

No. 617,456.

Patented Jan. 10, 1899.

C. P. BABCOCK.

SHEET ADJUSTER FOR PRINTING PRESSES.

(Application filed Feb. 3, 1898.)

(No Model.)

Fig. 1.

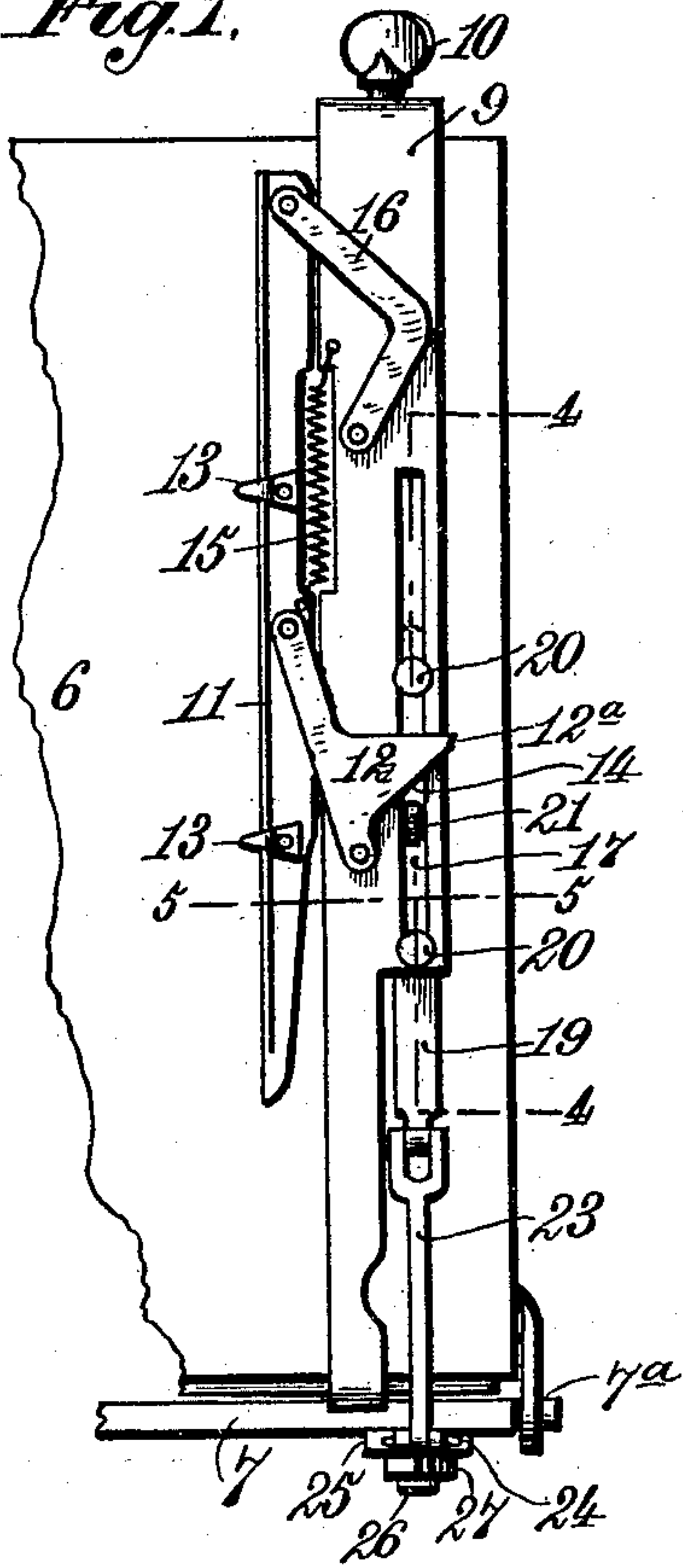


Fig. 2.

