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A. KLUGE ET AL

GAUGE FOR PRINTING PRESSES

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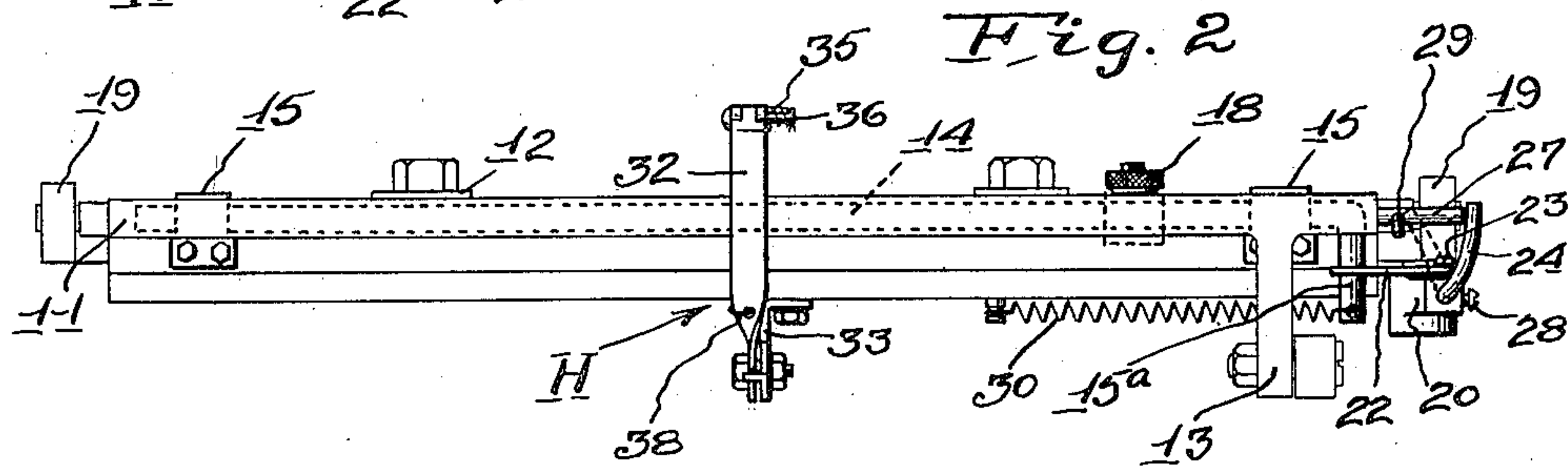
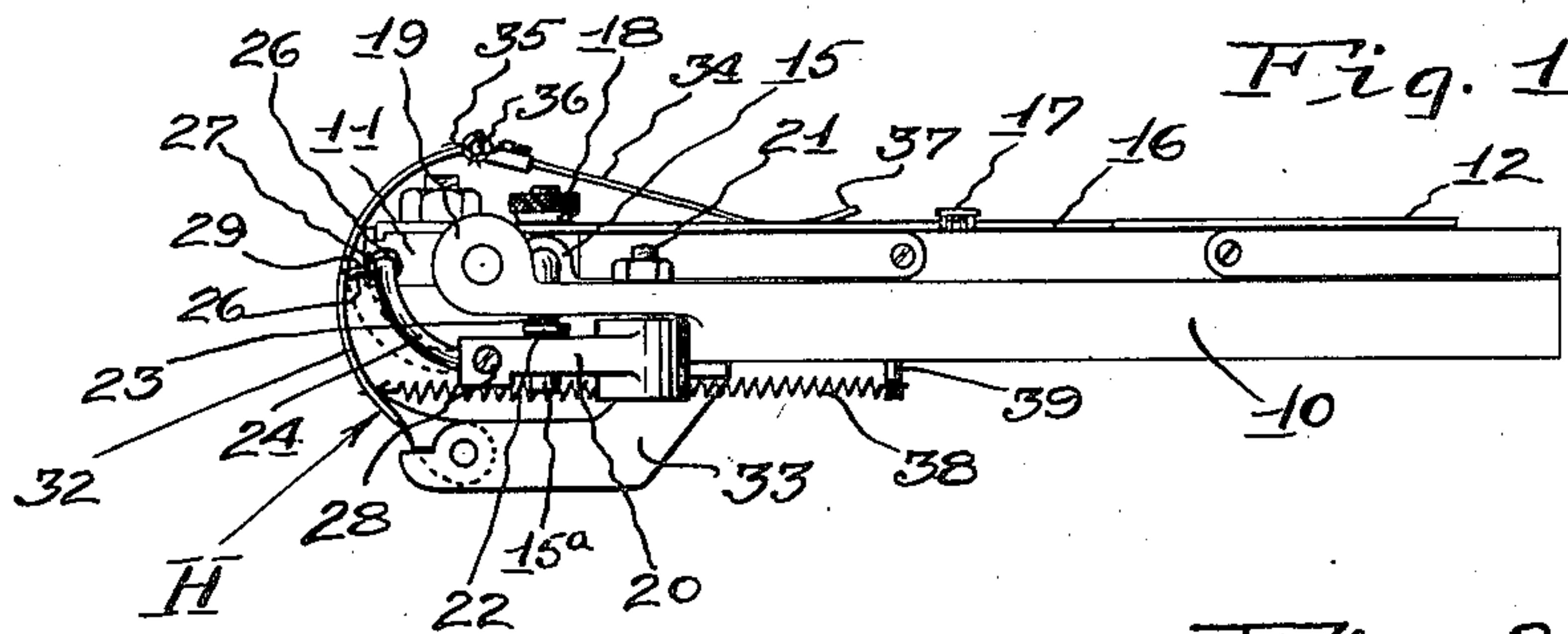
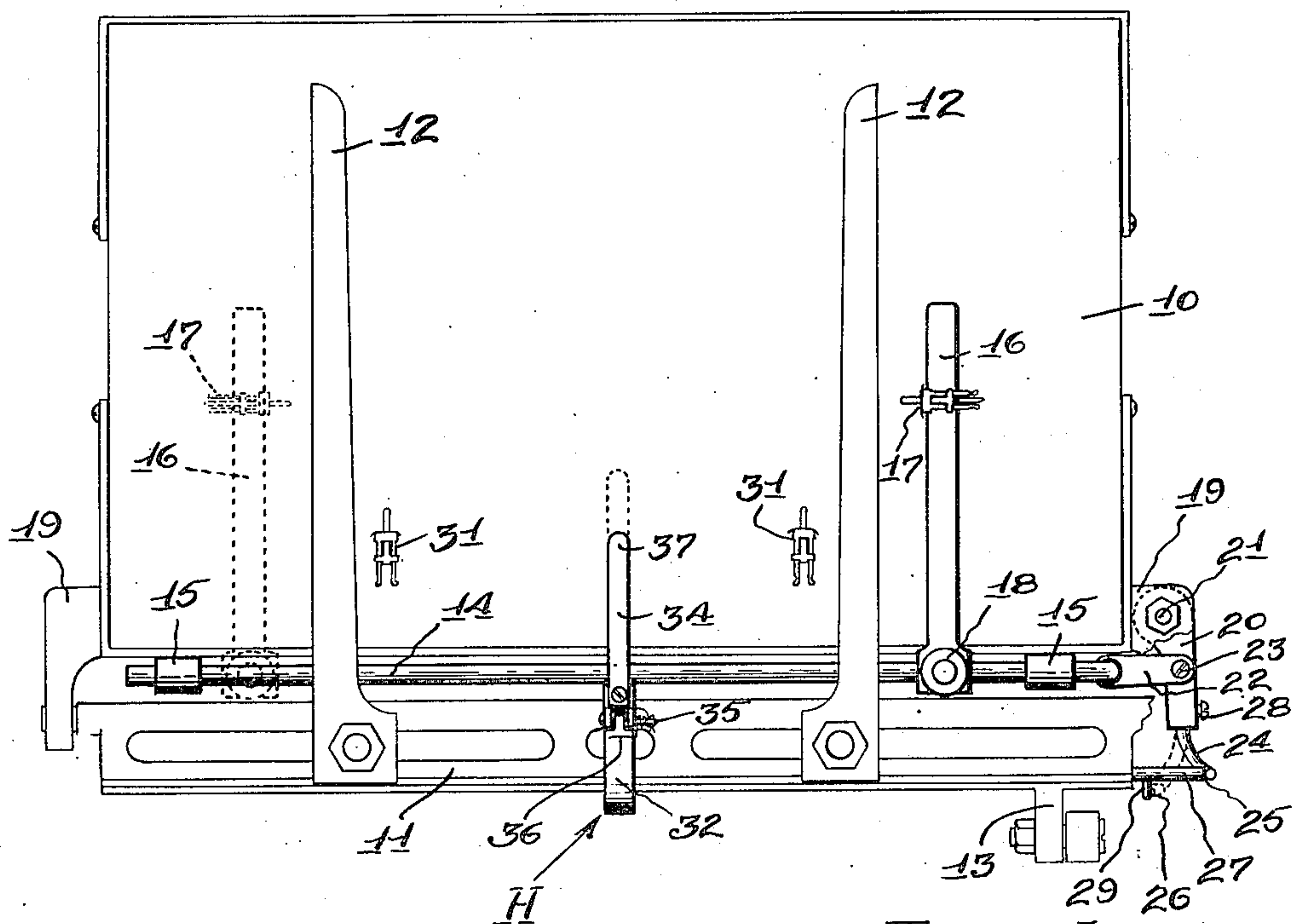


