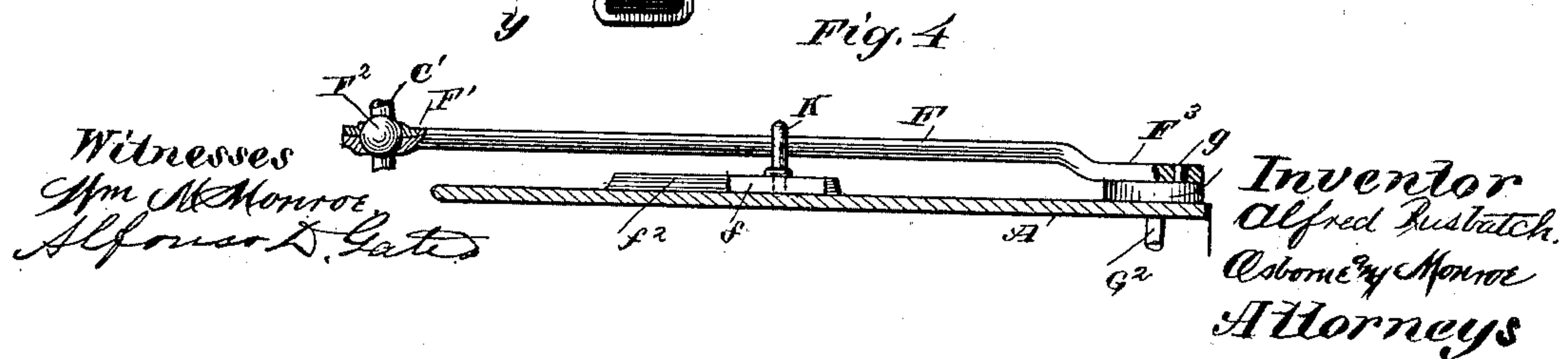
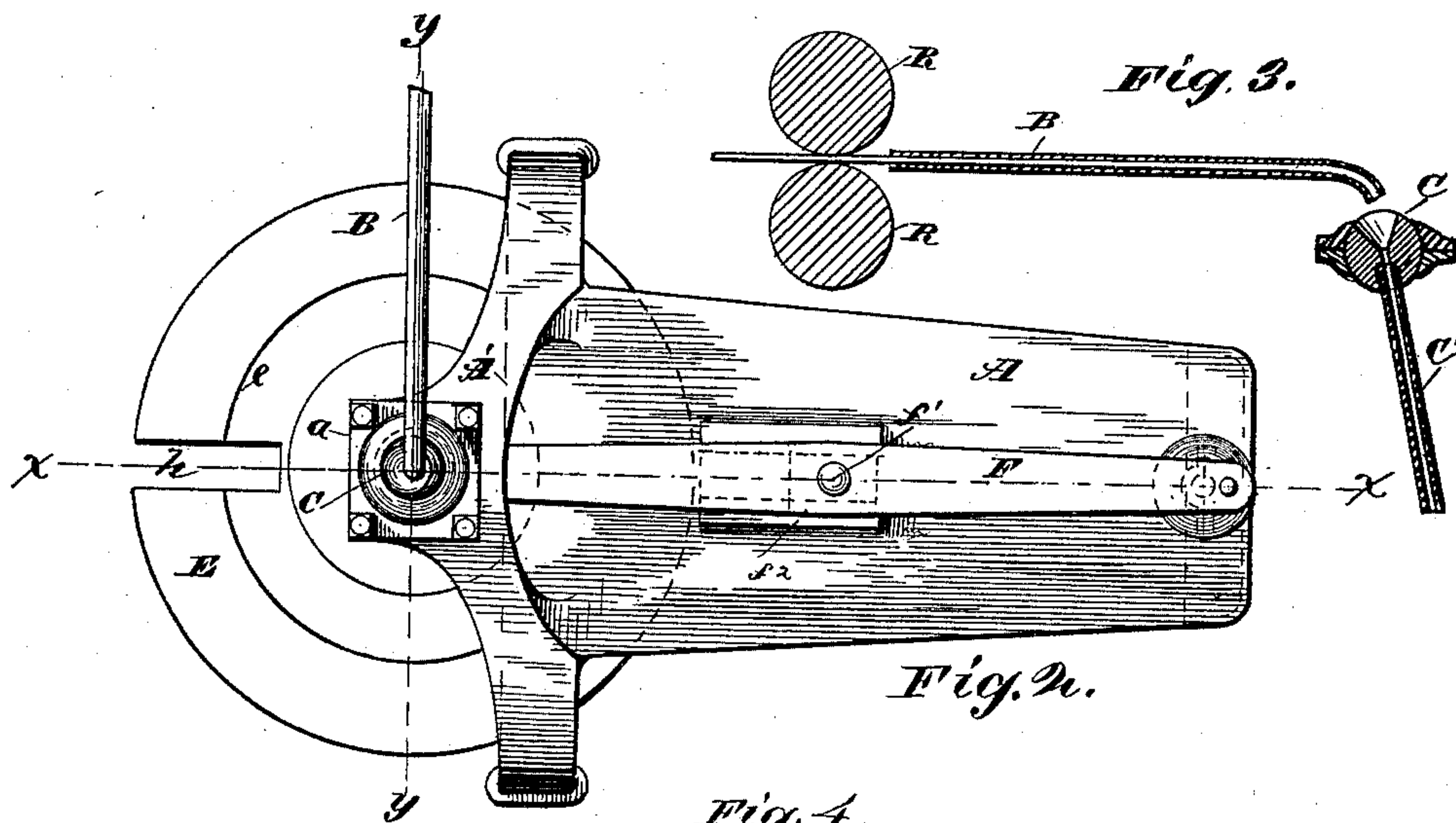
