(No Model.)

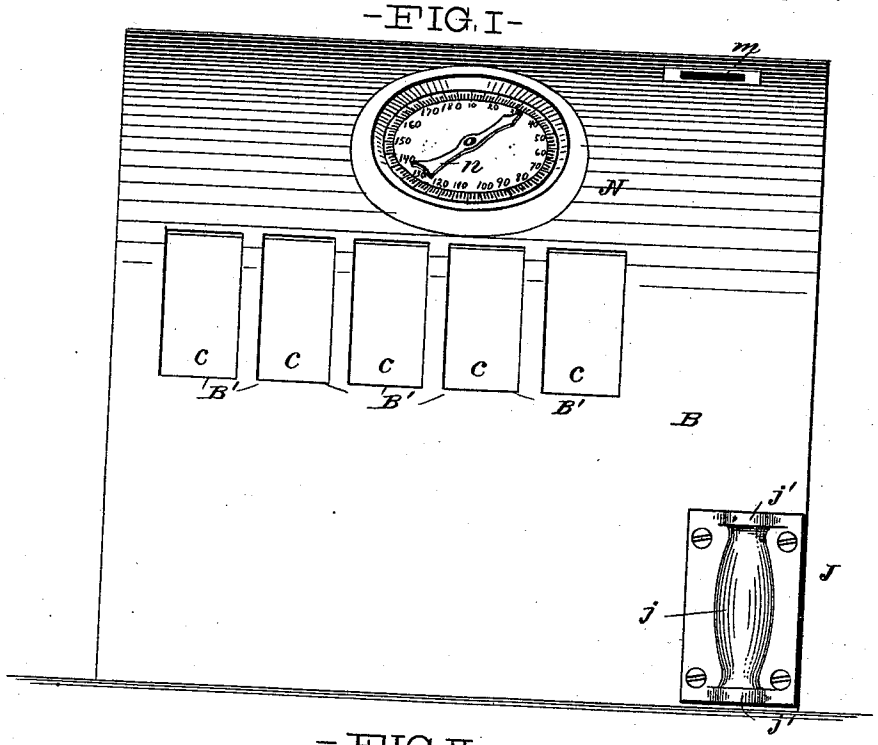
3 Sheets—Sheet 1.

J. McFARLAND & G. H. REID.

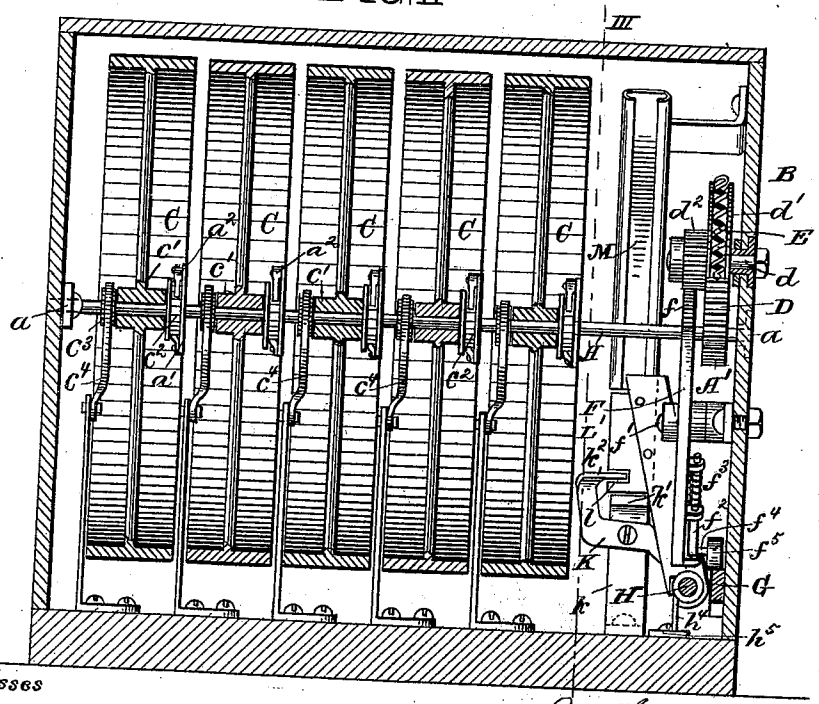
COIN CONTROLLED CARD EXHIBITING MACHINE.

