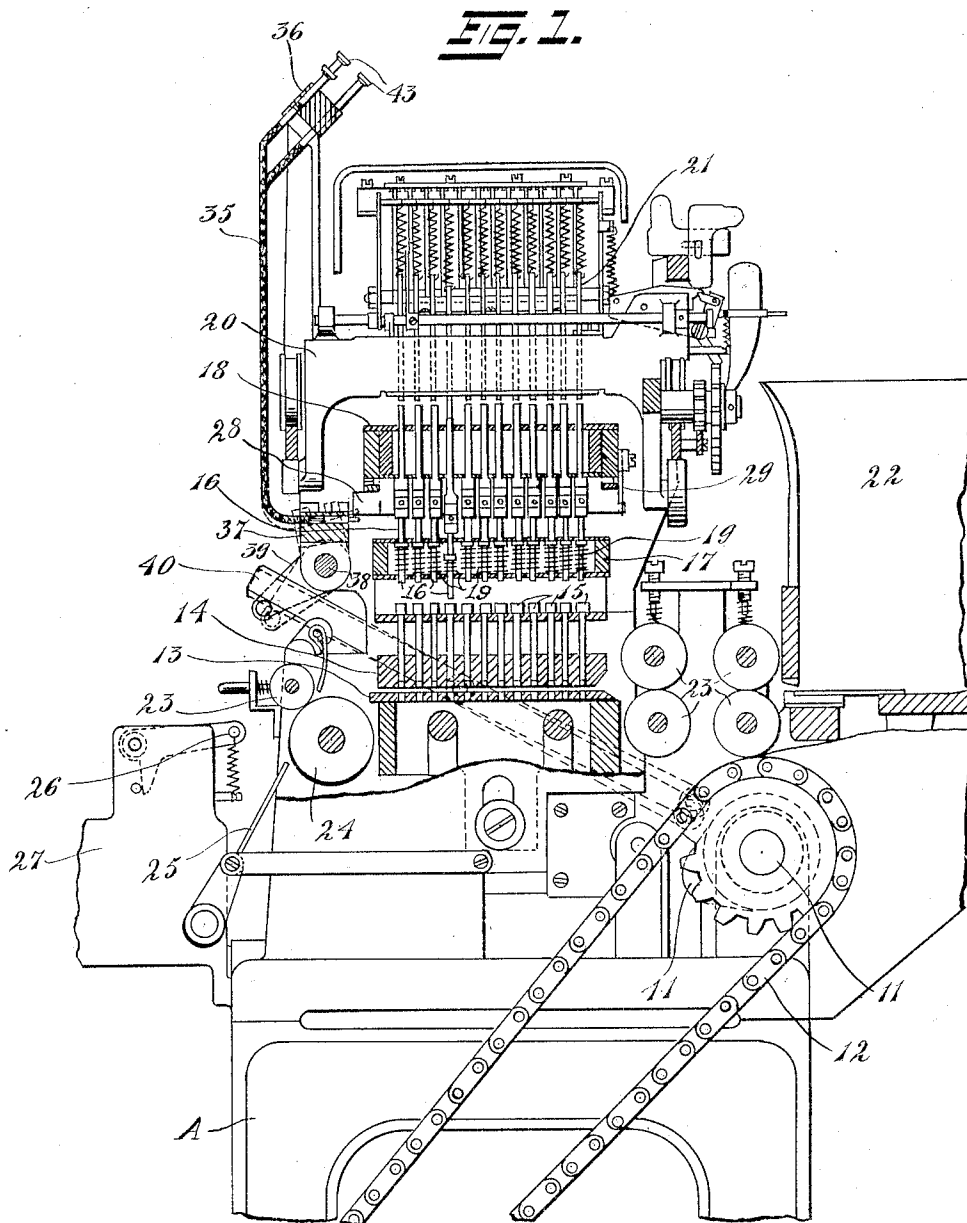


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FLEXIBLE CONTROLLING MEANS.
APPLICATION FILED DEC. 12, 1916.

Patented Oct. 21, 1919.
3 SHEETS—SHEET 1.



