

P. R. JOHNSON.
 PHOTOGRAPHIC PRINTING MACHINE.
 APPLICATION FILED JAN. 25, 1909.

968,953.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.

Fig. 2.

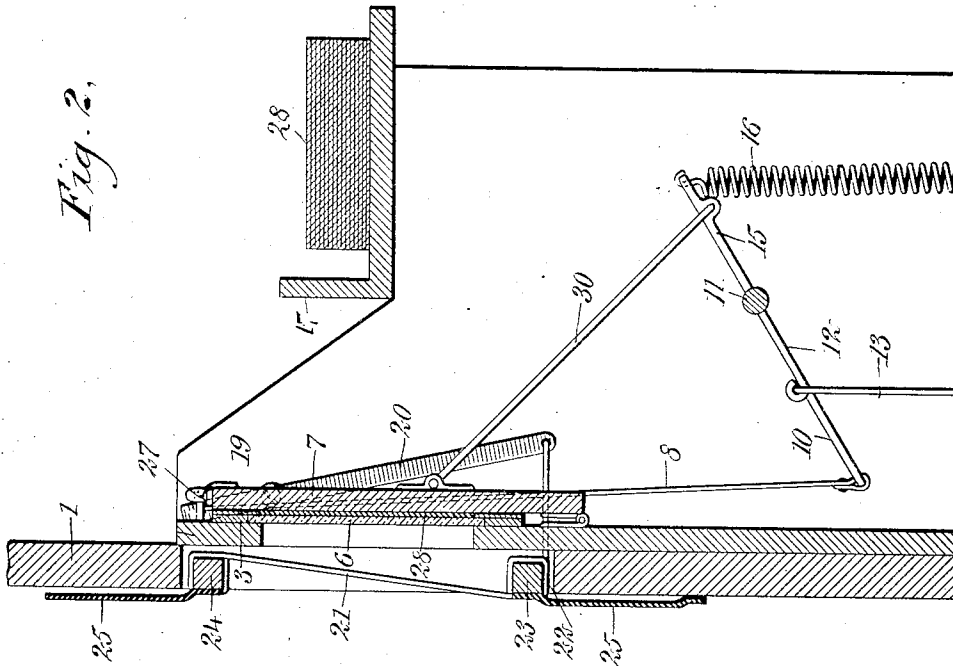
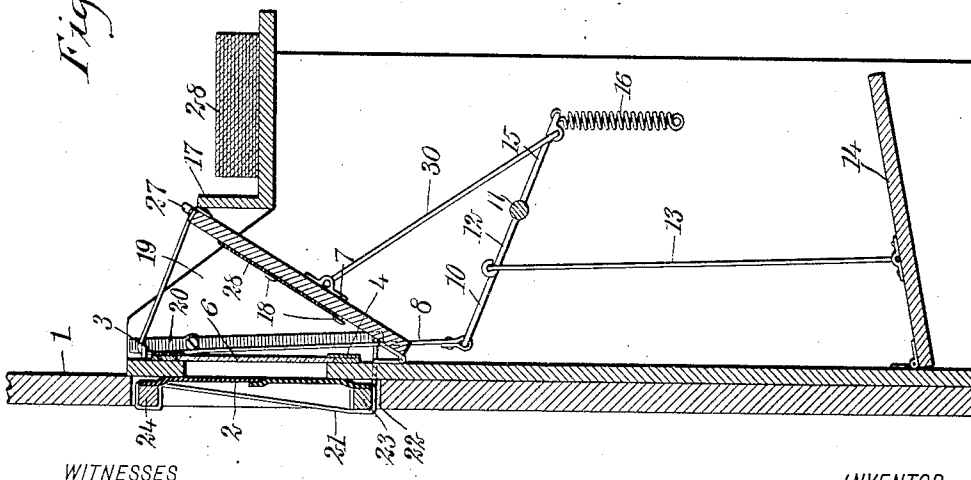


Fig. 1.



WITNESSES

Edward Thorpe
 E. B. Marshall

INVENTOR
 Peter R. Johnson
 BY *Mummales*
 ATTORNEYS

P. R. JOHNSON.
 PHOTOGRAPHIC PRINTING MACHINE.
 APPLICATION FILED JAN. 25, 1909.

968,953.

Patented Aug. 30, 1910.

2 SHEETS—SHEET 2.

Fig. 4.

