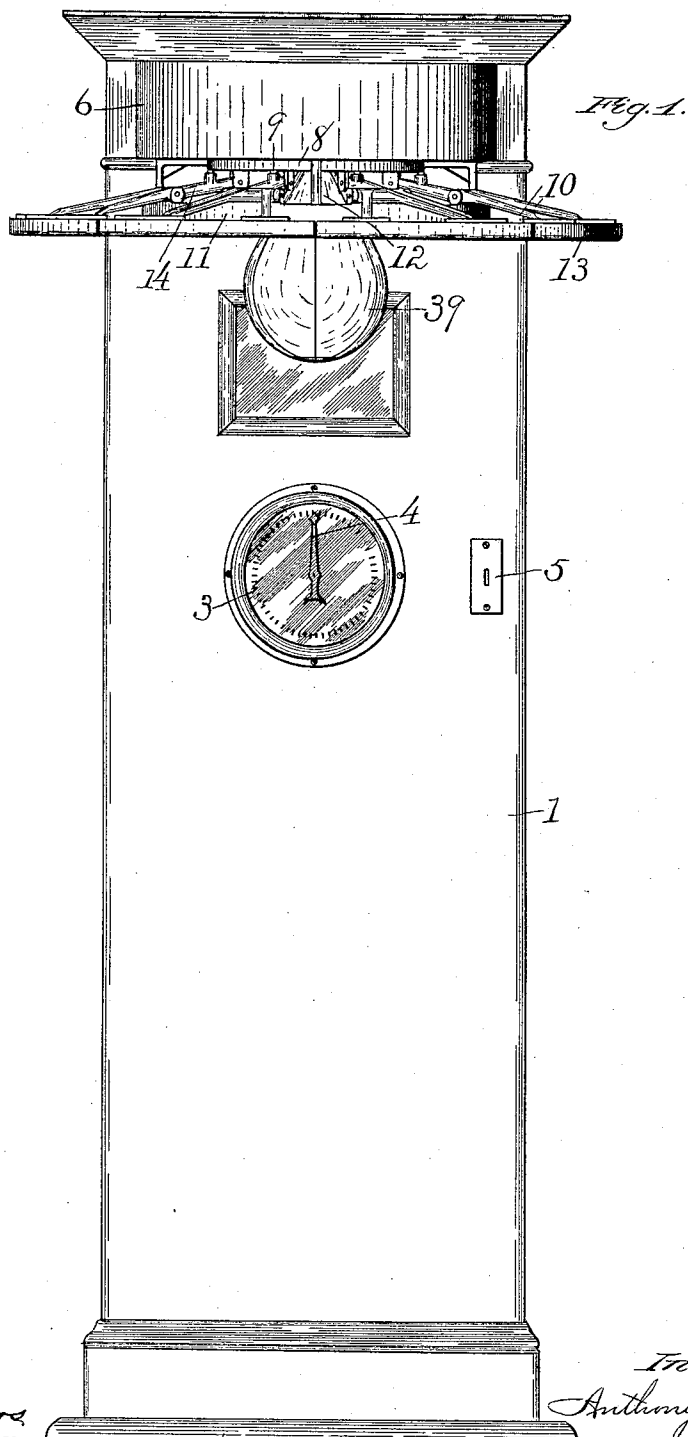


A. L. NEVELS.
TIME CONTROLLED BAG PUNCHING MACHINE.
APPLICATION FILED JULY 30, 1906.

1,042,816.

Patented Oct. 29, 1912.

5 SHEETS—SHEET 1.



Witnesses.

C. H. Storrs
L. E. Berkovich.

2

Inventor.

Anthony L. Nevels.

