(No Model.)

B. DECKER.

PUMP ATTACHMENT.

No. 542,332. Patented July 9, 1895.

Fig. 1.

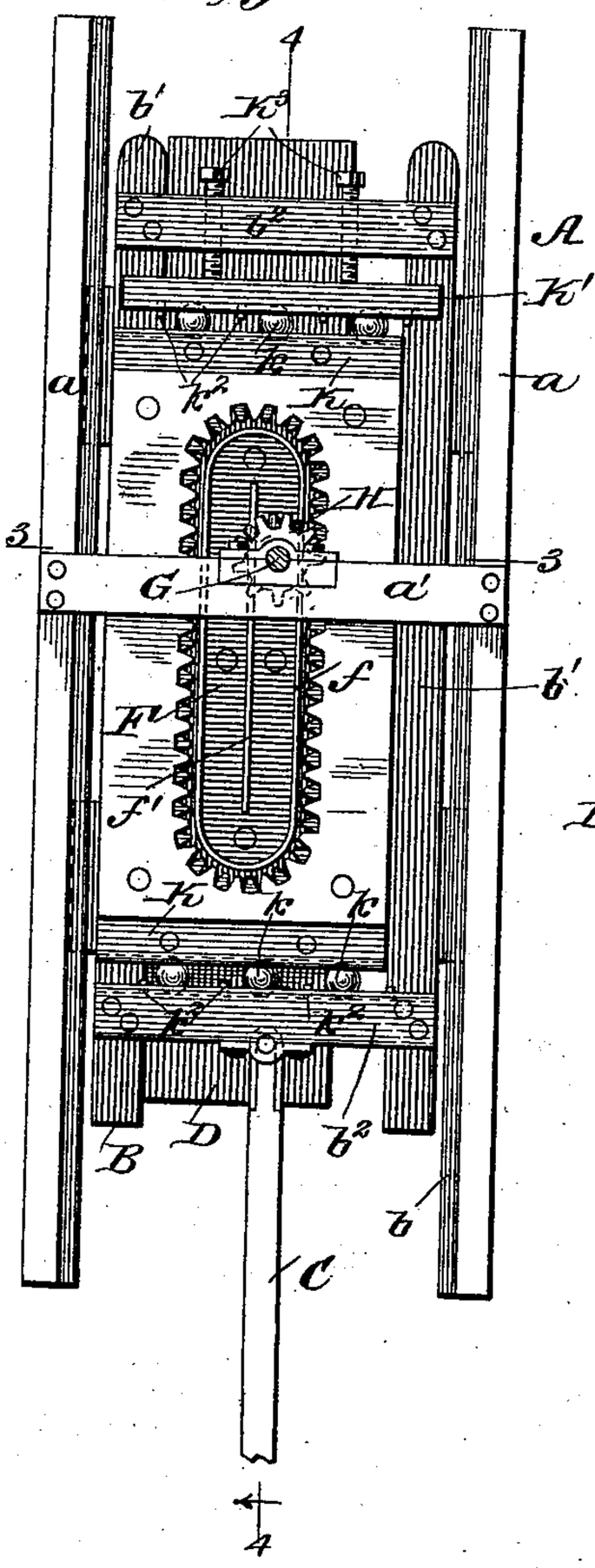


Fig. 2