No. 519,002. Patented May 1, 1894.

-FIG. I-



-FIG. II-



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(No Model.) 3 Sheets—Sheet 2.

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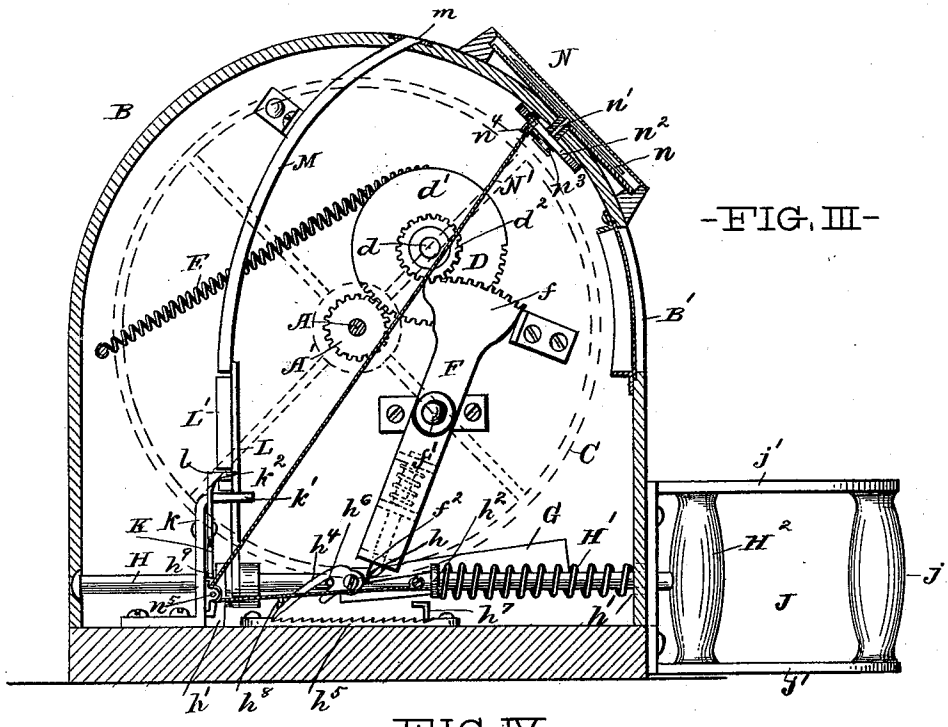
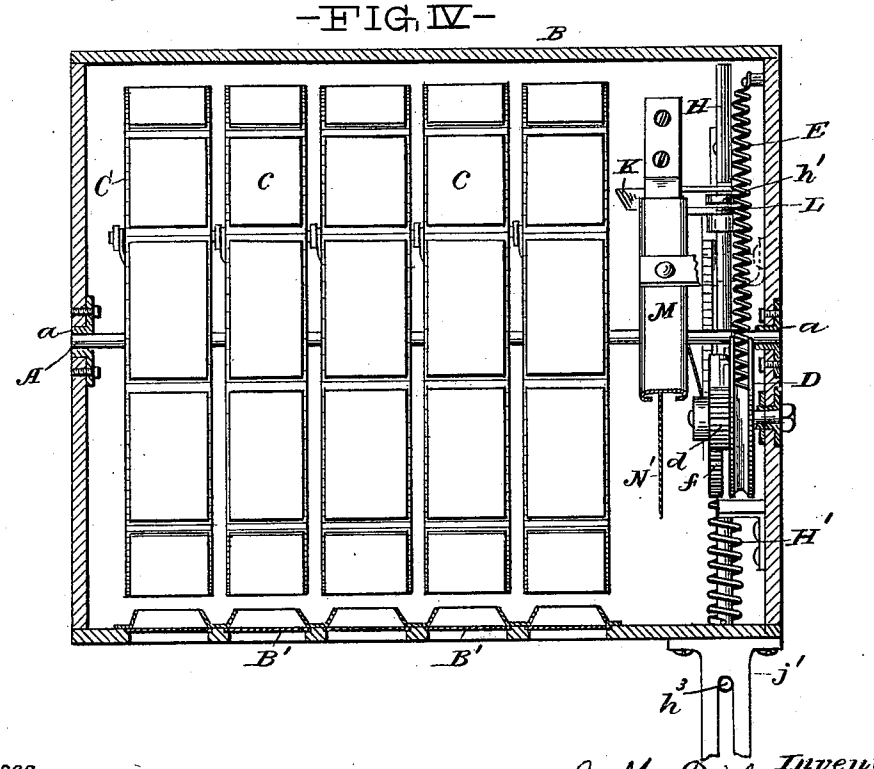
-FIG. III-