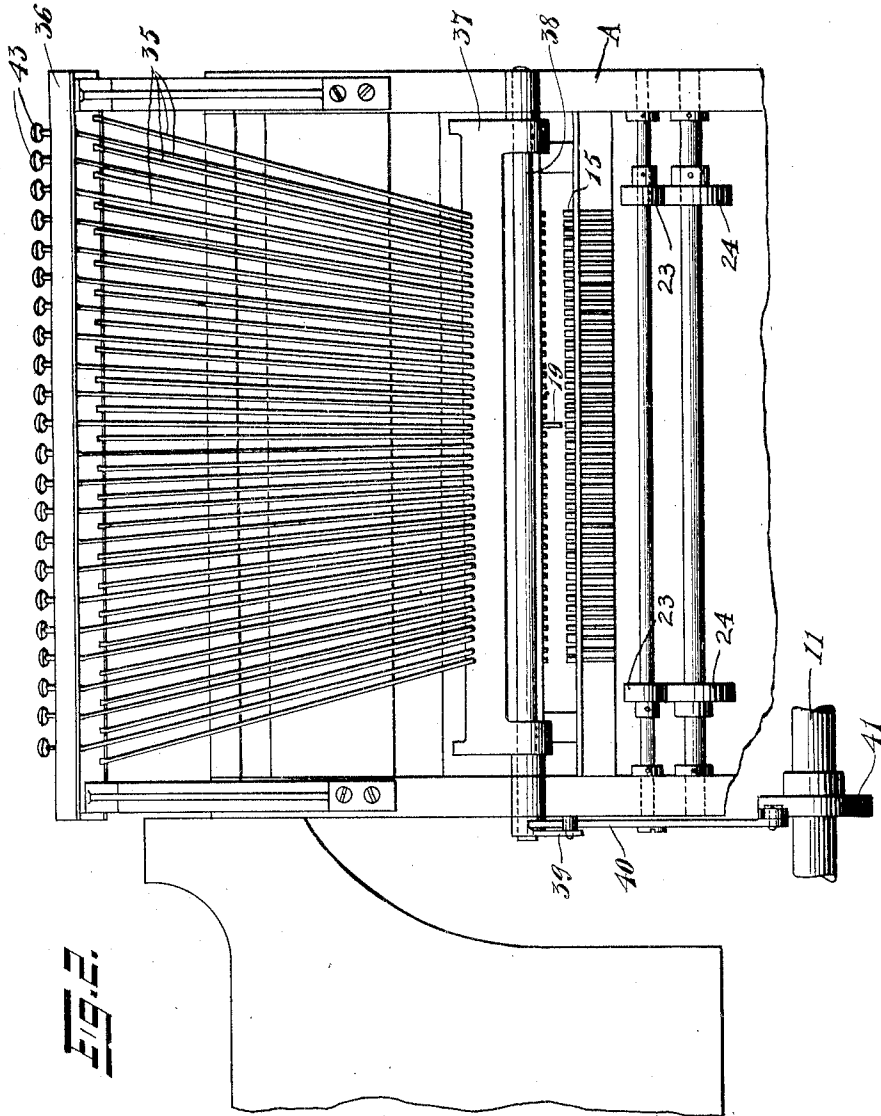
Witnesses:
Charles Whitman
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Inventor:
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By his Atty. *W. H. Richards*