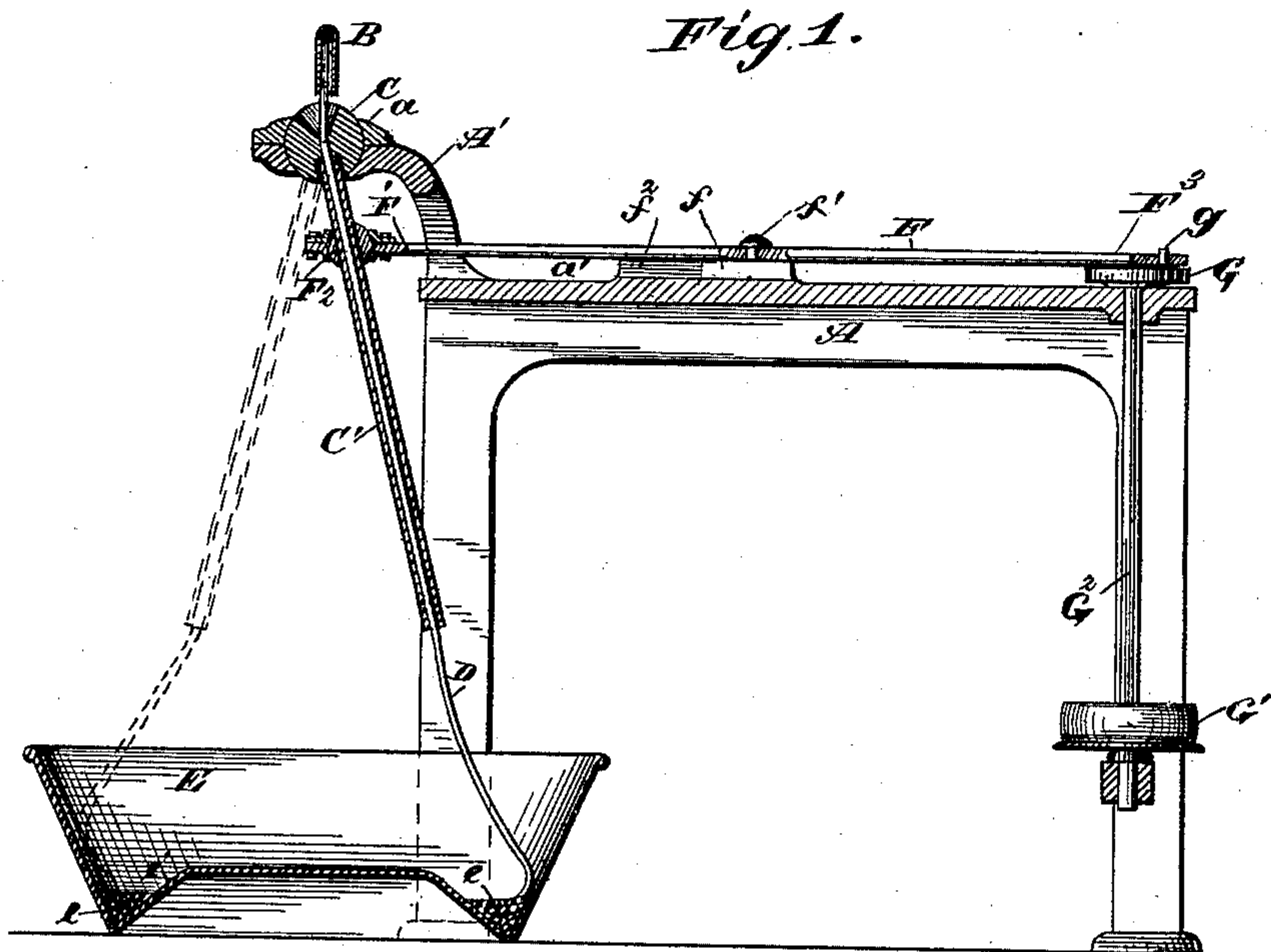


