

(No Model.)

A. CARRIER.

DOOR SPRING.

No. 321,949.

Patented July 14, 1885.

Fig. 1.

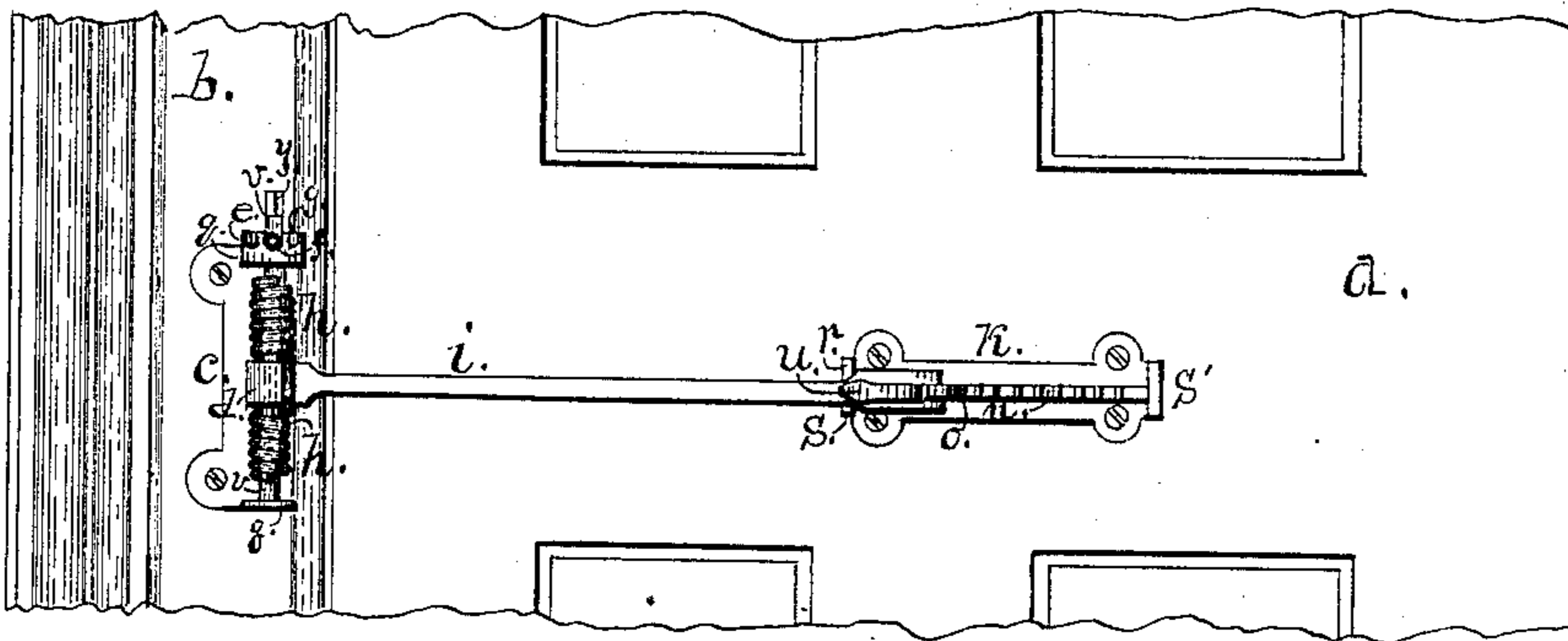


Fig. 2.

