(No Model.) 2 Sheets—Sheet 1.

E. R. BEACH & H. A. BERGER.

CHECK PUNCH.

No. 490,894. Patented Jan. 31, 1893

Fig. 2.

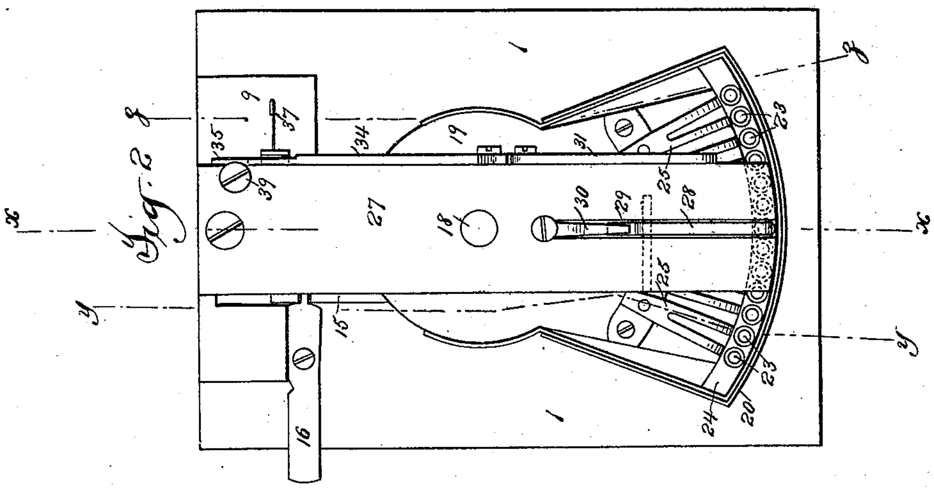
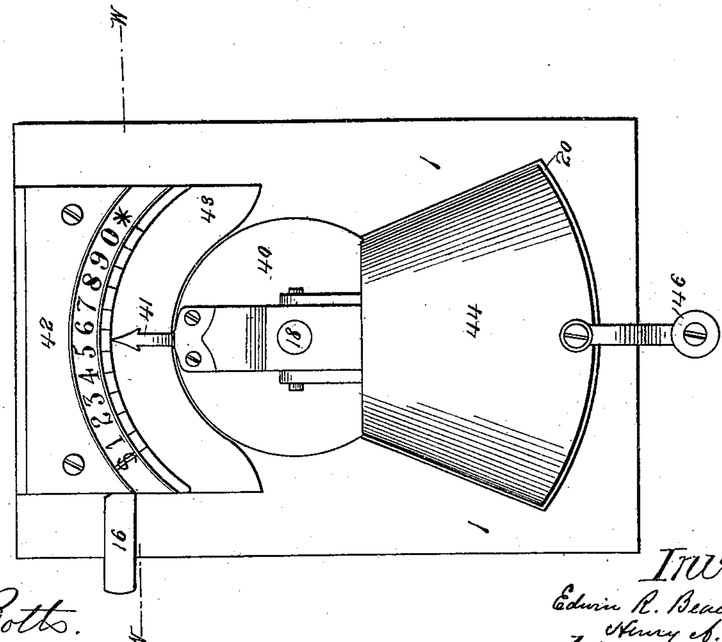


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

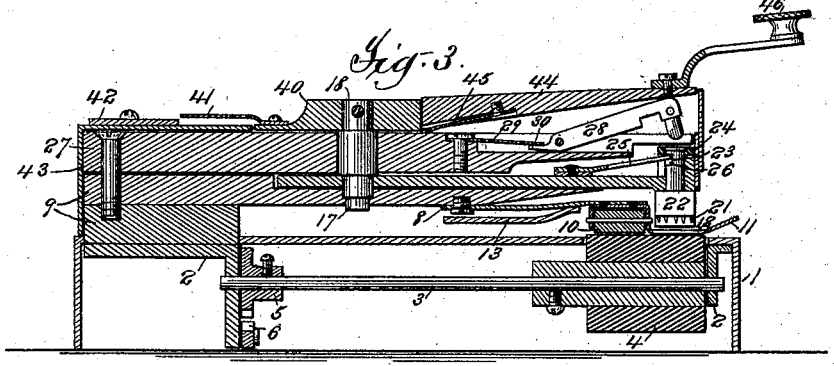


Fig. 4.