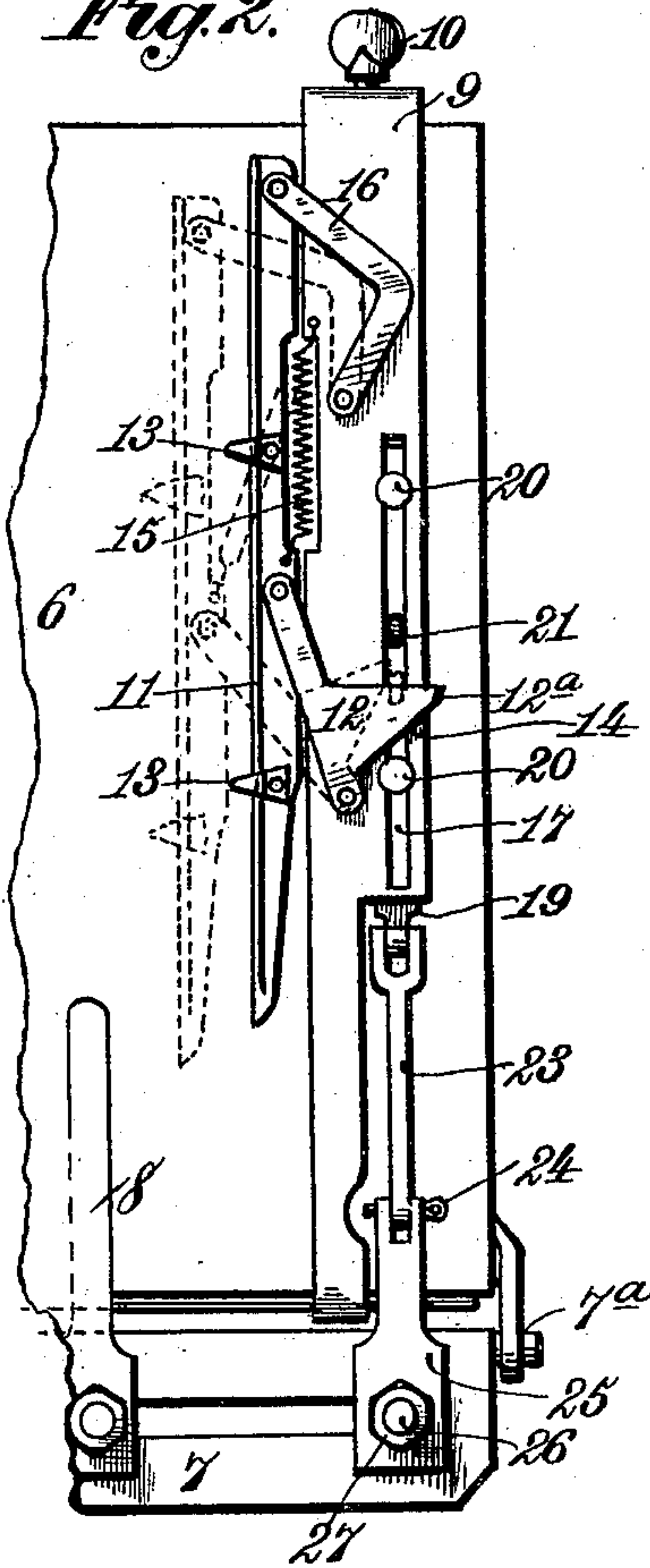


Fig. 3.

