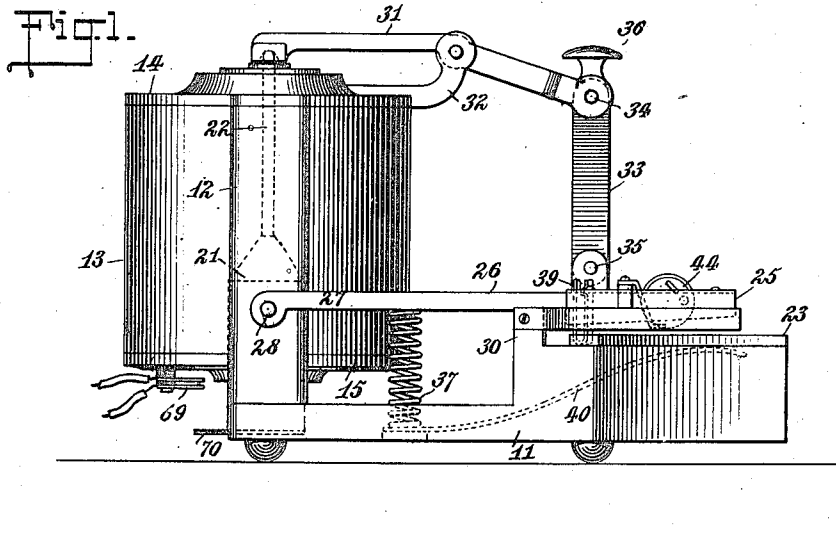


G. A. HOBART.
ELECTRICALLY OPERATED COUPON CUTTING MACHINE.
APPLICATION FILED MAY 22, 1912.

1,042,436.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.



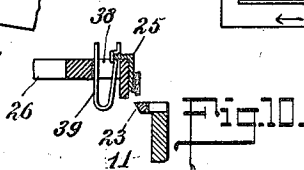
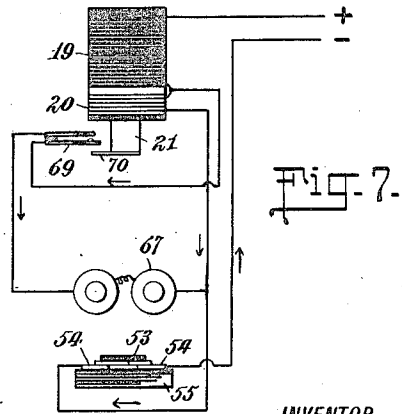
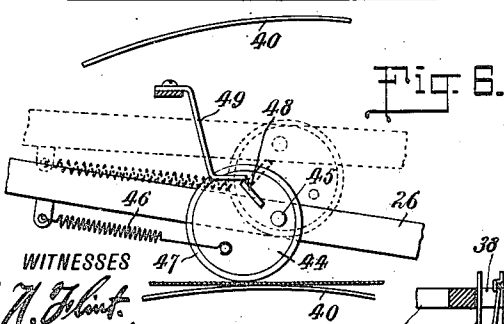
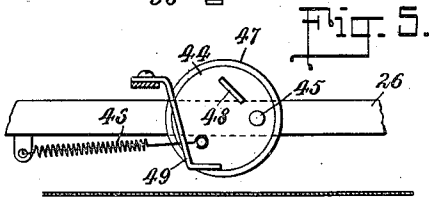
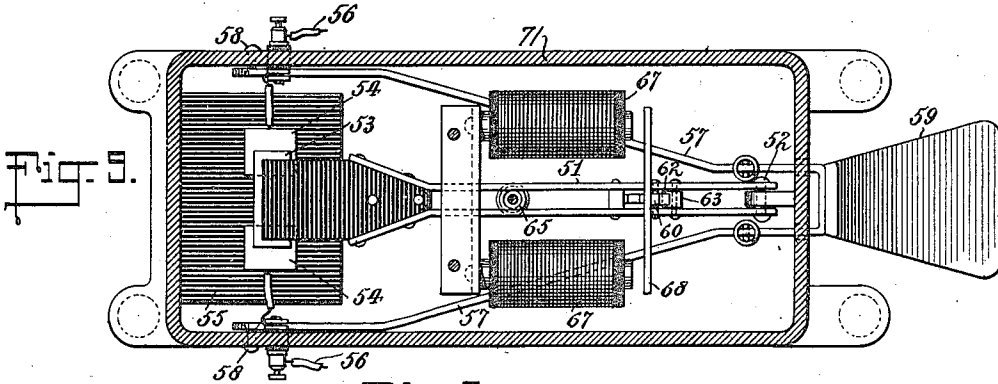
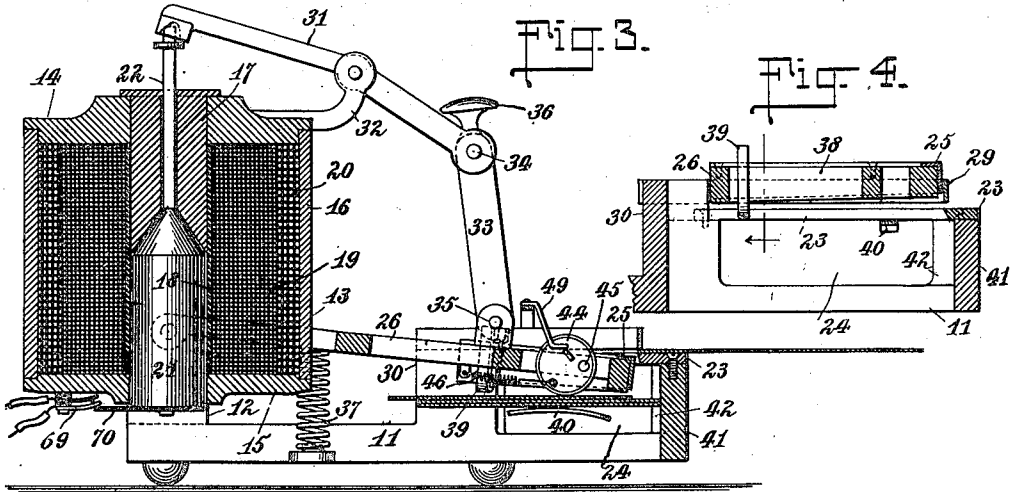
WITNESSES
R. A. Hunt.
H. M. White