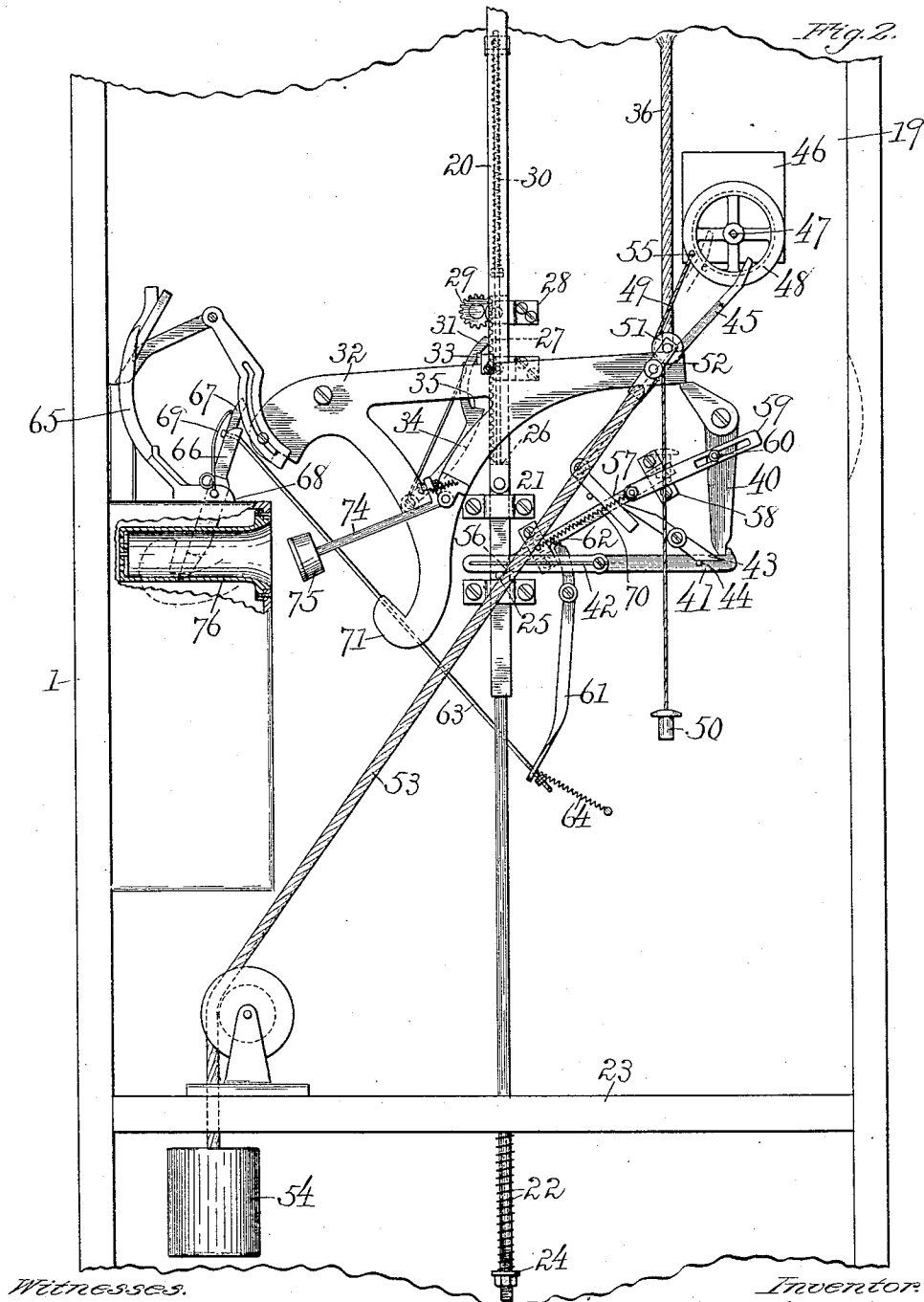
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5 SHEETS—SHEET 2.



Witnesses.

