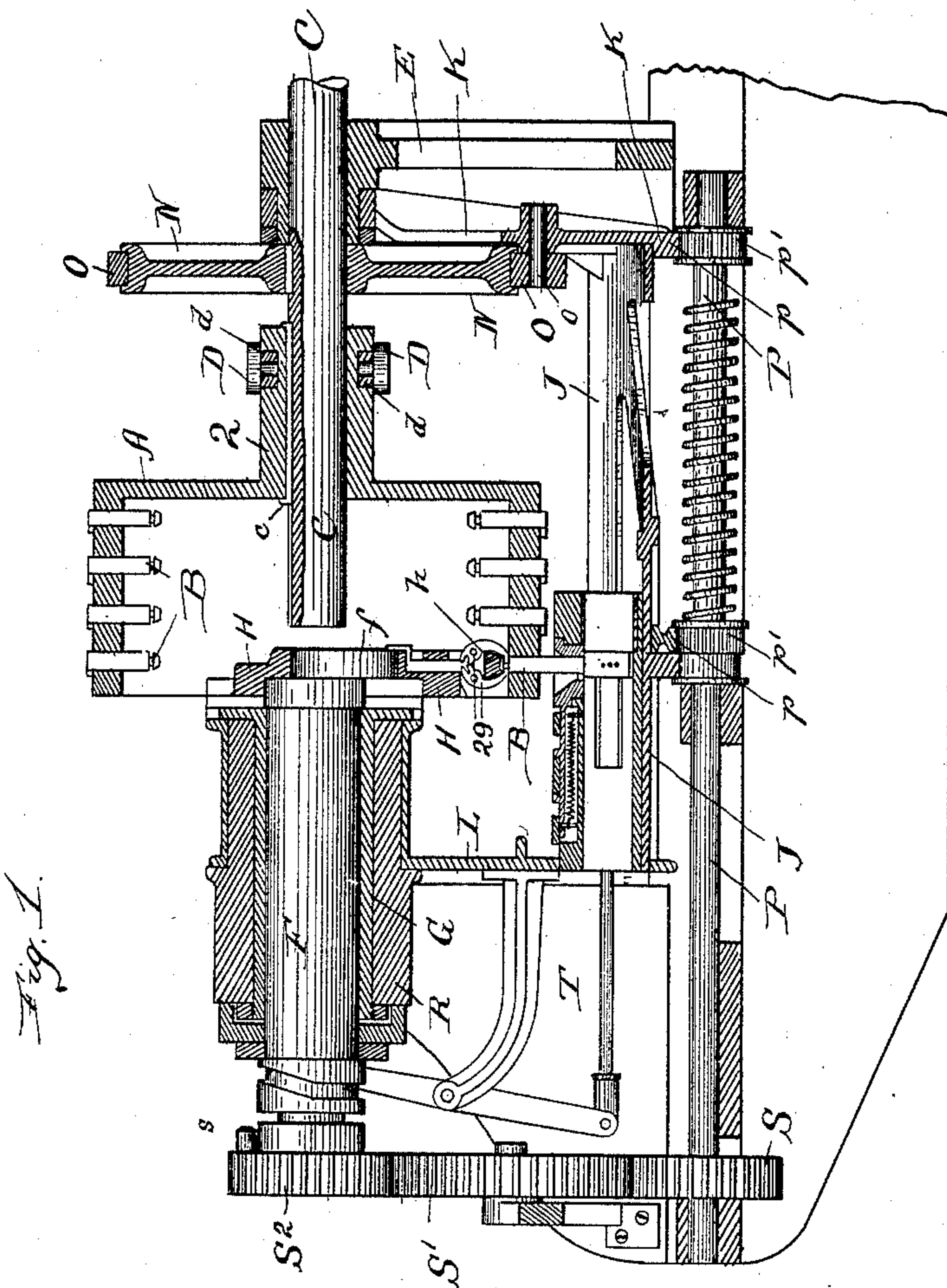
