

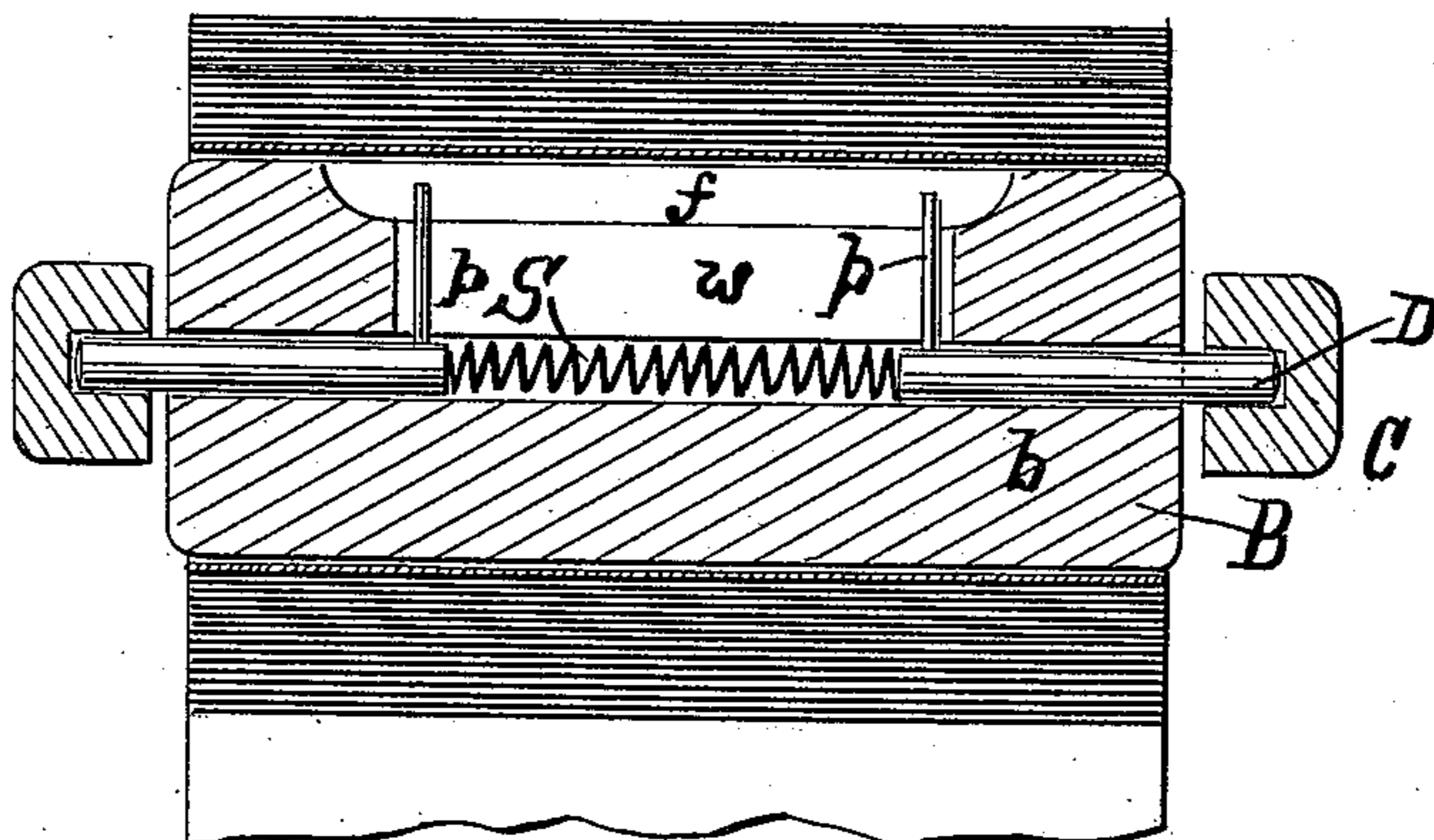
(No Model.)