C. F. Storrs
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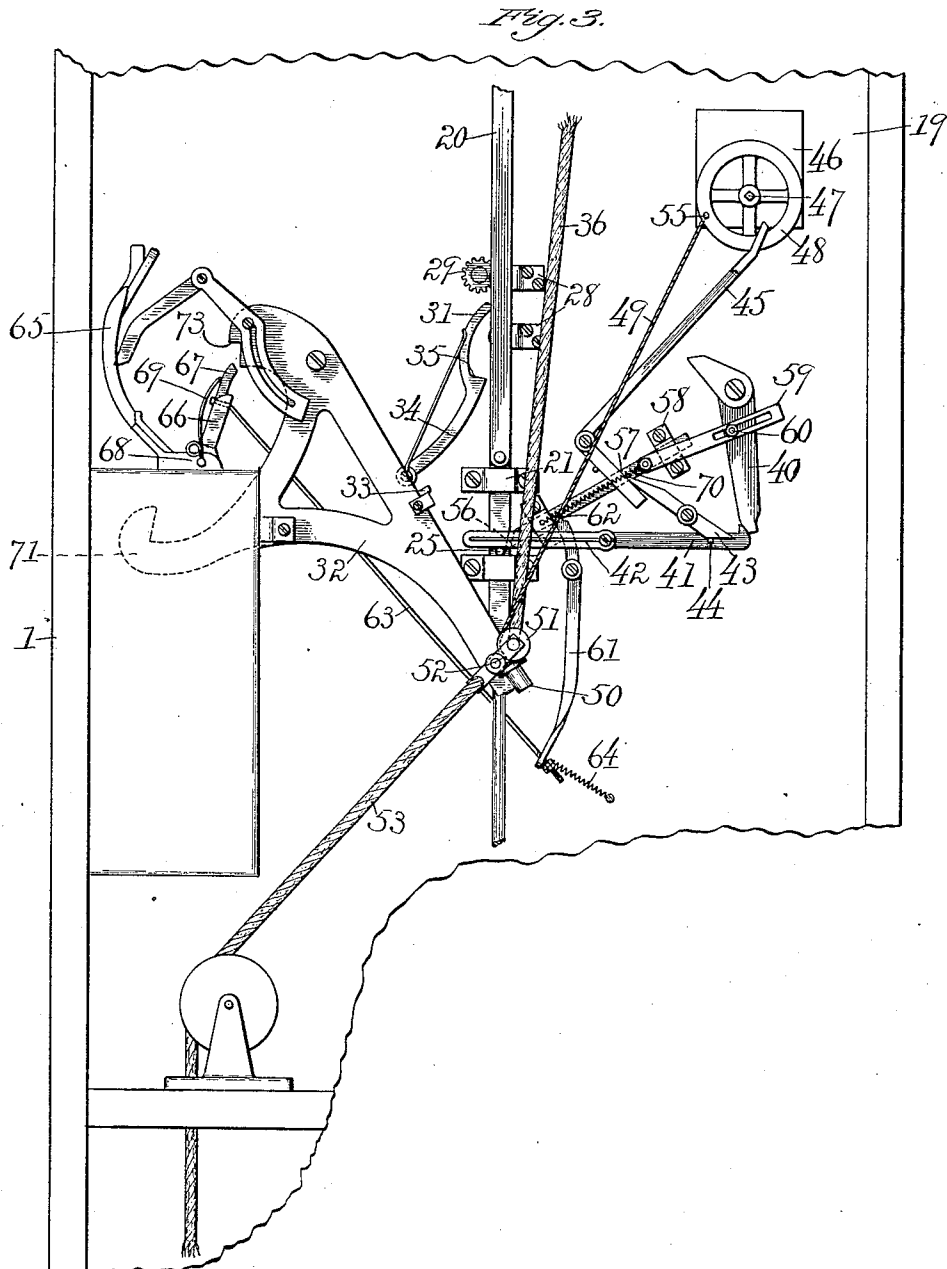
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5 SHEETS—SHEET 3.



Witnesses.