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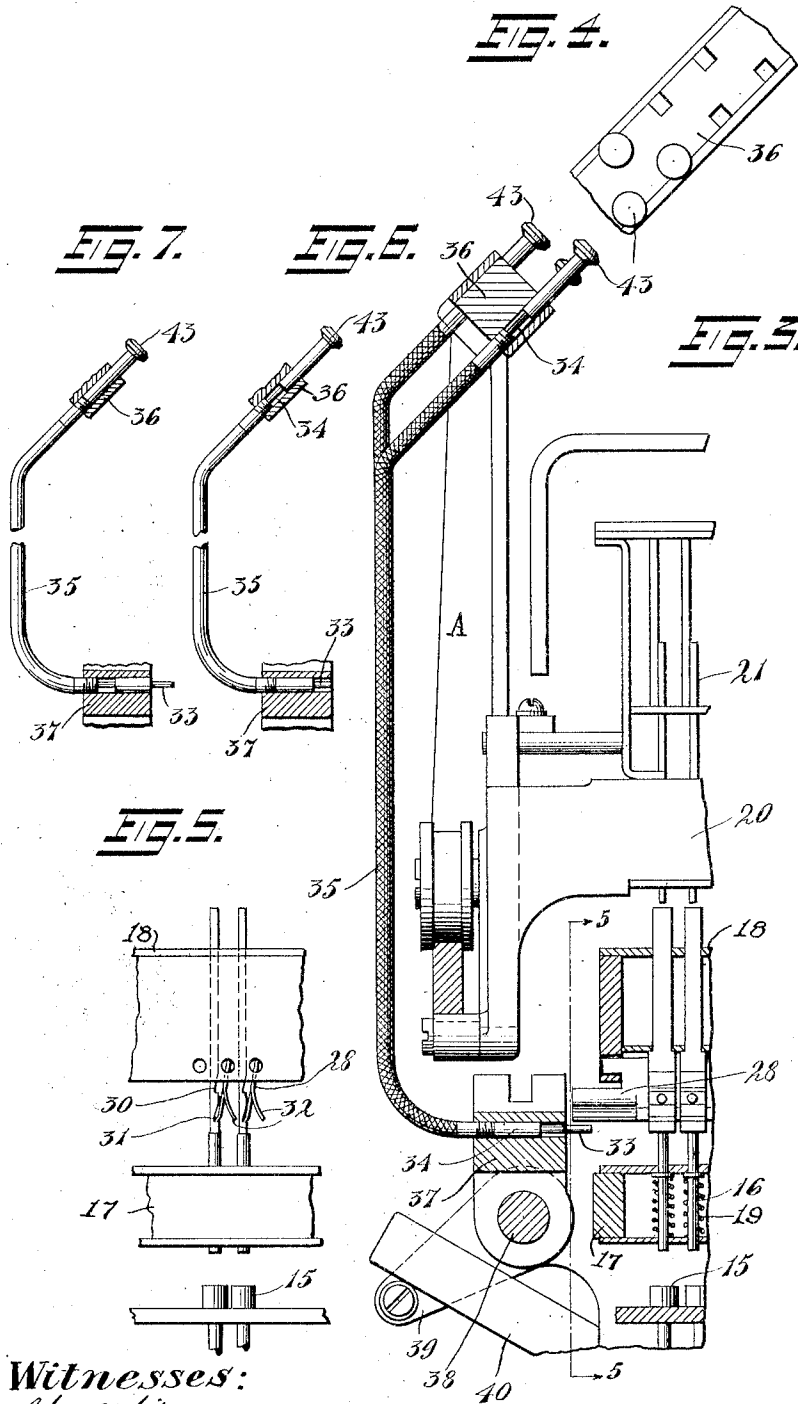
William W. Lasker
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UNITED STATES PATENT OFFICE.

WILLIAM W. LASKER, OF BROOKLYN, NEW YORK, ASSIGNOR TO POWERS ACCOUNTING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

FLEXIBLE CONTROLLING MEANS.

1,319,477.

Specification of Letters Patent.

Patented Oct. 21, 1919.

Application filed December 12, 1916. Serial No. 136,391.

To all whom it may concern:

Be it known that I, WILLIAM W. LASKER, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Flexible Controlling Means, of which the following is a specification.

This invention relates to perforating machines in general, and more particularly to means for controlling gang punches.

One of the main objects of the present invention is to provide flexible controlling means for setting the gang punches.

These and other features, capabilities, and advantages of the invention will appear from the subjoined detail description of one specific embodiment thereof illustrated in the accompanying drawings, in which—

Figure 1 is a fragmental sectional view showing a perforating machine equipped with the present improvement.

Fig. 2 is a fragmental elevational view of the same.

Fig. 3 is an enlarged fragmental view illustrating the flexible connection.

Fig. 4 is a fragmental plan view of Fig. 3.

Fig. 5 is a fragmental view along the line 5—5 of Fig. 3.

Figs. 6 and 7 illustrate, diagrammatically, successive positions of a flexible connection.