INVENTOR
Garret A. Hobart
BY George Cook
ATTORNEY

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2 SHEETS—SHEET 2.



WITNESSES
R. N. Flint
A. M. White

INVENTOR
G. A. Hobart
BY George Cook
ATTORNEY

UNITED STATES PATENT OFFICE.

GARRET A. HOBART, OF PATERSON, NEW JERSEY.

ELECTRICALLY-OPERATED COUPON-CUTTING MACHINE.

1,042,436.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed May 22, 1912. Serial No. 699,020.

To all whom it may concern:

Be it known that I, GARRET A. HOBART, a citizen of the United States, and a resident of Paterson, in the county of Passaic and State of New Jersey, have made and invented certain new and useful Improvements in Electrically-Operated Coupon-Cutting Machines, of which the following is a specification.

My invention relates to machines for cutting coupons from bonds or similar papers, and the object thereof is to provide an electrically operated coupon cutting machine which will make right-angular cuts in a bond or other paper and collect the coupons thus cut from the bond in a position such that they may be readily grasped by the operator and removed from the machine; to provide an electrically operated coupon cutting machine which will be simple in construction and reliable in operation; and to provide such other improvements in and relating to coupon cutting mechanism as are hereinafter more fully and at length referred to.

With the above and other objects of invention in view, my invention consists in the improved electrically operated coupon cutting machine illustrated in the accompanying drawing, described in the following specification, and particularly claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which my invention relates.

Referring to the drawings wherein the preferred embodiment of my invention is illustrated; Figure 1 is a view showing my improved electrically operated coupon cutting machine in side elevation; Fig. 2 is a view showing the same in plan; Fig. 3 is a view showing a section of the same upon a central vertical plane; Fig. 4 is a fragmentary view taken upon a vertical plane indicated by the line 4-4, Fig. 2; Figs. 5 and 6 are fragmentary views illustrating detail features of construction and operation to be referred to hereinafter; Fig. 7 is a view illustrating the electrical features of my device diagrammatically; Fig. 8 is a view illustrating certain controlling mechanism for the electrical features of my device, the view being in side elevation with parts broken away, except as to the inclosing casing which is shown in section; Fig. 9 is a similar view, with the controlling mechanism

in plan; and Fig. 10 is a view showing a certain stop used in my device.

