

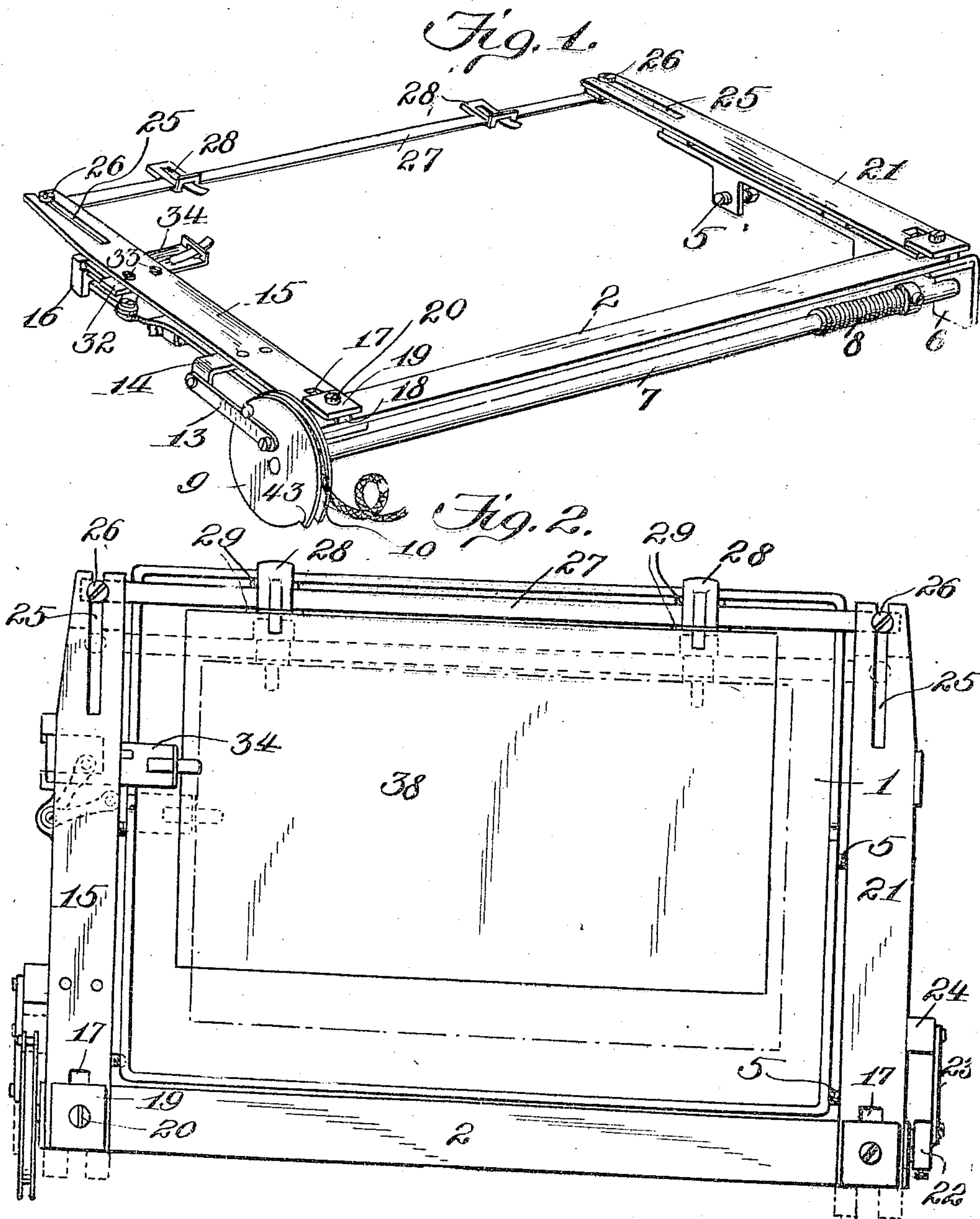
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PATENTED FEB. 12, 1907.

C. M. MORRISON.  
AUTOMATIC SHEET GAGE FOR PRINTING PRESSES.

APPLICATION FILED MAR. 29, 1906.

