

No. 706,623.

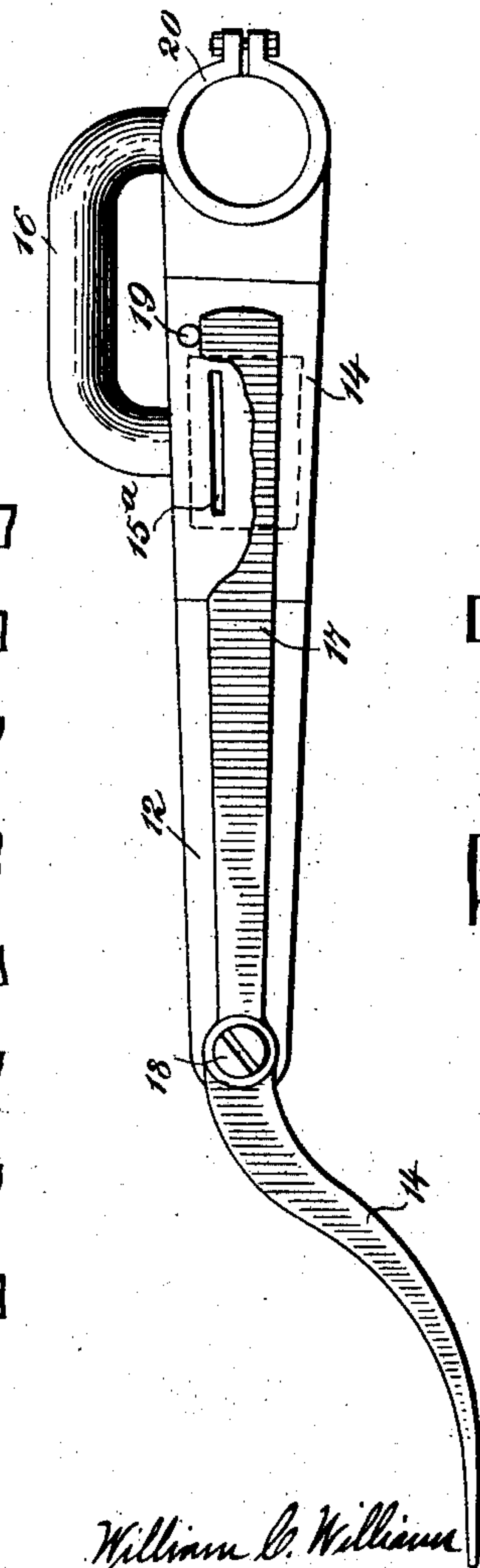
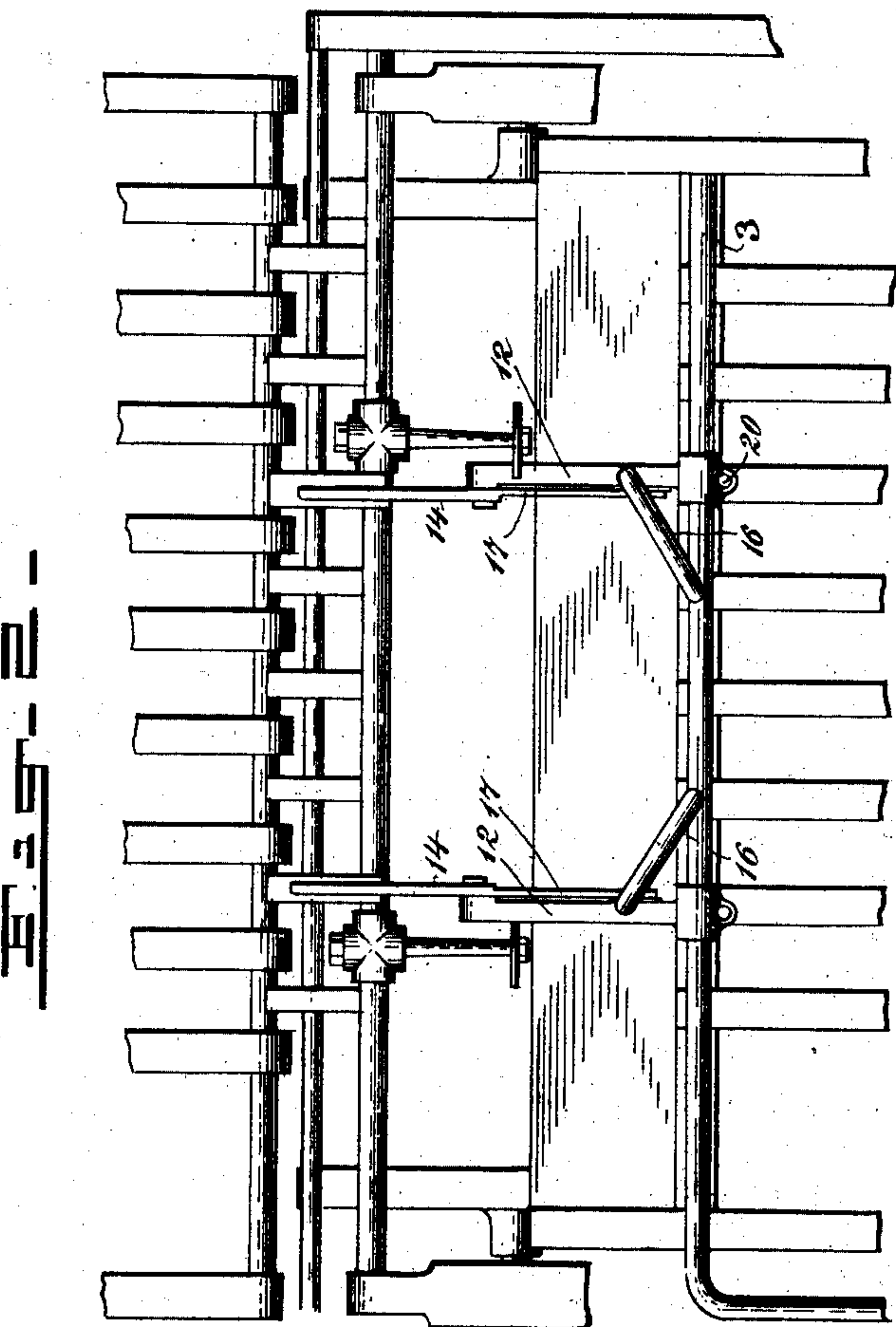