A. McL. ROWLAND.  
ROTARY BEARING FOR ROLLERS.

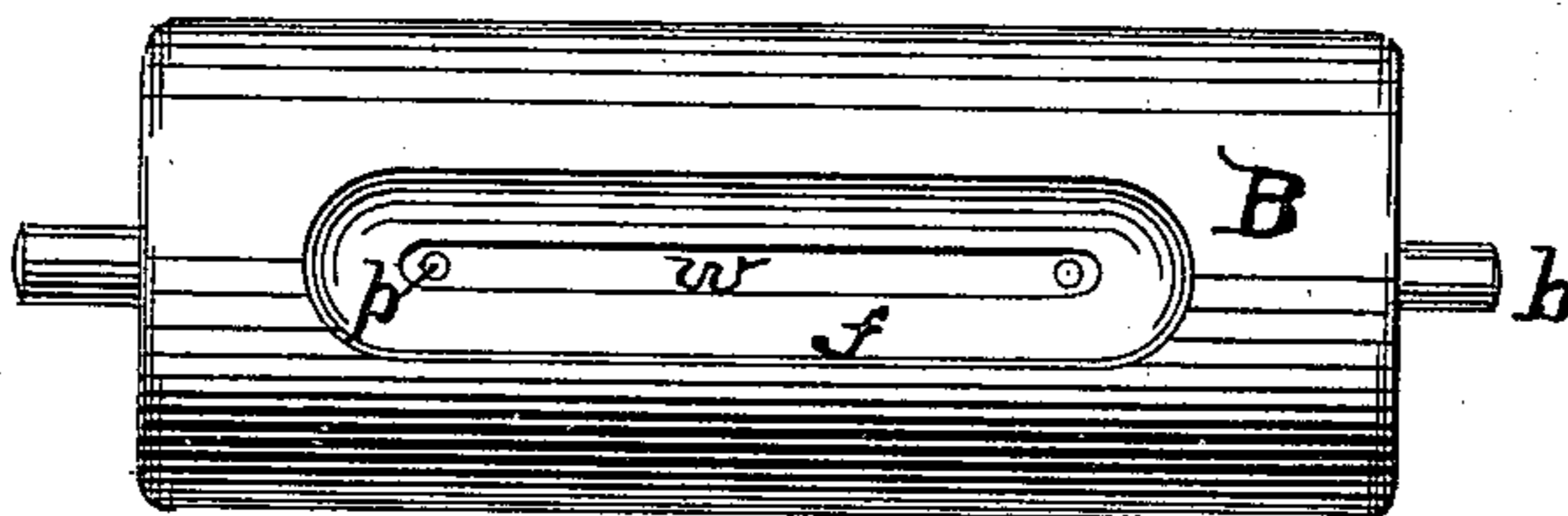
No. 464,201.

Patented Dec. 1, 1891.