Referring to the drawings wherein the preferred embodiment of my invention is illustrated, the reference character 11 designates the main frame of the machine, the same being of a form suitable to support in proper manner all of the operating parts thereof, although the controlling mechanism for the circuits whereby the operating solenoid is controlled may be, and is in the drawing, shown as supported by a separate frame, the controlling mechanism in the form of my invention illustrated in the drawings being separate from the remaining portion thereof.

The frame 11 is provided with vertically extending posts 12 at one end thereof, which serve as a support for a solenoid 13 which is the source of power whereby the cutting mechanism of my machine is operated. The said solenoid comprises two heads 14-15, the former being shown as supported upon the upper ends of the posts 12. A sleeve 16 connects the upper and lower heads of the solenoid and serves to complete the magnetic circuit thereof, the several parts thereof being formed of iron, as will be understood.

The reference character 17 designates an iron core, and 18 is a sleeve of non-magnetic material upon which a coil 19 is wound, this coil in turn being surrounded by a second coil 20.

While I have shown the operating solenoid in the form of an electro-magnet because of the iron casing formed by the heads and sleeves within which a coil is contained, it will be understood that a solenoid comprising a coil only may be employed.

The reference character 21 designates a reciprocating plunger made of iron and which, when acted upon by the solenoid, is drawn upward within the non-magnetic sleeve 18, as will be understood, the upper end of this core being preferably made conical so as to conform closely with the conical lower end of the core 17. A rod 22 extends upward from the reciprocating plunger 21 and serves to communicate motion from the same to the cutting mechanism of my device when the solenoid is energized and the plunger drawn upward.

Secured to the end of the frame 11 opposite the solenoid 13, is a stationary knife 23

right angular in outline in order that the machine may cut along two sides of a coupon in severing the same from a bond, as will be understood from Fig. 2 of the drawing. The frame 11 is cut away on one side beneath the knife 23 as shown at 24, Fig. 4, in order that coupons cut from bonds and stacked or assembled as hereinafter explained may be removed from the machine through said opening.

A reciprocating knife 25 is adapted to cooperate with the stationary knife 23 in cutting a coupon from a bond, this knife being carried by a reciprocating knife carrier 26 shown as in the form of a bifurcated frame having arms 27, which arms are pivotally secured to the posts 12 and 28 in order that the free end of the frame to which the movable knife is secured may move with reference to the stationary knife and bring the two knives into cutting engagement with one another. The movable knife 25 is somewhat wider at its rear ends than at its apex, as shown in Fig. 4, in order that a shear cut may be obtained as the knives pass one another. The movable knife corresponds in form with the stationary knife, as will be understood, and the portion of the knife carrying frame 26 along which the movable knife is secured is preferably of about the same thickness as the height of the movable knife, as shown in Fig. 4, in order that as the coupons are moved transverse to the knives, as will be hereinafter explained, the edges of the coupons will not engage the cutting edge of the movable knife.

The reference character 29 designates a guard for protecting the operator from injury by the knives, the same extending along and covering the cutting edge of the movable knife, and the rear ends thereof being secured to lugs 30 extending upwardly from the frame.

Motion is transmitted from the reciprocating plunger 21 to the reciprocating knife carrier 26 through any suitable mechanical elements, the form of transmission mechanism shown in the drawing comprising a lever 31 pivoted at about its middle to an arm 32 extending from the upper head 14 of the electro-magnet, one end of said lever being operatively engaged by the upwardly extending rod 22 hereinbefore referred to and the other end thereof being connected with the knife carrier through a link 33; the ends of which are pivotally connected, respectively, with said knife carrier and with the lever 31 at 34 and 35. A suitable handle 36 is also provided whereby the machine may be operated manually if desired.

The reference character 37 designates suitable springs, the lower ends of which are supported from the frame 11 and the upper ends of which engage the knife carrier 26

to thereby force it upward and separate the knives from one another, which movement also forces the reciprocating plunger downward and out of the solenoid whereby it is operated, as will be understood.

The knife carrying frame 26 is provided with slots 38 within which adjustable guides 39 are located, these guides being slidable along the slots in order to adjust the machine for cutting coupons of various sizes.

The coupons after being cut from the bond pass downward and are pressed against a spring 40 or equivalent resilient support, as shown in Fig. 3 of the drawing, after which each separate coupon is, upon the upward or return movement of the knife carrier, moved transverse to the knives in order that the entire number of coupons severed during a run of the machine may be caused to occupy a position with two of their sides beneath the stationary knife 23, which overhangs the portion of the frame along which it extends, as shown in Figs. 2, 3 and 4, and extends across the opening 24, as explained. The coupons are pressed upward against the under side of the stationary knife by the spring 40, the knife thus forming a stop for limiting upward movement of the coupons.