(No Model.)

A. RUSBATCH.
ROD COILING APPARATUS.

No. 405,433.

Patented June 18, 1889.



UNITED STATES PATENT OFFICE.

ALFRED RUSBATCH, OF CLEVELAND, OHIO.

ROD-COILING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 405,433, dated June 18, 1889.

Application filed February 23, 1889. Serial No. 300,980. (No model.)

To all whom it may concern:

Be it known that I, ALFRED RUSBATCH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Rod-Coiling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for coiling rods as they come from rolls in rod-mills.

The object of my invention is a simple and effective rod-coiling device that may be constructed and operated at less expense than other apparatus now in use for such purpose, and be worked in either a vertical, horizontal, or an inclined position. I attain these objects by the mechanism described herein, and shown in the accompanying drawings, and the matter constituting my invention is specifically defined in the claims.

In the drawings, Figure 1 is a longitudinal vertical section of my machine on the line $x x$ of Fig. 2. Fig. 2 is a plan view of my coiling device; and Fig. 3 is a transverse section through the line $y y$ of Fig. 2, and shows its connection with the rolls. Fig. 4 shows a modification of the pivot and guide for the vibrating arm hereinafter described.

In the figures of the drawings, A is a frame supporting the coiling mechanism.

C is a globular piece fitted in the overhanging arm A' of the frame A, in which it is free to revolve. The piece C is held in position by means of the cap a , bolted to the arm A'. This piece C, fitted in the overhanging arm A', and the cap a make a ball-joint. The ball C is conically bored through from its upper surface, and a distributor C' is rigidly secured to its lower side.

E is a receptacle for the rolled rods D.

B is a conducting-pipe from the rolls R R.

A rotary motion is given the distributor C', so that its lower end travels continuously around and over the receptacle E by means of the mechanism shown upon the upper part of the frame A. This mechanism consists of the vibrating arm F, pivoted at f' upon the block f , which slides in the lateral ways f^2

upon the upper surface a' of the frame A. One end F' of the vibrating arm F is connected with the distributor C' below C by a ball-and-socket joint F^2 , the other end F^3 being attached at one side of the disk G by the crank-pin g . The disk G is driven by means of the pulley G' on the shaft G². The disk may, however, be driven by means of gear-wheels, or by any other well-known mechanical means, instead of by the pulley and shaft shown herein.

By altering the position of the pivot f' on the vibrating rod F different-sized coils may be made by making the lower end of the distributor C' describe a larger or a smaller circle. The nearer the pivoted point is to the disk G the larger will be the circle described by the distributor C'.

The receptacle E, as shown in the drawings, is a pan having its bottom raised in the center. The rod is coiled in the circular groove e , as shown. A slot h is made in one side of the pan to allow the insertion of the tongs for removing the coil, which may be done while the coiling mechanism is running. If the sides are flaring and the rising portions e' of the bottom slant toward the center of the pan, as shown, the coil can be removed easily, and it also assists in shaping and compacting the coil. Other forms of receptacle, however, may be used with my coiling device.

The modification in my vibrating apparatus shown in Fig. 4 consists of a ring K pivoted to the sliding block f , the vibrating arm F sliding back and forth through said ring. By this modified form of structure the sliding block f remains stationary while the machine is running; but its position on the bed a' may be changed to increase or diminish the size of the coil instead of by changing the position of the pivot f' , as already shown. This modification may give the coil a slight egg shape, because the pivoted point on the rod is continually shifting as it slides through the ring; but the direction of the conductor will be so nearly circular that the coil will be practically round.

In the use of my invention the rod comes from the rolls R R and passes through the conducting-tube B. It then enters the conical bore through the globular ball C and

passes through the distributor C'. As the disk G is revolved by the shaft G² the arm F is thrown back and forth, and is also made to vibrate on its pivoted attachment, and thus gives a circular motion to the distributor C'.

My apparatus may be placed and operated in either a vertical, a horizontal, or an inclined position, as the distributor C' and the vibrating arm F may be placed in any position with reference to each other and the mechanism operating them.

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

1. A wire-rod-coiling machine consisting, in combination, of the main frame A, the block *f* on the main frame, the vibrating arm F, in connection with said block *f*, and attached at its front end to the distributor C', provided with the joint C, the opposite end being secured to disk G or its equivalent, the receptacle E, having a slot *h*, and means for operating said machine, substantially as shown.

2. In an apparatus for coiling wire rods, the receptacle E, provided with a slot *h* and having its bottom elevated toward its center, substantially as shown.

3. In an apparatus for coiling wire rods, the main frame A, provided with the overhanging arm A', having a bearing adapted to support the distributor C', in combination with the pivotal block *f* and the vibrating arm F, and means for operating said arm, substantially as shown.

4. In an apparatus for coiling wire rods, the vibrating arm F, pivoted to the sliding block *f* on the main frame A, substantially as shown.

5. The combination, in a wire-rod-coiling machine, of the distributor C', having a hollow ball-joint C, with the vibrating arm F, pivoted to the sliding block *f*, substantially as shown.

6. The combination, in a wire-rod-coiling machine, of the coil-receptacle E, provided with a slot *h* and having its bottom elevated toward its center, with the distributor C' and means for rotating said distributor, consisting of the vibrating arm F, pivoted to the sliding block *f*, and the crank-disk G or its equivalent, substantially as shown.

ALFRED RUSBATCH.

Witnesses:

JOSEPH A. OSBORNE,
WM. M. MONROE.