-FIG. IV-



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(No Model.) 3 Sheets—Sheet 3.

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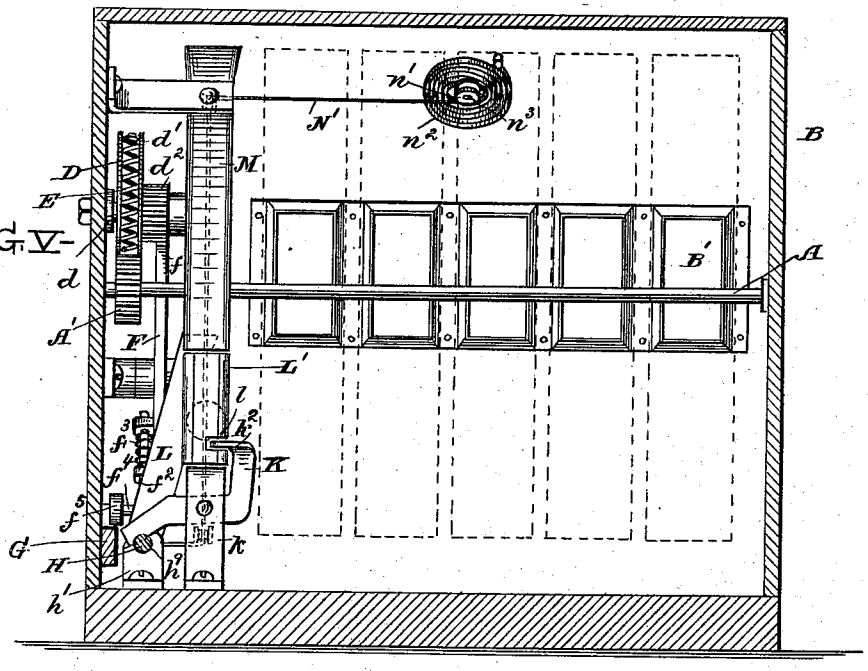
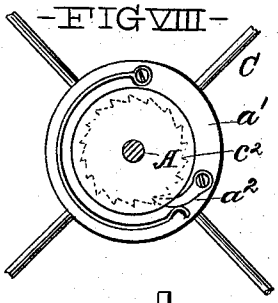
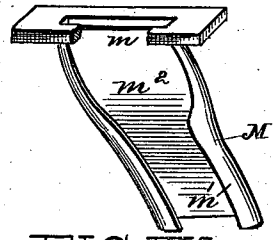
-FIG. V-



-FIG. VIII-



-FIG. VII-



-FIG. IX-

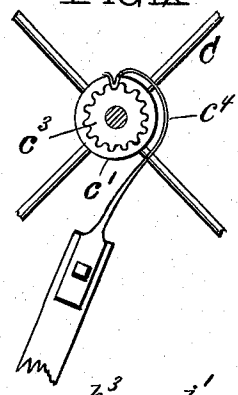
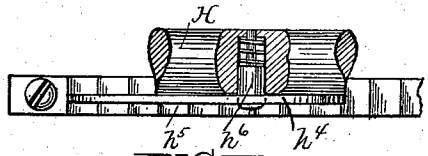


FIG. VI A



-FIG. VI-

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UNITED STATES PATENT OFFICE.

JOHN McFARLAND AND GEORGE H. REID, OF CLEVELAND, OHIO.

COIN-CONTROLLED CARD-EXHIBITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 519,002, dated May 1, 1894.

Application filed September 4, 1893. Serial No. 484,686. (No model.)

