

(No Model.)

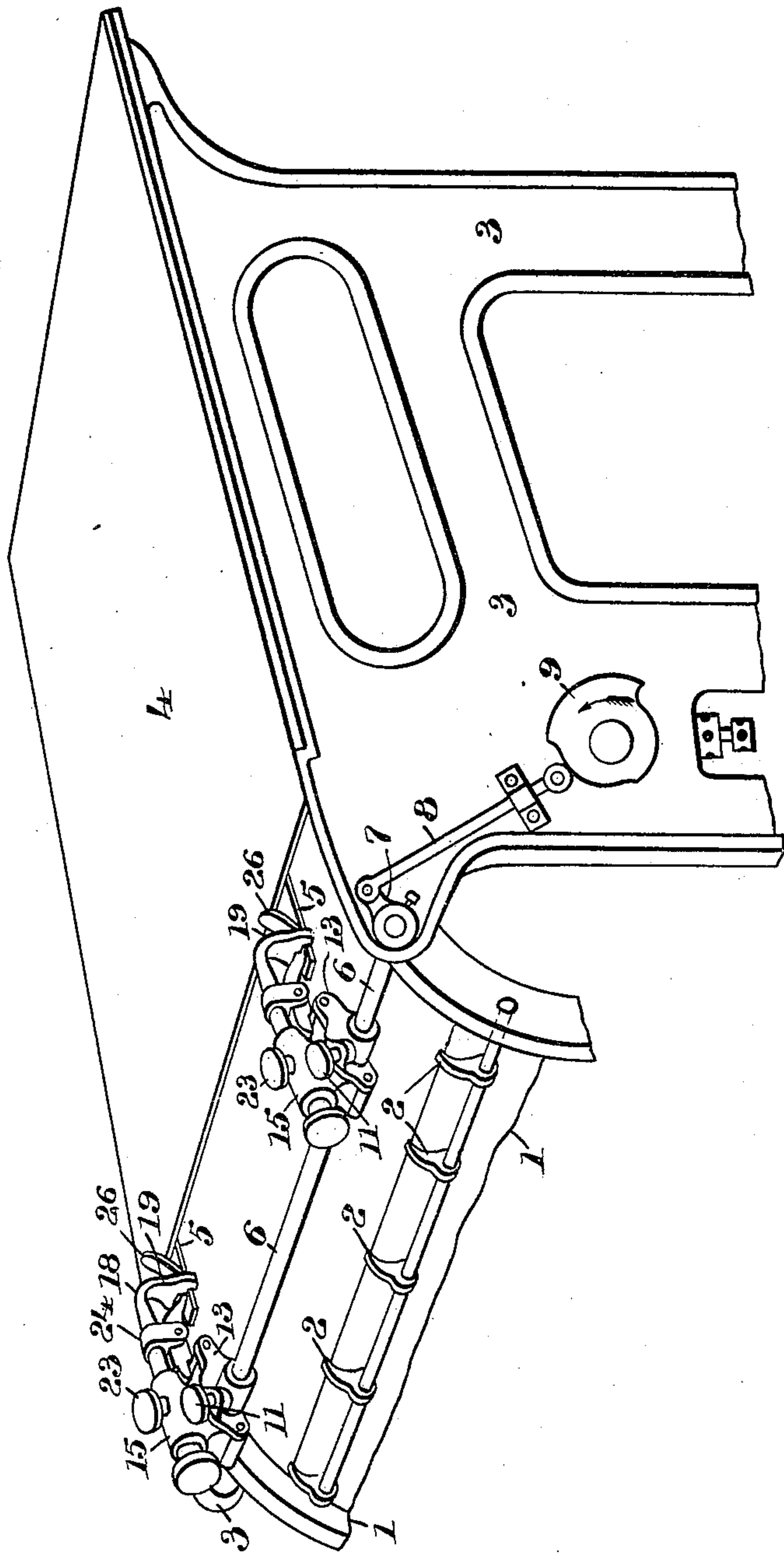
3 Sheets—Sheet 1.

S. WHITLOCK.
SHEET GUIDE FOR PRINTING MACHINES.

No. 466,055.

Patented Dec. 29, 1891.

Fig. 1.