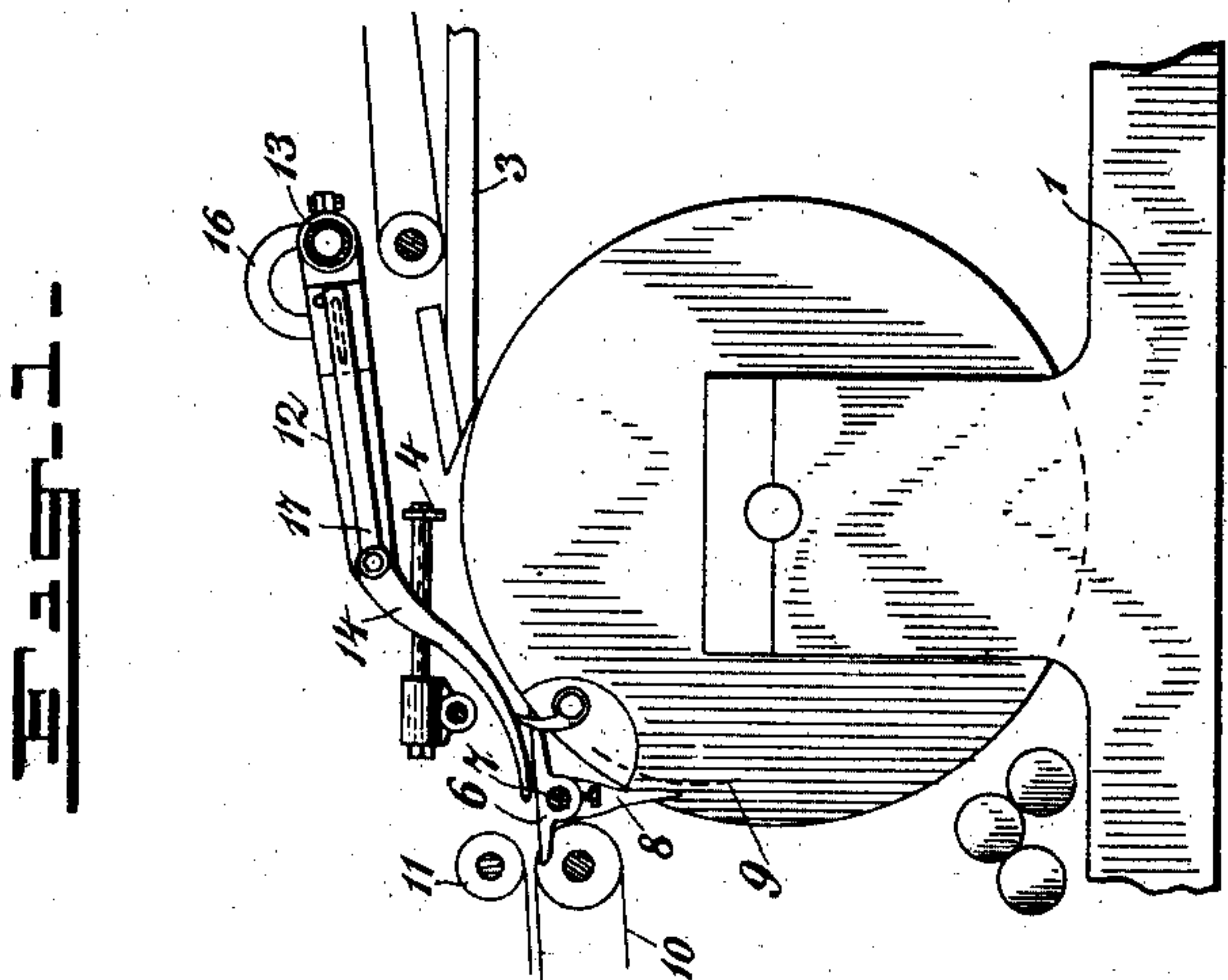
Patented Aug. 12, 1902.