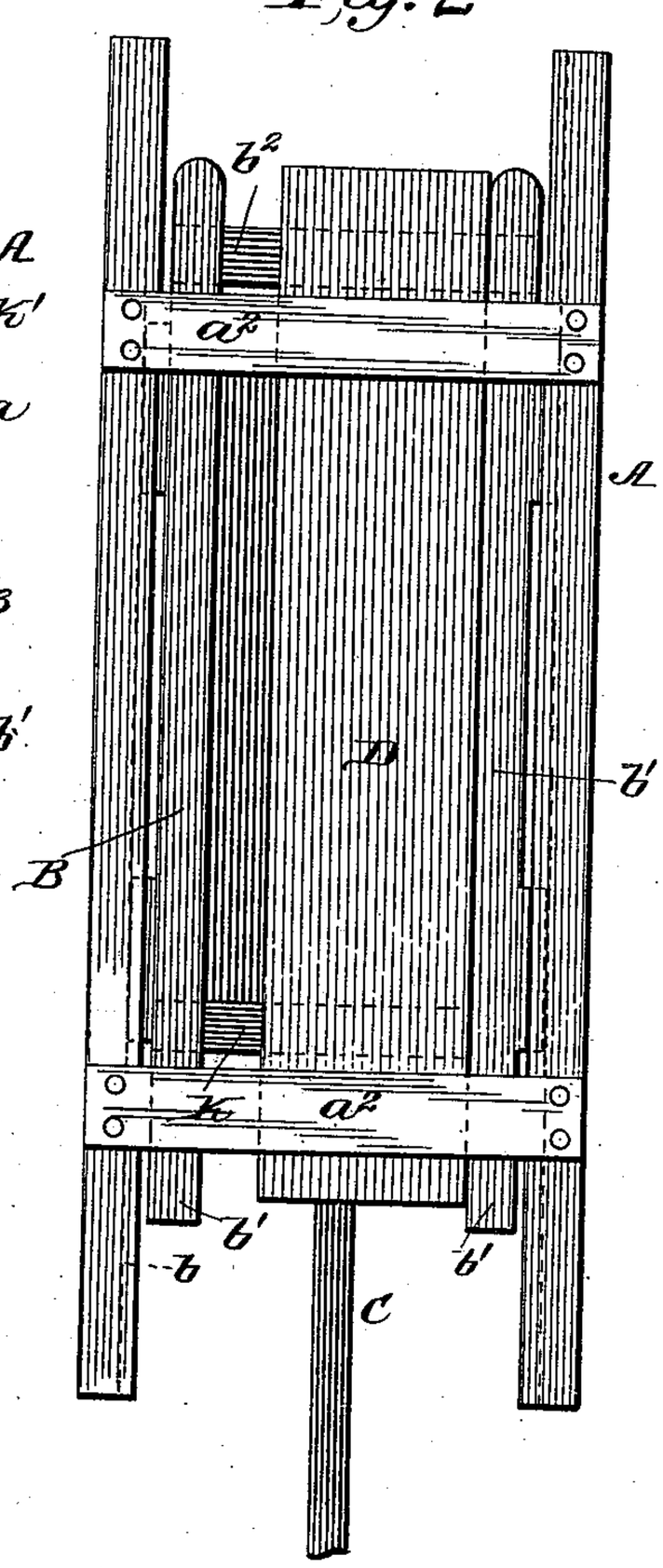


Fig. 4.

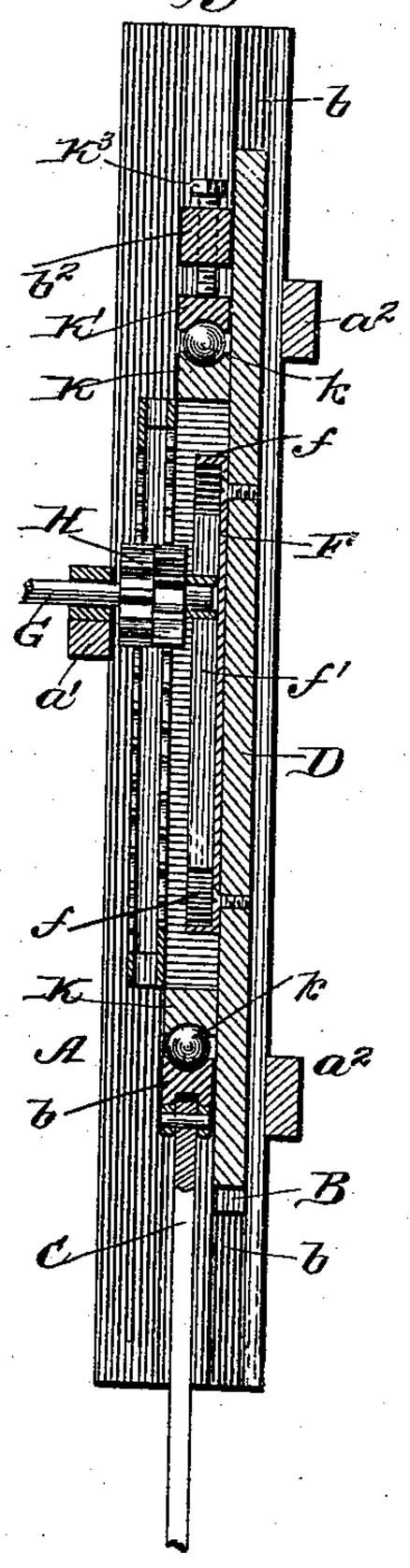
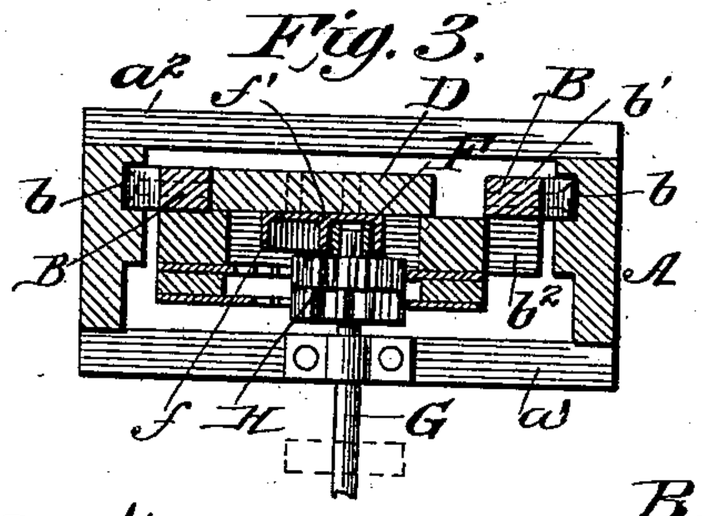


