

(No Model.)

C. H. F. RUSSMANN.
APPARATUS FOR TRANSMITTING MOTION.

No. 485,597.

Patented Nov. 1, 1892.

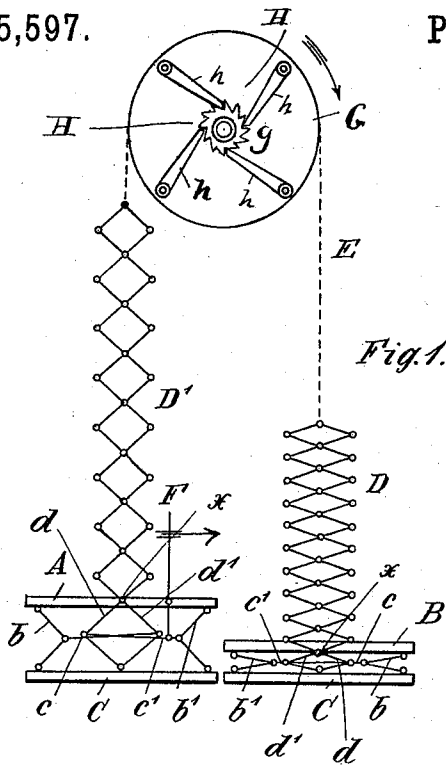


Fig. 1.

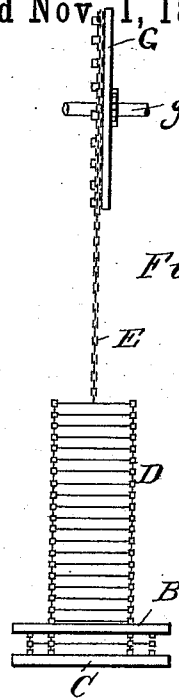


Fig. 2.

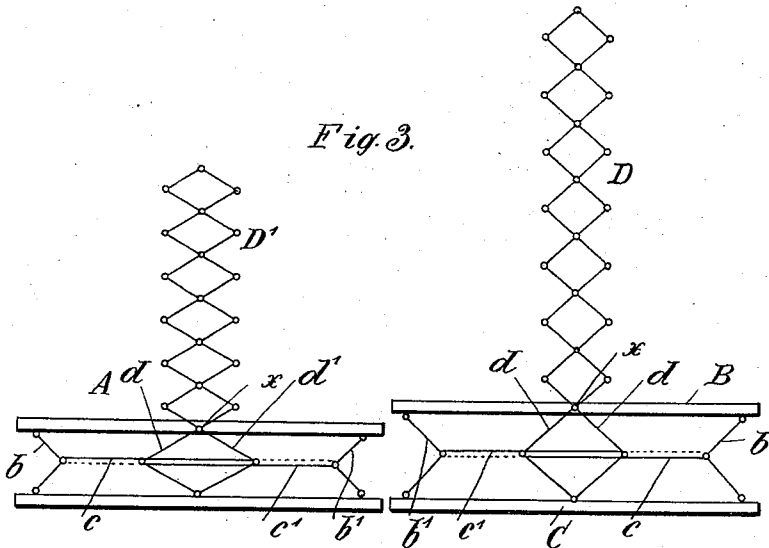


Fig. 3.

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APPARATUS FOR TRANSMITTING MOTION.

SPECIFICATION forming part of Letters Patent No. 485,597, dated November 1, 1892.

Application filed February 3, 1892. Serial No. 420,204. (No model.)

To all whom it may concern:

Be it known that I, CLAUS HEINRICH FERDINAND RUSSMANN, a subject of the King of Prussia, and a resident of Hamburg, Prussia, Germany, have invented certain Improvements in Apparatus for Transmitting Motion, of which the following is a specification.

The present invention is a mechanism to enable the use of the weight alone of living beings or in connection with the exercise of their physical strength, so that it can be used as motor-power for any purpose. The fundamental idea, however, of this invention is to arrange the mechanism so that the motor-power obtained can be converted into a reciprocatory or rotary motion without having any dead-point position.

In the accompanying drawings the new mechanism is shown in different forms.

Figures 1 and 2 are respectively a side and end view of my apparatus adapted for creating a rotary motion. Fig. 3 is an enlarged detail view showing the main features of my invention.

The prominent feature of the new mechanism is an arrangement of double platforms or like moving parts taking the weight of the operator in connection with a lazy-tongs so that the alternate weighting of the platforms or moving parts contracts or extends said tongs to create a power of great leverage.