2 SHEETS—SHEET 1.



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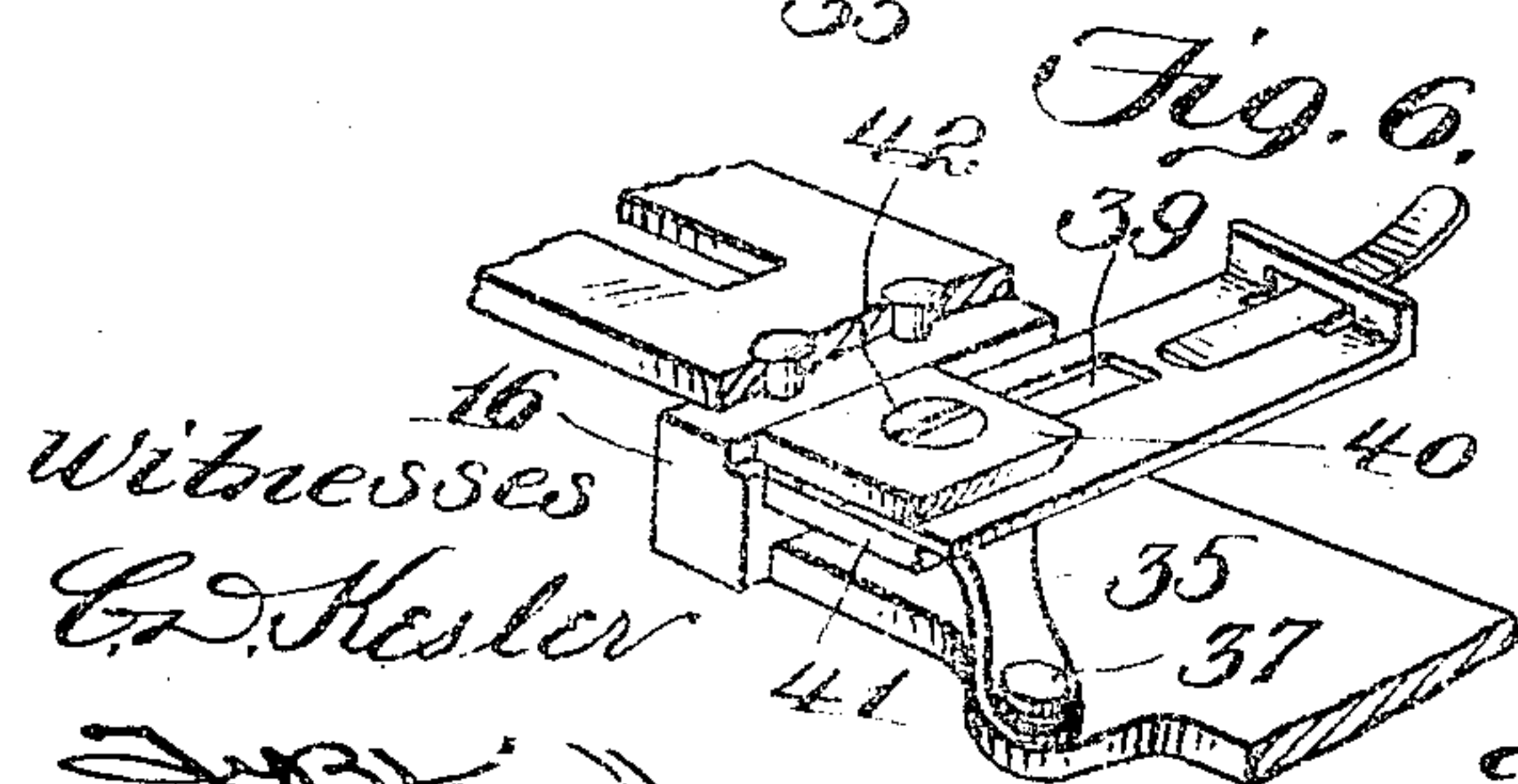