Fig. 3.



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BAZEL DECKER, OF MINATARE, NEBRASKA.

PUMP ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 542,332, dated July 9, 1895.

Application filed April 2, 1895. Serial No. 544,170. (No model.)

To all whom it may concern:

Be it known that I, BAZEL DECKER, of Minatare, in the county of Scott's Bluff, State of Nebraska, have invented an Improved Pump Attachment, of which the following is a specification.

This device is an improved machine for converting a rotary motion into a reciprocating one, and is particularly adapted for use upon pump-rods, the power for driving the device being any well-known form of wind or steam engine.

The object of the invention is to provide a device which can be made in various sizes to obtain any length of stroke without increasing the power, and another object is to so construct the device that the movement shall be steady and certain at all times.

With these and such objects as may appear from the following description, my invention consists in the peculiar construction and arrangement of the various parts, as hereinafter fully described, and pointed out in the claim.

In the drawings forming a part of this specification, Figure 1 is a face view of my improved power-transmitter. Fig. 2 is a rear view; Fig. 3, a transverse section on line 3 3, Fig. 1, and Fig. 4 a longitudinal section on the line 4 4, Fig. 1.

In carrying out my invention I employ an outer frame A, composed of side beams or standards a, forward cross-beams a', and rear cross-beams a^2. Upon the inner faces of the side beams a are constructed guides or ways b, in which slides an inner frame B, composed of side pieces b' and cross-pieces b^2 b^2, said cross-pieces being arranged upon the forward sides of the pieces b', and to one of the said cross-pieces is attached the pump or other rod C. Between the side pieces b' and also between the cross-pieces b^2 and a^2 is arranged a shiftable block or plate D, upon the forward face of which is arranged an essentially-rectangular-shaped toothed frame, being held some distance away from the plate; and it is also preferably constructed with two sets or rows of teeth arranged alternately, as shown, although one set or row could be employed. A guide-track F is arranged upon the forward face of the block and comprises the continuous outer wall f and the central or inner wall f'.

A rotary power-shaft G is journaled upon the cross-piece a' and carries a pinion H, which meshes with toothed frame back and forth as it engages first one side and then the other, and upon the end of the power-shaft is mounted a thimble which travels in the guide-track F, and by this means the toothed frame is shifted, bringing first one side into engagement with pinion and then the other; and from the continuous rotary motion of the power-shaft is produced a steady reciprocating motion of the toothed frame and all the parts connected therewith. At each end of the toothed frame is arranged a bearing-block K. Between these blocks K and the cross-pieces b^2 are arranged a series of antifriction-balls k, held in place by pins k^2. By this construction the plate D and its attached parts can shift easily and the friction be reduced to a minimum.

If desired, an adjustable block K′ may be arranged between the piece b^2 and block K, as shown at the upper end of Fig. 1, said block being adjustable by means of screws K^3 passing through the piece b^2 and into the said block, as clearly shown. By this adjustable construction all lost motion and wear of parts can be taken up.

The pinion is preferably a double one, with the teeth arranged alternately, as shown, but in case a single-toothed frame is employed then the pinion will also be single.

Now, in operation, the shaft is revolved from any suitable power and with it the pinion. This being in engagement with the toothed frame causes the same to move one way or the other, according to the direction of revolution of pinion, and when the end of frame is reached said frame is shifted to one side, bringing the other side of the toothed frame into engagement with the pinion. The groove-bearing blocks and ball-bearings make this movement very easy. During these movements the pump or other rod has been reciprocated in a straight line, being connected with the sliding frame, but not with the shiftable portion thereof.

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

In a mechanical movement or power transmitter, the combination with a main frame, of the sliding frame therein, the shiftable

plate or block, the toothed frame having double rows of teeth arranged alternately, the guide track arranged within the toothed frame, the bearing blocks, and balls, the power shaft and pinion, said pinion having two rows of teeth arranged alternately, substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

BAZEL DECKER.

Witnesses:
THOMAS A. TWISS,
GEO. C. STAHL.