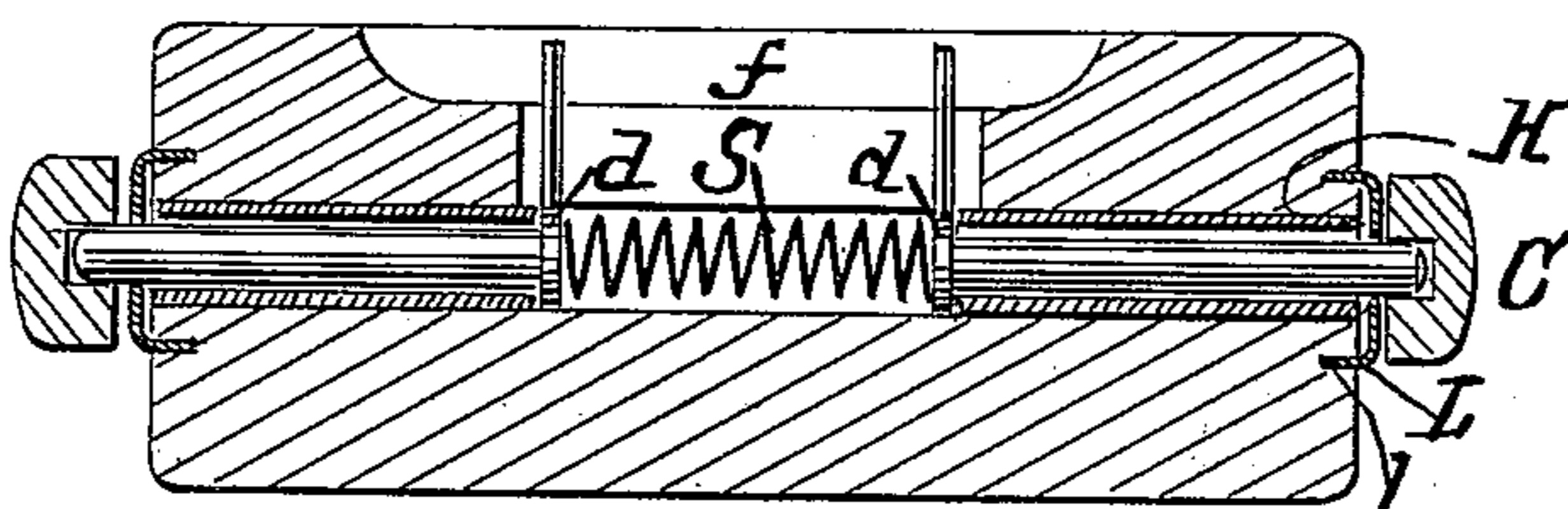
*Fig: 1.*



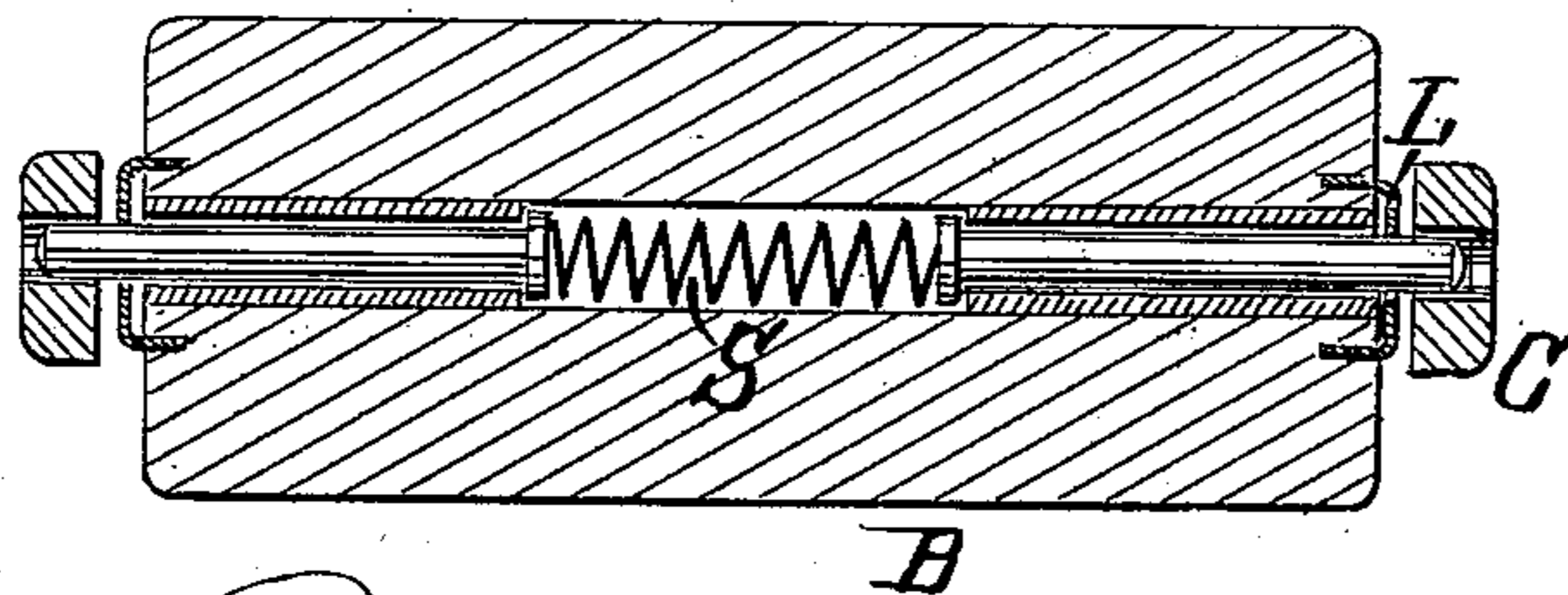
*Fig: 2.*



*Fig: 3.*



*Fig: 4.*



WITNESSES:

*Chas. Viola.*  
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INVENTOR  
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# UNITED STATES PATENT OFFICE.

ALEXANDER McL. ROWLAND, OF BROOKLYN, NEW YORK.

## ROTARY BEARING FOR ROLLERS.

SPECIFICATION forming part of Letters Patent No. 464,201, dated December 1, 1891.

Application filed July 28, 1891. Serial No. 400,992. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER McL. ROWLAND, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Rotary Bearings for Rollers and Like Devices, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates, particularly, to rollers of small diameters, such as are used with rolls of paper and in curtain-fixtures.

My purpose is to produce an axis pin or pintle and other parts of a bearing that may be more simple and reliable than those in present use; but at the same time I effect in a simple way a self-locking bearing that can only be removed from the bracket after the paper or other material wound upon the roller is unrolled. I effect this by providing the roller with a longitudinal slot running from the surface of the roller into its axial bore or recess and by providing spring-actuated pintles, each provided with an operating-pin which projects into or through such slot. When such a pintle is inserted in a bracket, (which may be done by pressing it into the recess and then bringing it opposite the socket of the bracket and there letting it fly forward into the socket,) it is impossible, without some especially-contrived means, to withdraw the pintle until the paper is removed from the roller and the operating-slot exposed. If, however, the bracket is in an accessible position and, instead of a socket for the pintle, is provided with a bearing-surface which runs entirely through the bracket, the pintle may be pressed back by inserting a small rod or like device from the opposite end of the bearing-surface. In such a case the pins for operating my device are no longer essential. It will be seen, however, that some stop mechanism or device is needed to prevent the pintles from being entirely ejected from the recess in which they belong when the roller is removed from its bracket. The operating-pin just described may be made to serve this purpose by coming in contact with the end of the slot in which it travels; but where these are absent it is necessary and in all cases I prefer to provide the pintles with a head or

flange at their inner end and inclose them in metallic sleeves, which fit them closely and are snugly secured within the axial bore or recess of the roller. The motion of the pintles will then be limited by the heads or flanges bringing up against the ends of these sleeves. To further complete and finish my roller-bearings and to secure the sleeves more surely in place, I provide end caps surrounding the ends of the sleeves, and through these the pintles project.

I have illustrated several types of my invention in the accompanying drawings.

Figure 1 shows in section a roller provided with the simplest form of my self-locking bearings and surrounded by a partially-unwound roll of paper. Fig. 2 is a view of the same looking into the operating-slot after the paper has been wound off. Fig. 3 is a cross-section similar to Fig. 1, but shows a more complete finished type of my invention; and Fig. 4 shows a roller in which my device is arranged to be used with brackets in which the bearing-surface runs entirely through, and with which the operating pin and slot are not essential.

My operating-slot is indicated at *w*. The surface of the roll in the vicinity of the slot is grooved out to form a finger-way *f* for the more ready operation of the pins. The pins project into this finger-way, as indicated at *p*. The axial bore or recess is shown at *b*, in the center of which is located my operating-spring *S*, and at either end the pintles *D*. The projecting ends of the pintles are shown in the supporting-brackets *C*, into the sockets of which they are firmly pressed by the spring *S*. In this position the pins *p* are somewhat removed from the ends of the slot *w*; but it will be seen that were the roller removed from the brackets the pins *p* would serve to prevent the ejection of the pintles by the spring. The rollers may be placed in the brackets by pressing in the pintles, placing the roller in position, and then releasing the pintles, which thereby fly out into the sockets in the brackets. Once in position, however, the pintles cannot be readily withdrawn, except by the operation of the pins *p*, and these cannot be gotten at until all the paper has been removed from the roller and the way and slot exposed. The pins may then be readily

pushed back, the pintles withdrawn, and the roller removed. A new roll of paper may now be slipped or rolled onto the roller and the roller replaced. The roller in Fig. 1 is shown, as described, with an axial bore running from end to end; but it will be seen that in rollers similar to curtain-rollers it will be more convenient to subdivide the spring S and place each pintle with its spring and other attachments in a separate recess at either end of the roller.