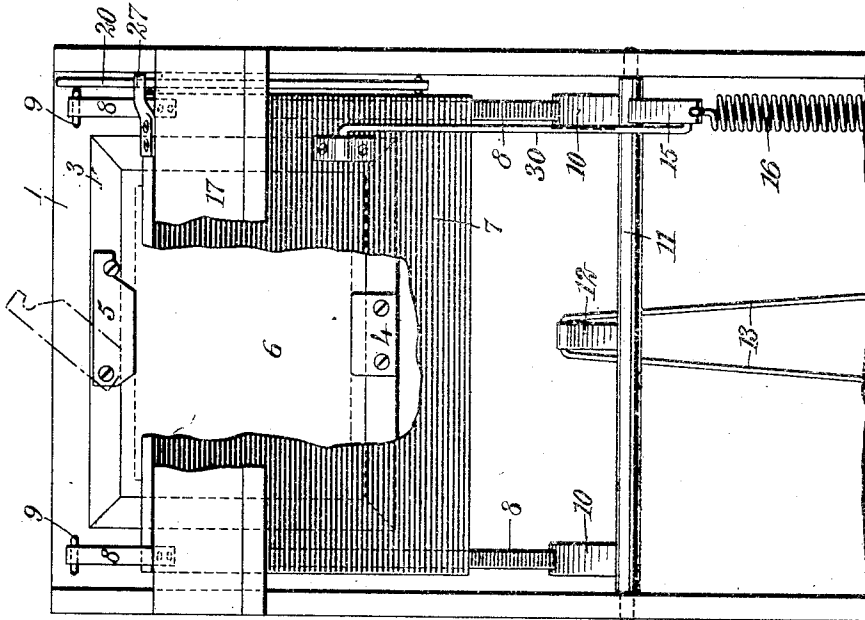
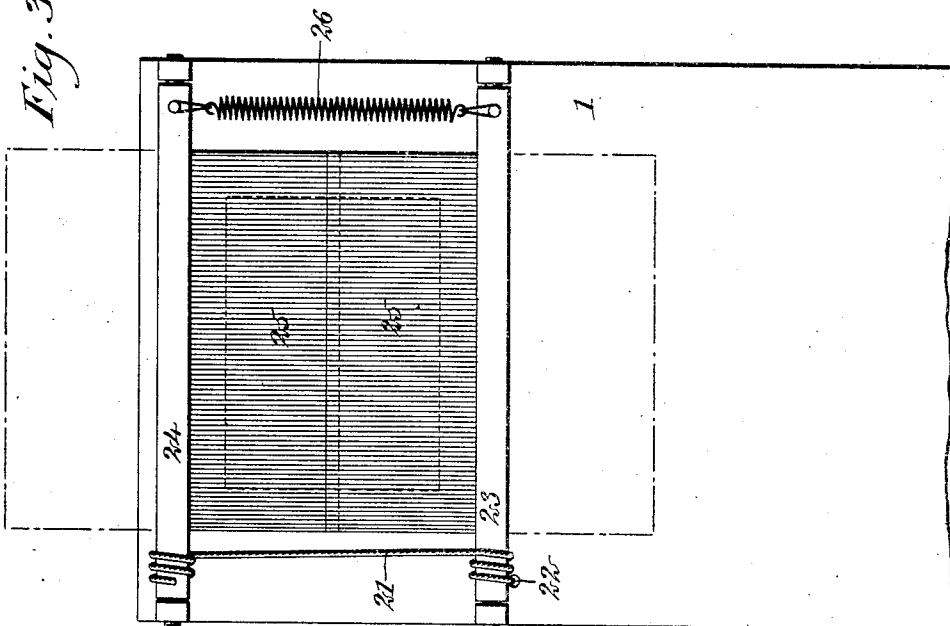


Fig. 3.



WITNESSES

Edward Thorpe.
 & B Marshall

INVENTOR

Peter R. Johnson

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

PETER RUDOLPH JOHNSON, OF FAIRDALE, NORTH DAKOTA.

PHOTOGRAPHIC-PRINTING MACHINE.

968,953.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed January 25, 1909. Serial No. 474,025.

To all whom it may concern:

Be it known that I, PETER R. JOHNSON, a citizen of the United States, and a resident of Fairdale, in the county of Walsh and State of North Dakota, have invented a new and Improved Photographic-Printing Machine, of which the following is a full, clear, and exact description.