Witnesses
Wm. J. Tanner
A. J. Tanner

Inventor
Sturges Whitlock
by his attorney
J. H. Hubbard

(No Model.)

3 Sheets—Sheet 2.

S. WHITLOCK.
SHEET GUIDE FOR PRINTING MACHINES.

No. 466,055.

Patented Dec. 29, 1891.

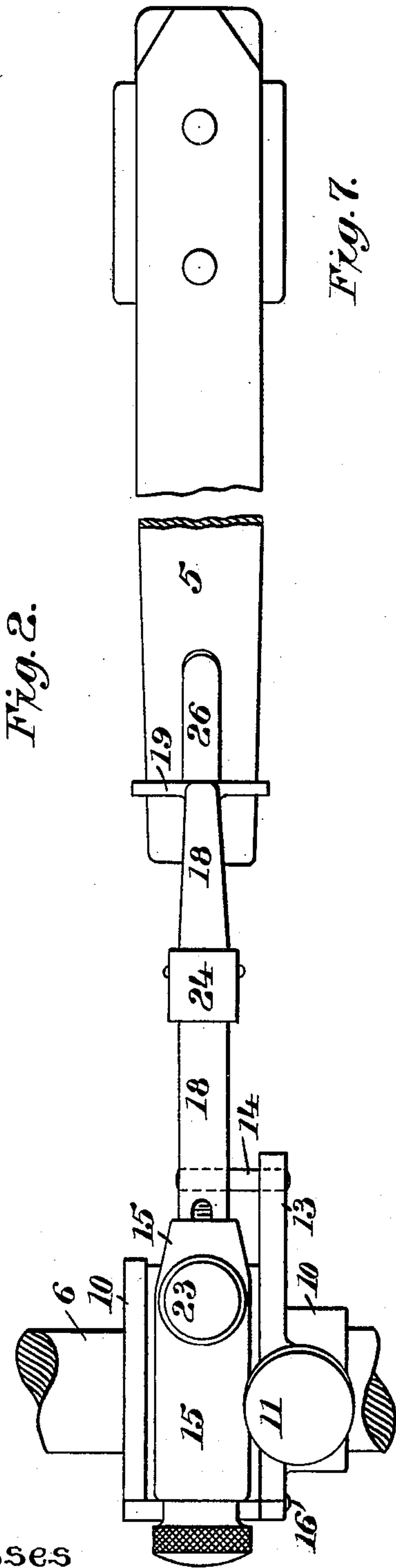


Fig. 2.

Fig. 7.