To all whom it may concern:

Be it known that we, JOHN MCFARLAND and GEORGE H. REID, residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Coin-Controlled Card-Exhibiting Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail, one mechanical form embodying the invention; such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—Figure I represents a front elevation of our improved card exhibiting and grip testing machine; Fig. II, a longitudinal vertical section of the same; Fig. III, a transverse section on the line III—III, Fig. II; Fig. IV, a horizontal section of the machine, illustrating the parts in top plan view; Fig. V, a longitudinal section of the machine, looking toward the front of the same, and illustrating the interior of the machine with the card wheels removed; Fig. VI, a detail view on an enlarged scale, of the pawl mechanism for the pull-rod; Fig. VI^a, a detail view of the pull rod, pawl, and the spring bolt holding the latter in its positions; Fig. VII, a view of a portion of the coin chute, illustrating the device for preventing coin smaller than the predetermined coin from passing down to the coin-operated releasing mechanism, and Figs. VIII and IX, detail views, respectively of the pawl and ratchet mechanism for a card wheel, and the stop for the same.

A shaft, A, is journaled in suitable bearings, a, in the end pieces of a casing, B, which incloses the entire mechanism of the machine, and which is provided with a series of openings, B′, in its front, through which the cards may be viewed. A number of card wheels, C, having cards, c, secured upon their peripheries, and corresponding in number to the number of openings in the casing, are journaled to revolve with their hubs, e', upon the shaft. The card exhibiting peripheries of said wheels register with the openings in the casing, so that the cards upon the periphery of each wheel will show through its respective opening. Collars a', are secured upon the shaft, and have spring-actuated pawls, a^2, which engage ratchet wheels, c^2, upon the hubs of the card wheels, so that the shaft may rotate the card wheels when it is itself rotated. Cog wheels, c^3, having notches registering with and corresponding in number to the cards upon the peripheries of the card wheels, are formed at the other ends of the hubs of the card wheels, and have their notches engaged by the V-shaped ends of curved springs, c^4, which are suitably supported from the casing. Said springs are of sufficient strength to have their ends engage the notches of the cog wheels and to stop the latter and the card wheels, when their impetus has sufficiently diminished; while they are sufficiently weak to admit of the V-shaped ends slipping upon the cog wheels at the beginning of the revolution of said wheels and card wheels. In this manner the proper stoppage of the card wheels, with a card exhibiting through its proper opening, will be insured.

A pinion, A′, is secured upon the shaft, at one end of the same and meshes with a partly cogged wheel, D, which is journaled upon a stud, d, projecting from the inside of one of the ends of the casing. Said partly cogged wheel has a spring, E, secured to a peripherally grooved portion, d', of its circumference, and the other end of the spring is suitably secured to the casing; so that the partly cogged wheel may be rotated back to its original position by the spring, when it has been partly rotated in a direction against the pull of the spring, and said spring has been wound upon the grooved periphery of the partly cogged wheel. A pinion, d^2, is secured to the hub of the partly cogged wheel, and is engaged by a cogged segment, f, upon the end of one arm of a lever, F, fulcrumed upon a stud, f', projecting from the end of the casing. The lower arm of said lever has a spring actuated bolt, f^2, sliding upon one side,—a spring, f^3, upon said bolt, forcing the latter outwardly and downwardly. A stud, f^4, having a roller, f^5, upon it, projects from the bolt; and said roller may travel upon a forwardly and upwardly inclined track, G, so that the bolt may