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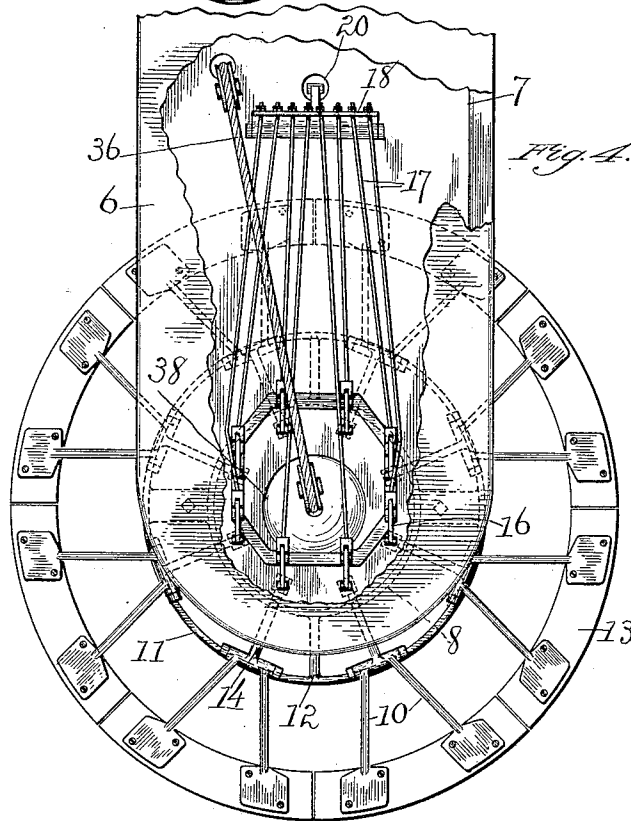
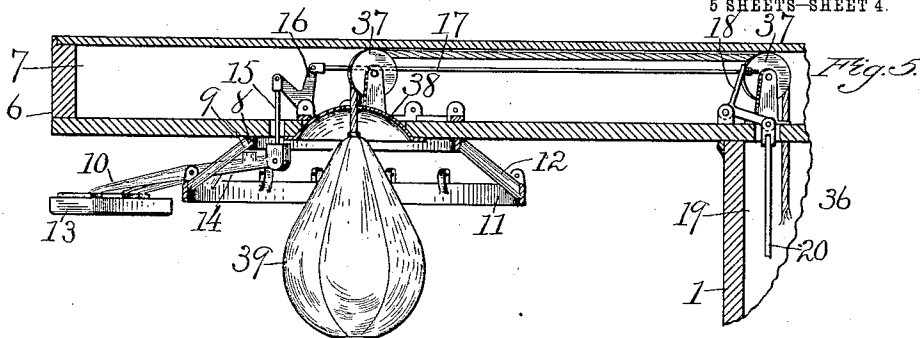
Anthony L. Nevels,
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5 SHEETS-SHEET 4.



Witnesses.

C. F. Morris
G. E. Berkovitch

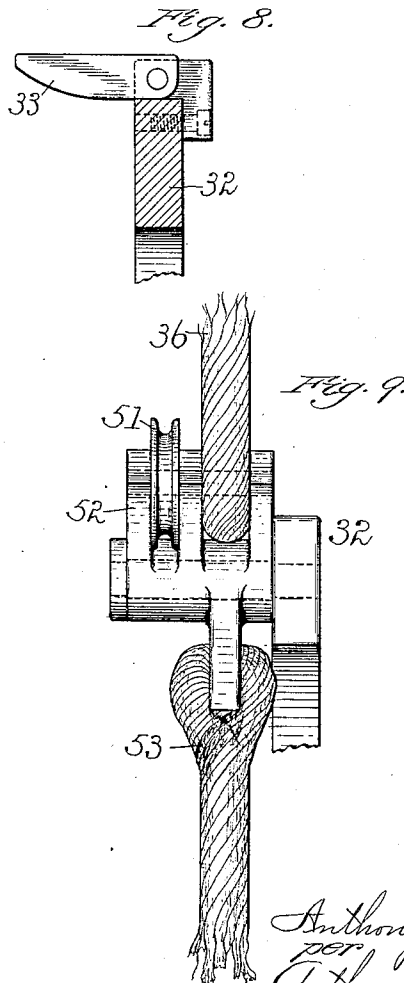
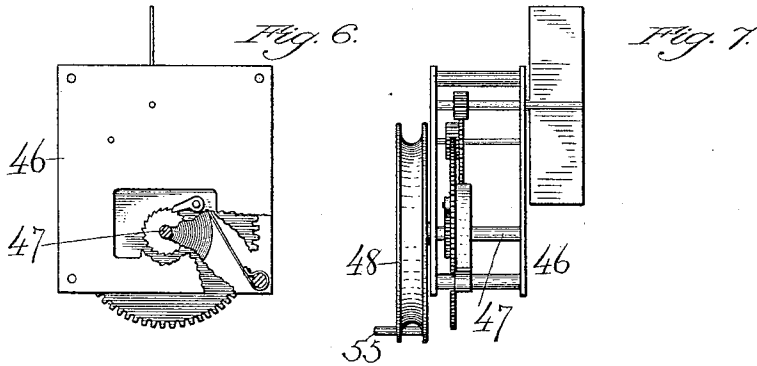
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5 SHEETS—SHEET 5.



Witnesses.

C. F. Storrs.

S. E. Berkovitch

Inventor.