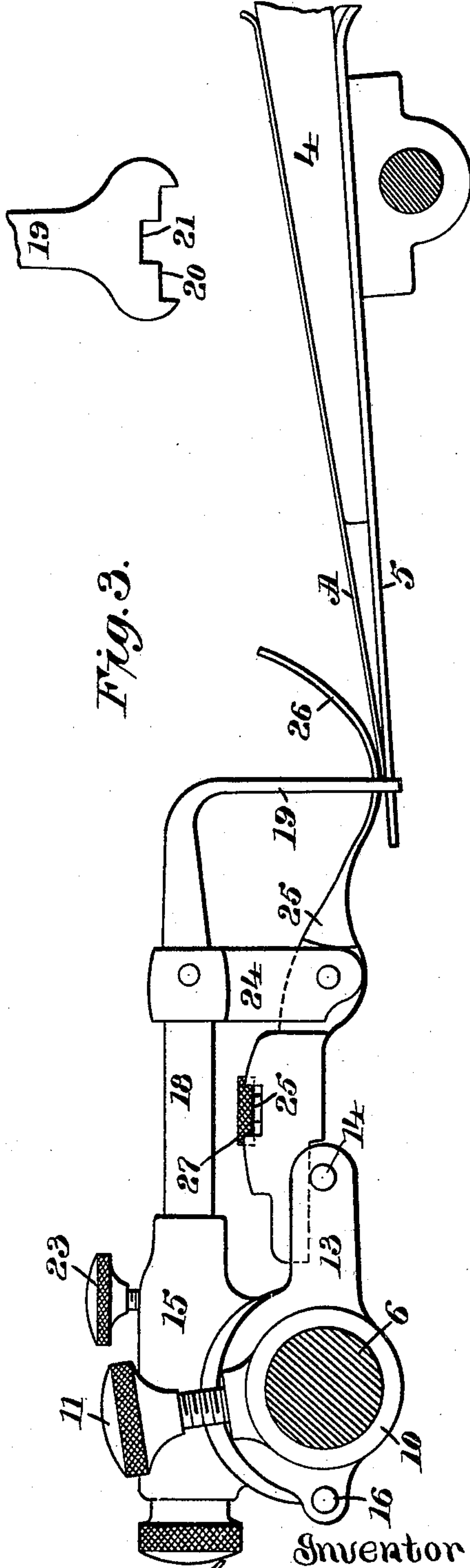


Fig. 3.

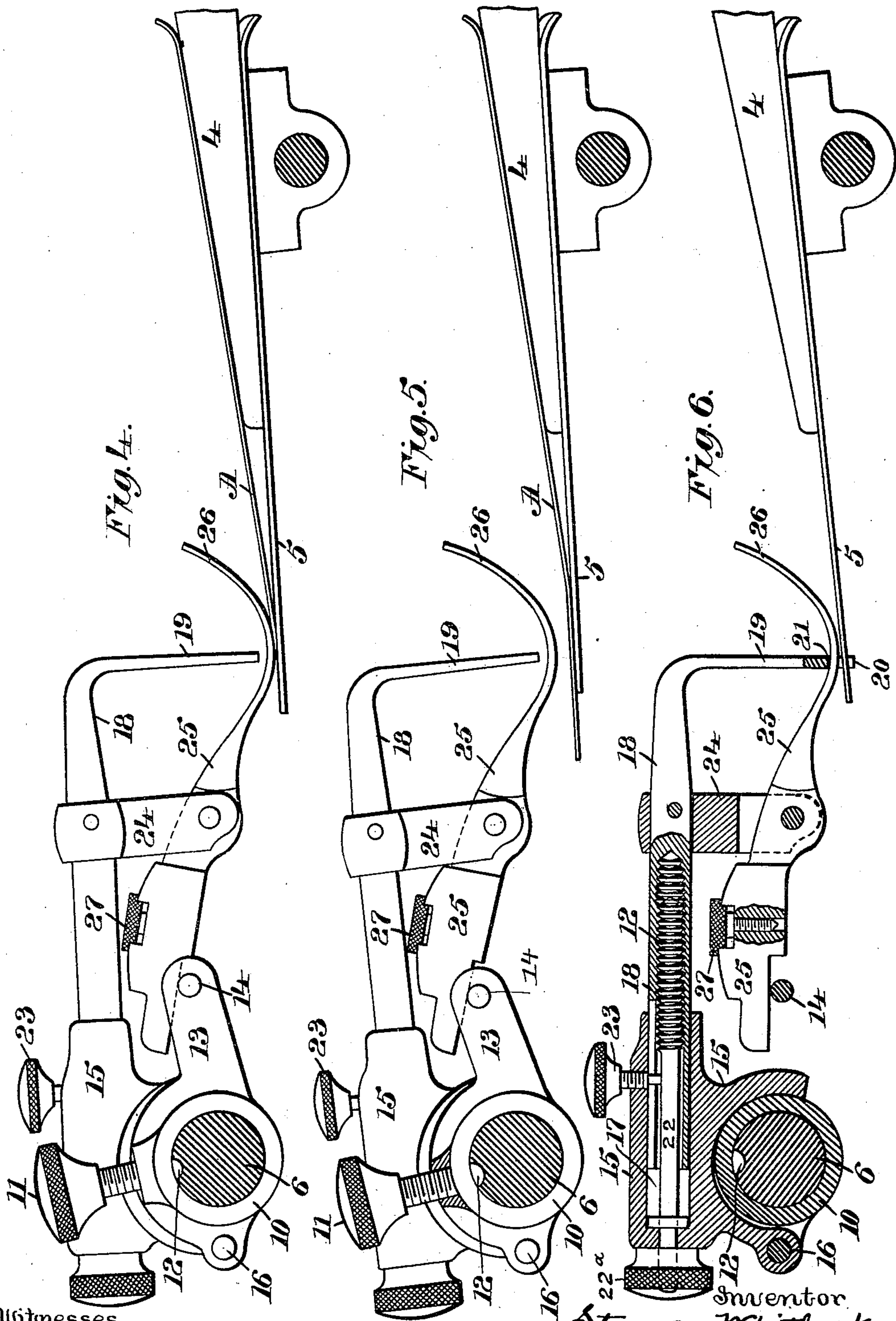
Witnesses
Wm. J. Danner
A. J. Tanner.