Fig. 3



Inventors
Abel Kluge
Eneval Kluge
By Bradbury & Caswell
Attorneys

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UNITED STATES PATENT OFFICE.

ABEL KLUGE AND ENEVAL KLUGE, OF ST. PAUL, MINNESOTA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO BRANDTJEN & KLUGE, INCORPORATED, OF ST. PAUL, MINNESOTA, A CORPORATION OF MINNESOTA.

GAUGE FOR PRINTING PRESSES.

Application filed November 11, 1920. Serial No. 423,448.

To all whom it may concern:

Be it known that we, ABEL KLUGE and ENEVAL KLUGE, citizens of the United States, residing in the city of St. Paul, county of Ramsey, and State of Minnesota, have invented new and useful Improvements in Gauges for Printing Presses, of which the following is a specification.

Our invention relates to improvements in gauges for printing presses.

In the use of printing presses of the platen type fed by hand or by mechanical means, sheets are subject to being lifted laterally from proper position against the lower gauge-pins by air pressure and the exact longitudinal position of said sheets upon the platen is difficult to attain.

It is the object of our invention to provide a simple, durable and inexpensive device of this kind adapted to hold a sheet against lateral displacement upon a platen and to shift the sheet endwise thereon from approximately desired longitudinal position into exactly correct longitudinal position, preparatory to the taking of the impression.

A further object is to provide a device of this nature, which is operated in synchronism with and by the movements of the platen and associated parts.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is an end elevation illustrating the usual platen, gripper-bar and grippers of an ordinary platen press, together with our improved device applied thereto; Fig. 2 is a side elevation thereof and Fig. 3 is a plan view of the same.