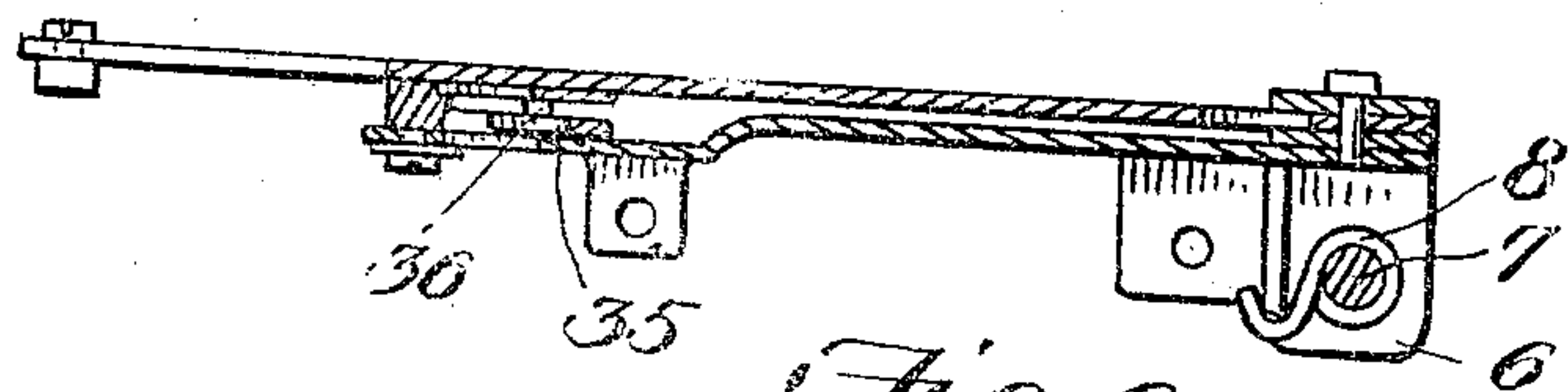
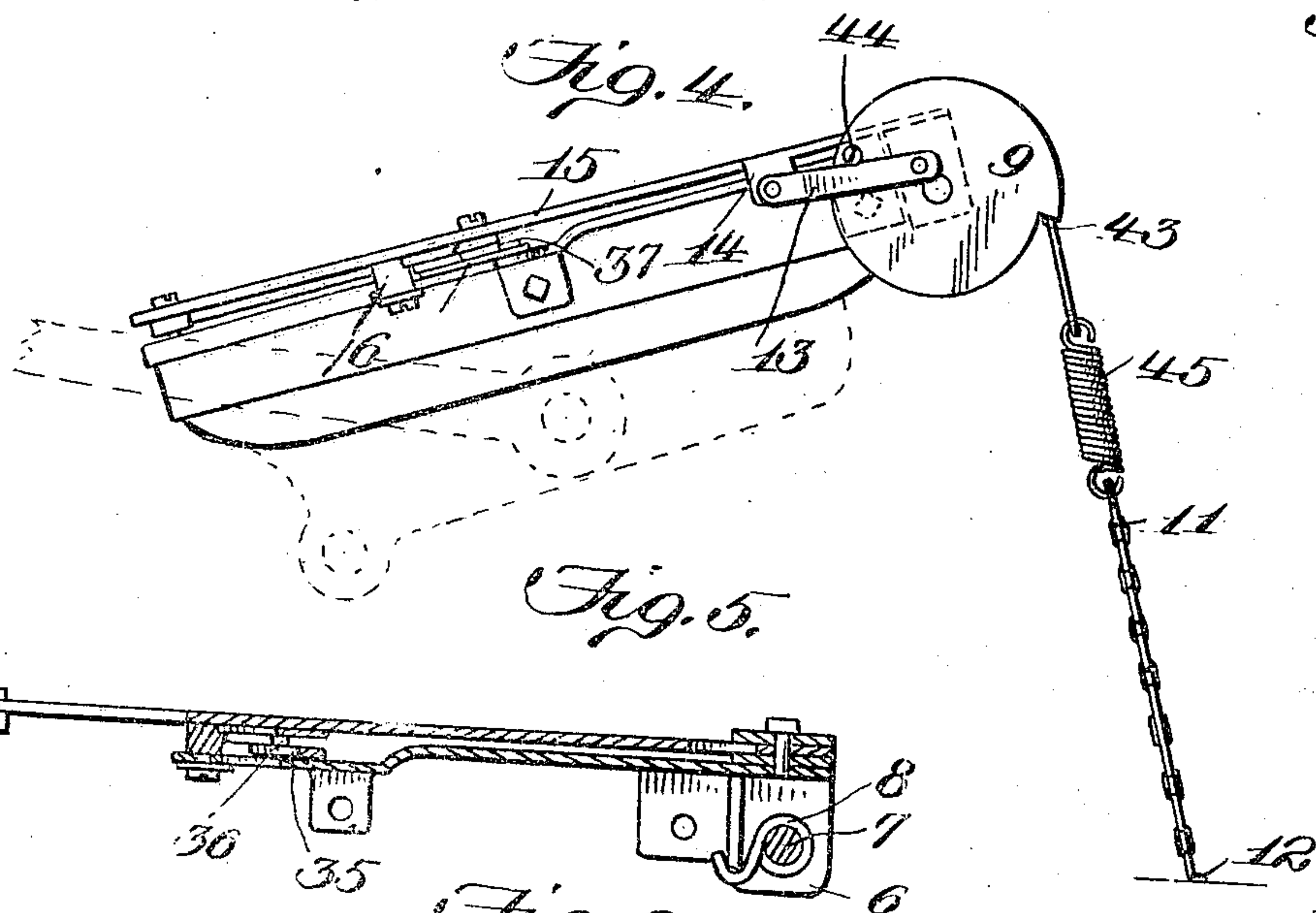
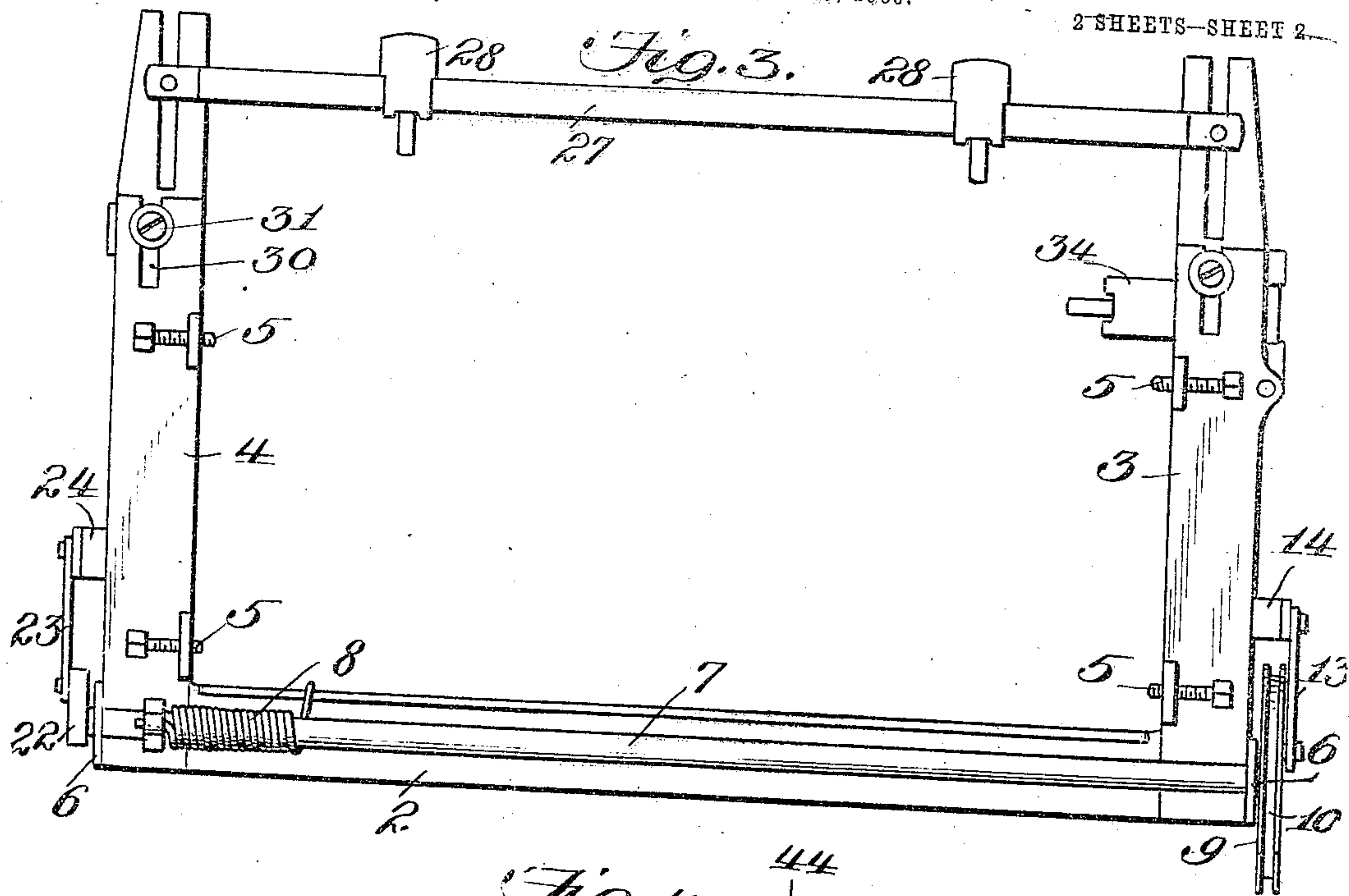
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AUTOMATIC SHEET GAGE FOR PRINTING PRESSES.