The movement above referred to imparted to each successive coupon brings one of the side edges thereof into contact with a vertical portion 41 of the frame of the machine, and its forward corner against a stop 42 at the front of the machine, the other edge of the coupon lying in the opening 24 as shown at 43, Fig. 2 through which they are removed at the end of a run. Successive coupons will be stacked, and all will be supported by the resilient support 40 with their several edges beneath the stationary knife 23 and against the stop 41, with their corners against the stop 42, until such time as it is desired to remove the bundle of coupons from the machine, at which time they are grasped and their corners moved to clear the stop 42, whereupon they may be withdrawn from the machine.

The mechanism whereby each successive coupon is moved transverse to the knives upon the upward movement of the knife carrier 26 is shown as comprising an oscillating member 44 pivotally supported at 45, to the knife carrier, movement of which member in a counter-clockwise direction about the pivot 45 is opposed by a spring 46 connected with said member and with the knife carrier. The pivoted member 44 is commonly provided with a surface of rubber or similar material 47 whereby it may obtain a firm grip upon the coupon. The said member is provided with a projecting lug 48 upon one side, and 49 is a stationary member shown as supported from the guard 29 by means of a cross-bar 50, the lower end

of said stationary member being adapted to engage the lug 48 upon movement of the knife carrying frame 26 as shown in Figs. 5 and 6.

Fig. 5 of the drawing shows the knife carrying frame as in its upper position. As the frame is moved downward, a coupon is severed and carried downward against the resilient support 40, the pivoted member 44 engaging the upper surface of the coupon as shown in Fig. 6. This movement is of sufficient extent to carry the lug 48 below the stationary member 49, as shown in Fig. 6, wherein the parts are in their lowermost position, the said stationary member finally occupying a position above the lug as shown. Upon the return or upward movement of the knife carrier 26, the stationary member 49 engages the lug 48 which, during the upward movement of said carrier, causes the oscillating member 44 to move upon its pivot 45, and, as the resilient support keeps the coupon pressed against the periphery of the pivoted member 44 during the greater part of the upward movement of the carrier 26, it will be understood that as the member 44 moves about the pivot 45 the coupon engaged by it will be pushed toward the right, referring to Fig. 6, and moved transverse to the knives until its edges engage the stops 41, 42, above referred to. Each separate coupon will be acted upon in the same manner, and all of them will be supported by the spring 40 or an equivalent support, so that all the coupons severed during a run of the machine will be assembled, stacked, and arranged with their edges superposed in position to be readily grasped by the operator and removed at the end of a run of the machine.

The electrical operating features of my machine are designed and arranged so that when a coupon is to be severed the movable knife makes a down stroke and immediately returns to its original position automatically, in order that current may not pass through the solenoid and hold the movable knife in its lowermost position, thus wasting energy, should the operator fail to break the circuit through the solenoid after the coupon has been severed. The preferred form of the means whereby this operation is accomplished is illustrated in Figs. 7 to 9 inclusive, wherein the reference character 51 designates a switch lever, one end of which is pivotally supported at 52, and the other end of which carries a resiliently supported circuit closer 53 designed to engage terminals 54 secured to a block of insulating material 55. The terminals 54 are included in a normally open circuit which also includes the solenoid whereby the reciprocating plunger 21 is operated, the ends of said circuit being shown at 56, so that when the circuit closing element 53

is brought into contact with the terminals 54, a current of electricity will flow through and energize the solenoid.

The switch lever 51 is moved to close the circuit as above explained by means of a manually operated lever or pedal 57, one end of which is pivotally supported at 58 and the other end of which is provided with a foot-piece or handle 59; and which manually operated lever is operatively and detachably engaged with the switch lever 51 through a trigger member 60 having a shoulder 61 in engagement with a similar shoulder 62 formed upon a latch 63 secured to the switch member 51; so that upon movement of the trigger member 60 to the left, Fig. 8, the levers will be disengaged from one another; whereupon a spring 65 which acts upon the switch lever 51, will move it upward and break the circuit at the terminal 54, the circuit being made at these terminals as the manually operated lever 57 is moved downward, during which movement it carries the switch lever 51 with it, as above explained. A spring 66 serves to return the lever 57 to its initial position and cause the shoulders 61, 62 to again engage with one another preparatory to another downward movement of the switch lever 51, as will be understood.