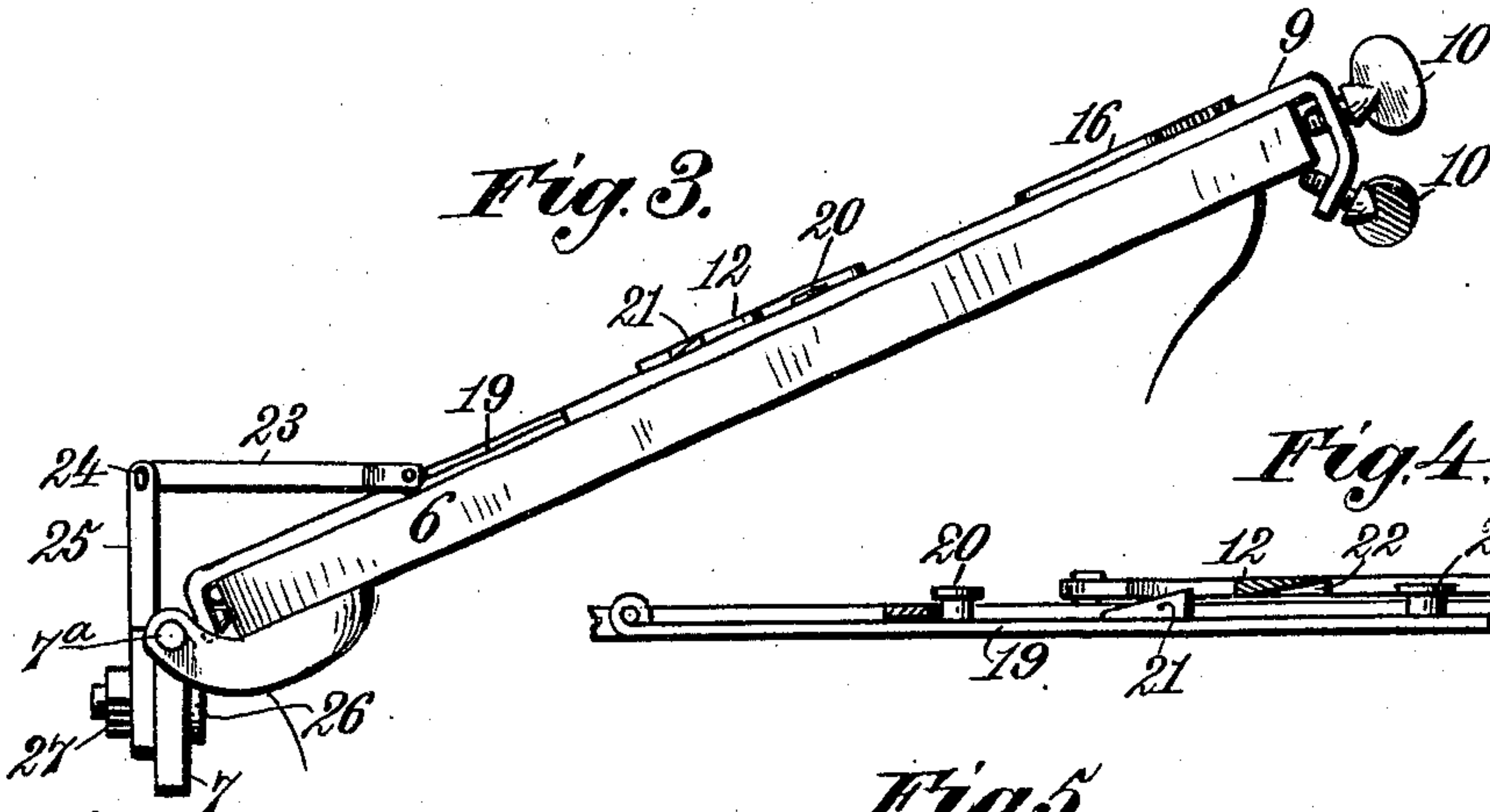


Fig. 4.

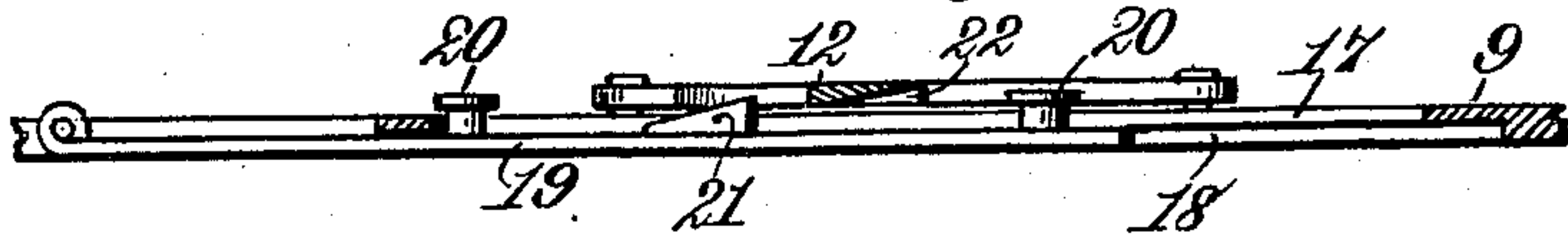
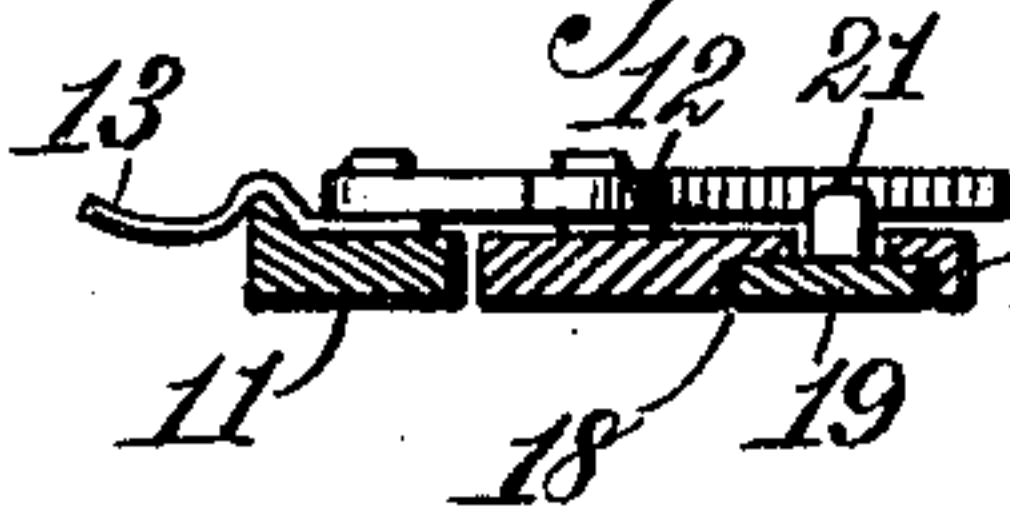