Referring to the drawings, platforms A B are each connected with a lazy-tongs D D', so that the pressing down of one platform contracts the tongs connected therewith, while the tongs connected with the other platform are opened out. For this purpose the platform B is connected by means of the knee-levers *b b'* with the base C, whereby the same can, for the purpose of a regular raising and sinking of the platform B, be connected with a guide. This guide is not shown in the drawings and will not be further mentioned, as it is a well-known arrangement, which, however, does not affect the nature of the invention. The pivotal points of the knee-levers *b b'* are connected by guiding-rods *c c'* with the lowest link of the lazy-tongs, which is, as is well known, composed of separate knee-levers *d d'*. The guiding-rod *c* engages the parting-point of the knee-lever *d* of the tongs

and the guiding-rod *c'* the parting-point of the knee-lever *d'* of the tongs, so that when the plate B is being pressed down the closing knee-levers *b b'* press the hinging-points of the levers *d d'* of the tongs apart, thereby drawing together the lowest link of the tongs, and thus the entire lazy-tongs. The longer the tongs D the greater the distance traversed by the parting-point of the uppermost link of the tongs, as the distance traversed by the parting-point X of the lowest link is, with equally-large links, reproduced so many times by its own length as there are links in the tongs. The top link of the tongs is connected with a chain, a rope, or a belt E, which leads over a wheel or pulley G on shaft *g* to the second lazy-tongs, actuated by the platform A, said pulley being provided with clutch devices H *h*.

The platform A is provided with the same system of knee-levers as the platform B, so that the second tongs D' is drawn apart by the downgoing tongs by means of the chain E, and thus raises the second platform A. The living weight rested during this time entirely on the platform B steps, however, immediately onto platform A, so that the previously-opened tongs D' is drawn together, thus drawing the chain E, connected to its end and opening out the tongs D'.

Supposing a man is standing with one foot on the platform A and with the other foot on the platform B and he alternately puts his weight from one foot to the other, he presses down first one platform and then the other, thereby alternately drawing together or opening out the tongs D D'. Every time the tongs are drawn together a long draft is exercised on the chain E, and if the chain-wheel on the actuating-shaft is so connected with any machine that the drawing of the chain puts the actuating-shaft into a continuous rotation this rotary movement will be obtained by the simple transfer of the weight from the platform A to the platform B. As, however, the chain-pull can be of any desirable length, for the size of the same only depends on the number of links of the tongs, the slight movement of the platform is transformed into a large one, which works at the circumference of a circle, so that it lies in the power of the constructor

to change each draft by a corresponding choice of the size of the diameter of the chain-wheel into one or several rotations of the latter.

It is for the understanding and importance of the present invention of no importance whether the transmission of the rotation of the chain-wheel to the actuating-shaft is such that only the draft of one tongs causes the rotation of the shaft, while the draft of the other tongs only causes the first tongs to stretch again, thus in a manner forming a backward movement of the work, or whether the alternate rotation of the chain-wheel is transmitted into a continuous rotation by any known transmission system. The transmission arrangement is not shown or described, so as not to encumber the description and drawings. The tongs are drawn together by pressing down the platforms A and B. If desired, however, the pressing down of the platforms A and B can be used to open out the tongs D D' if the guiding-rod c' is connected with the parting-point of the knee-lever d' of the tongs. The closing of the knee-levers b b' causes the closing of the knee-lever of the tongs. The weighting of the platforms A and B is then changed to a long shove, and this can naturally not be transmitted by a flexible element to the actuating-shaft, but a rigid device must be used, such as a tooth-shaft engaging in a tooth-wheel.

As said before, the new mechanism should also be arranged for the utilization of the power of the living beings forming the weight. If this is desired and if a human being constitutes the living weight, it will only be necessary to arrange levers F on the platforms A and B, which have their point of rotation on the platforms and engage movably in the guiding-rods c c'. If the person standing on the platforms A and B puts the one hand on the lever of platform A and the other on the lever of platform B and if he alternately presses

or draws these levers in the direction of the arrow as he transfers his weight from one platform to the other, he augments the power which his weight produces on the parting-point of the knee-lever of the tongs by the length of the draft or the pressure which he exercises on the corresponding lever F, and as both powers act simultaneously and in the same direction on the tongs not only the living weight, but also its strength, is changed into working power.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In apparatus for converting motion, the combination of the two platforms, each vertically movable on pivoted levers, and lazy-tongs connected to and operated by the movement of said levers when the platforms are moved, substantially as set forth.

2. In apparatus for converting motion, the combination of the two platforms, each vertically movable on pivoted levers, hand-lever F, connected to the latter, and lazy-tongs connected to and operated by the movement of said lever when the platforms are moved, substantially as set forth.

3. In apparatus for converting motion, the combination, with the two platforms mounted on pivoted levers, of lazy-tongs connected to and operated by the movement of said levers, induced by the movement of the platforms, a shaft and pulley provided with clutch devices, and a belt engaging said pulley and connected to the lazy-tongs, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CLAUS HEINRICH FERDINAND RUSSMANN.

Witnesses:

GEORG SCHMIDT,
HANS WEISSER.