APPLICATION FILED MAR. 29, 1906.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC SHEET-GAGE FOR PRINTING-PRESSES.

No. 843,688.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed March 29, 1906. Serial No. 308,778.

*To all whom it may concern:*

Be it known that I, CHARLES M. MORRISON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Automatic Sheet-Gages for Printing-Presses, of which the following is a specification.

This invention relates to printing-presses, and has for its object to provide an improved feed-gage or sheet-adjusting device for hand or platen printing-presses. More specifically stated, the invention has for its object to provide a device for use in centering or positioning the sheet to be printed upon the platen, which device involves sheet-engaging members simultaneously movable in directions at right angles to each other and automatically actuated by the movement of the platen.

Heretofore in feeding sheets or cards to be printed, and especially in color-work, where absolute register is required, great difficulty has been experienced in securing the accurate positioning of the sheet upon the platen by reason of the fact that, however careful the operator may be in placing the card or sheet upon the platen, there is always a liability to a slight rebound of said card or sheet from the stops provided on the platen and against which they are placed by the operator.

According to my invention as hereinafter described the sheet is placed upon the platen against the movable feed-stops so that the sides engaging such feed-stops will extend beyond the imaginary boundary defining its true position on the platen, and then by a simultaneous and gradual and uniform movement on said sides in directions at right angles to each other the sheet is brought to the correct position upon the platen, the device employed insuring that the stops shall cease movement at the same time.

The principles involved in my invention are embodied in a structure illustrated in the accompanying drawings; but I wish it understood that I do not confine myself to the precise details of construction therein shown except so far as indicated in the claims following this specification.

In said drawings, Figure 1 is a perspective view of my improved device. Fig. 2 is a top plan view of the device, showing it applied to a platen, the adjusted position of the stops being indicated by dotted lines. Fig. 3 is a

bottom plan view of the device. Fig. 4 is a view in side elevation illustrating the application of the device to a press. Fig. 5 is a longitudinal sectional view through one of the arms, and Fig. 6 is a broken perspective view illustrating the construction and operation of the side stop.

Referring now to the drawings, 1 indicates the platen of a printing-press, to which is secured my improved feed-gage device in a manner to bound three sides thereof. Said device comprises a frame consisting of a cross-bar 2, secured to opposite ends of which and extended at right angles thereto are arms 3 4. The frame as a whole is secured to the platen by means of bolts 5, engaging the side members of said platen, the cross-bar 2 extending along the upper edge of said platen, as shown. The outer ends of the cross-bar 2 are bent at right angles to the bar to form ears 6, in which is rotatably mounted a rod 7. Mounted on the rod 7 is a coil-spring 8, one end of which is secured to said rod and the other end of which engages a part of the cross-bar 2. Fixedly secured on one end of the rod 7 is a crank-wheel 9, provided with a peripheral groove 10, in which latter is secured one end of a chain 11, the other end being secured to a fixed part of the printing-press at any suitable point, (indicated at 12.)