Fig. 5.



Inventor:

Charles P. Babcock.

By Geo. W. Rea,

Att'y.

Witnesses:

Robert Everett.

R. D. Johnston Jr.

UNITED STATES PATENT OFFICE.

CHARLES P. BABCOCK, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF TWO-THIRDS TO CHARLES CONRADIS, OF ST. PAUL, MINNESOTA.

SHEET-ADJUSTER FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 617,456, dated January 10, 1899.

Application filed February 3, 1898. Serial No. 668,994. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. BABCOCK, a citizen of the United States of America, residing at Minneapolis, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Sheet-Adjusters for Printing-Presses, of which the following is a specification.

This invention relates to improvements in sheet-adjusters for platen printing-presses, and has for its objects, first, to provide a device connected to the platen and the usual gripper-bar for automatically adjusting the sheet to proper position to accurately receive the impression, and, secondly, to improve the construction and mode of operation of sheet-adjusters.

To this end the invention consists in the novel construction and combination and arrangement and mode of operation hereinafter described and claimed, reference being made to the accompanying drawings, wherein—

Figure 1 is a top plan view of a sheet-adjuster constructed according to my invention applied to the platen of the press. Fig. 2 is a similar view when the platen is in position to meet the bed of the press, illustrating in dotted lines the position which the adjuster has assumed in the movement of the platen and in full lines the normal position which it assumes under the influence of its retracting-spring. Fig. 3 is an edge view. Fig. 4 is a section on the line 4 4, Fig. 1; and Fig. 5, a section on the line 5 5 of Fig. 1.

In the said drawings the reference-numeral 6 indicates the platen of the press, provided with a tympan or tympan-sheets and the usual side and bottom stops. (Not shown.)

The numeral 7 indicates the gripper-bar, which is journaled in ears on the platen 6, as shown at 7^a. The mechanism for operating the platen and gripper-bar is well known and therefore not shown or described herein. The gripper-bar is slotted for the convenient adjustable attachment thereto of grippers 8 and of the sheet-adjusting attachment hereinafter described.

According to the example of my invention shown in the drawings, a support 9 is adjustably secured to the platen 6 by means of clamping-screws 10, and when adjusted it be-

comes practically a part of the platen, accompanying the same in its travel to and from the bed of the press. A sheet-adjuster blade 11 is linked to the support 9 by means of a lever 12, having pivotal connection at its opposite ends with said adjuster-blade and support, and said blade is provided with a suitable number (as two) of projecting fingers 13, under which the sheets may readily be placed by the feeder against the face of the blade. The adjuster-blade, as seen, is nearly as long as the depth of the platen, so that in operation it engages an extended edge of the sheet to be adjusted rather than an isolated part thereof, adding thereby greatly to its efficiency. The lever 12 is provided with a cam-face 14, against which the lug hereinafter referred to engages to project the adjuster-blade away from the support 9. The number 15 designates a spring connected with the support and the adjuster-blade for the purpose of retracting said blade or drawing it again close to the support after it has performed its function of adjusting the sheet on the platen.

