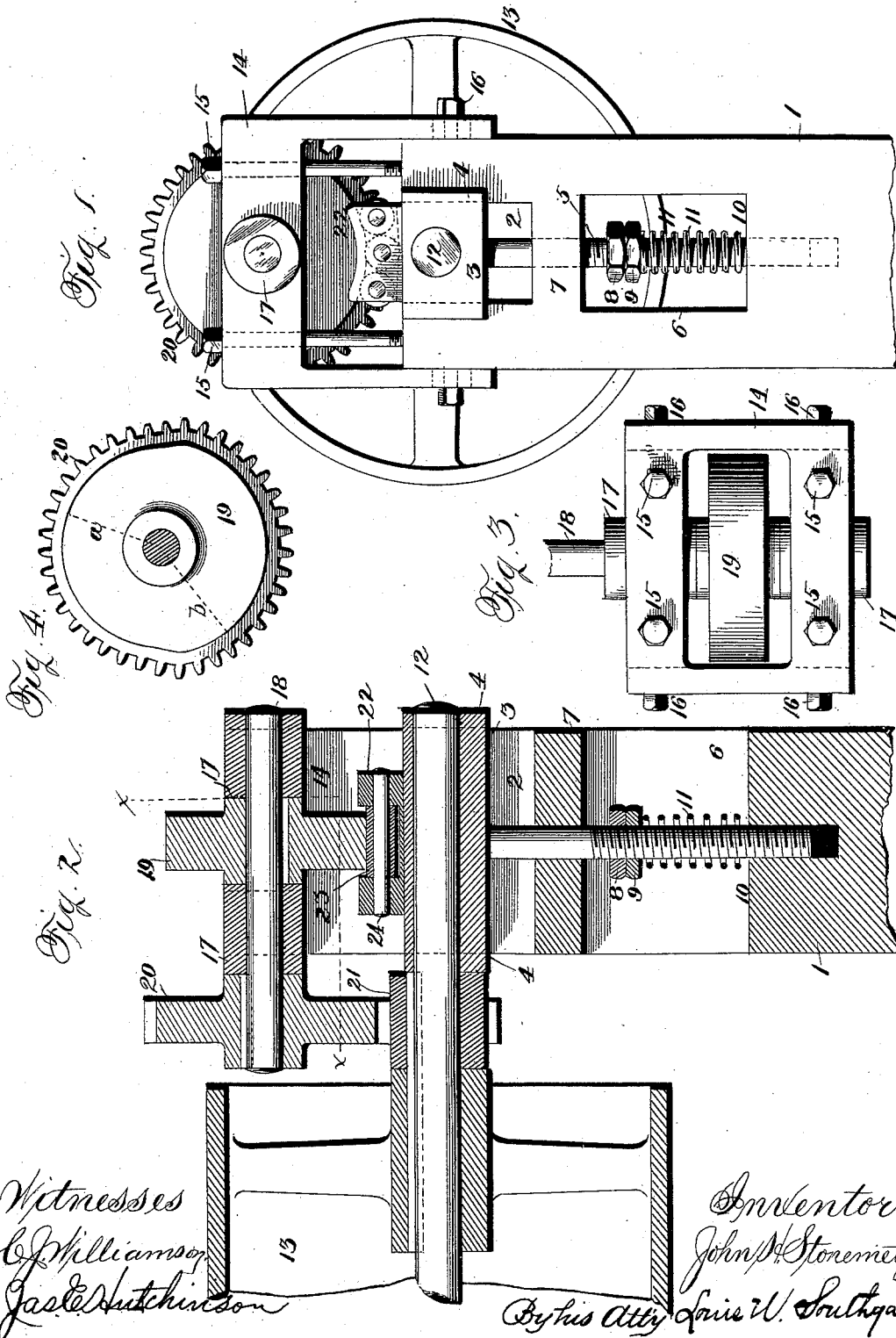


(No Model.)

J. H. STONEMETZ.
CYLINDER PRINTING PRESS.

No. 472,319.

Patented Apr. 5, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. STONEMETZ, OF MILLBURY, MASSACHUSETTS, ASSIGNOR TO THE STONEMETZ PRINTERS' MACHINERY COMPANY, OF SAME PLACE.

CYLINDER PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 472,319, dated April 5, 1892.

Application filed July 15, 1891. Serial No. 399,623. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STONEMETZ, a citizen of the United States, residing at Millbury, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Cylinder Printing-Presses, of which the following is a specification.

The aim of this invention is to produce a device that will raise and lower the impression-cylinder of a cylinder printing-press in relation to the reciprocating bed.

To this end the invention consists of the device described and claimed in this specification and illustrated in the accompanying drawings, which show enough of a printing-press to illustrate my invention.

Referring to said drawings, Figure 1 is an end elevation of my improved device. Fig. 2 is a central section of the same at right angles to Fig. 1. Fig. 3 is a plan of Fig. 1; and Fig. 4 is a section on line xx of Fig. 2, illustrating the cam and the cam-shaped gear.

