No. 864,157. PATENTED AUG. 27, 1907.

H. G. DAVIS.

MACHINE FOR ATTACHING TICKETS TO GOODS.

APPLICATION FILED JULY 26, 1904.

2 SHEETS—SHEET 1.

Fig 1

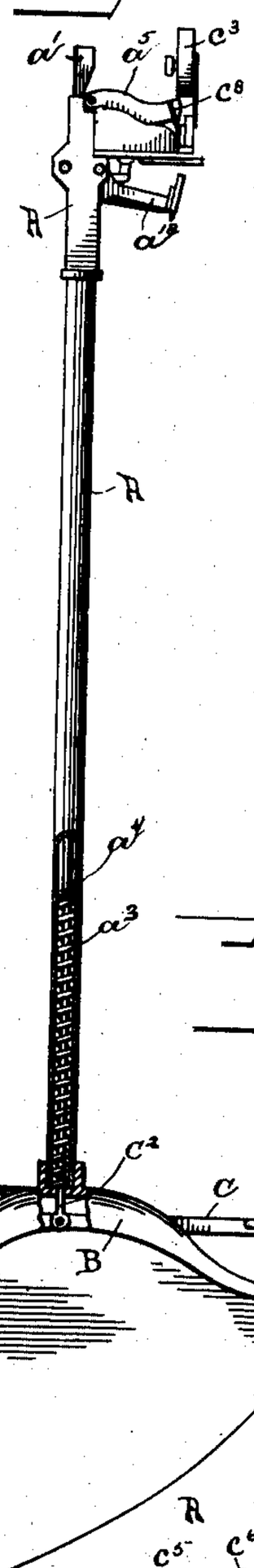


Fig 2

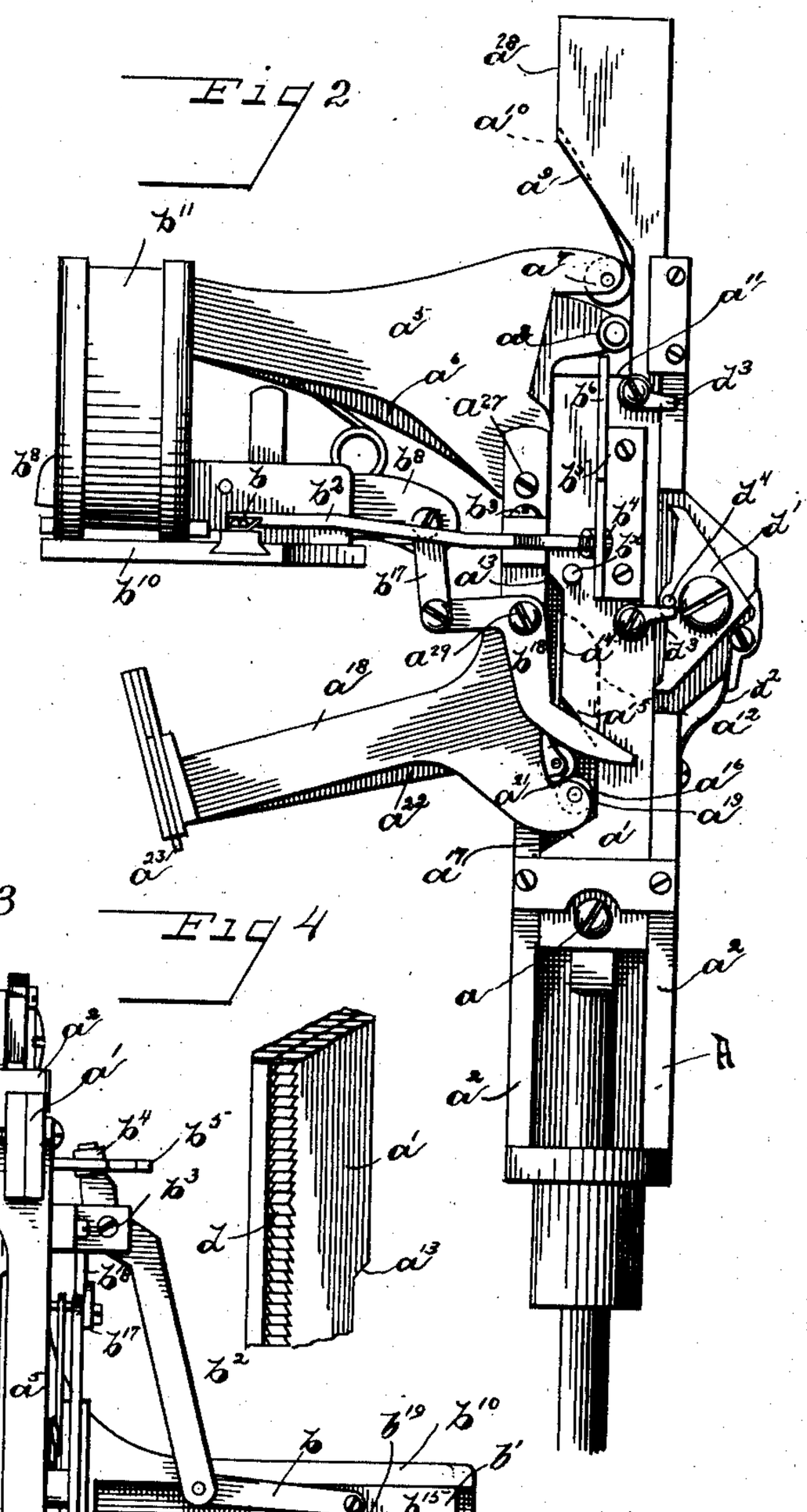
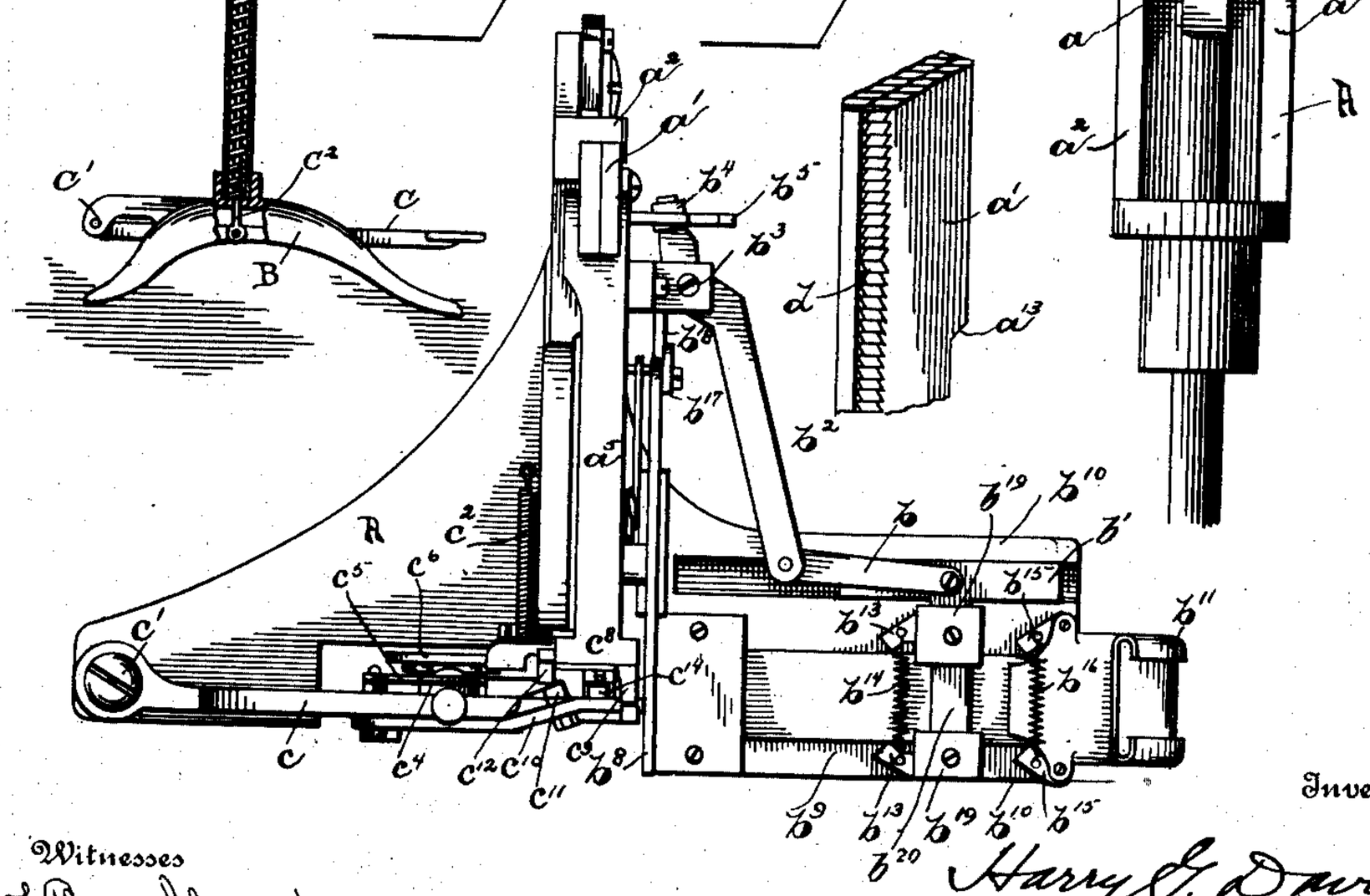