In the embodiment illustrated there is provided a frame A having a shaft 11 suitably connected by the chain 12 with any suitable source of power, not shown. The frame A is provided with a die plate 13, above which is disposed a guide plate 14 having openings in alinement with one another to accommodate the punches 15. The die plate and guide plate are vertically reciprocable to bring the punches 15 into contact with the settable means or pins 16 mounted in the frames 17 and 18. The pins 16 are resiliently maintained in raised position by the springs 19.

Above the pins 16 travels the carriage 20 having the setting pins 21 which are connected with suitable actuators, not shown in the present instance, but fully described and illustrated in my copending application, Serial No. 116,957, filed August 26, 1916. The carriage 20 will advance a perforation space with every actuation of a setting pin in the usual manner, and with each actuation of a setting pin 21, a settable pin

16 (as shown in Fig. 1) will be depressed and anchored in said depressed position for cooperation with the thereto alined punch 15 when the plates 13 and 14 are raised.

A suitable receptacle 22 is disposed at one side of the frame A, from which the cards to be perforated are fed in the usual manner to the feed rolls 23, from which they are fed to the plates 13 and 14, and after perforation discharged from said plates 13 and 14 by suitable rollers, not shown, to a position between the rollers 23 and 24, from which they are conveyed to the flipper 25, which cooperates with the rod 26 to securely and orderly pack the discharged cards into the receiver 27.

For anchoring the settable pins 16, when actuated by the setting pins 21, the oscillating anchoring means or plates 28 are provided, one plate for each row of settable pins 16. The plates 28 are pivotally connected to the frame 18 and provided with springs 29 for normally and resiliently maintaining their lower edges in contact with the pins 16. Each pin 16 is provided with two notches 30 and 31, Fig. 5. The lower notch 31 is normally engaged by a plate 28 when the pin is disposed in raised position. When a pin is depressed, the plate 28 in engagement therewith will be forced outward until the upper notch 30 registers therewith, and then the plate will immediately snap into such notch and lock such pin in depressed position.

For restoring the pins 16, the plates 28 are oscillated out of engagement with such pins 16 and for this purpose the plates are each provided with a finger 32 (Fig. 5). These fingers 32 are disposed so that their lower inclined faces may be contacted and moved by extended settable devices or pins 33 formed at the ends of the cables 34 which are disposed in the conduits 35. The conduits 35 extend from the extension 36 to the oscillating movable part or block 37 extending upwardly from the shaft 38 and mounted thereon. The shaft 38 has an arm 39 extending downwardly therefrom which is connected by the rod 40 with the cam 41 on the shaft 11. Thus, by the actuation of the shaft 11, the shaft 38 will be rocked, and in turn the block 37 disposed thereon will be rocker or actuated. The conduits 35 are flexible to permit the actuation of the block 37.

The cables 34 connect the pins 33 with the keys 43 extending upwardly from the extension 36. By means of the keys 43 the pins 33 may be actuated. The operation of the foregoing is substantially as follows: All those rows of pins 16 that are to be restored with every perforation at a certain setting will have the keys 43 depressed so that the pins connected therewith will be extended. Thereupon when the shaft 38 is rocked, all those pins 33 that are extended will engage the lower inclined faces of the fingers 32 to oscillate the plates 28 out of engagement with the pins 16, and thereby permit the springs 19 to again raise the pins 16 to their normal position.

It is obvious that various changes and modifications may be made to the details of construction without departing from the spirit of the invention, as defined in the claims.

I claim:—

1. In a device of the character described, the combination of a plurality of settable means; a movable part; and settable devices moved by said part and adapted to be set relative to said part into operative or inoperative position for releasing the settable means from set position.

2. In a device of the character described, the combination of a plurality of settable means 16 adapted to be set into operative position to effect punching; means 28 for anchoring the settable means in set position; a movable device-carrying part 37; and settable devices 33 moved by the device carrying part and adapted to be set relative thereto into operative or inoperative relation with the anchoring means.

3. In a device of the character described, the combination of a plurality of settable means adapted to be set into operative position; means for anchoring the settable means into set position; a movable device-carrying part; settable devices carried on said part and adapted to be set relative thereto into position for actuating said anchoring means for releasing said settable means; actuating means; and a connection between the actuating means and the settable devices.