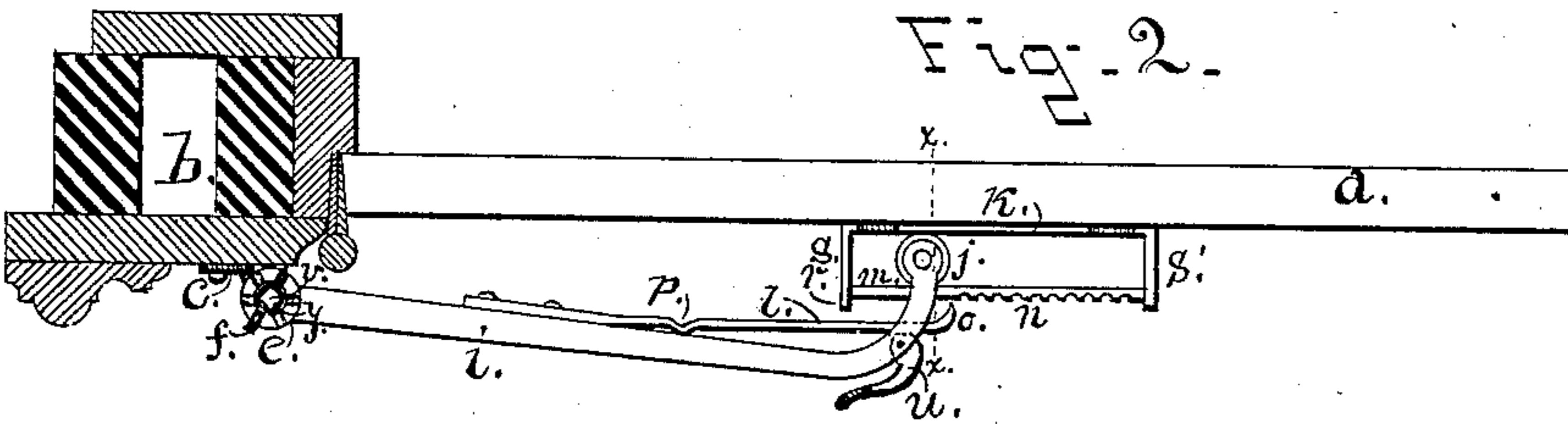


Fig. 3.

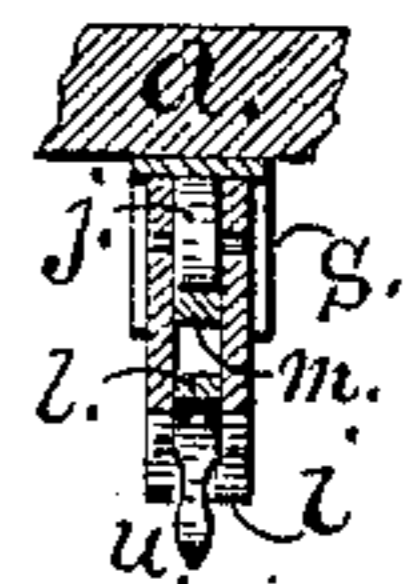


Fig. 3.