Anthony L. Nevels,
per
Arthur B. Jenkins.
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UNITED STATES PATENT OFFICE.

ANTHONY L. NEVELS, OF HARTFORD, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NEVELS MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

TIME-CONTROLLED BAG-PUNCHING MACHINE.

1,042,816.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed July 30, 1906. Serial No. 328,288.

To all whom it may concern.

Be it known that I, ANTHONY L. NEVELS, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented and produced a new and Improved Time-Controlled Bag-Punching Machine, of which the following is a specification.

My invention relates to the class of devices in which a bag is normally suspended in an inoperative position, but which may be moved to an operative position to be struck by blows delivered by a person's fist, and the object of my invention is to provide a device of this class which shall require some act on the part of the user, as the deposit of a toll or token to enable the bag to be placed in position for use; and a further object of the invention is to provide a device which shall in the one structure have means for enabling use of the machine for different periods of time depending upon the act of the user or character of the toll or token deposited; and a further object of the device is to provide means for determining the force of the blow delivered against the device; and a still further object of the invention is to provide a device in which the force of different blows struck from different directions shall be equally registered.

One form of device embodying mechanism in the use of which the above objects may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation of a machine embodying my invention. Fig. 2 is a detail view on enlarged scale showing the position of the parts with the bag properly located for use for a predetermined length of time. Fig. 3 is a like view on enlarged scale but with the parts in position after the mechanism has been tripped and the bag located in an inoperative position, the plunger having been omitted from this view. Fig. 4 is a detail top view of the machine with parts broken away to show construction. Fig. 5 is a detail view in central section through the hood of the machine showing the position of the bag when not in use. Fig. 6 is a detail view in front elevation on enlarged scale illustrating the time mechanism, with parts broken away to show construction. Fig. 7 is a detail edge view of the same, but with the sheave in place.

Fig. 8 is a detail view on enlarged scale illustrating the pawl trip appurtenant to the indicator slide. Fig. 9 is a detail view on enlarged scale illustrating the swinging frame mounted on the main lever.

In the accompanying drawings the numeral 1 denotes the case provided with a base 2 sufficiently large to properly support the device as a whole, this base extending from the front of the case. The case 1 is of proper thickness to provide a chamber within which the operating mechanism is located. A dial 3 and an indicating pointer 4 are provided on the front of the case for the purpose of indicating, under conditions, the force of a blow struck, and a coin plate 5 is provided for the reception of coins which pass through a coin chute within the case.

The case includes a projection 6 extending from the top forward, this projection having a chamber 7 within which parts of the mechanism are located. A stop ring 8 is secured to the under side of the projection 6 and this stop ring is provided with cushions 9 against which blow receiving levers rest. These blow receiving levers are mounted in a supporting ring 11, which is held on arms 12 extending from the stop ring 8, although it is obvious that they may be supported in any convenient manner. Each blow receiving lever includes segment supporting arms 10 preferably arranged in pairs as shown in Fig. 4 of the drawings, each pair supporting a segment 13. These levers are suitably mounted on a pivot on the ring 11 and each also includes a single extension 14 which rests against the stop ring 8 and is also connected by a rod 15 with a bell crank lever 16 mounted in the chamber 7. The levers and the segments are so arranged as to form a circle, as plainly shown in Fig. 4 of the drawings.

The bell crank levers 16 are arranged at points disposed about the center of the several rings 8—11 and that formed by the segments 13, and connecting rods 17 extend from each lever to an indicator operating lever 18 mounted within the chamber 7, this indicator operating lever being in the form of a bell crank lever and one arm extending over the chamber 19 in the casing 1. A portion of the several levers are omitted from Fig. 5 of the drawings for the purpose of clearness of illustration.

The indicator operating lever 18 has one arm of considerable width to which the ends of the several connecting rods 17 are secured, and a single arm, which is pivotally connected with a releasing and indicating bar 20. This bar is mounted in guides 21 secured to the case. A spring 22 located on the bar and between a bridge 23 and a shoulder (in this instance formed by a nut) 24 on the bar exerts a pressure thereon to hold it at the lower limit of its play. This bar bears a releasing lever trip pin 25 and has a shoulder 26 (shown in dotted outline in Fig. 2) to engage an indicator slide 27 mounted in slide-ways 28 located between the releasing and indicating bar 20 and the front wall of the case, as shown in dotted lines in Fig. 2 of the drawings. The indicator bar has a toothed edge which engages with teeth on a pinion 29 secured to the arbor of the pointer 4. The indicator slide 20 may have a spring 30 to insure its proper movement in one direction.

