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Patented Apr. 4, 1899.

G. W. KNIGHT & H. W. BRACKEN.
SPINNING OR TWISTING FRAME.

(Application filed Oct. 19, 1898.)

(No Model.)

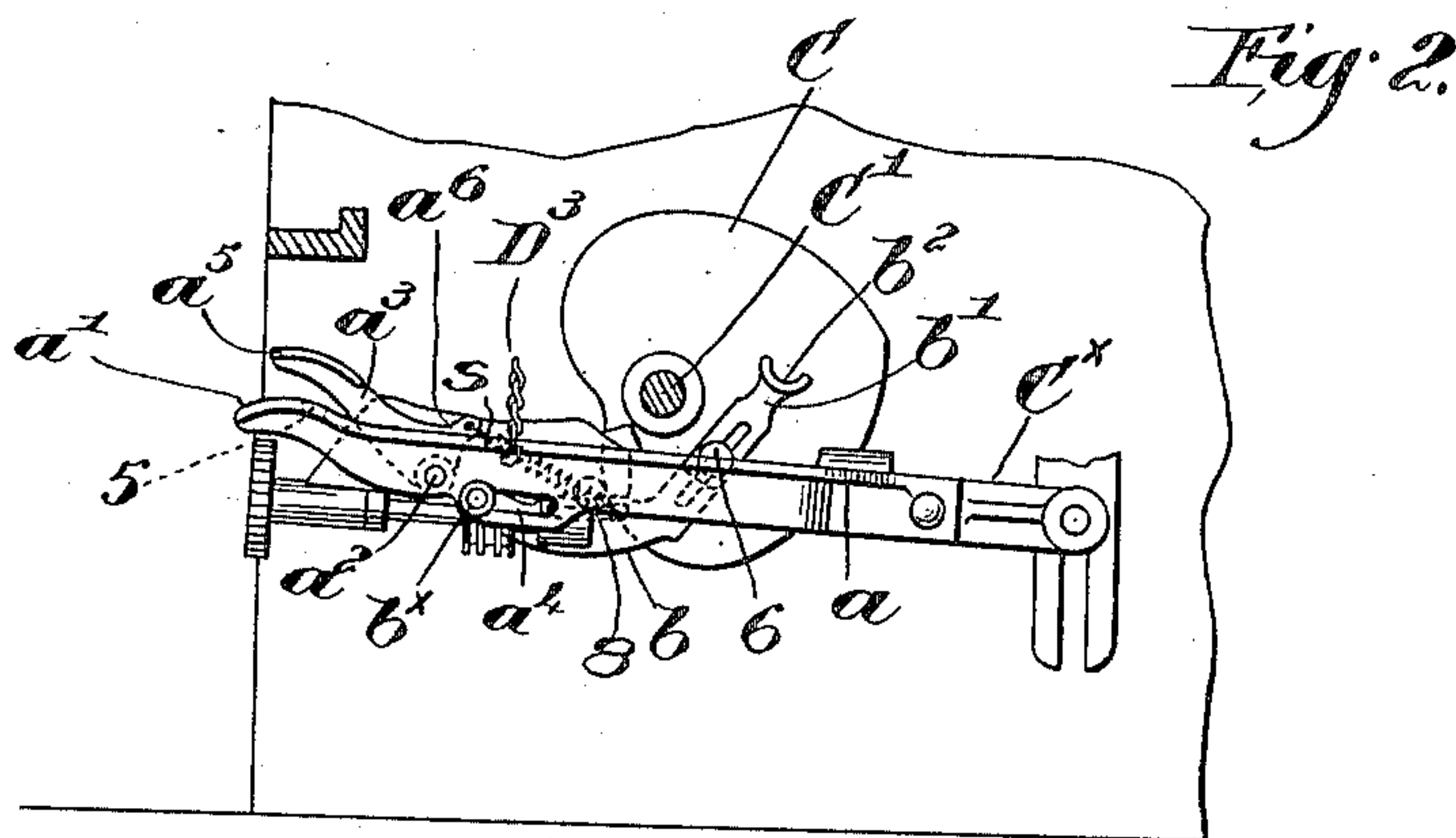
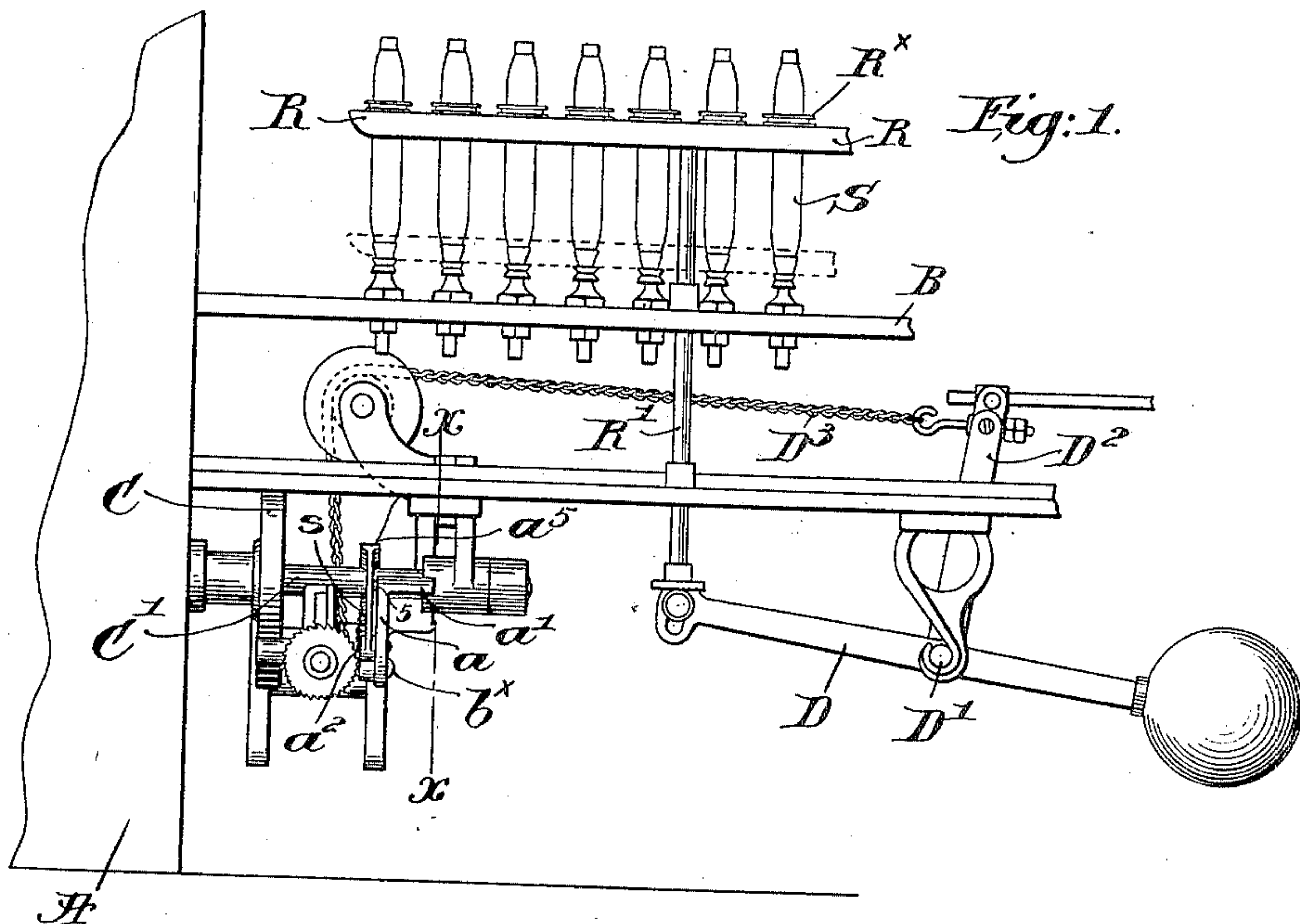
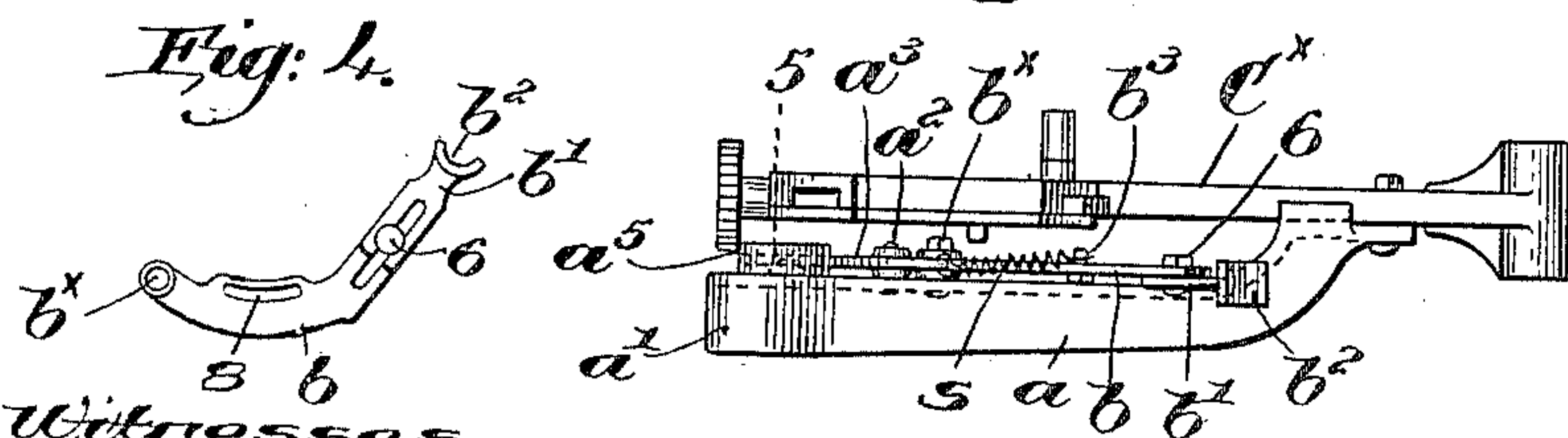