Inventor
Sturges Whitlock
by his atty J. H. Hubbard

S. WHITLOCK.
SHEET GUIDE FOR PRINTING MACHINES.

No. 466,055.

Patented Dec. 29, 1891.



Witnesses
Wm. J. Tanner
A. J. Tanner.

Inventor
Sturges Whitlock
by his atty J. H. Hubbard

UNITED STATES PATENT OFFICE.

STURGES WHITLOCK, OF SHELTON, CONNECTICUT, ASSIGNOR TO THE
WHITLOCK MACHINE COMPANY, OF SAME PLACE.

SHEET-GUIDE FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 466,055, dated December 29, 1891.

Application filed March 7, 1891. Serial No. 384,131. (No model.)

To all whom it may concern:

Be it known that I, STURGES WHITLOCK, a citizen of the United States, residing at Shelton, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sheet-Guides for Printing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain novel and useful improvements in sheet-guides for printing-machines, and has for its object to provide means for aligning the paper upon the feed-board prior to the grasping of the same by the grippers, and also to hold said paper as against displacement until such time as the grippers have fully taken hold thereon, and then to entirely and fully release the sheet; and with these ends in view my invention consists and resides in the construction and combination of elements hereinafter fully to be set forth, and then recited in the claims, and particularly in the combination of stops and the holding-fingers so arranged and operated as to be removed out of contact with the sheet one after the other.

In order that such persons as are skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings and the letters and numerals marked thereon, which form a part of this specification.

Figure 1 shows in perspective a portion of a printing-machine provided with my invention. Fig. 2 is a detail plan view of the sheet-guide and the supporting-strip. Fig. 3 is a detail side elevation showing the parts in what I term their "first position." Fig. 4 is a similar view showing the parts in their second position; Fig. 5, a similar view showing the parts in their third position; Fig. 6, a detail longitudinal vertical section; Fig. 7, a detail end elevation of the sheet-stop.

The cylinder 1, which is provided with ordinary grippers 2, is journaled between standards 3 after the manner common in printing-machines. The feed-board 4 is supported in proper relation to the cylinder.

5 are paper-supporting strips set on the under surface of the feed-board but projecting a little beyond its lower edge. These supporting-strips may be used in any number desired, and they are arranged between or in such manner as not to lie in the same vertical plane with the grippers carried by the cylinder.

6 denotes a transverse rock-shaft, whose ends are journaled in bearings on the standards, and said shaft is connected either by a short crank 7 and pitman 8 with a rotating cam 9 or by some equivalent means with some moving part of the machine, so as to impart to said shaft a rocking movement through an arc of, say, ten degrees, more or less. Each of the sheet-guides consists of a box or sleeve 10, surrounding the shaft 6 and adapted to be firmly held in position thereon by means of a set-screw 11, whose end abuts against the shaft, which is preferably furnished with a groove 12, into which the point of the screw may take. This method of attachment, which is, however, not at all essential, permits the guides to be moved longitudinally upon the shaft, as may be desired. The box just referred to carries a rigid outward projection 13, whose end is furnished with a pin 14, extending laterally therefrom and whose purpose will be presently explained.

15 is a block, whose rear end, as at 16, is hinged to the box and whose lower surface is seated upon said box in such manner as to prevent it from dropping forward and downward, except within certain limits. Projecting outward from the upper part of this block, which has formed therein a socket 17, is a rod 18, whose forward end is turned downward at right angles, as seen at 19, and is flattened and provided with two notches 20 and 21, as appears at Fig. 7. The rod 18 is adjustable longitudinally in its socket by means of a screw-threaded spindle 22, having an operating-nut 22^a and a set-screw 23. A bracket 24 depends from the rod 18, somewhere about its center, and between the two parts of a fork which is formed in said bracket is pivoted a lever 25, overbalanced as to its rear end and terminating as to its forward end in a thin flat curved finger 26. The pin 14, heretofore referred to, engages beneath the rear end of

this lever. A set-screw 27 is carried by said lever for purposes of regulation, as will be presently explained.