A pawl 31, to hold the indicator slide, is pivoted to the wall of the casing, its end engaging the teeth of the rack on the slide. A main operating lever 32 is pivotally mounted on the wall of the case, and a pawl trip 33 is pivotally mounted on said lever and rests against the upper edge thereof that prevents downward movement of the trip. In the upward movement of the main operating lever this pawl trip 33 strikes a cam surface 34 on the trip and moves it from engagement with the teeth of the indicator slide 27. As the main lever 32 moves downward the pawl trip 33 striking a shoulder 35 swings upward to freely pass the pawl.

The main lever 32 has secured to one end a flexible bag support 36 that passes upward and over sheaves 37 suitably mounted in the case, the periphery of one of said sheaves being located over a central opening in a recessed plate 38. The bag 39 is secured to the outer end of the bag support 36, as shown in Fig. 5 of the drawings. A main lever retainer 40 is pivoted to the case, one end to engage the main operating lever and the opposite end to be engaged by a releasing lever 41 pivoted within the case and projecting in the path of movement of the releasing lever trip pin 25. A spring 42 may be employed if desired to insure movement of the releasing lever in one direction.

It will be noted that the trip lever 40 may be swung in either direction, it being so balanced, however, that its lower end will tend to swing toward the right. If, however, when the parts are tripped it shall assume the position shown in Fig. 3 the engagement of the end of the main operating lever 32 with the under side of its upper end will move it to proper position to engage the releasing lever 41. A trip lever 43 is pivoted within the case, one end engaging a

pin 44 on the releasing lever 41, and the other end resting against a time operated lever 45 pivoted within the case. A time mechanism 46 is mounted in operative position with respect to the lever 45. This time mechanism may be constructed after the manner of any ordinary time mechanism which includes a main spindle 47 connected with a main spring and the usual train of gears, and ratchet and pawl mechanism for allowing the main spindle to be turned to wind the spring. A sheave 48 is secured to the main spindle 47 and a flexible main lever connection 49 is secured within a groove in the sheave, its free end supporting a button 50. This flexible connection passes through an opening between a roller 51 and a swinging frame 52 on which it is mounted. This swinging frame is pivoted at the end of the main operating lever 32 and serves as a means of attachment of the flexible bag support 36 and also of a flexible weight connection 53 supporting a weight 54. The sheave 48 bears a trip pin 55, which, as the shaft rotates in the operation of the time mechanism under the power of its main spring, engages the time operated lever 45, swinging it on its pivot and forcing the trip lever 43 against the pin 44 which disengages the releasing lever 41 from the main lever retainer 40. The releasing and indicating bar 20 is locked against movement in the use of the machine under certain conditions.

A notch 56 is cut in the edge of the bar, as plainly shown in dotted lines in Fig. 3 of the drawings, and a locking bolt 57 is mounted in bolt sockets 58 secured to the case. A connecting lever 59 is pivoted to the bolt and has a slot engaging a pin 60 on the main lever retainer 40. This pin and slot engagement of the lever 59 causes the bolt to be withdrawn from engagement with the releasing and indicating bar 20 whenever the retainer 40 is swung to release the main operating lever. A bolt holding lever 61 is pivoted to the case, one end engaging a notch 62 in the bolt 57, and the other end being engaged by a connecting rod 63 which extends to a lever of a coin operated device. A spring 64 may be employed to return the lever 61 to position to engage the bolt 57.

A coin chute 65 leads from the plate 5 to coin operated levers 66 and 67. The lever 66 is pivoted to a coin receptacle 68, and the lever 67 is pivoted within a longitudinal channel in the lever 66, a spring 69 holding the upper ends of the levers together. The end of the rod 63 is secured to the lever 66, so that whenever this lever is swung the bolt holding lever 61 will be disengaged from the notch 62 in the locking bolt 57, allowing the latter to be forced into the notch 56 to hold the releasing and indicating bar 20 against movement. A spring 70 forces said bolt into engagement with said notch.