W. C. WILLIAMS.

CONTROLLING MECHANISM FOR PRINTING PRESSES.

(Application filed Sept. 3, 1901.)

(No Model.)



WITNESSES:
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CONTROLLING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 706,623, dated August 12, 1902.

Application filed September 3, 1901. Serial No. 74,106. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. WILLIAMS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Controlling Mechanism for Printing-Presses, of which the following is a specification.

My invention relates to a controlling mechanism for printing-presses or similar paper-manipulating machines, and more particularly to a fluid-operated controlling mechanism adapted to be rendered operative by the crumpling of the paper or similar material during its passage through the machine. In passing through a press the paper frequently catches and becomes crumpled, and if the machine is not immediately stopped the paper gathers into a more or less compact mass, which is apt to become dislodged and be carried into the printing mechanism, where it acts to injure or destroy the printing or impression surfaces or to otherwise injure the press or interfere with its operation.

My invention has for its object to provide a simple and reliable mechanism which will be rendered operative by the crumpling of the paper to stop the press before the paper accumulates in such a mass as to be apt to cause injury.

My invention consists in the novel parts, improvements, and combinations herein shown and described.

The accompanying drawings, which are referred to herein and form a part hereof, illustrate one embodiment of my invention and serve in connection with the description herein to explain the principles of the invention and the best mode in which I have contemplated applying those principles.

Of the drawings, Figure 1 is a side elevation, partly in section, of a printing-press equipped with a controlling mechanism constructed in accordance with my invention; only as much of the press being shown as is necessary to make the construction and operation of the device clear. Fig. 2 is a plan view of the same; and Fig. 3 is a side elevation, on an enlarged scale, of a part of the device removed from the press.

I have illustrated my invention in connection

with a printing-machine in which the impression-cylinder makes two revolutions for each impression and in which the sheets are delivered from the top of the cylinder near the point where the sheets are fed to the cylinder. In this type of machine there is provided a set of fingers, which are automatically moved into and out of coöperative relation with the impression-cylinder at the proper time to strip the sheet therefrom and transfer it to the delivery mechanism, and as it is at this point in the path of the sheet that the most trouble is experienced by the crumpling of the paper I have illustrated my invention as applied to this part of the press.

Referring to the drawings in detail, 1 represents a portion of the frame of an ordinary bed-and-cylinder machine.

2 is the impression-cylinder.

3 is the feed-board, and 4 represents the ordinary front gages, from which the sheets are taken by the grippers 5 of the impression-cylinder.

6 represents the stripping-fingers, which are mounted on a rock-shaft 7 and are moved into position at the proper time to take the sheets from the grippers 5 by an arm 8 and a cam 9. From the fingers 6 the paper passes to the delivery mechanism proper, which usually includes a set of tapes 10 and guide-rollers 11.