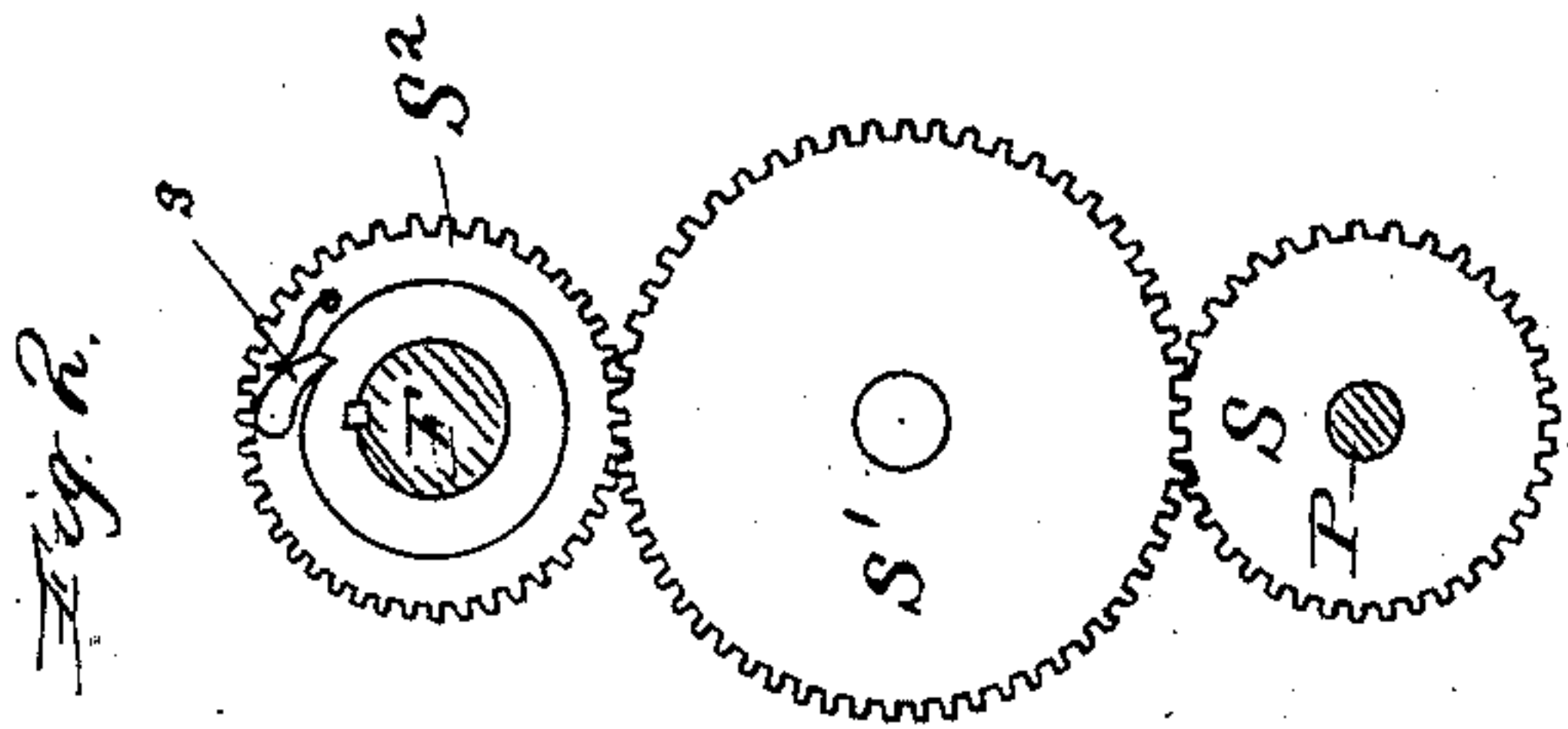