For the purpose of insuring an even and uniform movement of the adjuster-blade it is also jointed to the support by a link 16, distant from the lever 12. This link in the drawings is shown as angular; but its shape is not material, that illustrated being convenient because of the location of the retracting-spring 15. While I consider this link very useful for the purpose stated, it is possible the blade may be moved with requisite evenness and uniformity without it, and therefore I do not regard it as of the essence of my invention. The distance of movement of the blade 11 away from the support 9 is governed by the distance between the pivotal points of connection of the lever 12 and link 16 with said blade and support.

The support 9 is slotted, as shown at 17, and at the under side thereof, behind the slot, is cut away to provide a raceway 18 for a reciprocating slide 19, which is held in the raceway by suitable means, as headed buttons 20, passing through the slot. The slide 19 is provided with a cam-lug 21, projecting through the slot 17, and which in its forward movement engages the cam-face 14 of the lever 12 and operates the lever to thrust or

project the adjuster-blade 11 away from the stationary support 9, and which in its return travel passes into an inclined recess 22 in the under side of the lever and beneath and past said lever without influencing the adjuster-blade, the lever being capable of rising slightly to permit this. At the extremity of the cam-face the lever is formed with a straight face 12^a, along which the cam-lug 21 rides past the lever, momentarily holding the adjuster-blade at the outer limit of its stroke.

It will be observed that when the lever is operated by the cam-lug 21 its end which is connected to the adjuster-blade 11 moves in the arc of a circle, by reason of which the adjuster-blade has a compound or resultant movement, a movement away from and longitudinally of the support 9. The movement of the end of the lever to which the adjuster-blade is secured is in the arc of a circle; but the extended face of the adjuster-blade, while also having a compound or resultant movement, a movement longitudinally of as well as away from the support, maintains its parallelism with its original position. This compound movement of the adjuster-blade, during which it maintains its parallelism with its original position is important, for thereby the sheet engaged by said blade is carried into proper contact not only with the usual side stops, but also with the bottom stops of the platen. This is a very useful function, as the operator who feeds the press may fail to dispose the sheet accurately against the bottom quite as often as he fails to properly dispose it in relation to the side stops.

One end of the slide 19 is pivotally connected to a pitman 23, the other end of which has pivotal connection by means of a removable split pin 24 with a block or bracket 25, which is adjustably connected to the gripper-bar 7 by means of a bolt 26, passing through the slot of the gripper-bar and said bracket, and a clamping-nut 27. The device may be adjusted to different positions upon the face of the platen and secured in the adjusted position by means of the clamping-screws 10 and the bolt and nut 26 and 27. By withdrawing the split pin 24 the device may be easily removed from the platen when it is desired to supply new tympan-sheets to the latter and without the necessity of disturbing the connection of the block or bracket 25 with the gripper-bar.

The relative connection of the grippers 8 and the slide 19 to the oscillating gripper-bar 7 is such that when the platen is in position for the sheet to be fed to it the slide will move in advance of the grippers and operate the adjuster-blade, through the medium of the cam-lug 21 and the lever 12, to accurately adjust the sheet to both the side and bottom gages, when it is immediately retracted by the spring 15 before the grippers engage the sheet.

The operation of my invention is as follows:

The support 9 being adjusted upon the platen and the proper connection made with the gripper-bar to insure that the stroke of the adjuster-blade will adjust the sheet to proper position to accurately receive the impression, as shown in Fig. 1, the movement of the platen toward the bed of the press swinging on the journal 7^a causes the link 23 to assume the position shown in Fig. 3, forcing the slide 19 forward. In this forward movement of the slide the cam-lug 21 thereon engages the cam-face 14 of the lever 12 and operates the latter to project the adjuster-blade 11, as shown in dotted lines, Fig. 2, which engages the edge of the sheet and adjusts it to proper position. When the adjuster-blade is at the limit of its stroke, the cam-lug rides along the straight face 12^a of the lever, momentarily holding the blade in its then position, and when it has passed said straight face 12^a the adjuster-blade is retracted by the spring 15 to its normal position, as shown in full lines, Fig. 2. When the parts are in this position, the grippers 8 engage the sheet, which receives its impression from the bed of type, and during the movement of the platen away from the bed the slide 19 and pitman 23 resume their normal position, the cam-lug 21 passing into the recess 22 in the under side of the lever 12 and beneath and past said lever.