My invention relates to photographic printing machines in which the negative may be disposed in a plate holder and be held securely in place behind the shutter, a tympan being provided which is operable by a treadle, and is adapted to hold the printing paper and to move it into position against the negative, there being means by which the tympan operates the shutter as the printing paper is pressed against the negative by the tympan. In the face of the tympan are disposed pins which are held yieldingly extended, the pins being provided to hold the printing paper in place, but the heads of which will push back even with the face of the tympan when the printing paper on the tympan is pressed against the negative.

My machine is designed for use in a dark room or cabinet, light being admitted through the shutter by an opening in the wall of the dark room or cabinet.

Still other objects of the invention will appear in the following more complete description.

In this specification I will describe the preferred form of my invention, but it will be understood that I do not limit myself thereto, as I consider myself entitled to all forms and embodiments of the invention which may be held to fall within the scope of the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, in which—

Figure 1 is a sectional side elevation of the invention; Fig. 2 is an enlarged sectional elevation showing the members of the invention which appear in the upper portion of Fig. 1; Fig. 3 is a front elevation of the invention showing the shutter; and Fig. 4 is a rear elevation of the invention with a portion of the tympan broken away.

Referring to the drawings, it will be seen that my invention is mounted in a frame 1,

to which a shutter 2 is secured, there being an opening in this frame 1, in which a plate holder 3 may be disposed. A plate 4 is secured to the plate holder, within which a negative 6 may be disposed, and a clamp 5 is pivoted at the top of the plate holder, so that it may be moved down against the inside of the negative and will hold the negative securely in place in the plate holder. A tympan 7 is hinged to the frame 1, below the opening therein, and to the top of this tympan are secured straps 8, which are disposed around pulleys 9, the pulleys being secured to the frame, and the straps then lead downwardly to arms 10, secured to a shaft 11. An arm 12 is also secured to the said shaft 11, and this arm 12 is connected by a link 13 with a treadle 14. There is still another arm 15, which is secured to the shaft 11, and to this arm 15 is secured a spring 16, the arm 15 being disposed on the side of the shaft opposite to the arm 12, and the spring 16, which is secured to the said arm 15 is held downwardly so that the treadle will be held upwardly disposed, and the tympan 7 is held yieldingly against the printing paper holder 17 by means of a rod 30, which is pivoted to the tympan 7 and to the arm 15, the latter being held yieldingly downward by means of the spring 16, as has been stated. On the face of the tympan are pins 18, which are yieldingly extended and which are adapted, with the exception of their heads, to move within the tympan when the tympan is pressed against the negative 6 in the plate holder 3, so that the pins while supporting the printing paper will not prevent the tympan from closing snugly against the negative during the period of exposure. To the frame member 19, secured to the frame 1, is pivoted a lever 20, to the terminal of the lower arm of which is secured a cord 21. This cord 21 projects outwardly through an orifice 22 in the frame 1, and it is wound in one direction around a rock shaft 23 journaled in the frame, and the cord is then wound on a second rock shaft 24, in a direction opposite to the direction in which it is wound on the rock shaft 23. It will, therefore, be seen that when the cord 21 is pulled, the rock shafts will be moved in opposite directions, inasmuch as the outer terminal of the cord 21 is secured to the rock shaft 24, after it has been wound thereon. To each of the rock

shafts 23 and 24 is secured a shutter member 25, these shutter members being long enough to overlap and being constructed of such material as will permit them to lie close against the frame 1 in which there is the opening in which the negative in the printing frame is disposed. A spring 26 is secured at its ends to the rock shafts 23 and 24, the spring 26 being adapted to hold the shutter members normally closed against the opening in the frame. To the side of the tympan 7 is secured a trip 27, the trip being adapted to actuate the lever 20 which in turn will draw the cord 21, which will rock the shafts 23 and 24 in opposite directions and thereby open the shutter.

In using my invention, the negative 6 is secured in position in the printing frame 3 by means of the plate 4 and the clamp 5. A piece of printing paper 28, is then slipped into position on the tympan and is held by the pins 18, after which the operator presses the treadle 14 downwardly with his foot, which rocks the shaft 11, and thereby causes the straps 8, by means of the arms 10 to be drawn downwardly, which presses the tympan against the negative in the printing frame. As the tympan presses down on the negative, the trip on the tympan operates the lever 20, which draws on the cord 21, thereby rocking the shafts 23 and 24 in opposite directions, with the result that the shutter members open to expose the negative to the light, thereby printing the paper. The operator then lifts his foot from the treadle 14, which causes the spring 16 to rock the shaft 11, thereby loosening the straps 8, which permits the tympan to fall backwardly to permit the operator to remove the paper 28 which has been printed, and to place in position a new piece of paper, after which the operator again presses the treadle 14 and the operation is repeated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a photographic printing machine, a printing frame, a divided shutter, two rock shafts, the halves of the shutter being secured to the rock shafts respectively, means to rock the shafts, a tympan adapted to hold printing paper and press it against a negative in the printing frame, a lever adapted to operate the said means, and a trip on the tympan adapted to operate the lever.