Referring to the drawings, we employ the reference numeral 10 to indicate an ordinary platen, which is supplied with the usual gripper-bar 11 and grippers 12. In common practice, the platen of a press is swung from approximately horizontal receiving position to substantially vertical printing position, the gripper-bar 11 being tilted thereon by a cam actuated arm 13, so that the grippers 12 will engage a sheet, on the platen, about to receive an impression. Our device is carried principally by the platen 10 and operated by the gripper-bar 11, which is tilted

with respect to said platen. This device includes a longitudinally slidable rod 14 supported and guided in bearings 15 secured to the lower edge of the platen 10. A side register gauge 16, fitted with an ordinary gauge-pin 17 and carried upon said rod 14, lies closely above the platen 10, as shown in Fig. 3. Said gauge 16 is slidably mounted upon the rod 14 and may be locked in desired longitudinal positions thereon by means of a set nut 18, threaded in said gauge and arranged to bear against said rod. The usual brackets 19 on the platen 10 pivotally support the gripper-bar 11. A rocker-arm 20 is pivoted beneath one of these brackets 19 on a bolt 21 passing through said bracket. A link 22 joins said rocker-arm 20 with a downturned end 15^a of the rod 15. Said link 22 is connected at one end with the rocker-arm 20 by means of a stud 23 threaded in the latter, while the opposite end of said link is formed with a bore which receives said downturned end 15^a. A cam-slide 24 on the free end of the rocker-arm 20 is designed to severally engage two abutments 25 and 26 on a pin 27 carried by the gripper-bar 11. Said cam-slide 24 comprises a curved rod, one end of which is inserted in a longitudinal bore in the rocker-arm 20 and locked in different angular positions therein by means of a set-screw 28 threaded in said rocker-arm against said rod. The pin 27 is fixed at one end in the gripper-bar 11 and is formed with a lug 29 thereon. The outer end of said pin provides the abutment 25 for the cam-slide 24 and the lug 29 on said pin supplies the abutment 26. A spiral spring 30 attached at one end to the lower extremity of the downturned end 15^a of the rod 15 and at its other end to the platen 10, serves to maintain engagement between the cam-slide 24 and its respective abutment member and also shifts the rod 14 in one direction. The action of the abutments 25 and 26 against the cam-slide 24 reverses the movement of the rod 14 against the action of the spring 30. With the cam-slide 24 engaging the abutment 25 as shown in solid lines, Fig. 3, the gauge 16 (solid lines) is shifted to the left by the action of the spring 30, when the gripper-bar is moved to swing the grippers toward the platen. Said gauge is thereafter retracted by the action of the abutment 25

upon the cam-slide 24, when the movement of said gripper-bar is reversed. Thus, it will be seen, that a sheet placed upon lower gauge-pins 31, with one end thereof in proximity to the gauge 16, will be shifted to position slightly to the left of its original position before the grippers 12 become operative and prior to the taking of the impression. That position in which the sheet is left by said gauge may be accurately determined by proper longitudinal adjustment of the gauge 16 upon the rod 14. It may be desired to shift a sheet in the reverse direction upon the platen 10, or in other words, to the right as seen in Fig. 3. We provide for such operation as follows: The gauge-pin 17 on the gauge 16 is reversed and said gauge slid along the rod 14 and fixed thereon near the left end of the platen (dotted lines, Fig. 3). The cam-slide 24 is readjusted so as to bear against the abutment 26 on the lug 29 (dotted lines, Fig. 3). Movement of the gripper-bar 11 to swing the grippers 12 against the platen 10, then results in shifting the gauge 16 to the right (Fig. 3) through the action of the abutment 26 and cam-slide 24, while movement of said gripper-bar 11 in the opposite direction permits the retraction of said gauge by the spring 30. We supply a holder H to retain a sheet temporarily against the lower gauge-pins 31, while the platen 10 approaches printing position and prior to the correcting thrust of the gauge 16. This holder H retains a sheet in the position in which it is fed during the initial working throw of the platen 10 and is withdrawn from the sheet by the action of the gripper-bar 11 prior to the working thrust of the gauge 16. Said holder includes a curved arm 32, one end thereof being pivotally supported on a bracket 33 depending from the platen 10 and the other end thereof resting above the gripper-bar 11. A finger 34, pivoted on said last mentioned end of said arm, has its free end lightly and yieldingly pressed against the platen 10 by means of a spring 35, encircling a pin 36 joining said arm and finger, one end of said spring being placed upon the arm 32 and the other end thereof upon the finger 34. Said free end of the finger 34 has an upturned tip 37 to guide the margin of a sheet therebeneath. A spiral spring 38, stretched between the arm 32 and a pin 39 in the platen 10, yieldingly holds said arm in contact with the free side of the gripper-bar 11. Said spring 38 throws the arm in one direction, in the absence of resistance, and said arm is so shaped that the gripper-bar 11 in one of its swinging movements on the platen 10 will throw said arm 32 in the opposite direction against the action of the spring 38. We have constructed the arm 32 and finger 34 so that the latter will occupy the highest position upon the platen 10, when the platen