4. In a perforating machine, the combination of a plurality of punches; a plurality of settable means adapted to be set in cooperative relation with said punches; means for anchoring certain of the setting means in set position; an oscillating device-carrying part; settable devices carried on said part and adapted to be set into operative position for engaging said anchoring means whereby said anchoring means may be caused to release said settable means; actuating means; and a flexible connection between the actuating means and the settable devices.

5. In a perforating machine, the combination of a plurality of punches; a plurality

of settable means adapted to be set into cooperative relation with said punches for effecting punching; means for anchoring certain of the settable means in set position; fingers on said anchoring means; an oscillating device-carrying part; settable devices carried on said part and adapted to be set into operative or inoperative position for engaging or failing to engage said fingers whereby said anchoring means is or is not caused to release said settable means; a group of keys; and a flexible connection between said keys and the respective settable devices whereby said settable devices are at will set into operative or inoperative position.

6. In a perforating machine, the combination of a plurality of punches; a plurality of settable pins adapted to be set into cooperative relation with said punches for effecting punching; means for anchoring certain of the settable pins in set position; fingers carried on said anchoring means; an oscillating block; settable devices carried on said block and adapted to be set into operative or inoperative position for engaging or failing to engage said fingers whereby said anchoring means is or is not caused to release said settable pins; a group of keys; and a flexible connection between said keys and the respective settable devices whereby said settable devices are at will set to operative or inoperative position.

7. In a device of the character described, the combination of settable-pin means; pin-setting means adapted to engage the settable-pin means to move the same to set position, punches for engaging the settable-pin means when the same is set by the pin-setting means, and means for moving said punches to engage the settable-pin means when the same is set by the pin-setting means.

8. In a device of the character described, the combination of settable-pin means, pin-setting means adapted to engage the settable-pin means to move the same to set position, punches for engaging the settable-pin means when the same is set by the pin-setting means, means for moving said punches to engage the settable-pin means when the same is set by the pin-setting means, and means for returning the settable-pin means to normal position after being set by the pin-setting means.

9. In a device of the character described, the combination of means comprising settable-pins, pin-setting means comprising pins adapted to engage said settable pins to move the same to set position, punches for engaging the settable pins when the same are set by said pin-setting means, and means for moving said punches to engage the settable pins when the same are set by said pin-setting means.

10. In a device of the character described, the combination of means comprising settable pins, pin-setting means comprising pins adapted to engage said settable pins to move the same to set position, punches for engaging the settable pins when the same are set by said pin-setting means, means for moving said punches to engage the settable pins when the same are set by said pin-setting means, and means for returning the settable pins to normal position after being set by said pin setting means.

11. In a device of the character described, the combination of means comprising settable pins, said pins when in normal position being raised and being movable to depressed position, pin-setting means comprising pins adapted to engage the settable pins to move said pins to depressed position, punches for engaging the settable pins when the same are in depressed position, and means for moving said punches to engage the settable pins when the same are in depressed position.

12. In a device of the character described, the combination of means comprising settable pins, said pins when in normal position being raised and being movable to depressed position, pin-setting means comprising pins adapted to engage said settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, and means for returning the settable pins from depressed position to raised position.

13. In a device of the character described, the combination of means comprising settable pins, said pins when in normal position being raised and being movable to depressed position, pin-setting means comprising pins adapted to engage said settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, and means for anchoring the settable pins in depressed position.

14. In a device of the character described, the combination of means comprising settable pins, said pins when in normal position being raised and being movable to depressed position, pin setting means comprising pins adapted to engage said settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, and means for anchoring the settable pins in depressed position and returning the same to raised position.

15. In a device of the character described,

the combination of means comprising settable pins, said pins being spring retained in raised position when normal and being movable to depressed position, pin-setting means comprising pins adapted to engage the settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, means for anchoring the settable pins in depressed position and returning the settable pins to raised position, and means for operating said anchoring and returning means, said means for operation having flexible connection to said anchoring and returning means.

16. In a device of the character described, the combination of means comprising settable pins, said pins being spring retained in raised position when normal and being movable to depressed position, pin-setting means comprising pins adapted to engage said settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, means for anchoring the settable pins in depressed position and returning the settable pins to raised position, means for operating said anchoring and returning means, means for receiving cards in position for punching by said punches, and means for removing the cards after they have been punched.