Fig 3

Fig 4



Witnesses

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No. 864,157. PATENTED AUG. 27, 1907.

H. G. DAVIS.

MACHINE FOR ATTACHING TICKETS TO GOODS.

APPLICATION FILED JULY 25, 1904.

2 SHEETS—SHEET 2.

Fig 8

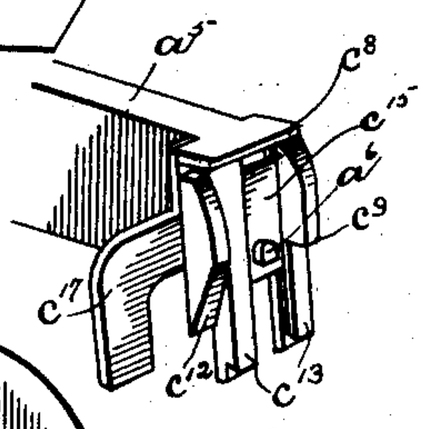


Fig 7

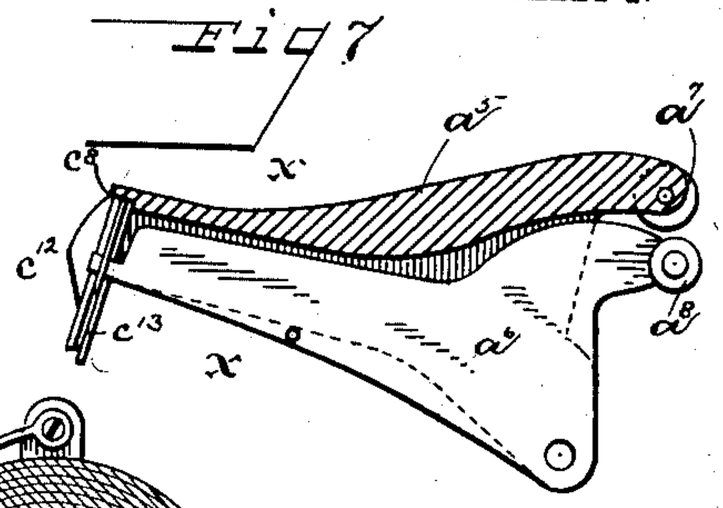


Fig 5

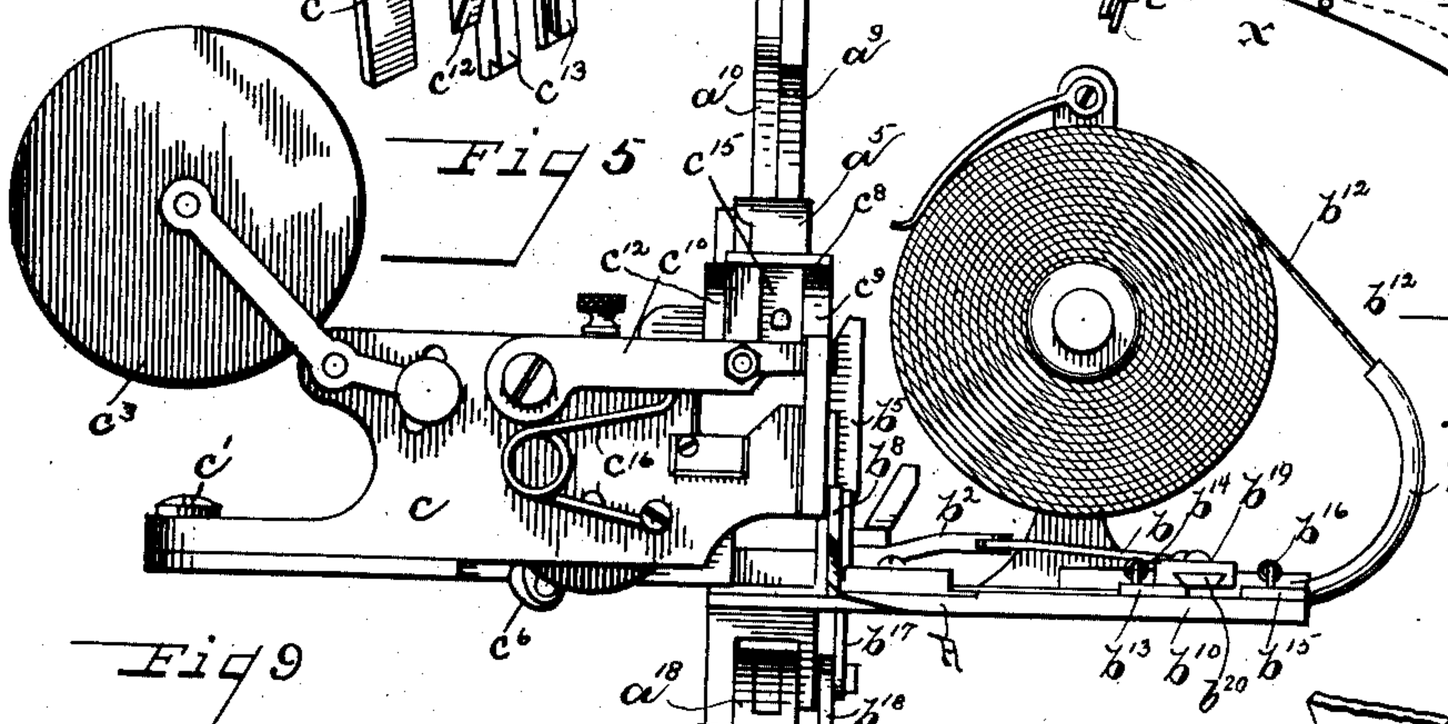


Fig 14.

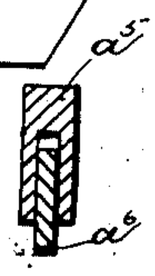


Fig 9

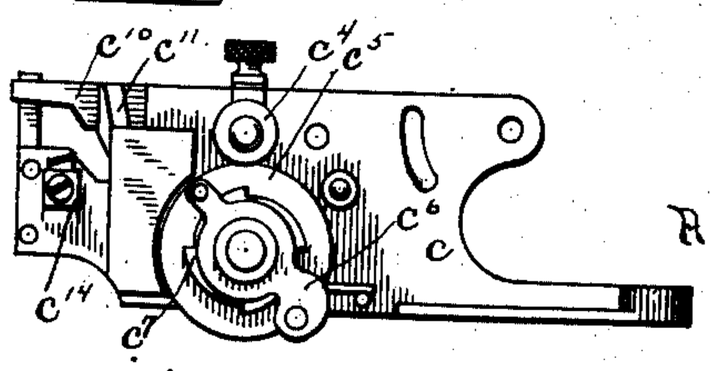


Fig 13.