In accordance with my invention an arm 12 is mounted on a suitable support 13, located at any convenient point above the impression-cylinder. To the arm 12 is pivoted a contact-finger 14, the free end of which is located in coöperative relation with the stripping-fingers 6, being preferably located directly above, and close to, but not in contact with, one of said fingers. In accordance with my invention the finger 14 is connected to a valve for controlling the operating fluid of the controlling mechanism of the press. Preferably this mechanism is such as is normally held inactive by means of a partial vacuum, the destruction of which renders the mechanism operative to stop the press or to throw the impression-cylinder out of operation, or to do both, as more fully described in the patent granted to G. F. Lieger, No. 624,228. To this end the arm 12 is provided with a chamber 15, which

communicates, on the one hand, with a port 15^a, formed in one side of the arm 12, and, on the other hand, with a pipe 16, which communicates with the controlling mechanism, and the finger 14 is provided with a valve-arm 17, which when the finger is in its normal position is adapted to cover the port 15^a. Preferably the arm 17 is so arranged with relation to the port that it has a movement transversely thereto, as in this way the pressure of the fluid offers the least resistance to the movement of the arm. As shown, the port 15^a is formed near the base of the arm 12, and the arm 17 is so connected to the finger 14 as to partly balance it on the pivot 18. A stop 19 is provided to hold the parts in their operative position. The arm 12 and the parts carried thereby are preferably duplicated on the opposite sides of the machine, so as to render the controlling mechanism operative if the sheet catches at either side of the press. The arms 12 are preferably also adjustable angularly and laterally, so that the contact-fingers can be brought into operative relation with the different stripping-fingers 6, as is required to accommodate sheets of different sizes. To this end the support 13 is preferably in the form of a tube, which forms a part of the controlling mechanism, and the arms 12 are connected to the tube by clamps 20, which permit the adjustments referred to. As shown also, the tubes 16 are made flexible and are connected to the tube 13 out of the desired range of adjustment of arms 12. It will be seen from this construction that when the paper catches on the finger 6 at either side of the press and crumples thereon one at least of the fingers 13 will be so operated as to cause the valve 17 to uncover the port 15^a. Air will thus be admitted to the chamber 15, thus destroying the vacuum therein and in the passages connected therewith and rendering the controlling mechanism operative. This operation is rendered more certain by the lifting of the fingers 6, their movement being more or less positively imparted to the fingers 14 by the crumpled paper. In this way the press is certain to be stopped before the mass of paper is carried by the succeeding revolution of the impression-cylinder into contact with the printing-form or with the inking apparatus.

My invention is not limited to the precise construction shown, as in carrying the invention into effect many changes may be made in the construction without departing from the principles of the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a printing-press or similar paper-manipulating machine the combination with a

fluid-operated controlling mechanism including an arm having a valve-port, of a controlling-valve pivoted on said arm, and a contact-finger connected to said valve and arranged in such relation to the path of the paper in the machine that a crumpling of the paper will operate said controlling-valve.

2. In a printing-press or similar paper-manipulating machine the combination with a fluid-operated controlling mechanism including an arm having a valve-port, of a valve pivoted on said arm and constructed to open and close said port by a movement transverse thereto, and a contact-finger connected to said valve and arranged in such relation to the path of the paper in the machine that a crumpling of the paper will operate said controlling-valve.

3. In a printing-press or similar paper-manipulating machine, the combination with a fluid-operated controlling mechanism including a tube mounted transversely to the path of the paper in the machine and an arm adjustably mounted on said tube, said arm having a valve-port connected to said tube by a flexible pipe, of a controlling-valve pivoted on said arm, and a contact-finger connected to said valve and arranged in such relation to the path of the paper that a crumpling of the paper will operate said controlling-valve.

4. In a printing-press or similar paper-manipulating machine the combination with a fluid-operated controlling mechanism including a tube mounted transversely to the path of the paper in the machine and an arm adjustably mounted on said tube, said arm having a valve-port connected to said tube by a flexible pipe, of a valve constructed to open and close said valve-port by a movement transverse thereto, and a contact-finger connected to said valve and arranged in such relation to the path of the paper that a crumpling of the paper will operate said controlling-valve.

5. In a printing-press the combination with an impression-cylinder and a set of automatically-operated fingers for stripping the sheets therefrom, of a fluid-operated controlling mechanism, a controlling-valve therefor and a contact-finger connected to said valve and arranged in such relation to said stripping-fingers that a crumpling of the paper will upon the movement of said stripping-fingers operate said controlling-valve.

Signed at New York city, in the county of New York and State of New York, this 13th day of August, A. D. 1901.

WILLIAM C. WILLIAMS.

Witnesses:

EDWIN SEGER,

JOHN O. GEMPLER.