17. In a device of the character described, the combination of means comprising settable pins, said pins being spring retained in normal position and movable to depressed position and having on the stems recess means for engagement, pin-setting means comprising pins adapted to engage said settable pins to move the same to depressed position, punches for engaging the settable pins when the same are in depressed position, means for moving said punches to engage the settable pins when the same are in depressed position, means for anchoring the settable pins in depressed position and returning the settable pins to raised position, said anchoring and returning means comprising oscillating finger plates for engaging the recess means for engagement on the stems of the settable pins and projectable pins for engaging the oscillating finger plates and means for operating the projectable pins, said means for operation having flexible connection to the projectable pins, a die plate for receiving cards in position for punching by said punches, means for moving said cards to position for punching by said punches, and means for removing the cards after they have been punched.

18. In a device of the character described,

the combination of a plurality of settable means adapted to be set into operative position; means for anchoring the settable means into set position; a movable device-carrying part; settable devices carried on said part and adapted to be set relative thereto into position for actuating said anchoring means for releasing said settable means; actuating means; and a connection between the actuating means and the settable devices.

19. The combination with a perforating machine, of a plurality of punches, a plurality of settable pins cooperating with said punches, means for anchoring certain of such settable pins in punch actuating position, and means for restoring said anchoring means, said restoring means comprising a plurality of pins, an oscillating frame on which said pins are mounted, fingers on said anchoring means for cooperating with said pins to disengage said anchoring means from said settable pins, a plurality of keys, and a plurality of flexible connections connecting said keys with said restoring pins whereby said restoring pins may be set in or out of restoring position.

20. In a perforator, the combination with a plurality of punches, a plurality of settable pins for cooperating with said punches, means for resiliently maintaining said settable pins out of cooperation with said punches, plates for anchoring said settable pins in cooperative position with said punches when said settable pins are set, said pins having notches to cooperate with said plates, and means for bringing said plates out of engagement with said pins to permit the settable pins to be restored, said restoring means comprising a plurality of pins, an oscillatable member on which said pins are mounted, and means for actuating said oscillatable member whereby said pins will cooperate with said plates to disengage said plates from said settable pins.

21. In a perforator, the combination with a plurality of punches, of a plurality of settable pins cooperating with said punches, means for resiliently maintaining said pins out of cooperation with said punches, notches in said pins, oscillatable plates for cooperating with said notches to anchor said settable pins in position to cooperate with said punches, resilient means for maintaining said plates in cooperation with said notches, and means for withdrawing said

plates from engagement with said pins to permit said pins to be restored.

22. In a perforator, the combination with a plurality of punches, of a plurality of settable pins cooperating with said punches, means for resiliently maintaining said pins out of cooperation with said punches, notches in said pins, oscillatable plates for cooperating with said notches to anchor said settable pins in position to cooperate with said punches, resilient means for maintaining said plates in cooperation with said notches, means for withdrawing said plates from engagement with said pins to permit said pins to be restored, fingers on said plates, said restoring means comprising a plurality of restoring pins to cooperate with said fingers, an oscillatable member for mounting said restoring pins, and means for actuating said oscillatable member to bring said pins into contact with said fingers thereby to actuate said plates out of engagement with said settable pins to permit said settable pins to be restored.

23. In a perforator, the combination with a plurality of punches, of a plurality of settable pins cooperating with said punches, means for resiliently maintaining said pins out of cooperation with said punches, notches in said pins, oscillatable plates for cooperating with said notches to anchor said settable pins in position to cooperate with said punches, resilient means for maintaining said plates in cooperation with said notches, means for withdrawing said plates from engagement with said pins to permit said pins to be restored, fingers on said plates, said restoring means comprising a plurality of restoring pins to cooperate with said fingers, an oscillatable member for mounting said restoring pins, means for actuating said oscillatable member to bring said pins into contact with said fingers thereby to actuate said plates out of engagement with said settable pins to permit said settable pins to be restored, a plurality of keys, and a plurality of flexible connections connecting said keys with said restoring pins whereby said restoring pins may be set into or out of position for coacting with said anchoring plates.

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Witnesses:

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