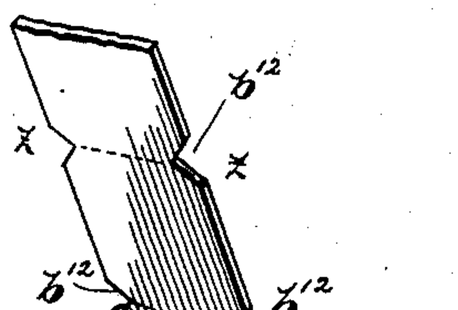


Fig 10

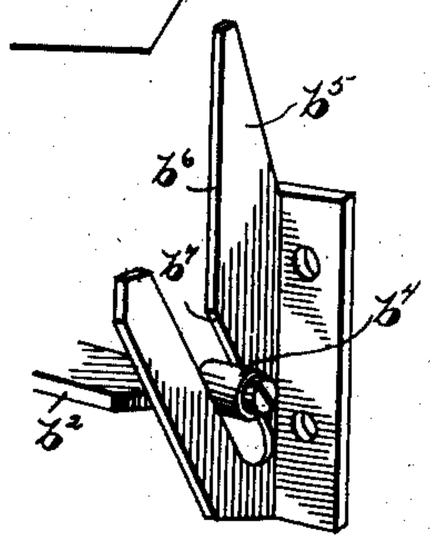


Fig 6

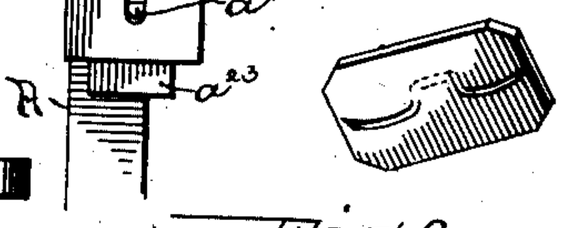


Fig 12

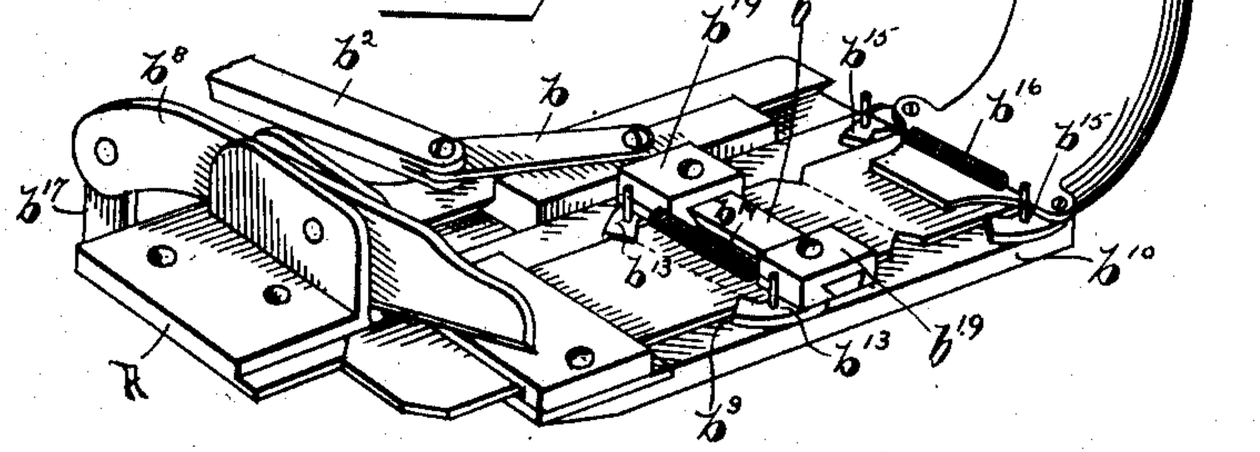
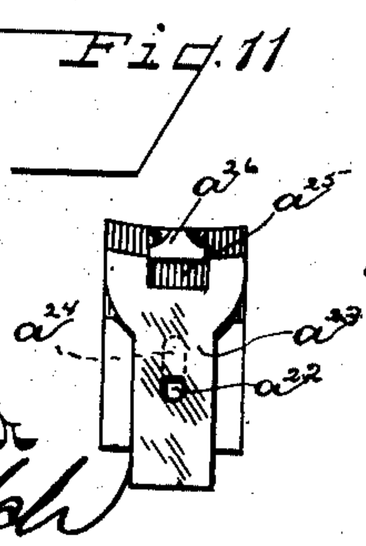
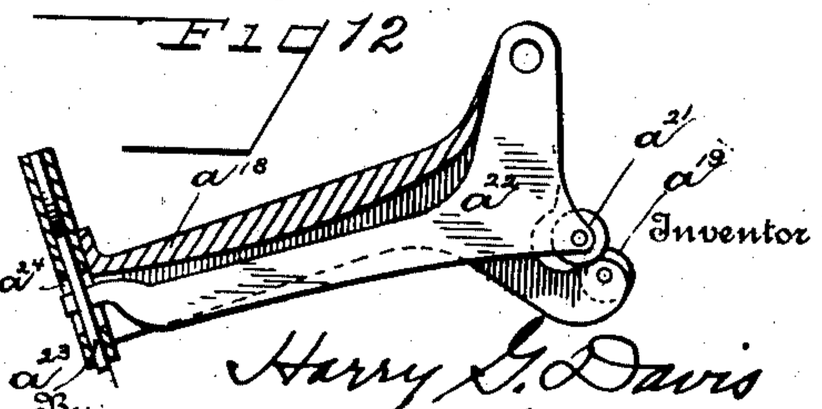


Fig 11





Witnesses

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UNITED STATES PATENT OFFICE.

HARRY G. DAVIS, OF DAYTON, OHIO.

MACHINE FOR ATTACHING TICKETS TO GOODS.

No. 864,157. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed July 25, 1904. Serial No. 217,967.

To all whom it may concern:

Be it known that I, HARRY G. DAVIS, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Machines for Attaching Tickets to Goods, of which the following is a specification.