The trigger member 60 is automatically operated to disengage the levers 51 and 57 from one another by means of an electro-magnet 67, which electro-magnet is included in a normally open circuit provided with a circuit closing device 69, the operation of which is dependent upon movement of the reciprocating plunger 21; so that after the solenoid 13 has been energized and the plunger 21 moved to a certain extent, the circuit in which the electro-magnet 67 is included will be closed and the trigger member 60 moved to disengage the levers 51 and 57, the upper end of the trigger member having a bar 68, shown in Figs. 8 and 9, which is attracted by the magnet, as will be understood.

The circuit closer included in the circuit which also includes the electro-magnet 67 is shown as carried by the lower head 15 of the magnet 13 and as comprising two spring members which may be brought into contact with one another by an arm 70 located at the lower end of the reciprocating plunger 21, so that as said arm engages the lower of the springs above referred to, it is pressed against the upper spring and the electro-magnet 67 energized thereby breaking the main solenoid circuit at the terminals 54 and permitting the knife carrier to return to its initial upper position, as above explained.

The mechanism whereby the solenoid is controlled is shown as contained within a casing 71 which may be secured to the floor adjacent the machine, although it will be understood that this controlling mechanism

and the cutting mechanism of my improved bond cutting device may be all supported by a single frame or casing.

Fig. 7 illustrates in diagram the electrical connections whereby the reciprocating plunger is operated. In this figure, the coarse and fine coils are shown as arranged tandem instead of superposed; and electricity passes from any suitable source through these windings in series, through the circuit closing member 53, and back to the source of supply. After the plunger has moved upward sufficient to close the circuit in which the electro-magnet 67 is included, electricity passes from the source of supply through the fine winding 19, circuit closer 69, electro-magnet 67, circuit closing element 53, and to the source of supply; the electro-magnet 67 being connected in shunt with the coarse winding, and the fine wire coil being in series with the electro-magnet. After the electro-magnet has acted upon the trigger member 60 and released the switch lever 51, the circuit closing member 53 is removed from the terminals 54, and flow through both the coils of the solenoid and the electro-magnet is interrupted.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:

1. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier, one end of which is pivotally supported from said frame and the other end of which carries a knife adapted to cooperate with said first mentioned knife; a reciprocating plunger; an oscillating lever the middle portion of which is pivotally supported from said frame, one end of said lever being operatively connected with said plunger and the other end of which lever is operatively connected with said knife carrier; and a solenoid for operating said plunger.

2. In a device of the class described, a suitable frame; a knife right angular in form supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and similar in form to said first mentioned knife and adapted to cooperate therewith; a reciprocating plunger; a solenoid for operating said plunger; and means whereby said knife carrier is operated by said plunger.

3. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier in the form of a bifurcated frame, the two arms of which are pivotally secured to said first mentioned frame; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a pivotally supported lever; a reciprocating plunger operatively connected with one end of said lever; a link the

ends of which are pivotally connected respectively with the other end of said lever and with said knife carrier; and a solenoid for operating said plunger.

4. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; means whereby said knife carrier is operatively connected with said plunger; means dependent for its operation upon movement of said plunger for interrupting the action of said solenoid at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its initial position.

5. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; means dependent for its operation upon movement of said plunger for operating said switch to open said circuit at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its original position.

6. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; an electro-magnet for controlling said manually operable switch, the same being included in a circuit in shunt with reference to said first mentioned circuit; means for controlling said shunt circuit; means for operating said shunt circuit controlling means at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its original position.

7. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a nor-

of said stationary member being adapted to engage the lug 48 upon movement of the knife carrying frame 26 as shown in Figs. 5 and 6.

Fig. 5 of the drawing shows the knife carrying frame as in its upper position. As the frame is moved downward, a coupon is severed and carried downward against the resilient support 40, the pivoted member 44 engaging the upper surface of the coupon as shown in Fig. 6. This movement is of sufficient extent to carry the lug 48 below the stationary member 49, as shown in Fig. 6, wherein the parts are in their lowermost position; the said stationary member finally occupying a position above the lug as shown. Upon the return or upward movement of the knife carrier 26, the stationary member 49 engages the lug 48 which, during the upward movement of said carrier, causes the oscillating member 44 to move upon its pivot 45, and, as the resilient support keeps the coupon pressed against the periphery of the pivoted member 44 during the greater part of the upward movement of the carrier 26, it will be understood that as the member 44 moves about the pivot 45 the coupon engaged by it will be pushed toward the right, referring to Fig. 6, and moved transverse to the knives until its edges engage the stops 41, 42, above referred to. Each separate coupon will be acted upon in the same manner, and all of them will be supported by the spring 40 or an equivalent support, so that all the coupons severed during a run of the machine will be assembled, stacked, and arranged with their edges superposed in position to be readily grasped by the operator and removed at the end of a run of the machine.