(No Model.)

C. SEARS.  
MATRIX MAKING MACHINE.

No. 475,806.

Patented May 31, 1892.



Witnesses:  
Lew. C. Curtis  
H. M. Munday,

Inventor:  
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His Attorneys



# UNITED STATES PATENT OFFICE.

CHARLES SEARS, OF SOUTH EVANSTON, ILLINOIS.

## MATRIX-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 475,806, dated May 31, 1892.

Application filed August 20, 1890. Serial No. 362,487. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SEARS, a citizen of the United States, residing in South Evanston, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Matrix-Making Machines, of which the following is a specification.

This invention relates to improvements in the matrix-making machine set forth in my application for Letters Patent filed July 18, 1890, and serially numbered 359,208. It relates to the means for actuating the shaft carrying the eccentric, whereby the type-dies are actuated in making the impressions upon the matrix.

The nature of the invention will be fully understood from the accompanying drawings and the subjoined description thereof.

In said drawings, Figure 1 is a partial longitudinal vertical section of a matrix-machine embodying my present improvement. Fig. 2 is a side view of the gearing for actuating the eccentric-shaft.

In said drawings, A represents the type-die-carrying wheel furnished with a series or fonts of type-dies B. This wheel is supported by a hub 2 upon a continuously-revolving shaft C, and it is keyed to said shaft by the key c, so as to rotate therewith; but it nevertheless is capable of being adjusted upon said shaft when it is desired to change the font of type, being impressed by means of a lever, the ends of which are shown at D, and which is keyed to a collar d, which is loosely embraced in an annular recess in the hub 2. The shaft C is supported at the end shown by a standard E.

At F is shown the shaft, which carries the eccentric f for actuating the type-dies, said eccentric giving motion to a slide H, carrying a plunger h, which strikes the top of the dies and forces them to descend upon the matrix. Said eccentric also actuates the grippers 29, so that they will draw the type back after the impression is made, the construction by which this is done being the same as in my said previous application. The shaft F is actuated from the swinging matrix-carrier J, which, with the making of each impression, is locked to and rotates with the type-wheel through a part of the latter's revolution. Said matrix-carrier is supported upon swinging brackets

K L, and the means by which it is locked to the type-wheel intermittently are the same as those described in my former application, and may consist of the wheel N, rigid upon the shaft C, a friction-ring O, coupled to the bracket K of the matrix-frame by a pin o, and means for tightening said ring upon the wheel whenever an impression is to be made. The means for tightening this ring I do not now show, as they are fully set forth in my previous application. The matrix-carrier is provided with one or more racks p, which mesh with pinions p' upon the shaft P, stationarily journaled beneath the swinging frame. This shaft, it will be noticed, will be actuated with each movement of the frame, and I connect the shaft F with shaft P, so that it also will be actuated by the movement of the matrix-frame. A convenient means for doing this is illustrated, and consists of the gear S, mounted upon an extension of said shaft P, an intermediate gear S', and the gear S<sup>2</sup>, loosely mounted upon shaft F. Said gear S<sup>2</sup> carries a spring dog or pawl s, which engages with a corresponding tooth or projection upon shaft F when the gear is actuated in one direction—viz., in the direction of movement caused by the movement of the matrix-frame in unison with the type-wheel. The reverse movement of the gear caused by the swinging back of the matrix-frame to its normal position communicates no movement to shaft F. Shaft F is surrounded by a sleeve G, supported in the bearing R, mounted upon a standard T. There is shown in the drawings, also, devices for positioning and feeding the matrix; but I do not describe them, as they are identical with the like devices in my former application and form no part of the present invention. By thus carrying power to the eccentric-shaft from the swinging frame I am enabled to dispense with the hollow shaft shown in my former application.

I claim—

1. In a matrix-machine, a rotating type-wheel, a swinging matrix-carrier, and means for moving said matrix-carrier in fixed relation with said type-wheel during a part of the latter's revolution, combined with means for impressing a die upon the matrix, and mechanism connecting said impressing mechanism with the swinging matrix-carrier, whereby the



impressing mechanism is actuated by the matrix-carrier, substantially as set forth.

2. In a matrix-machine, the combination of the continuously-rotating type-wheel, a matrix-carrier frame adapted to be locked to and move with said type-wheel during a part of the latter's revolution, means for actuating the type to make the impression, and mechanism connecting said type-actuating means with the swinging frame, substantially as set forth.

3. In a matrix-machine, the combination of a continuously-rotating type-wheel, a swinging matrix-carrier adapted to be locked to said type-wheel intermittently, an intermittently-operated eccentric for impressing the type, and mechanical connections carrying power to said eccentric from the matrix-carrier, substantially as set forth.

4. The combination of the type-wheel, the swinging matrix-carrier, means for locking the matrix-carrier to the type-wheel, the shaft P, actuated by the matrix-carrier, the train of gears carrying motion to the shaft F, the impression device, and said shaft F, substantially as set forth.

5. In a matrix-machine, the combination of a swinging matrix-carrier, with a type-die wheel moving over the matrix, and mechanism for impressing the type, receiving its power from said swinging carrier, substantially as set forth.

CHARLES SEARS.

Witnesses:

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GEO. S. ROSS.