My invention relates to a ticket attaching machine and particularly relates to a stationary machine supported on a pedestal adapted to be operated by the foot of the operator or by some other kind of operating force.

My improvement consists in the construction of a compact machine, easy and accurate in its operations, which is adapted securely to attach tickets to clothes or similar articles.

In the drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a detail view of the main operating mechanism. Fig. 3 is a plan view showing parts of the mechanism in detail. Fig. 4 is a detail view of the mechanism for causing the complete operation of the machine. Fig. 5 is a front view of the operating mechanism, showing the supply of tickets on the right side of the machine and the wire supply on the left. Figs. 6 and 10 are detail views of the ticket feeding mechanism. Figs. 7 and 8 are detail views of the forming and driving mechanism. Fig. 9 is a detail view of the wire feeding mechanism. Figs. 11 and 12 are detail views of the clenching device for the staples. Fig. 13 shows a ticket after the staple has been clenched. Fig. 14 is a sectional view taken on the line $x\,x$ of Fig. 7.

Like characters of reference indicate like parts throughout the several views.

In this machine I employ a frame A, of tubular form at its lower part, supported by a pedestal B. Within the pedestal B I pivot a treadle, C, pivoted at the point C^1 (Fig. 1). To this treadle there is pivotally connected a rod, C^2 (Figs. 1 and 2), which rod is connected at its upper end at the point a to an operating bar a^1. This operating bar is adapted to slide in guide-ways, a^2, formed in the frame A of the machine. This operating bar, a^1, is slid back and forth within the guides, a^2, by the operation of the treadle, C, there being a coiled spring, a^3, placed within the tubular part of the frame A at its lower end (Fig. 1), which spring engages at its upper end a pin, a^4, projecting from the rod C^2. Consequently, when the operator depresses the treadle, C, with his foot, the rod C^2 is moved downwardly against the tension of the spring, a^3, and when the foot of the operator is removed from the treadle, the spring, a^3, throws the rod C^2 upwardly and restores the operating bar, a^1, to its normal or extreme upward position.

The feeding mechanism for the tickets and for the wire is operated by the sliding bar, a^1. This also operates the cutting mechanism for the wire and for the tickets and constitutes the main operating device of the machine. To the frame A of the machine there is pivoted at a^{27} an upper arm a^5. In this arm, a^5, there is pivoted also at a^{27} a spring-pressed driving arm, a^6, which may be operated independently of the movement of said arm. The arm, a^5, at its inner end (nearest the operating bar) is formed with a roller, a^7, and there is a roller, a^8, formed on the inner end of the driving arm. As shown in Fig. 2, the roller of the upper arm, a^5, is immediately above the roller formed on the driving arm and lies slightly to one side of it. In other words, the engaging surfaces of the rollers, a^7 and a^8, are not in the same plane and consequently contact against different parts of the operating bar. The upper end of the operating bar is formed with a flat surface, a^{28}, and below this flat surface there is formed an incline, a^9, (full lines Fig. 2) having a cam surface at its upper end and an incline, a^{10}, (partly shown in dotted lines in Fig. 2). The bar is formed with a flat surface immediately below the inclines, a^9 and a^{10}. Then there is an offset, a^{11}, and below the offset, a^{11}, the operating bar is formed with a flat surface and below that surface is formed an incline, a^{13}, at one side and an offset, a^{12}, forming a cam-way, at the other side; then a flat surface, a^{14}, and below the flat surface an incline, a^{15}, and then a flat surface, a^{16}, and an incline, a^{17}. The offset, a^{12}, is shown in dotted lines in Fig. 2. In Fig. 2 the rollers, a^7 and a^8, are in engagement with the flat surface, a^{10}, and drop to normal position at the ends of the incline, a^9 and a^{17}, and the operating parts are shown in the positions assumed at the beginning of the operation of the machine.

When the operating bar, a^1, is drawn downwardly, through its connection with the treadle C of the machine, the roller, a^7, rolls on the incline, a^{10}, which causes the arm, a^5, to be oscillated on its pivotal point and the outer end to be dropped slightly. When the main operating bar has been drawn down to a point where the roller, a^7, engages the flat surface, a^{28}, the upper arm, a^5, will be held stationary, but the roller, a^8, will be on the incline, a^9, and the driving arm, a^6, will be oscillated on its pivot and the driving of the staple thereby effected when the roller reaches the upper part of said incline. The lower arm, a^{18}, is also pivoted at a^{29} to the frame of the machine and carries the clenching mechanism. This arm, a^{18}, is formed at its inner end with a roller, a^{19}, which in Fig. 2 is shown in engagement with the flat surface a^{16}. When the operating bar is moved downwardly, the roller, a^{19}, rolls on the incline, a^{15}, and thereby the outer end is raised. The adjustment is such that the arm, a^5, is moved a predetermined distance and then the arm a^{18} and the arm a^5 are operated in unison so that the outer ends of said arms will approach each other. When the roller, a^7, of the upper arm comes in contact with

the flat surface, a^{28}, the roller, a^{19}, of the lower arm comes in contact with the flat surface, a^{14}, and both arms are then held stationary.