The electrical operating features of my machine are designed and arranged so that when a coupon is to be severed the movable knife makes a down stroke and immediately returns to its original position automatically, in order that current may not pass through the solenoid and hold the movable knife in its lowermost position, thus wasting energy, should the operator fail to break the circuit through the solenoid after the coupon has been severed. The preferred form of the means whereby this operation is accomplished is illustrated in Figs. 7 to 9 inclusive, wherein the reference character 51 designates a switch lever, one end of which is pivotally supported at 52, and the other end of which carries a resiliently supported circuit closer 53 designed to engage terminals 54 secured to a block of insulating material 55. The terminals 54 are included in a normally open circuit which also includes the solenoid whereby the reciprocating plunger 21 is operated, the ends of said circuit being shown at 56, so that when the circuit closing element 53

is brought into contact with the terminals 54, a current of electricity will flow through and energize the solenoid.

The switch lever 51 is moved to close the circuit as above explained by means of a manually operated lever or pedal 57, one end of which is pivotally supported at 58 and the other end of which is provided with a foot-piece or handle 59; and which manually operated lever is operatively and detachably engaged with the switch lever 51 through a trigger member 60 having a shoulder 61 in engagement with a similar shoulder 62 formed upon a latch 63 secured to the switch member 51; so that upon movement of the trigger member 60 to the left, Fig. 8, the levers will be disengaged from one another; whereupon a spring 65 which acts upon the switch lever 51, will move it upward and break the circuit at the terminal 54, the circuit being made at these terminals as the manually operated lever 57 is moved downward, during which movement it carries the switch lever 51 with it, as above explained. A spring 66 serves to return the lever 57 to its initial position and cause the shoulders 61, 62 to again engage with one another preparatory to another downward movement of the switch lever 51, as will be understood.

The trigger member 60 is automatically operated to disengage the levers 51 and 57 from one another by means of an electro-magnet 67, which electro-magnet is included in a normally open circuit provided with a circuit closing device 69, the operation of which is dependent upon movement of the reciprocating plunger 21; so that after the solenoid 13 has been energized and the plunger 21 moved to a certain extent, the circuit in which the electro-magnet 67 is included will be closed and the trigger member 60 moved to disengage the levers 51 and 57, the upper end of the trigger member having a bar 68, shown in Figs. 8 and 9, which is attracted by the magnet, as will be understood.

The circuit closer included in the circuit which also includes the electro-magnet 67 is shown as carried by the lower head 15 of the magnet 13 and as comprising two spring members which may be brought into contact with one another by an arm 70 located at the lower end of the reciprocating plunger 21, so that as said arm engages the lower of the springs above referred to, it is pressed against the upper spring and the electro-magnet 67 energized thereby breaking the main solenoid circuit at the terminals 54 and permitting the knife carrier to return to its initial upper position, as above explained.

The mechanism whereby the solenoid is controlled is shown as contained within a casing 71 which may be secured to the floor adjacent the machine, although it will be understood that this controlling mechanism

and the cutting mechanism of my improved bond cutting device may be all supported by a single frame or casing.

Fig. 7 illustrates in diagram the electrical connections whereby the reciprocating plunger is operated. In this figure, the coarse and fine coils are shown as arranged tandem instead of superposed; and electricity passes from any suitable source through these windings in series, through the circuit closing member 53, and back to the source of supply. After the plunger has moved upward sufficient to close the circuit in which the electro-magnet 67 is included, electricity passes from the source of supply through the fine winding 19, circuit closer 69, electro-magnet 67, circuit closing element 53, and to the source of supply; the electro-magnet 67 being connected in shunt with the coarse winding, and the fine wire coil being in series with the electro-magnet. After the electro-magnet has acted upon the trigger member 60 and released the switch lever 51, the circuit closing member 53 is removed from the terminals 54, and flow through both the coils of the solenoid and the electro-magnet is interrupted.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:

1. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier, one end of which is pivotally supported from said frame and the other end of which carries a knife adapted to cooperate with said first mentioned knife; a reciprocating plunger; an oscillating lever the middle portion of which is pivotally supported from said frame, one end of said lever being operatively connected with said plunger and the other end of which lever is operatively connected with said knife carrier; and a solenoid for operating said plunger.