The faces of the levers 66 and 67 lie in the same plane and close against the face of the coin chute 65. The channel in the coin chute 65 is narrowed or contracted at its lower end, so that while a coin or token of a certain diameter may pass to the end of the channel, a coin of greater diameter will be retained at a certain distance above the end of the channel. A slot is formed in the lower end of the coin channel, through which a coin engaging hook 71 on the end of the main lever 32 may pass, a similar slot also being formed in the lower end of the lever 67. The lever 67 is constructed of a width corresponding to the diameter of the smaller coin to be used, or possibly slightly wider than the diameter of the coin. The coin being located in the narrower part of the channel in the coin chute 65 rests against the lower end of the lever 67 and in the space between the hook 71 and said lever shown in dotted outline in Fig. 2 of the drawings. As the hook is moved to the right, as seen in said Fig. 2, the coin, as to a portion thereof, passes through the channel in the lever 66 in which the lever 67 is located without moving the lever 66. When, however, a coin of larger diameter is placed in the coin chute 65 it will rest within the larger part of the channel within the coin chute and against the faces of both the levers 66 and 67. As the lever 32 is now swung both the levers 66 and 67 will be swung drawing the connecting rod 63 and operating the bolt holding lever 61 which is disengaged from the locking bolt 57, allowing the latter to pass into the notch in the bar 20.

For the reason that coin operating mechanism is considered by the Patent Office to be a separate invention, this coin operating mechanism is made the subject matter of a separate application, and further detailed description is therefore deemed unnecessary herein, reference being had to said application for a more complete understanding thereof.

It will be noted from the above description taken in connection with the drawings that the device provides for two methods of operation: one in which a single blow may be delivered on the bag and the force of such blow indicated, and another in which successive blows may be delivered to the bag for a predetermined length of time at the end of which the mechanism will be locked against further use until after the insertion of another coin.

In order to prevent too rapid movement of the main operating lever 32 and consequent jar when its movement is stopped, a plunger 74 is pivoted to the lever and has a piston 75 that enters a cylinder 76. The air within the cylinder acts as a cushion for the piston 75, and the rapidity with which

the air is allowed to escape from the cylinder will determine the rapidity of movement of the lever 32 in a manner well-known to devices of this class.

The operation of the machine in accordance with the first method is as follows. A coin of comparatively small diameter, as a penny, being placed through the opening in the coin plate 5 passes along the coin chute 65 by which it is delivered to the lower end of the levers 66 and 67, resting against the lever 67. By now pulling down upon the bag 39 the main operating lever 32 is swung upward from the position shown in Fig. 3 and the coin engaging hook 71 coming in contact with the coin moves the lever 67 so that its end passes from out the path of movement of the shoulder 73 on the lever 32 (should the bag be pulled with no coin in the coin chute 65 the hook 71 would pass through the slots in the lower end of the coin chute 65 and the lever 67 and the upper end of the lever would thus be retained in the path of movement of the shoulder 73, thus preventing movement of the lever 32 and consequently holding the bag in its uppermost position, and as shown in Fig. 5 of the drawings) and allows the lever to move upward into the position shown in Fig. 2 of the drawings. As the lever moves the coin is discharged from engagement between the hook 71 and the lever 67. In this operation, it being assumed that the time train has been properly wound in a former movement of the lever 32, the main lever connection 49 slips loosely through the opening in the swinging frame 52. The end of the lever 32 engaging the upper end of the main lever retainer 40 moves the same into position where it is engaged by the releasing lever 41 and the parts are thus held locked in the position shown in Fig. 2 of the drawings, the bag having been moved from the position shown in the drawings to a position where it may freely swing to strike the segments 13. A blow being now struck against the bag it is forced against a segment 13, which is tipped and through the connecting mechanism shown operates the releasing and indicating bar 20 which moves upward, causing the trip pin 25 to engage the releasing lever 41, thus releasing the main lever retainer 40 and allowing the lever 32 to drop under the pull of the weight 54, the main lever connection 49 slipping freely through its opening in the frame 52. As the bar 20 moves upward the shoulder 26 engaging with the lower end of the indicator slide 27 moves it upward rotating the pinion 29 and consequently the pointer 4 thus indicating on the dial 3 the force of the blow. In this operation it will be noted that the parts all return to the position shown in Fig. 3 of the drawings.