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. KNIGHT AND HOWARD W. BRACKEN, OF HOPEDALE, MASSACHUSETTS, ASSIGNORS TO THE DRAPER COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

SPINNING OR TWISTING FRAME.

SPECIFICATION forming part of Letters Patent No. 622,649, dated April 4, 1899.

Application filed October 19, 1898. Serial No. 693,977. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. KNIGHT and HOWARD W. BRACKEN, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Spinning or Twisting Frames, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

When the spindles of a spinning or twisting frame are to be doffed, the attendant frequently depresses the ring-rail by main force to the desired level and inserts a bobbin or any other article at hand between the rail and some fixed part of the frame to maintain the rail depressed during the doffing operation. This mode of procedure is not only inconvenient, but it tends to twist or displace the rail; and this invention has for its object the production of effective means for depressing the ring-rail for doffing and maintaining it depressed during such operation, a single movement by the operator thereafter releasing the rail.

Figure 1, in front elevation, represents a sufficient portion of a spinning-frame to be understood with our present invention applied thereto. Fig. 2 is a transverse sectional view of a portion of the rail-depressing mechanism and the devices forming our present invention, taken on the line xx , Fig. 1, looking toward the left. Fig. 3 is a top or plan view of a part of the depressing mechanism shown in Fig. 1, and Fig. 4 is a side elevation of the detent detached.