is in receiving position. In such position a sheet is readily slipped beneath the tip 37 of the finger 34 and against the bottom gauge-pins 31. The curvature of the arm 32 is such that the finger 34 will be withdrawn from the sheet during the working stroke of the platen, but not entirely removed therefrom until said platen closely approaches printing position. Such placement of the platen is coincident with the initial working stroke of the gauge 16. It will, therefore, be seen that the finger 34 performs its function of holding a sheet upon the platen during the initial throw thereof and that said finger avoids interference with the endwise movement of the sheet by the gauge 16 during the latter part of the working throw of the platen.

Changes in the specific form of our invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. The combination with a platen and gripper-bar of a printing press, of a finger adapted to engage and hold the lower edge of a sheet against the platen and a movable support for said finger yieldingly mounted on the platen, said support being engaged with and actuated by the gripper-bar to slide the finger downward out of sheet engaging position.
2. The combination with a platen and gripper-bar of a printing press, of an arm mounted beneath the platen and curved upward over the gripper-bar, and a yielding finger carried by the arm and adapted to engage the lower margin of a sheet on the platen, said arm being engaged with and actuated by the gripper-bar to withdraw said finger from sheet engaging position.
3. The combination with a platen and gripper-bar of a printing press, of a register gauge carried by the platen and shiftable sidewise thereon, means actuated by the gripper-bar for moving said gauge and means for holding a sheet upon the platen, said means being designed to be rendered inoperative by the action of the gripper-bar prior to the sheet registering stroke of said gauge.
4. The combination with a platen and gripper-bar of a printing press, of a side register gauge and sheet holder for said platen, both carried on the platen and operated by said gripper-bar upon movement thereof with respect to said platen, the sheet holder being rendered inoperative upon the registering stroke of the gauge.
5. The combination with the platen and gripper-bar of a printing press, of a rod slidably mounted on the platen, a gauge

adjustably secured to said rod and arranged to rest closely adjacent to the face of the platen, a rocker arm on the platen connected with said rod, means actuated by the movement of the gripper-bar for oscillating said arm, whereby upon one stroke of the gauge a sheet is shifted longitudinally to desired position and upon the reverse stroke said gauge is retracted, and holding means shifted into and out of operative position by said gripper-bar, said holding means being rendered inoperative upon the registering stroke of the gauge.

6. The combination with a platen and gripper-bar of a printing press, of a rod slidably mounted on the platen at its lower edge, a gauge adjustably secured to said rod and arranged to rest closely adjacent to the face of the platen, a rocker-arm mounted at one end of the platen, a link joining said rocker-arm and rod, a spring for shifting the rod in one direction, a cam-slide

on the rocker arm and an abutment on the gripper-bar arranged to bear against the cam-slide and shift the rod in a direction against the action of said spring.

7. The combination with a platen and gripper-bar of a printing press, of a rod slidably mounted on the platen at its lower edge, a gauge adjustably secured to said rod and arranged to rest closely adjacent to the face of the platen, a rocker-arm mounted at one end of the platen, a link joining said rocker-arm and rod, a spring for shifting the rod in one direction, an adjustable cam-slide on the rocker arm, abutments on the gripper-bar adapted to be severally engaged by the cam-slide and designed to shift said rod as and for the purposes described.

In testimony whereof, we have signed our names to this specification.

ABEL KLUGE.
ENEVAL KLUGE.