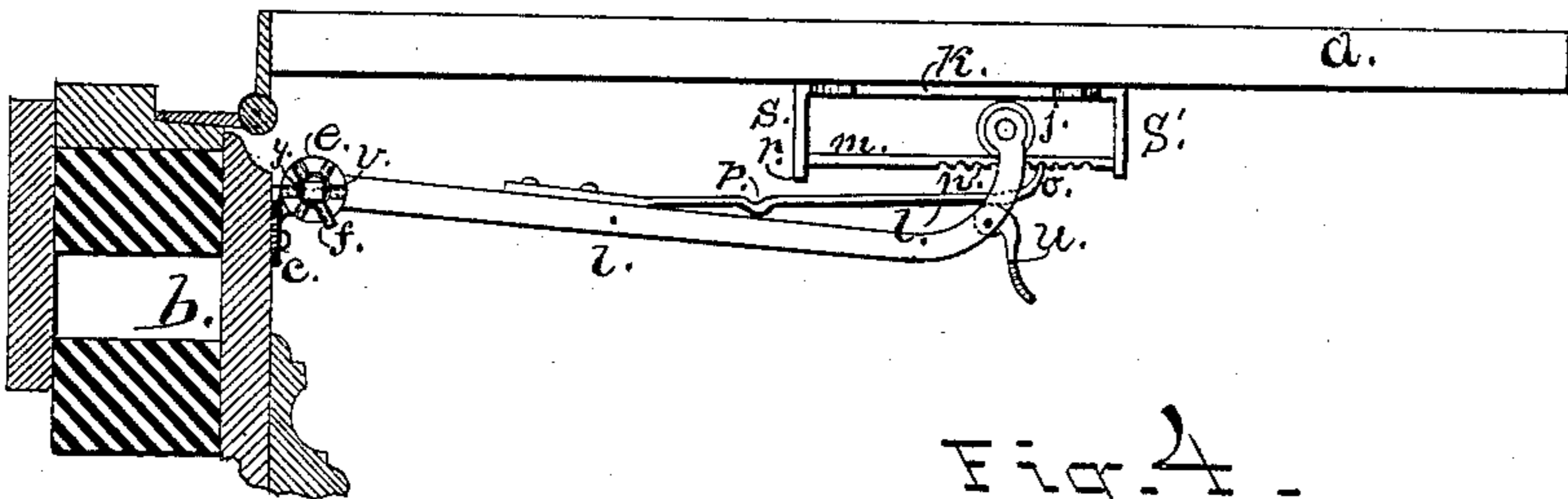
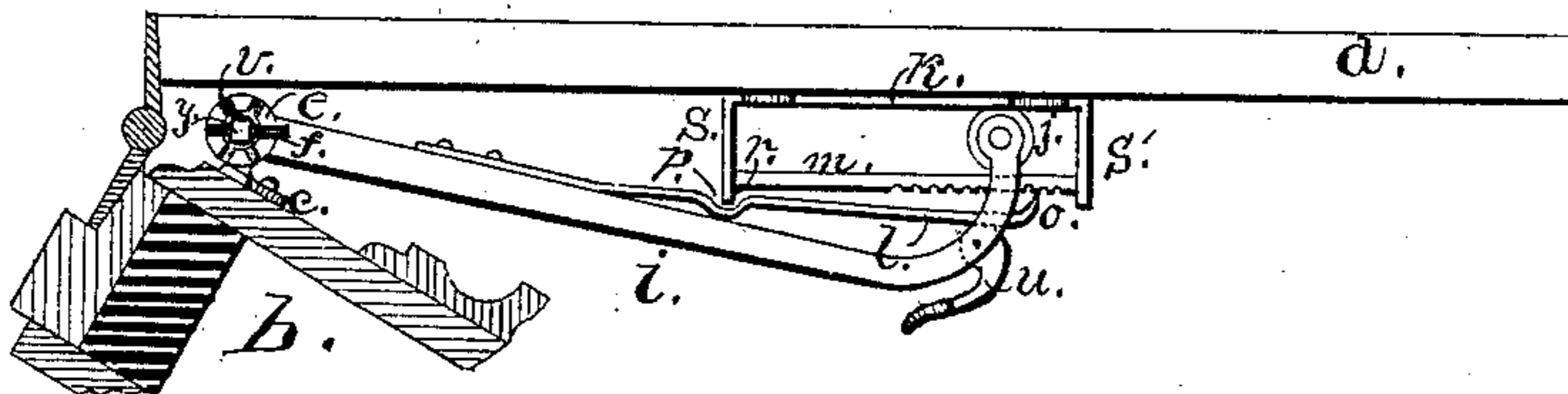


Fig. 4.



ATTEST:

M. B. Thomas
A. J. Thomas

INVENTOR:

Arthur Carrier
by James E. Thomas
Atty.

UNITED STATES PATENT OFFICE.

ARTHUR CARRIER, OF BAY CITY, MICHIGAN.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 321,949, dated July 14, 1885.

Application filed November 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR CARRIER, a citizen of Canada, and a subject of the Queen of Great Britain, and a resident of Bay City, in Bay county, and State of Michigan, have invented a new and useful Improvement in Door-Springs, of which the following is a specification.

My invention relates to improvements in door-springs in which a hinged arm acted upon by a spring operates to close the open door, and the object of my invention is to produce a device by means of which an open door may be automatically closed, or may be securely fastened in any desired position.