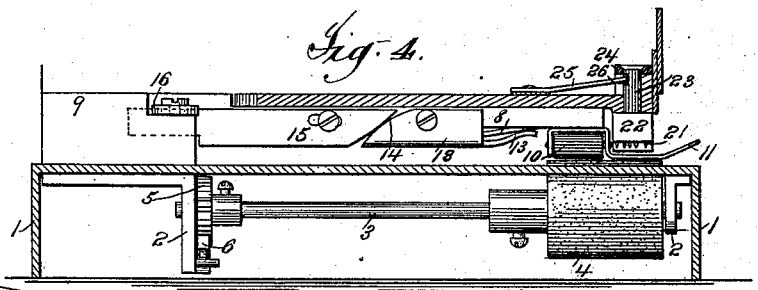


Fig. 5.

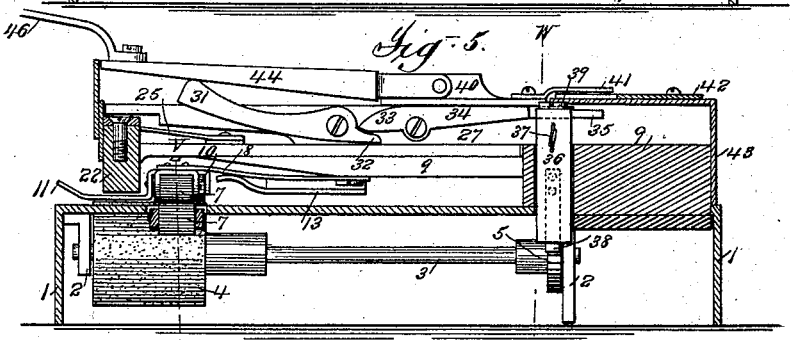


Fig. 7.

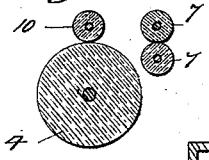
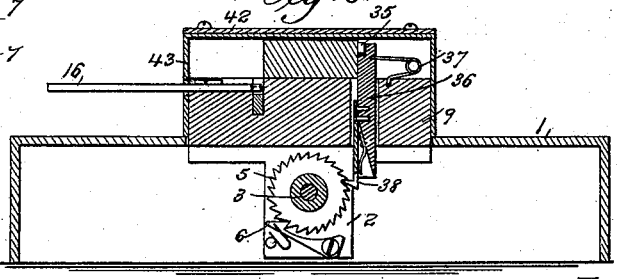


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWIN R. BEACH, OF JERSEY CITY, NEW JERSEY, AND HENRY A. BERGER, OF BROOKLYN, NEW YORK.

CHECK-PUNCH.

SPECIFICATION forming part of Letters Patent No. 490,894, dated January 31, 1893.

Application filed January 2, 1892. Serial No. 416,790. (No model.)

To all whom it may concern:

Be it known that we, EDWIN R. BEACH, of Jersey City, in the county of Hudson and State of New Jersey, and HENRY A. BERGER, of Brooklyn, in the county of Kings and State of New York, both citizens of the United States, have invented certain new and useful Improvements in Check-Punches, of which the following is a specification.

Our invention relates to certain new and useful improvements in punches for checks, bonds, stock, and other commercial paper and securities, employed as a means of protection against the altering or "raising" of the original figures upon such instruments, and particularly to that class of punches in which the figures are outlined by a number of small holes, in contradistinction to those punches in which the entire figure is completely cut out of the paper.

The punches now on the market, so far as we are aware, are objectionable in that they are complicated in construction peculiarly liable to get out of order, and are expensive to manufacture.

It is the object of our invention, therefore, to obviate these objections and to produce a punch not only simple and economical in construction and not liable to get out of order, but at the same time affording a greater protection against the altering or "raising" of the original figures than the mechanisms heretofore employed.

To this end our said invention consists in the details of construction and the arrangement and combination of parts, all as hereinafter more particularly described and pointed out in the claims.

Referring to the accompanying drawings, in the several figures of which like parts are similarly designated: Figure 1, is a top view of our improved device; Fig. 2, is a similar view with the dial and striking or punch actuating mechanism removed; Fig. 3, is a central longitudinal section in the line *x*, *x*, Fig. 2. Fig. 4, is a view taken on the line *y*, *y*, Fig. 2, showing the mechanism we employ for raising the feed rolls, and showing the base plate and the punch carrier in section. Fig. 5, is an end for end view, partly in section, taken on the line *z*, *z*, Fig. 2, showing the automatic feed actuating mechanism; Fig. 6, is a section taken on the line *w*, *w*, Figs. 1 and 5; and Fig. 7, is a diagrammatic sectional view on line *v*, *v*, of Fig. 5, looking in the direction of the arrow, showing the relative position of the rolls.