Referring to Fig. 1, the frame A, spindle-rail B, the spindles S, rotatably mounted thereon and driven in usual manner, the reciprocating ring-rail R, provided with usual rings R^x , the lifter-rods R' , only one of which is shown, and the weighted lifter arms or levers D, fulcrumed at D' and each bearing on the lower end of a lifter-rod, may be and are of usual or well-known construction, a rocker-arm D^2 attached to each lever being connected by a chain D^3 with the usual winding mechanism, mounted on the depressing member or lever C^x , which is controlled during

the operation of the apparatus by the usual traverse-cam C, fast on the shaft C' .

We have herein shown an offset arm a parallel to and securely bolted to the depressing-lever C^x and provided at its forward end with a suitable foot-piece a' , said arm being herein shown as an angle-iron with its web depending, and on the latter is pivoted at a^2 near its outer end a detent-controller a^3 , limited as to its downward movement relative to the arm a by a lateral lug or projection 5 on the inner face of the web of the latter, said controller being also laterally enlarged at its outer end to form a foot-piece a^5 .

The web of the arm a is preferably slotted, as at a^4 , Fig. 2, to receive the fulcrum-stud b^x of the detent, shown separately in Fig. 4 as composed of two parts $b b'$, bent rearwardly and upward, the member b' having a concave head b^2 , the parts $b b'$ being slotted at their overlapping ends to receive a clamping-bolt 6, whereby the length of the detent may be adjusted. The fulcrum of the detent may be adjusted by moving the stud b^x in the slot a^4 as may be necessary or desirable.

The spring s , attached at one end to an ear a^6 of the controller, is attached at its other end to a stud-bolt b^3 , preferably adjustable in a slot 8 of the detent back of its fulcrum b^x .

The detent is arranged to engage some relatively-fixed part of the apparatus when in operative position, and herein the cam-shaft C' is the part selected, the detent when in its normal inoperative position standing below and back of said shaft, as clearly shown in Fig. 2.

When the frame is to be doffed, the attendant with his foot depresses the controller a^3 until it engages the stop 5, thereby tightening the spring s , and then, with his foot on the detent-controller and the foot-piece a' , depresses the lever C^x and parts carried thereby bodily, which operation will, through the chain D^3 and intervening devices, depress the ring-rail to the dotted-line position, Fig. 1.

The parts b and b' are relatively adjustable to permit the rail to be held at any desired position within the limits of the device.

The tightening of the spring s , as described,

acts to throw the detent forward, and as soon as the lever C^x is fully depressed the head b^2 of the detent will be brought underneath the shaft C' , so that when pressure is removed from said lever the detent by its engagement with the shaft C' will prevent elevation of the lever and parts carried thereby and will maintain the ring-rail depressed. As soon as the controller a^3 is released the spring s returns it to normal position, and after the doffing is completed the attendant depresses the lever C^x by engaging only the foot-piece a' , so that as soon as the head b^2 of the detent is disengaged from the shaft C' said detent will swing back to its normal inoperative position, the spring s being relaxed, and then the lever C^x is free to rise to its normal position, so that spinning may proceed.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a spinning or twisting frame, the ring-rail, a depressing member therefor, a detent for said member, a detent-controller, both mounted to rock on said member, and a yielding connection between the controller and detent, pressure upon said controller and member rocking the controller and depressing the depressing member, such movement of the controller acting through said yielding connection to move the detent relatively to said depressing member, depression of the latter completing movement of the detent

into operative position, subsequent lowering of said depressing member releasing the detent.

2. In a spinning or twisting frame, the ring-rail, a depressing-lever therefor provided with a foot-piece, a detent for said lever, and a detent-controller having a foot-piece, both mounted pivotally on the lever, and a spring connecting said detent and controller, pressure on both foot-pieces acting to tighten the spring and depress the lever, to thereby move the detent into operative position, subsequent depression of the lever releasing the detent.

3. In a spinning or twisting frame, the ring-rail, a depressing-lever therefor, an adjustable detent, and a detent-controller, both pivoted independently on the said lever, and a spring connecting the detent and its controller, whereby the former has a yielding movement about its pivot, rocking movement of the controller and thereafter depression of the lever moving the detent into operative position, subsequent depression of the lever releasing the detent.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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