be raised when the lower arm of the lever is drawn forward. The lower beveled end of the bolt f^2 engages a notch, h, in a horizontally sliding pull-rod, H. Said pull-rod is guided in suitable horizontal bearings, h', and has a spring, H', coiled around it. Said spring bears against the forward side of the casing and against a collar, h^2, upon the rod; so that said spring will return the pull-rod, when the latter has been drawn outward. A grip frame, J, is secured upon the forward side of the casing, and has a vertical handle portion, j, and two horizontal and longitudinally slotted sides, j', which serve as guides for the reduced ends h^3, of a pull handle, H^2, secured vertically upon the outer end of the pull-rod. This handle may be gripped by the fingers of the hand, while the crotch of the thumb is braced against the handle portion of the grip frame, when the pull handle may be drawn out against the pressure of the return spring H'. A pawl, h^4, is pivoted upon the side of the pull-rod and engages by its gravity a ratchet plate, h^5, secured upon the bottom of the casing. Said pawl and ratchet plate will thus prevent the pull-rod from returning, while the latter is being drawn out. The pawl is prevented from being disengaged from the ratchet plate, on the forward strrke of the pull rod, and from dropping down and engaging the ratchet plate, on the back stroke of said rod, by means of a spring bolt, h^6, sliding in the pull rod and engaging the pawl in its raised and lowered positions. As the end of the bolt is rounded, the pawl may be disengaged from the bolt and force the latter back, when forcibly moved, while yet being held sufficiently by the bolt to prevent displacement by slight jars or by the longitudinal motion of the pull rod. Two stops, h^7 and h^8 are arranged at the respective ends of the throw of the pawl; and one, h^7, of said stops, engages the pawl from the under side and raises it when it arrives at the extreme of its forward stroke,—raising it out of engagement with the ratchet plate. The other stop, h^8, is arranged so as to engage the pawl and throw it down against the frictional pressure of the spring-actuated bolt, when the pawl arrives at the rear extreme of its throw, whereby the pawl is again thrown into engagement with the ratchet plate. The rear portion of the pull-rod is formed with a notch, h^9, which is engaged by the lower gravitating arm of a coin-released trigger, K, which is fulcrumed to rock transversely to the pull-rod upon a bracket, k, which is formed with a small platform, k', closing the end of the movable portion of the coin chute and serving as a stop for the actuating coin. An arm, L, projects from the pull-rod, and has the movable portion L', of the coin chute secured upon its end. The movable portion of the coin chute is flat, and is of sufficient width to permit a coin of the predetermined size and denomination to pass down through it and to rest upon the platform k'. A notch, l, is cut into the edge of the movable portion of the coin chute, sufficient to intersect the passage through the same, and the oblique and horizontally projecting upper end k^2, of the coin released trigger projects into said notch so as to bear against a coin when the latter is dropped in the chute. The notch h^9, in the rear portion of the pull-rod, is of a sufficient length to permit the pull-rod and the movable portion of the coin chute to move a short distance before being released by the trigger; so that the coin in the movable portion of the coin chute may be carried along the oblique edge of the trigger and tilt the latter to disengage the pull-rod. The stationary coin chute, M, is suitably supported from the casing, and opens through the latter with its upper end,—being there provided with a slot, m, into which the actuating coin may be inserted. The chute is curved and has its lower end registering with the upper end of the movable portion of the coin chute, so that both of said chute portions may form one continuous chute. The under side of the coin chute is open, with the exception of two inwardly bent flanges, m', which are sufficiently wide to hold a coin of the predetermined size and denomination, while they will admit of smaller coins dropping out. For the purpose, however, of insuring the perfect guidance of the actuating coin through the chute, the flanges are preferably cut away at one place only, as shown at m^2, Fig. VII, at which place a coin smaller than the predetermined size will drop out, while the remaining portions of the flanges are sufficiently wide to hold and completely guide the actuating coin.

A dial, N, is secured upon the casing, and has an index hand, n, pivoted with its shaft, n', in its center. A flat helical spring, n^2, is secured to the shaft of the hand and to the casing, back of the dial; and a pulley, n^3, is secured upon the inner end of the shaft. A cord N', is secured to and winds upon the pulley, at one end, and passes over guide pulleys, n^4 and n^5, to the pull-rod, to which it is secured at its other end. When the strength of the return spring is known, and the amount of pull upon the handle required to compress said spring to a given degree is known, the dial may be subdivided accordingly, so as to indicate in pounds and ounces the gripping strength required to draw out the pull-rod by its handle.