2. In a photographic printing machine, a printing frame for the negative, a tympan adapted to be pressed against a negative in the printing frame, a member disposed in close proximity to the printing frame adapted to support a strap, a shaft, an arm secured to the shaft, a strap disposed over the said member having one terminal secured to the tympan and the other terminal se-

cured to the said arm, another arm secured to the shaft, and a link connecting the tympan and the last named arm.

3. In a photographic printing machine, a printing frame for the negative, a tympan adapted to be pressed against a negative in the printing frame, a member disposed in close proximity to the printing frame adapted to support a strap, a shaft, an arm secured to the shaft, a strap disposed over the said member having one terminal secured to the tympan and the other terminal secured to the said arm, another arm secured to the shaft, a link connecting the tympan and the last mentioned arm, a shutter, and means actuated by the tympan for operating the shutter.

4. In a photographic printing machine, a printing frame, a hinged tympan which is moved against the printing frame, a shaft, an arm on the shaft, a strap secured to the tympan, a pulley secured in close proximity to the printing frame, the strap being disposed over the pulley and having its other terminal secured to the arm, a treadle secured to and which is adapted to rock the shaft, and means which are adapted yieldingly to hold the shaft in one position.

5. In a photographic printing machine, a printing frame for the negative, a shutter, a tympan which is adapted to be pressed against a negative in the printing frame, a cord which is adapted to open the shutter, a lever to which the cord is secured, and a trip on the tympan which is adapted to operate the lever.

6. In a photographic printing machine, a printing frame for the negative, a shutter, a tympan which is adapted to be pressed against a negative in the printing frame, a cord which is adapted to open the shutter, a lever to which the cord is secured, a trip on the tympan which is adapted to operate the lever, means to operate the tympan, and a treadle which is adapted to operate the said means.

7. In a photographic printing machine, a divided shutter, two rock shafts, the halves of the shutter being secured to the rock shafts respectively, a cord which is wound on one of the rock shafts in one direction and on the other rock shaft in a direction opposite thereto so that when the cord is drawn in one direction it will move the halves of the shutter to a closed position and when drawn in the opposite direction it will open the shutter, and a spring which is adapted to hold the rock shafts normally stationary with the shutter closed.

8. In a photographic printing machine, a printing frame, a divided shutter, two rock shafts, the halves of the shutter being secured to the rock shafts respectively, a cord which is wound on one of the rock shafts in one direction and on the other rock shaft

in a direction opposite thereto, a tympan which is adapted to hold printing paper and press it against a negative in the printing frame, a lever to which a cord is secured, and
 5 a trip on the tympan which is adapted to operate the lever.

9. In a photographic printing machine, a printing frame, two rock shafts, a divided shutter, the halves of which are secured to
 10 the rock shafts respectively, a cord which is wound on one of the shafts in one direction and on the other shaft in a direction opposite thereto, means to hold the rock shafts yieldingly stationary with the shutter closed,
 15 a tympan which is adapted to hold printing paper and press it against a negative in the printing frame, a trip on the tympan, a lever to which the cord is secured, the lever being so disposed as to be operated by the
 20 trip when the tympan is pressed against the printing frame, means to operate the tympan, and a treadle which is adapted to operate the said means.

10. In a photographic printing machine, a
 25 printing frame for the negative, a shutter, a tympan which is adapted to press the

printing paper against the negative in the printing frame, pins mounted on the tympan having heads which are yieldingly extended and which are adapted to clamp the print-
 30 ing paper in position, and means which are adapted to operate the shutter as the tympan is pressed against the negative in the printing frame.

11. In a photographic printing machine, a
 35 divided shutter, two rock shafts, the halves of the shutter being secured to the rock shafts respectively, and a cord, which is wound on one of the rock shafts in one di-
 40 rection and on the other rock shaft in a direction opposite thereto, so that when the cord is drawn in one direction, it will move the halves of the shutter to a closed position, and when drawn in the opposite direction
 45 it will open the shutter.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

PETER RUDOLPH JOHNSON.

Witnesses:

J. D. LARSON,

A. G. LEWIS.