Before proceeding with a detailed description of our improved device, we desire to state that the main features consist of a base plate having mounted thereon a feed mechanism for moving the check or other paper forward after each punching operation; means for separating the friction rolls, constituting a part of said mechanism to permit the insertion and withdrawal of a check, a movable segmental row of punches actuated by a depressible plate, said punches on the full stroke bearing or striking against a moderately soft rubber, gelatine or other yielding roll or wheel constituting a part of the feed mechanism; means for automatically actuating said feed mechanism; and a pointer on the rear portion of the punch carrier for indicating on an appropriate dial the proper figure or character to be punched, all as hereinafter more particularly described and pointed out in the claims.

1, is the base plate, having mounted on the under side thereof and preferably journaled to the brackets 2, a central longitudinal shaft 3, carrying at one end the moderately soft rubber, gelatine or other yielding roll 4, a portion of the circumference thereof extending through an appropriate aperture in the base plate, as shown in Figs. 3, 4, and 5 for receiving the impact of the punches, and constituting also a portion of the feed mechanism, and at the opposite end of the said shaft is arranged the cog or gear-wheel 5, provided with the spring locking pawl 6. Mounted also upon the under side of said base plate and having a portion of its circumference extended through an aperture therein, is one of a pair of friction rolls 7, which may consist either of rubber or of corrugated metal; the corresponding roll being carried upon a spring piece 8, mounted on the under side of a T-bar 9, secured to the base plate; while a similar and larger friction roll 10, carried upon the same piece or an extension thereof, engages with the rubber roll 4, constituting

an additional pair of friction rolls. In use, the roll 10 will be in the center of the device and the pointer 11, provided with the central aperture 12 (Fig. 3) is extended downward and forward for indicating the proper position for placing the character on the paper to be punched.

To admit the insertion and withdrawal of the check or other paper, we provide means for raising the upper friction rolls, said means consisting as shown particularly in Fig. 4, of a rightangled or shouldered plate 13, passing under and impinging against the spring piece or strip 8, upon which are mounted the upper friction rolls, the shoulder on the said plate 13, being cam-faced at 14 and engaging with an oppositely cam-faced slotted connecting rod 15, the device being actuated by the operating lever 16 secured to and having a bearing in, the head of the T-bar 9. The shank of said T-bar is provided with the aperture or pivot-bearing 17 within which rotates the standard or post 18, of the punch carrier. This punch carrier is shown in plan in Figs. 1 and 2, and is preferably of the form illustrated, consisting of the circular rearward portion 19 and the front portion 20 carrying the punches, the latter being an arc of a circle and substantially a quadrant thereof.

The punches consisting of a number of taper pins, 21, outlining the form of the various figures and characters, are secured in the punch blocks 22, from which project the upper circular portions 23, passing through beveled orifices in the guard plate 24, the punches being normally held up out of position by the tongue springs 25, the free ends of which are engaged in grooves, channels or recesses 26 in the circular extension of the punches 23. The pin, post or pivot 18, having its lower portion journaled in the aperture in the shank of the T-bar 9, projects upwardly through said punch carrier at the center of the circular rearward portion thereof, and also at the center of the circle of which the front portion is an arc, and over this pin 18, is passed the bar or shank 27, affording an upper journal for said pin or pivot 18 and carrying also the punch striker and the automatic feed actuating mechanism. The punch striker consists of the hammer 28, normally retained out of contact with the guard plate 24, and punches 23 by the flat or tongue spring 29, engaging with the finger 30 on the hammer.

The feed mechanism is clearly illustrated in Fig. 5, and consists of an upwardly curved bar 31, provided with a finger or lug 32, passing under and engaging with the finger 33 upon the bar 34 the latter being provided with the rearward reduced extension 35, said reduced extension engaging with a shoulder upon the downwardly projecting strip 36, and the position of the parts as illustrated in Fig. 5, being maintained by the spring 37 engaging with the strip 36, and the head of the T-bar 9. The said strip 36, passes downwardly through the base plate and terminates in a spring catch or pawl 38 engaging with the cog or gear-wheel 5 on the shaft 3, of the feed mechanism. If desired, the stop 39 may be arranged to limit the upward movement of the extension 35 on rod 34 and keep the spring 37 always at a slight tension.