The operation of my invention may be most readily gathered from an inspection and comparison of Figs. 3, 4, and 5, to which reference is now particularly made. Each of the sheet-guides is in alignment with one of the supporting-strips 5 and normally engages it at a point a little beyond the edge of the feed-board. (See Fig. 2.) When in its normal position, as shown at Fig. 3, the wider notch 20 in the end of the flattened part 19 rests astride of the supporting-strip 5 at the same time the finger 26 lies in the notch 21. The sheet-guides are held in this engagement by their weight, the shaft 6 being idle. When a sheet of paper, which is denoted in the drawings by the letter A, is fed downward along the feed-board by the operator until its forward edge passes beneath the under surface of the curved fingers 26 and rests against the outer surface of the several parts 19, as shown at Fig. 3, said parts remain in the position shown until the grippers have almost reached the point where they seize the sheet, when the rocking movement is imparted to the shaft 6. This rocking movement is continuous, but having reference to its effects it is divided into two stages. The first effect of said rocking movement is to raise through the projection and the pin 14 the overbalanced rear end of the lever 25, thereby forcing its outer end downward out of the notch and against the paper, so that the edge of the latter is slightly clasped beneath the several fingers 26 and against the supporting-strips 5. At this time the position of the parts is as shown at Fig. 4, and it is at this time that the grippers fasten upon the edge of the sheet. As they do this the rocking movement of the shaft still continues, whereupon the guide as a whole is lifted still farther, and the fingers 26, having reached their limit of movement about their fulcrums, are raised clear of the sheet just as the latter is carried down by the cylinder. As soon as the sheet has passed beneath the grippers the shaft returns to the position shown at Fig. 3, the cam or other operating means being properly timed for this purpose. The set-screws 27 will control the amount of independent movement of the fingers.

By means of the device just described several advantageous results are accomplished. In the first place the ends of the parts 19 furnish a solid stop or abutment against which the edge of the sheet may be accurately fed, the fingers 26 offering no resistance to its passage beneath them. Then as the parts 19 are raised while the sheet is no longer supported

from its edge it is pinched between the fingers 26 and the supporting-strips tightly enough so that it will neither slide downward nor will it be readily displaced until seized by the grippers. It is intended that the operation shall be so timed that the fingers shall rise out of contact with the sheet before the latter is drawn forward by the grippers; but if for any reason they should not be completely out of engagement as the sheet is drawn forward they will not oppose any serious resistance to its passage.

In this my invention I do not wish to be confined to the precise details of construction herein shown and described, since these may be freely varied without departing from the essentials of my invention, which I deem to be commensurate with the terms of the claims here following.

I claim—

1. The combination, with the transverse shaft, of the longitudinally-sliding box, the block carrying the sheet-stop and hinged to said box, the pivoted and overbalanced pressure-finger carried by the sheet-stop, and means for imparting to the pressure-finger a movement relative to the sheet-stop, substantially as described.

2. The combination, with the feed-table, of the projecting sheet-supporting strips, the sheet-stops having their ends notched, adapted to straddle the strips, pressure-fingers carried by the sheet-stops and seated in the notched ends of the latter, and means for moving the stops and fingers out of engagement with the sheet.

3. In a printing-machine, the combination, with the feed-board, of paper-supporting strips projecting beyond the edge of said feed-board, the sheet-stop carried by the shaft and adapted to engage upon the strip, the overbalanced pressure-finger pivoted to the sheet-stop, and means secured upon the shaft and engaging said pressure-finger, whereby the movement of the latter upon its pivotal point is effected.

4. The combination, with the shaft 6, of the box, the block hinged to said box, the sheet-stop projecting outward from the block and adjustable relative thereto, the pivoted and overbalanced pressure-finger, and the projection 13, engaging said finger, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

STURGES WHITLOCK.

Witnesses:

SHERMAN HARTWELL HUBBARD,
WM. J. TANNER.