When a coin of the predetermined size and denomination is dropped into the chute, said coin will rest against the oblique edge of the trigger and upon the platform at the lower end of the coin chute. When now the pull handle is gripped, the pull-rod may be drawn a short distance, permitting the coin to push the trigger out of engagement with the pull-rod, whereupon the pull-rod may be drawn out to its full extent, carrying with it the segment-carrying lever F, and rotating the partly cogged wheel against the tension of the spring. The

amount of pull will be registered upon the dial, and the pull-rod will be prevented from returning until it has been drawn out to its full extent, and its pawl has been released from the ratchet plate. This does not occur until the spring bolt of the segment-carrying lever has been released from the notch in the pull-rod and the lever has been returned to its original position by the revolution of the partly cogged wheel caused by the tension of the spring for the same. This last mentioned revolution of the partly cogged wheel will rotate the shaft A in the direction in which the pawls upon said shaft will carry with them their ratchet wheels and the card wheels, and the latter will receive such impetus, that they will continue revolving after the shaft has stopped,—each wheel revolving until it loses its momentum, and revolving independently of the other wheels. In this manner chance combinations of the cards upon the peripheries of the card wheels may be exhibited through the openings in the casing.

The cards may be pictures, or they may have letters or figures upon them, or any other marks which may form suitable combinations.

The machine may be employed to exhibit various samples, chance being then relied upon to produce pleasing combinations.

Other modes of applying the principle of our invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth respectively in the following claims are employed.

We therefore particularly point out and distinctly claim as our invention—

1. In a card exhibiting machine, the combination with a pull-rod having a notch, of a lever connected to operate the exhibiting mechanism and having means for returning it to its normal position,—said lever being provided with a spring bolt which engages the notch in the pull-rod, substantially as set forth.

2. In a card exhibiting machine, the combination of a pull-rod and handle,—said rod being formed with a notch,—a lever connected to operate the exhibiting mechanism and provided with means for returning it to its normal position, a spring bolt upon said lever to engage the notch in the pull-rod and provided with a projecting stud, and an inclined track upon which said stud travels so that the bolt may be raised out of engagement with the notch of the pull-rod, substantially as set forth.

3. In a card exhibiting machine, the combination of a pull-rod connected to actuate the exhibiting mechanism, a gravitating pawl pivoted upon said rod, a spring bolt in said rod and engaging said pawl in its raised and lowered position, a ratchet plate engaged by said pawl, and stops for raising and dropping the pawl, respectively arranged at the forward and rear end of the ratchet plate, substantially as set forth.

4. In a card exhibiting machine, the combination of a shaft having a pinion at one end, exhibiting wheels journaled upon said shaft and having ratchet wheels and cog wheels, pawls upon the shaft engaging said ratchet wheels, springs having V-shaped ends engaging the notches of the cog wheels, a partly cogged wheel engaging the pinion upon the shaft and provided with a peripheral groove and a pinion upon its hub, a spring secured to the partly cogged wheel and rigidly secured at its other end, a lever having a cogged segment engaging the pinion of the partly cogged wheel, a spring bolt upon said lever having a laterally projecting stud, an inclined track upon which said stud rides, a pull-rod having a notch engaged by said spring bolt, and a spring for returning said rod to its normal position, substantially as set forth.

5. In a card exhibiting machine, the combination of a pull-rod connected to actuate the exhibiting mechanism and formed with a notch, a coin chute having a notch in its side, and a trigger fulcrumed to engage the notch in the pull-rod and to have an oblique end projecting into the notch of the coin chute to be displaced by the actuating coin, substantially as set forth.

6. In a card exhibiting machine, the combination of a pull-rod connected to actuate the exhibiting mechanism and formed with a notch, a stationary coin chute, a movable coin chute portion forming a continuation of the stationary coin chute and supported from the pull-rod and formed with a notch in its side, and a trigger fulcrumed to engage the notch in the pull-rod and to have an oblique end projecting into the notch of the movable coin chute portion, substantially as set forth.

7. In a card exhibiting machine, the combination of a pull-rod connected to actuate the exhibiting mechanism and formed with a notch and stationary coin chute, a movable coin chute portion supported from the pull-rod and formed with a notch in its side, a platform closing the lower end of said movable chute portion, and a pawl engaging the notch in the pull-rod and formed with an oblique end which projects into the notch of the movable portion, substantially as set forth.

In testimony that we claim the foregoing to be our invention we have hereunto set our hands this 2d day of September, A. D. 1893.

JOHN McFARLAND.
GEORGE H. REID.

Witnesses:
WM. SECHER,
J. C. TURNER.