2. In a device of the class described, a suitable frame; a knife right angular in form supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and similar in form to said first mentioned knife and adapted to cooperate therewith; a reciprocating plunger; a solenoid for operating said plunger; and means whereby said knife carrier is operated by said plunger.

3. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier in the form of a bifurcated frame, the two arms of which are pivotally secured to said first mentioned frame; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a pivotally supported lever; a reciprocating plunger operatively connected with one end of said lever; a link the

ends of which are pivotally connected respectively with the other end of said lever and with said knife carrier; and a solenoid for operating said plunger.

4. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; means whereby said knife carrier is operatively connected with said plunger; means dependent for its operation upon movement of said plunger for interrupting the action of said solenoid at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its initial position.

5. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; means dependent for its operation upon movement of said plunger for operating said switch to open said circuit at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its original position.

6. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; an electro-magnet for controlling said manually operable switch, the same being included in a circuit in shunt with reference to said first mentioned circuit; means for controlling said shunt circuit; means for operating said shunt circuit controlling means at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its original position.

7. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a nor-

manually open circuit in which said solenoid is included; a manually operable switch for closing said circuit; a spring, the tendency of which is to move said switch to open said circuit; means for releasing said switch; an electro-magnet for controlling said switch releasing means after said switch has been operated as aforesaid; a circuit in which said electro-magnet is included; means dependent for its operation upon movement of said plunger for controlling the circuit in which said electro-magnet is included; and means for returning said knife carrier to its original position.

8. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier one end of which is pivotally connected with said frame and the other end of which carries a knife adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable lever; a switch lever adapted to close the circuit in which said solenoid is included; a spring acting in opposition to movement of said switch lever in a direction to close said circuit; a trigger carried by one of said levers and in detachable engagement with the other; an electro-magnet adapted to act upon said trigger to disengage said levers from one another; a normally open circuit in which said electro-magnet is included; means included in said circuit for closing the same; means dependent for its operation upon movement of said plunger for operating said circuit closing means to close the circuit in which said electro-magnet is included at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its initial position.

9. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier one end of which is pivotally connected with said frame and the other end of which carries a knife adapted to cooperate with said first mentioned knife; a reciprocating plunger; a pivotally supported lever with one end of which said reciprocating plunger is operatively connected and the other end of which lever is operatively connected with said knife carrier; a solenoid for operating said plunger; a normally open circuit in which said electro-magnet is included; means included in said circuit for closing the same; means dependent for its operation upon movement of said plunger for operating said circuit closing means to close the circuit in which said electro-magnet is included at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its initial position.

10. In a device of the class described; a suitable frame; a knife supported by said frame; a knife carrier, one end of which is pivotally connected with said frame and the other end of which carries a knife adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable lever; a switch lever adapted to close the circuit in which said solenoid is included; a spring acting in opposition to movement of said switch lever in a direction to close said circuit; a trigger carried by said manually operable lever and in detachable engagement with said switch lever; an electro-magnet adapted to act upon said trigger to disengage said levers from one another; a normally open circuit in shunt with the circuit in which said solenoid is included, and in which shunt circuit said electro-magnet is included; a switch included in said shunt circuit for closing the same; means dependent for its operation upon movement of said plunger for operating said switch to close the circuit in which said electro-magnet is included at the end of the movement of said knife carrier in one direction; and means for returning said knife carrier to its initial position.

11. In a device of the class described, a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable lever; a switch lever adapted to close the circuit in which said solenoid is included; a spring acting in opposition to movement of said switch lever in a direction to close said circuit; a trigger carried by one of said levers and in detachable engagement with the other; an electro-magnet adapted to act upon said trigger to disengage said levers from one another; a normally open circuit in which said electro-magnet is included; means included in said circuit for closing the same; and means dependent for its operation upon movement of said plunger for operating said circuit closing means to close the circuit in which said electro-magnet is included at the end of the movement of said plunger in one direction.

12. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; means for operating said knife carrier; a support adapted to receive coupons severed by said knives; a stop; and means adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives and against said stop.