In detail, 1 represents the upright or frame that supports the impression-cylinder of a printing-press. The top of the upright is planed out or cut away, as at 2, to form a bearing, and fitting in the same is the square journal-box 3. This box 3 has flanges 4, which fit in the sides of the upright and hold the box against lateral displacement. The box 4 has the depending stem 5. This stem fits snugly in the upright 1, and the latter is cut away, as at 6, thus forming a brace or guide 7. The lower end of the stem is screw-threaded, and is held and guided in the upright, as shown. Fitting on the stems are the nuts 8 and 9, and between the same and the shoulder 10 on the upright is the spring 11. Running in the box 3 is the shaft 12, and keyed or fastened on this shaft 12 is the impression-cylinder 13.

Fitting on the sides of the upright 1 is the box or cap 14. This cap is adjustable relatively to the upright by means of the screws 15 15, and is securely fastened in its adjusted position by means of screws 16 16. Thus the "impression" or the pressure that the cylinder is to exert on the bed can be conveniently adjusted from the top of the machine. This cap 14 is cut out in the middle, as shown, and

bearings 17 17 are formed in the sides thereof. Journalled in these bearings is the shaft 18, and keyed or otherwise fastened to this shaft between the bearings 17 17 is the cam 19. This cam consists simply of two arcs of circles, each approximately one hundred and eighty degrees, formed on the two different radii a and b . The difference between the length of these two radii a and b is the distance which it is desired to raise and lower the impression-cylinder. These two arcs connect by small easy curves, as shown in Fig. 4. The cam is driven by means of gear 20, fast on the end of the shaft 18, and pinion 21, keyed on shaft 12 between upright 1 and cylinder 13. The gear 20 is of the same contour as the cam 19, for a purpose hereinafter mentioned. As shown, the gearing is between the upright and the impression-cylinder; but in some instances I place the gearing on the outside of the upright, as is readily understood. Fastened on the top of the box 3 is the frame 22, and mounted on shafts 24, held in this frame, are the rollers 23, which may be three in number, as shown. These rollers are used to reduce friction, and more especially to give the cam a large bearing. If the cam bore only at one point, the wear of the parts would soon affect the impression. The cam 19 bears against these rollers. The gear 20, as shown, is double the size of the pinion 21. Thus the cam will make one revolution to two of the impression-cylinder.

Of course, as is readily understood, the cam mechanism is applied to both ends of the impression-cylinder; but as both act in exactly the same manner only one has been shown and described.

The operation is as follows: The nuts 8 and 9 are adjusted so that the tension of the springs will be sufficient to lift the impression-cylinder 13 clear of the reciprocating bed. The cam 19 is so set that as the bed runs back after printing the sheet on the impression-cylinder the portion of the cam with the small radius a will bear against the rollers 24, and thus the cylinder will be held away from the bed by the springs. Now as the bed is driven forward again that portion of the cam with the large radius b will come into con-

tact with the rollers, and will thus force the cylinder down with great pressure against the bed. Of course the movement of the cylinder is slight, and, as will be understood from the drawings, as the gear 20 is cam-shaped, as the same moves away from the pinion 21 a perfect gear is provided, so that the gear and pinion will be in perfect mesh all the time.

10 As thus described the device is applied to what is known as the "two-revolution cylinder-press;" but of course by simply changing the gearing and the shape of the cam the device could be applied to what is known as the 15 "three-revolution press" or to the stop-motion cylinder-press.

The details of construction herein shown may be greatly varied by a skilled mechanic without departing from the scope of my invention. 20

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

1. In a cylinder-press, the combination of 25 the impression-cylinder mounted vertically movable in the frame, the vertically-adjustable cap mounted on the frame, the cam adapted to force the cylinder against the bed mounted in said cap, and gearing for driving 30 said cam, substantially as described.

2. In a cylinder-press, the combination of

the frame, the box 3, mounted vertically adjustable in the frame, the impression-cylinder carried by said box, a cam-bearing on said box and gearing for driving said cam, and 35 means for moving the cylinder from the bed, substantially as described.

3. In a cylinder-press, the combination of the frame, the box 3, mounted vertically adjustable in the frame, said box having the 40 depending stem, the spring on the same, and the nut for regulating the tension of the same, the impression-cylinder carried by the said box, a cam-bearing on said box, and gearing between said cam and cylinder, substantially 45 as described.

4. The combination of box 3, having the rollers on the top of the same, said box carrying the shaft of the impression-cylinder and being vertically movable in the frame, 50 an adjustable spring acting to lift said box, a cam mounted in an adjustable cap and bearing on said rollers, and the pinion 21 and the gear 20 for driving said cam, substantially as described. 55

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

JOHN H. STONEMETZ.

Witnesses:

LOUIS W. SOUTHGATE,
JAMES J. RAFFERTY.