The operating bar, a^1, at one side of the flat surface, a^{14}, has the offset, a^{12}, which is formed with a cam-way upon which the roller, a^{21}, formed on the end of a clenching arm, a^{22}, will roll at the end of the downward movement of the operating bar, a^1. The clenching arm is pivoted at a^{29} in the arm, a^{18}, and the adjustment is such that the roller, a^{21}, rolls on the cam surface after the arm, a^{18}, has been oscillated by the incline, a^{15}. The clenching arm, a^{22}, engages a clenching plate, a^{23}, Fig. 11. The end of the clenching arm, a^{22}, is shown extended into a slotted opening, a^{24}, formed in the outer end of the arm, a^{18}. This clenching plate is formed with an opening, a^{25}, and is adapted to be guided so that an anvil-shaped plate, a^{26}, fits within said opening, a^{25}. This anvil, a^{26}, is secured to the arm, a^{18}. It is of peculiar form and has a peculiar function in the operation of the machine. The ends of the wire staple first engage the curved surfaces of the anvil, a^{26}, and are spread apart by the ends of the staple sliding over the curved surface, and when the plate, a^{23}, is raised upwardly by the clenching arm, a^{22}, the ends of the staple are bent and formed in a bow-shape, as shown in Fig. 13, which makes a very secure and desirable fastening.

The feeding device for the tickets comprises a pivoted link, b, Fig. 3, and a slide, b^1, connected thereto. This link is pivoted to a lever, b^2, which is pivoted to the frame of the machine at the point indicated by b^3. One end of the lever, b^2, is formed with a roller, b^4, Fig. 2, which is adapted to contact against a plate, b^5, Figs. 2 and 10, which plate is rigidly secured to the operating bar, a^1, of the machine. Consequently, when the operating bar is drawn downwardly, the roller moves over an incline, b^7, Fig. 10, until it reaches a flat surface, b^6. While the roller is passing over the incline, b^7, the lever, b^2, is operated and the slide, b^1, is moved toward the operating bar and a ticket within the receptacle is advanced to a point below the cutting knife, b^8, Fig. 6. This slide, b^1, is adapted to rest on the guide surface, b^9, formed in the base, b^{10}, which projects from the frame of the machine. To this base there is rigidly secured a curved guide, b^{11}, and the tickets are fed through this guide, b^{11}, and pass between the slide, b^1, and the base, b^{10}, so that the slide, b^1, engaging the strip of tickets, will advance same to proper position. These tickets are usually printed tickets with arbitrary characters and it is desirable that they always be severed at some definite point such as that indicated by the dotted line, $z\ z$, Fig. 6.

I have shown the tickets formed with notches, b^{12}, and the slide, b^1, has pivoted pawls, b^{13}, carried by heads, b^{19}, slidably mounted on the lateral extension, b^{20}, of said slide, said heads being provided with set-screws to secure them in position. These pawls are connected by a spring, b^{14}, so that the pawls are adapted to engage in the notches, b^{12}, and in this way the strip of tickets is always kept in proper alinement. The construction described permits the adjustment of the pawls to accommodate different widths of strips of tickets. Retaining pawls, b^{15}, are also connected by a spring, b^{16}, and are adapted to hold the tickets in advanced position by the pawls engaging the notches, b^{12}, until the slide, b^1, has been returned to its normal position, the danger being that the strip of tickets will be pushed back when the slide, b^1, is moved back to its normal position. The knife, b^8, is pivoted to the frame of the machine and is connected to a link, b^{17}, which in turn is pivoted to a crank-arm, b^{18}, which arm is operated by the operating bar, a^1, by the contact of the pin, $b\times$, against the free end of said crank-arm.