For the rearward circular portion of the punch carrier we provided a cover 40 conforming in shape thereto and provided with the pointer 41 to indicate the proper character to be punched, registering with a dial 42 on the upper face of a box or shield 43 surrounding the head of T-bar 9, and provided with an aperture through which extends the lever 16 for raising the friction rolls. The arc shaped portion of the punch carrier is provided with a depressible plate or cover 44 preferably hinged or pivoted to the post of pivot 18 and held in its normal position by the flat spring 45. This depressible plate or cover is provided with the operating handle 46 and against the under side of said plate, impinges the top of the hammer 28 and the end of curved bar 31 of the automatic feed mechanism.

The operation of our device is as follows:— The lever 16 projecting through the aperture in the shield or box 43 is pressed backwardly thereby raising the upper feed rolls 7 and 10 through cam-faced connecting rod 15 operating on the oppositely cam-faced shoulder 14 of the plate 13 bearing against the spring piece 8, carrying said upper friction rolls. The check or other paper is then inserted between said rolls, the proper position for punching the character on said check being indicated by the pointer 11. The lever is then released and the upper friction rolls, descend by the action of the spring piece 8, upon the lower friction roll 7, and the rubber, gelatine or other yielding wheel or roll 4, holding the check firmly in place. By means of the handle 46, the segmental punch carrier is swung or rotated upon the pivot 18 until the pointer 41 indicates on the dial 42, the proper character to be struck, when the handle 46 is pressed downward, carrying with it the depressible plate 44 which thereby forces the spring hammer 28, through the beveled orifices in the guard plate 24, the hammer in turn forcing the punches downward by coming in contact with the circular portions 23 thereof and the conical or taper pins 21, of the punches pass through the aperture 12 in the pointer 11, passing through and puncturing the check and losing their impact in the rubber roll 4. In addition to actuating the hammer 28, upon moving the plate 44 downward, the end of curved rod 31, thereby is also depressed through its finger 32, caught under the finger or projection 33 on rod 34, depressing the rearward reduced extension 35, of said rod 34 and forcing the rod or strip 36 downward against the tension of the spring 37 a sufficient distance to enable the spring pawl 38 on the end of said strip 36 to engage or take up one tooth on the cog or gear-wheel 5, and as soon as the

depressible plate 44 is released, and assumes its normal position the strip 36 will be raised through the action of its spring 37, rotating the cog 5, a short distance, and also the shaft 3, and rubber, gelatine or other yielding roll or wheel 4, thereby moving the check forward a distance sufficient to admit the punching of another character.

It will be observed from the foregoing, that our device does not require the complication of parts and the careful and nice adjustment necessary in the punches now on the market. It will also be observed that we dispense entirely with the female die, substituting therefor the soft rubber, gelatine or other yielding roll or wheel, thereby decreasing the cost of manufacture and rendering the device less liable to get out of order; one special feature of our improved punch being that it pricks or punctures the paper and tears or disintegrates the fiber thereof, in contradistinction both to cutting the block figure entirely out of the paper and also to cutting the outline of the figure in a number of small holes; (which is the case where a male and female die are employed,) and by thus tearing or disintegrating the fiber of the paper a certain protection is afforded against altering or "raising" the characters originally punched therein.

What we claim as new and desire to secure by Letters Patent, is:—

1. In a check punch, a yielding roll for receiving the impact of the punches, arranged below the base plate and extending slightly above the same and engaging with a friction roll, in combination with spring punches and means for actuating the same substantially as described.

2. In a check punch, a yielding wheel or roll for receiving the impact of the punches, mounted on a longitudinal shaft below the base plate and projecting slightly above the same, a friction roll above the base plate, means for automatically revolving the yielding wheel or roll, and means for separating the friction roll and the yielding wheel or roll, in combination with spring punches and means for actuating the same, substantially as described.

3. In a check punch, the combination with spring punches and means for operating the same of a yielding wheel or roll for receiving the impact of the punches, mounted on a longitudinal shaft below the base plate and projecting slightly above the same; a friction roll above the base plate and an additional pair of friction rolls, one above and one beneath, the base plate, and co-operating with said yielding lower roll and means for separating the upper and lower rolls, substantially as described.

4. In a check punch, the combination with spring punches and means for operating the same of a yielding wheel or roll for receiving the impact of the punches, and constituting also one of a pair of friction rolls, the upper companion roll being mounted on a spring piece, and means for raising said upper roll, substantially as described for the purposes set forth.

5. In a check punch, a yielding wheel or roll for receiving the impact of the punches and constituting also one of a pair of friction rolls, the upper companion roll being mounted on a spring piece and provided with a forwardly projecting apertured pointer, in combination with spring punches and means for forcing said punches downwardly through the aperture in the pointer and means for raising said upper roll and pointer, substantially as described.