Secured at one end to the crank-wheel 9, outside the center thereof, is a link 13, the other end of which is secured to a lug 14, projecting laterally from a slide-bar 15, which is mounted above the arm 3 in parallel relation thereto. 16 indicates a guide secured on the under side of the slide-bar 15 and engaging the outer side of the arm 3. At its upper end the slide-bar 15 is provided with a slot 17, which slot receives and works over a guide-lug 18, secured on the upper side of the cross-bar 2, near the outer end thereof, said slide-bar being held to position at this point by means of a washer 19 and screw 20, engaging in said lug.

21 indicates a similar slide-bar located above and parallel to the arm 4 and secured and guided in a similar manner, the corresponding parts being indicated by the same reference-numerals as above employed.

On the end of the bar 7 opposite that to which the crank-wheel 9 is secured is mounted a crank 22, to the outer end of which is



connected one end of a link 23, the other end of said link being secured to a lug 24, secured to the under side of the slide-bar 21. The outer or lower ends of each of the slide-bars 15 and 21 are provided with an elongated open-ended slot 25, in which is adjustably secured at opposite ends by means of binding-screws 26 a thin strip of metal 27, which, as shown, extends between the said slide-bars and parallel to the cross-bar 2. Slidably mounted on the metal strip 27 are two stops 28, which, as will be understood, may be adjusted to any desired position on said strip.

In order to insure the engagement of the stops 28 with the sheet placed upon the platen in the movement of the strip 27, as hereinafter explained, the face of the platen or of the material placed thereon is cut away to provide grooves 29 to receive said stops, said groove of course being provided after the stops have been placed in the desired position on the strip 27. These grooves permit the stops 28 to work in a plane slightly below the surface of the material on the platen, so that said stops will be certain to engage the edge of the sheet and not ride over the same. By loosening the set-screws 26 the strip 27 may be adjusted toward or from the cross-bar 2, as may be required by the size of the sheet or the position of the galley of type relative to the platen. The outer end of each of the arms 3 4 is provided with an open-ended slot 30, in which works a guide-bolt 31, screwed in the guide-piece 16, which is carried by the slide-bar 15. The slide-bars 15 and 21 are thus guided at their upper ends by means of the slots 17 and guide-lugs 18 and toward their lower or outer ends by means of the guide-bolts 31, engaging in the slots 30 of the arms 3 and 4, and by the guides 16. 32 indicates a second slide-piece, which is secured on the under side of the slide-bar 15 by means of screws 33 and extends parallel to the slide-piece 16. Mounted to slide between the guides 16 and 32 is a stop 34, which is actuated by a link 35, one end of which is pivotally secured to a slide carrying the stop, as indicated at 36, and the other end of which is pivotally secured to the arm 3, as indicated at 37. The link 35 is normally inclined inward or toward the axis of the slide-bar 15, and in the movement of said slide-bar, the pivot 37 of the said link being fixed, the stop 34 will move inward or outward, according as the platen moves toward or from the bed of the press.

In operation as the platen is moved toward the press to make the impression the chain 11, secured to the crank-wheel 9, being secured at one end to a fixed part of the machine, will cause said crank-wheel, and consequently the shaft 7, to revolve through a greater or less arc of a circle. This movement of the crank-wheel 9 and shaft 7 will,

through the medium of the links 13 and 23, cause the slide-bars 15 and 21 to be moved upward, thereby causing the stops 28, carried by the strip 27, also to be moved upward or toward the cross-bar 2. Through the connections described this movement of the slide-bar 15 will also cause the stop 34 to be moved inward, the line of movement of the stop 34 being, as will be seen, at right angles to the lines of movement of the stops 28. Assuming the platen to be in the normal or feeding position, (shown by Fig. 2,) a sheet (indicated by 38) is placed by the operator upon the platen to lie at its lower edge against the stops 28 and at one end against the stop 34. As the platen moves toward the bed the stops 28 and 34 will be moved, as above explained, and the sheet 38 will thus be gradually moved to its correct position on the platen, as indicated by the dotted lines in Fig. 2. This movement of the sheet is effected uniformly by forces operating in directions at right angles to each other, the movement being so gradual that there is no danger of any rebound of the sheet from contact with either of the stops. Both sets of stops cease movement simultaneously, and at the time of the cessation of such movement the sheet will have been brought to its proper position on the platen. Immediately thereafter the impression occurs. Provision is made for adjusting the stop 34, and to this end it is provided with a slot 39 and is clamped between two slide-plates 40 41, which are the slide members engaging the slide-pieces 16 and 32.