I attain this object by means of the mechanism described hereinafter, and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a door with my improved door-spring attached thereto. Fig. 2 is a plan view of the same showing the door closed. Fig. 3 is a view of the same showing the door partly open. Fig. 4 is a view of the same showing the door entirely open. Fig. 5 is a sectional view at *xx*.

Similar letters refer to similar parts throughout the several views.

a represents a door, and *b* the jamb or frame to which it is hinged. *i* is an arm, which is pivoted at *d* to the plate *c* by the pin *v*, the plate *c* being secured to the frame *b* and provided at its upper and lower ends with outward-extending parts *g*, which receives the pin *v*.

The arm *i* extends horizontally along the door to a proper distance, and is, near its extended end, divided longitudinally for a short distance, and curved toward the door *a*, and provided at the end with a roller, *j*, which is pivoted between the said divided ends, and bears upon the plate *k*, rigidly secured to the door *a*. Around the lower portion of the pin *v*, and having its end passed through a hole in the said pin, is coiled the spring *h* in such a manner that it may be passed over and across the arm *i*, and again coiled in an opposite direction around the pin *v* until near the upper part of the said pin, where it is passed through a hole in the pin. The upper end of the pin *v* is provided with a square part, *y*, which may be grasped by a wrench, and just below the part *y* the pin *v* is provided with a hole,

through which passes the removable pin *f*. The upper part, *g*, is provided on its upper side with the notches *e*, and the outer ends of the pin *f* rest in two of the said notches *e*, so that when the pin *v* shall be turned in a proper direction the spring *h* will be wound up and brought to bear upon the arm *i*, and the pin *f* is then passed into the notches *e* and through the pin *v*, and the tension of the spring *h* then causes the arm *i* and its roller *j*, at the end thereof, to bear upon the plate *k* and push the door to a closed position. The outer ends of the plate *k* are provided with the outwardly-extending parts *s* and *s'*, and through the outer ends of the parts *s* and *s'* is passed and rigidly secured the bar *m*, having the notches *n* on its outer side, and near the hinged end of the arm *i*, and on the inner side thereof, is rigidly attached the spring *l*, which extends between the divided ends of the arm *i*, and has its extended end arranged to act as a pawl, *o*, and engage with the notches *n*.

Between the divided ends of and outside of the spring *l*, is pivoted the cam *w*, having a suitable lever to operate the same, and is arranged so that when the lever shall be turned to bear against the arm *i*, the cam *w* will allow the pawl *o* to be free from the said engagement with the notches *n*, and when the lever is moved outward the cam operates to force the pawl *o* into engagement with the notches *n* and hold it firmly in that position, and secure the door until the pawl *o* shall be released by turning the cam *w* back again, so that the door may be secured in any desired position.

Near the fastened end of the spring *l* is the notch *p*, formed by bending the spring *l* so that the notch *p* shall have sloping sides and be adapted to engage, when the door is opened nearly to its full extent, with the extended part *s*, which projects beyond the bar *m* for that purpose. The notch *p* is arranged with the sloping sides, in order that it may, when engaged with the part *s*, ordinarily hold the door open. When power is applied to close the door, the spring gives away and allows the part *s* to pass out of the notch *p*.

Having fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a door-spring, the combination of the

plate *c*, provided with the extended parts *g* and notches *e*, the pin *v*, having on one end the square part *y* and pin *f*, the spring *h*, the arm *i*, and roller *j*, with the plate *k*, having the parts *s* and *s'* and the bar *m*, provided with the notches *n*, the spring *l*, provided with the pawl *o* and the cam *w*, substantially as described, and for the purpose set forth.

2. In a door-spring, as described, the com-

bination of the rigid plate *k*, having the projecting part *s*, with the spring *l*, provided with the notch *p*, and the spring-actuated arm *i*, provided with the roller *j*, substantially as set forth, and for the purpose specified.

ARTHUR CARRIER.

Witnesses:

CURTIS E. PIERCE,
G. H. FRANCIS.