6. In a check punch, a yielding wheel or roll for receiving the impact of the punches and constituting also one of a pair of friction rolls, the upper companion roll being mounted on a spring piece and provided with a forwardly projecting apertured pointer, and an auxiliary pair of friction rolls, the upper one of which is also carried on a spring piece and means for raising the upper rolls from their companions, in combination with spring punches and means for forcing said punches downwardly through the aperture in the pointer substantially as described.

7. In a check punch, upper and lower feed rolls, the upper rolls being mounted on a spring piece, and means for raising the upper rolls from their companions, said means consisting of a plate passing beneath said spring piece and provided with a cam-faced shoulder, engaging with an oppositely cam-faced connecting rod, and an actuating lever, combined and arranged to operate, substantially as described.

8. In a check punch, provided with spring punches and means for operating the same an automatic feed device comprising a longitudinal shaft passing beneath the base plate, said shaft having secured to one end a yielding wheel or roll, one portion of which receives the impact of the punches, and the other portion of which engages a friction roll, and a cog or gear-wheel at the opposite end of said shaft, in combination with a vertical rod carrying at its lower end a spring pawl engaging with the said gear-wheel and means for automatically raising and lowering, said rod, substantially as and for the purpose described.

9. In a check punch, an automatic feed device comprising a longitudinal shaft passing beneath the base plate, said shaft having secured to one end a yielding wheel or roll, one portion of which receives the impact of the punches, and the other portion of which engages a friction roll; and a cog or gear-wheel mounted on the opposite end of said shaft, in combination with a vertical rod shouldered at its upper end and carrying at its lower end a spring pawl, said rod being retained in its normal position by a spring; a horizontal bar engaging with the shouldered rod and provided with a forwardly projecting finger engaging with a finger on an upwardly curved

lever, and a series of punches actuated by a vertically movable plate adapted also to depress the free end of the said curved lever and actuate the feed mechanism, substantially as described.

10. In a check punch a rotatory quadrant-shaped punch carrier swinging between two fixed parts; means, substantially as described attached to one of said fixed parts for automatically feeding the paper, a lever operating on oppositely cam-faced connections to separate friction rolls, secured to the other fixed part, in combination with spring punches and means for actuating the same, all combined and arranged to operate substantially as specified.

11. In a check punch a rotatory quadrant-shaped punch carrier pivoted between two fixed parts; a spring hammer, and means substantially as specified attached to one of said fixed parts for automatically feeding the paper, a lever operating on oppositely cam-faced connections to separate friction rolls, secured to the other fixed part, in combination with friction rolls, spring punches and means for actuating the spring hammer, substantially as described.

12. In a check punch, a rotatory quadrant-shaped punch carrier pivoted between two fixed parts; spring punches secured in the arc-shaped portion of the carrier and actuated by a spring hammer secured in one of the fixed parts, said hammer being operated by a depressible plate forming a cover for the punch carrier, substantially as described.

13. In a check-punch, a rotatory quadrant-shaped punch carrier pivoted between two fixed parts; spring punches secured in the arc-shaped portion of the carrier and actuated by a spring hammer secured in one of the fixed parts and operated by a depressible plate forming a cover for the punch carrier, in combination with means for automatically moving the paper after each character is punched, substantially as described.

14. In punches for checks a rectangular base from the under surface of which depend puncturing pins, and from the upper surface of which extends a circular upright portion, said punches being retained in their normal position in the punch carrier by means of flat or tongue springs secured at one end to said punch carrier and engaging at their free ends in channels in the circular portions of said punches, substantially as described.

15. In a check punch, two fixed longitudinal bars or blocks, affording upper and lower bearings for a swinging punch carrier, a swinging segmental punch carrier located between said bars, the upper one of which carries a hammer for striking the punches, said hammer being actuated by a segmental depressible plate hinged to an extension of the pivot of the said punch carrier, and a handle for depressing the said plate, substantially as described.

16. A depressible plate forming a cover for a horizontally swinging punch carrier, provided with a projecting lever-handle, and with a rearwardly projecting pointer, in combination with a dial indicating the proper character to be struck, a spring hammer, spring punches and means for automatically feeding the paper, substantially as described.

Signed at New York, in the county of New York and State of New York, this 30th day of December, A. D. 1891.

EDWIN R. BEACH.
HENRY A. BERGER.

Witnesses:
FREDERIC CANAGAN,
EUGENE V. MYERS.