I have particularly described in detail the construction and mode of operation of an apparatus embodying my invention; but I desire it understood that I do not limit my invention to such details otherwise than as specified in the following clauses of claim.

What I claim is—

1. In a sheet-adjuster for printing-presses, the combination of a support secured to the platen, a lever pivoted to said support, an adjuster-blade carried by said lever, a gripper-bar and means connected thereto for operating the lever to project said blade over the face of the platen, substantially as described.

2. In a sheet-adjuster for printing-presses the combination with a support secured to the platen of a press, of an adjuster-blade pivotally connected to said support by a lever, a slide moving in said support and adapted to engage said lever to project the blade over the face of the platen to adjust the sheet and means for actuating said slide, substantially as described.

3. In a sheet-adjuster for printing-presses the combination with a support secured to the platen, of an adjuster-blade pivotally connected to said support by a lever having a cam-face, a slide moving in said support and having a cam-lug to engage said lever to project the adjuster-blade to adjust the sheet and means for actuating said slide, substantially as described.

4. In a sheet-adjuster for printing-presses the combination with a support secured to the platen, and a gripper-bar, of an adjuster-

blade connected to said support by a lever, and a slide connected to the gripper-bar for operating said lever to project the adjuster-blade over the face of the platen, substantially as described.

5. In a sheet-adjuster for printing-presses the combination with a slotted support secured to the platen, of an adjuster-blade pivotally connected to said support by a lever having a cam-face and a slide moving in said support provided with a cam-lug projecting through the slot and connected to the gripper-bar, whereby the adjuster-blade is automatically projected, substantially as described.

6. In a sheet-adjuster the combination with a slotted support secured to the platen and a gripper-bar, of an adjuster-blade linked to said support by a pivoted lever having a cam-face, a slide moving in said support and provided with a cam-lug to engage and operate said lever, and means connecting said slide to the gripper-bar, whereby the adjuster-blade is automatically operated, substantially as described.

7. In a sheet-adjuster the combination with a slotted support secured to the platen, and a gripper-bar, of an adjuster-blade, a lever pivotally connected to said support and blade and having a cam-face, an auxiliary link connecting said support and blade, a slide moving in said support and provided with a cam-lug projecting through the slot to engage said lever, a pitman connecting said slide to the gripper-bar whereby the adjuster-blade is automatically projected, and a spring connected to said blade and support for returning the former to normal position, substantially as described.

8. In a sheet-adjuster for printing-presses the combination with a support secured to the platen, and a gripper-bar, of an adjuster-blade connected to said support, a bracket secured to the gripper-bar, a pitman connected to said bracket, and means actuated by said pitman for projecting the adjuster-blade over the face of the platen, substantially as described.

9. In a sheet-adjuster for printing-presses, an automatically-operated adjuster-blade provided with an extended sheet-engaging surface which has a compound movement and maintains its parallelism with its original po-

sition, to adjust the sheet to the side and also the bottom gages of the platen, substantially as described.

10. In a sheet-adjuster for printing-presses, an adjuster-blade provided with an extended sheet-engaging surface which has a compound movement and maintains its parallelism with its original position, to adjust the sheet to the side and also to the bottom gages of the platen, and means connected to the gripper-bar for automatically operating said blade, substantially as described.

11. In a sheet-adjuster for printing-presses, the combination with a support secured to the platen, of an adjuster-blade having an extended sheet-engaging surface, a link connecting said blade to said support, and means for imparting a compound movement to said adjuster-blade during which it maintains its parallelism with its original position, to adjust the sheet to the side and also to the bottom gages of the platen, substantially as described.

12. In a sheet-adjuster for printing-presses, the combination with a support secured to the platen, of an adjuster-blade having an extended sheet-engaging surface, a link connecting said blade to said support, and means connected to the gripper-bar for automatically imparting a compound movement to said adjuster-blade during which it maintains its parallelism with its original position, to adjust the sheet to the side and also the bottom gages of the platen, substantially as described.

13. In a sheet-adjuster for printing-presses, the combination of a support secured to the platen, and resting upon the tympan side thereof, an adjuster-blade linked to said support and adapted to be projected over the face of the platen, a gripper-bar, means connected to the latter for automatically projecting said blade, and a spring connected to said support and said blade for retracting the latter, substantially as described.

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

CHARLES P. BABCOCK.

Witnesses:

H. B. McDOWELL,
EDWARD A. HOUGH.