Under the second method, it being as-

sumed that the time train has been operated to wind the main spring, as will occur in every movement of the lever 32 should such main spring not be wound, a coin of a larger denomination as a nickel is passed through the chute 65 and rests in the larger part of the opening in said chute and between the hook 71 and the faces of the levers 66 and 67. The bag now being pulled downward the lever 32 is swung upward as before, but with the result that the hook 71 engaging the coin presses it against the faces of both the levers 66 and 67, swinging them on their pivots and drawing the connecting rod 63, which swings the bolt holding lever 61 from engagement with the notch 62 in the locking bolt 57, which is projected by the spring 70 into the notch 56 in the bar 20, which is thus held against movement. The parts are set to hold the lever 32 as before described. Repeated blows may now be struck on the bag and as it strikes the segments 13 no movement will be given to the bar 20. The time mechanism, however, is operating under the force of the main spring and continues to operate until the trip pin 55 encounters the time operated lever 45 which being swung by said contact operates the trip lever 43 which moves the releasing lever 41, disengaging it from the main lever retainer 40 when the parts assume the position shown in Fig. 3, and as hereinbefore described. In this operation of the time train the main lever connection 49 has been wound upon the sheave 48, and as the end of the lever 32 swings downward the button 50 is caught by the swinging frame 52 and the connection 49 is thus pulled downward, rotating the sheave 48 backward and winding the main spring of the time train. The machine is now in position for either operation above noted.

While the device has been described herein as particularly adapted for use in connection with a coin operated device it will be understood that it is equally applicable in any device of a similar character in which tokens or other means may be employed in the place of a coin, and where the term "coin" is used herein it will be understood to include all such equivalent means.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a bag punching machine, a bag normally located in an inoperative position, an actuator connected therewith and having an arm controlling lever to be connected with said arm, means for holding said actuator in position to permit operation of the machine, a time device, and an indicating device, connections between the controlling levers and indicating device for locking the latter, and connections between the time device and holder for releasing said actuator.

2. In a bag punching machine, a bag nor-

mally located in an inoperative position, an actuator connected therewith and having an arm, controlling levers to be connected with said arm on the interposition of a proper member, connections between the controlling levers and actuator for locking the latter against movement, a holder for said actuator, time mechanism connected with said holder, and connections between said time mechanism and holder for operating the latter to release the actuator.

3. In a bag punching machine, a bag suspended from a flexible support, segments arranged to receive the blows of the bag, an indicator connected with each of said segments, a main operating lever connected with the bag support, a lock for said indicator, controlling levers arranged to be connected with the main operating lever on the interposition of a proper member, said levers being connected with said lock, a holder for said main operating lever, a time operated device, and connections between said time operated device and holder for moving the latter to release the main operating lever.

4. In a bag punching machine, a bag suspended from a flexible support, segments arranged to receive the blows of the bag, an indicator connected with each of said segments, a main operating lever connected with the bag support, a lock for said indicator, controlling levers arranged to be connected with the main operating lever on the interposition of a proper member, said levers being connected with said lock, a holder for said main operating lever, a time operated device, and connections between said time operated device and holder for moving the latter to release the main operating lever.

5. In a bag punching machine, a bag suspended from a flexible support, a circle formed of segments to receive the blows of the bag, a pivoted main operating lever connected with the bag support, an indicator connected with each of said segments, a holder for said operating lever, a time device, and connections between the time device and holder and between the indicating device and holder for moving the latter to release the lever.

6. In a bag punching machine, a bag suspended from a flexible support, a pivoted main operating lever connected with said support, means for receiving the blows of the bag, an indicator connected with said blow receiving means, a lock for said indicator, a holder for said lever, a time device, connections between the time device and holder and between the indicator and holder for moving said holder to release the main operating lever, and connections between said holder and lock for the indicator.

7. In a bag punching machine, a bag sus-

pendent from a flexible support, a pivoted main operating lever connected with said support, a time device including a spring operated main arbor, and connections between said arbor and main operating lever for winding the spring in the movement of said lever.

8. In a bag punching machine, a bag suspended from a flexible support, a pivoted main operating lever connected with said support, a holder for said lever, time mech-

anism including a main spring-influenced spindle, connections between said lever and spindle for rotating the latter to wind the spring, and connections between said time mechanism and holder for moving the latter to release the lever.

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