42 indicates the screw holding the slide-pieces together and by loosening which the stop 34 may be adjusted, the slot 39 working over said screw, as will be understood.

The spring 8 operates to turn the shaft 7, crank-wheel 9, and crank 22 to their normal position as the platen is moved away from the type in a manner that will be well understood.

It is necessary that the revolution of the shaft 7, crank-wheel 9, and crank 22 be stopped at a given point in the feeding movement of the device in order that the movable stops shall uniformly be brought to a given position upon the tympan. To this end I provide on the crank-wheel 9 a shoulder 43, which is adapted to engage the under side of the lug 14, to which the link 13 is connected. In the reverse movement the shaft 7 and parts connected thereto will be stopped by a pin 44, engaging the upper side of the link 13. In order to prevent any rebound of the crank-wheel 9 as its stop 43 engages the lug 14, I interpose in the length of the chain 11 a coil-spring 45. The length of the chain 11 with the spring 45 in its retracted condition is such that the shoulder 43 will engage the lug 14 a short time before the feeding movement of the platen ceases, immediately after



which the further slight movement of the platen will cause the spring 45 to be extended, and thus hold the shoulder against the lug 14 or, in other words, prevent it from rebounding therefrom.

I claim--

1. In a printing-press, a platen, a feed-gage device mounted thereon and having shiftable bars arranged in parallelism with respect to each other and at opposite sides of the platen, a strip carried at the terminals of the bars, stops movable on said strip, an automatically-movable stop carried by one of the shiftable bars, and means for actuating simultaneously the shiftable bars and the automatically-movable stop.

2. In a printing-press, a movable platen, a feed-gage device carried thereby involving slide-bars, a strip for connecting the same and having manually-adjustable stops, an automatically-movable stop carried by one of the slide-bars, and mechanism for simultaneously operating the automatically-movable stop and the slide-bars.

3. In a printing-press, in combination with a movable platen, a feed-gage device carried thereby involving slide-bars extending parallel with the sides of said platen, a strip secured at opposite ends to the outer ends of said slide-bars, means for imparting longitudinal movement to said slide-bars in both directions, and a stop movable in a line at right angles to the line of movement of one of said slide-bars and actuated thereby.

4. In a printing-press, in combination with a movable platen, a feed-gage device carried thereby involving slide-bars extending parallel with the sides of said platen, a strip secured at opposite ends to the outer ends of said slide-bars, means for imparting longitudinal movement to said slide-bars in both

directions, and an adjustable stop movable in a line at right angles to the line of movement of one of said slide-bars and actuated thereby.

5. In a printing-press, in combination with a movable platen, a feed-gage device carried thereby involving slide-bars extending parallel to the sides of said platen, a strip adjustably mounted at opposite ends in the outer ends of said slide-bars, stops slidably mounted on said strip, means for imparting longitudinal movement to said slide-bars in both directions, and an adjustable stop movable in a direction at right angles to the line of movement of one of said slide-bars and actuated thereby.

6. In a printing-press, in combination with a movable platen, a feed-gage device mounted thereon involving an upper cross-bar having arms extending at right angles thereto, a spring-controlled shaft mounted in said cross-bar, slide-bars slidably mounted on said cross-bar and said arms and extending parallel to the latter, crank connections between said slide-bars and said shaft, a strip secured at opposite ends in the outer ends of said slide-bars, stops slidably mounted on said strip, guides secured to the under side of one of said slide-bars, a stop slidably mounted between said guides, a link pivotally connected at one end to said guide and at its other end to the corresponding arm, and means operatively connecting said shaft with a fixed part of the press to cause said shaft to be rotated in the movement of the platen.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES M. MORRISON.

Witnesses:

CHAS. S. HYER,

BRUCE S. ELLIOTT.