In Fig. 3 I have shown my preferred and more perfected type of bearing. In Fig. 1 the material of the roller B forms the surface against which the pintle bears, and this, being usually of wood or some soft material, does not form as satisfactory a surface for this purpose as metal. I therefore, as shown in Fig. 3, surround the pintle with a metallic sleeve H, which fits tightly within, and is thereby secured to the roller. Further, I provide the inner ends of the pintles with the heads or flanges *d*, which form a stop and prevent the pintles from being ejected through the sleeves H. To further insure the retention of the parts within the roller and to give greater finish to my device, I provide the face-plate or cap L at either end of the roller, which snugly surrounds the projecting end of the pintle and is secured in position by the flange *l*, which is driven into the material of the roller. These caps or plates L lie close against the ends of the roller and assist in securing the sleeves H in position.

In Fig. 4 I have shown the form of my device wherein the slot *w* and the operating-pins are omitted and the pintles pressed back, when desired, by the insertion of a rod or pin from the outside ends of the brackets C.

I am well aware that very many attempts have been made to produce a simple yet effective bearing of this general class, and in this connection I am aware that surface-plates have been combined with flanges to limit the motion of pintles. Such construction has been invented and described by Hugh Farley, of Philadelphia, Pennsylvania; but owing to the fact that the bearing-surface was not a sufficient length this construction required the supplemental bearing-surfaces, which he accordingly provided. I am also aware that Alfred Clemons, of Buffalo, New York, invented and described a bearing in which the pintle was inclosed in a sleeve provided with a transversed pin which ran through a slot in the pintle and in this way limited its motion; but the cost of such construction is con-

siderable, and a worn pintle cannot be replaced without the removal of the transverse rivet or pin.

With my invention I secure simplicity and reliability of operation, and I make no claim to the constructions described in prior publications, as above indicated.

What I do claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In combination with a roller or other rotary device, a sleeve within an axial recess in the said device, a spring-actuated pintle surrounded by the said sleeve and provided with a stop-flange to limit its motion, and an operating-pin secured to the said pintle and projecting into or through an operating-slot *w* in the said rotary device, substantially as and for the purposes set forth.

2. In combination with a roller or other rotary device, a sleeve within an axial recess in the said device, a pintle surrounded by the said sleeve and provided with a flange *d* at its inner end to limit its motion within the said sleeve, an actuating-spring for the said pintle, and a bracket or bearing C, substantially as and for the purposes set forth.

3. In combination with a roller or other rotary device, a sleeve within an axial recess in the said device, a pintle surrounded by the said sleeve and provided with a flange *d* at its inner end to limit its motion within the said sleeve, an actuating-spring for the said pintle, and a retaining-cap L, surrounding the protruding end of the said pintle, substantially as and for the purposes set forth.

4. In combination with a roller or like rotary device, an axial pintle within a recess in the said device, an actuating-spring behind the said pintle, and a pin *p*, secured to the said pintle and projecting into or through an operating-slot in the said rotary device, substantially as and for the purposes set forth.

5. In combination with a roller or other rotary device, a sleeve within an axial recess in the said device, a pintle surrounded by the said sleeve and provided with a flange *d* at its inner end to limit its motion within the said sleeve, and an actuating-spring for the said pintle, substantially as and for the purposes set forth.

In testimony of the foregoing I have hereunto set my hand this 25th day of July, 1891.

ALEXANDER McL. ROWLAND.

Witnesses:

HAROLD BINNEY,  
FRED. HEMMING.