13. In a device of the class described, a

suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and
 5 adapted to coöperate with said first mentioned knife; a resilient support adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon
 10 after it has been severed as aforesaid to move it transverse to said knives; and a stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

14. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and
 20 adapted to coöperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; means whereby said knife carrier is operated by said plunger; a resilient support adapted to
 25 receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and a
 30 stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

15. In a device of the class described, a suitable frame; a knife supported by said
 35 frame; a knife carrier one end of which is pivotally supported from said frame; and the other end of which carries a knife adapted to coöperate with said first mentioned knife; means for operating said knife carrier; a support adapted to receive coupons
 40 severed by said knives; a stop; and means adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and
 45 against said stop.

16. In a device of the class described, a suitable frame; a knife supported by said frame; a knife carrier, one end of which is
 50 pivotally supported from said frame and the other end of which carries a knife adapted to coöperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; means whereby
 55 said knife carrier is operated by said plunger; a resilient support adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has
 60 been severed as aforesaid to move it transverse to said knives; and a stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

17. In a device of the class described, a
 65 suitable frame; a knife supported by said

frame; a knife carrier, one end of which is pivotally supported from said frame and the other end of which carries a knife adapted to coöperate with said first mentioned
 knife; a reciprocating plunger; a pivotally
 70 supported lever one end of which is operatively connected with said plunger and the other end of which is operatively connected with said knife carrier; a solenoid for operating said plunger; a resilient support
 75 adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and a
 80 stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

18. In a device of the class described, a suitable frame; a knife supported by said
 85 frame; a knife carrier in the form of a bifurcated frame the two arms of which are pivotally secured to said first mentioned frame; a knife carried by said carrier and adapted to coöperate with said first mentioned
 90 knife; a pivotally supported lever; a reciprocating plunger operatively connected with one end of said lever; a link the ends of which are pivotally connected respectively with the other end of said lever and
 95 with said knife carrier; a solenoid for operating said plunger; a support adapted to receive coupons severed by said knives; and means adapted to act upon each successive coupon after it has been severed as afore-
 100 said to move it transverse to said knives.

19. In a device of the class described, a suitable frame; a knife supported by said
 frame; a knife carrier in the form of a bi-
 105 furcated frame, the two arms of which are pivotally secured to said first mentioned frame; a knife carried by said carrier and adapted to coöperate with said first mentioned knife; a pivotally supported lever; a reciprocating
 110 plunger operatively connected with one end of said lever; a link the ends of which are pivotally connected respectively with the other end of said lever and with said knife carrier; a solenoid for operating said plunger; a resilient support
 115 adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and a station-
 120 ary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

20. In a device of the class described, a suitable frame; a knife supported by said
 125 frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to coöperate with said first mentioned knife; a reciprocating plunger; a
 130

solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; means dependent for its operation upon movement of said plunger for operating said switch to open said circuit at the end of the movement of said knife carrier in one direction; means for returning said knife carrier to its original position; a resilient support adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and a stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

21. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; an electro-magnet for controlling said manually operable switch, the same being included in a circuit in shunt with reference to said first mentioned circuit; means for controlling said shunt circuit; means for operating said shunt circuit controlling means at the end of the movement of said knife carrier in one direction; means for returning said knife carrier to its original position; a resilient support adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as

aforesaid to move it transverse to said knives; and a stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

22. In a device of the class described, a suitable frame; a knife supported by said frame; a reciprocating knife carrier; means for guiding said knife carrier in its movements; a knife carried by said carrier and adapted to cooperate with said first mentioned knife; a reciprocating plunger; a solenoid for operating said plunger; a normally open circuit in which said solenoid is included; a manually operable switch for closing said circuit; a spring the tendency of which is to move said switch to open said circuit; means for releasing said switch; an electro-magnet for controlling said switch releasing means after said switch has been operated as aforesaid; a circuit in which said electro-magnet is included; means dependent for its operation upon movement of said plunger for controlling the circuit through said electro-magnet; means for returning said knife carrier to its original position; a resilient support adapted to receive coupons severed by said knives; means carried by said knife carrier and adapted to act upon each successive coupon after it has been severed as aforesaid to move it transverse to said knives; and a stationary member carried by said frame and engaged by said coupon moving means whereby said means is actuated.

Signed at Paterson in the county of Passaic and State of New Jersey, this 9th day of May, A. D. 1912.

GARRET A. HOBART.

Witnesses:

ALFRED W. GREENWOOD,
GEO. MILES.