The mechanism for feeding the wire comprises a supporting plate, c, pivoted to the frame of the machine at c^1. This supporting plate, c, is held in its normal position, shown in Fig. 3, by a spring, c^2. The supply of wire is on a roller, c^3, Fig. 5, and is fed between a small roller, c^4, and a large feed roller, c^5. The feeding mechanism for the wire is that shown in my former application, Serial No. 155,501, and does not require a detailed description. A pawl arm, c^6, when moved in one direction, engages a ratchet, c^7, which is formed integral with the roller, c^5. Consequently, when the pawl arm, c^6, is operated in one direction, it will move the feed roller, c^5, and feed the wire to proper position for the operation of forming the staple from the wire.

The arm, a^5, has a forming head, c^8, Fig. 8, which is also similar to the forming head shown and described in my previous device and it has a shoulder, c^9, Fig. 8, which is adapted upon the movement of the arm, a^5, to contact against the end of a pivoted cutting arm, c^{10}, Fig. 5, which cutting arm has a blade, c^{11}, for the purpose of cutting the wire. The forming head, c^8, has also a cam face, c^{12}, which moves the supporting plate, c, against the tension of the spring, c^2, so that after the wire is formed into the shape of a staple by projections, c^{13}, forcing the wire against a stationary block, c^{14}, rigidly connected to the pivoted supporting plate, c, the supporting plate, c, is moved laterally and the staple is held within the guides formed in the projection, c^{13}, exactly as shown in my prior device. A driving plate, c^{15}, Fig. 8, drives the staple after the block, c^{14}, has been removed. A spring, c^{16}, Fig. 5, is adapted to return the cutting arm, c^{10}, to its normal position when the supporting plate, c, is moved laterally by the cam face, c^{12}. The means for operating the feeding pawl, c^6, is shown in Fig. 8 as a projecting arm c^{17}.

I have shown a device for requiring the complete operation of the main operating part, a^1, in both directions, as shown in Figs. 2 and 4. The sliding bar, a^1, is formed with ratchet teeth, d, and a double-acting pawl, d^1, is pressed by a spring, d^2, into position such that the upper end of the pawl, d^1, engages the ratchet teeth during the upward movement of the sliding bar, a, and thereby prevents any return movement of same while the lower end of the pawl, d^1, engages said ratchet teeth on the downward movement of the sliding bar, and prevents any return movement while the bar is moving in that direction. The pawl is reversed at the end of the up and down movements of the bar by the arms d^3, engaging the pin, d^4.

The general operation of the machine should now be clear. The operator, by depressing the treadle, through the connections with the main operating part first moves the pivoted arms, a^5 and a^{18}, the free ends of which approach each other, and the goods to be ticketed being supported on the free end of the arm, a^{18}, and the staple to be driven being supported within the end of the arm, a^5, are brought into close proximity with the ticket intermediate therefrom. The arms are then

held stationary by reason of the formation of the face of the operating bar, a^1, and the ticket and wire having been fed during the movement of the arms, the driving mechanism for the staple is then operated by the sliding bar and at the end of the downward movement of the sliding bar, a^1, the clenching mechanism is operated. In this manner I secure a positive and accurate operation of the feeding of the ticket to the point where the staple is driven through the ticket and always in proper alinement, and then the driving of the staple and the clenching of the staple is secured by improved mechanism.

Having thus described my invention, I claim:—

1. In a ticket attaching machine, the combination of wire feeding with forming and driving devices, ticket feeding and cutting devices, means for operating said parts, said feeding devices being moved in the same plane as the tickets, and said tickets being moved in a single plane of movement, substantially as specified.

2. In a ticket attaching machine, wire feeding, forming and driving devices, ticket feeding and cutting devices, means for operating said parts, said ticket feeding devices including pawls and said tickets being formed with offset portions, said pawls being in the same plane with the tickets and engaging continuously the edges of said tickets, for the purpose of alining the tickets, substantially as specified.

3. In a ticket attaching machine, the combination of wire feeding with cutting, forming and driving devices, offset portions formed on the edges of the tickets, and means for maintaining the pawls in contact with the edges of the ticket, guiding surfaces of the offset portions of the ticket for the purpose of causing the proper alinement of the ticket, substantially as described.

4. In a ticket attaching machine, the combination of wire feeding with forming and driving mechanism, a knife for severing said tickets, a main operating device for said parts, said tickets being maintained in one plane of movement, offset portions on the edges of said tickets, and means for maintaining the feeding devices in engagement with the edges of the tickets and adapted to coöperate with the offset portions for alining said tickets, substantially as specified.

In testimony whereof, I have hereunto set my hand this 22d day of July, A. D. 1904.

HARRY G. DAVIS.

Witnesses:
JOHN M. NUTT,
E. M. BERLIN.