(No Model.)

I. H. PALMER.

POWER CONVERTER.

No. 303,541. Patented Aug. 12, 1884.

Fig. 1.

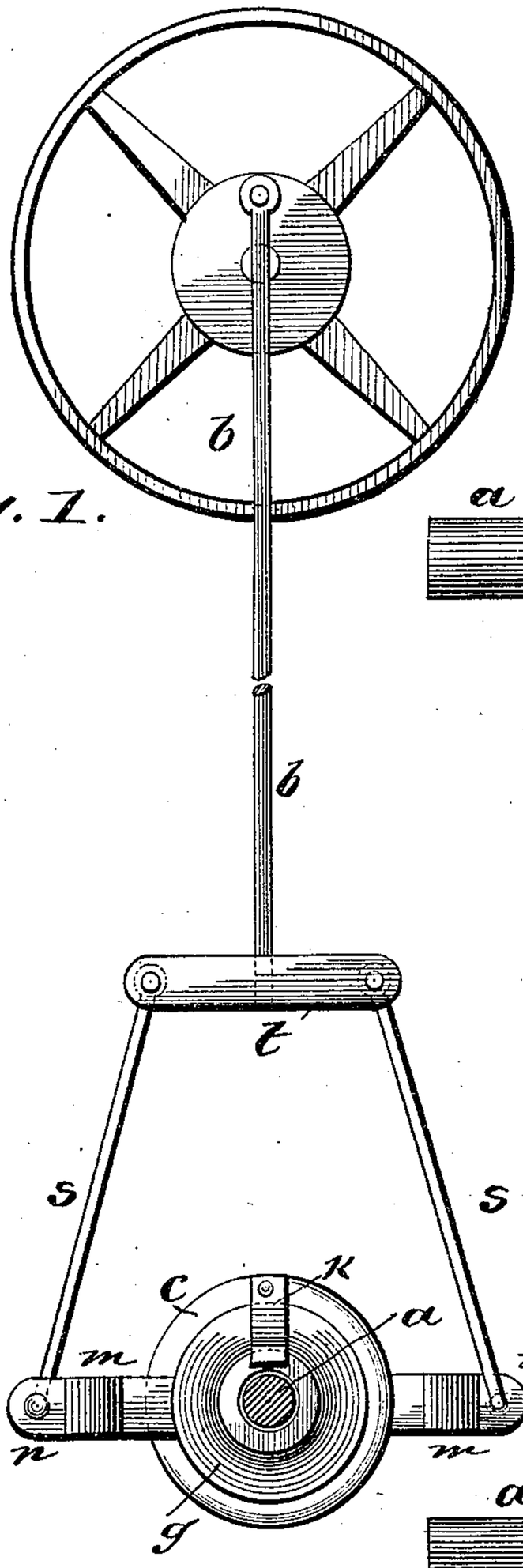


Fig. 2.

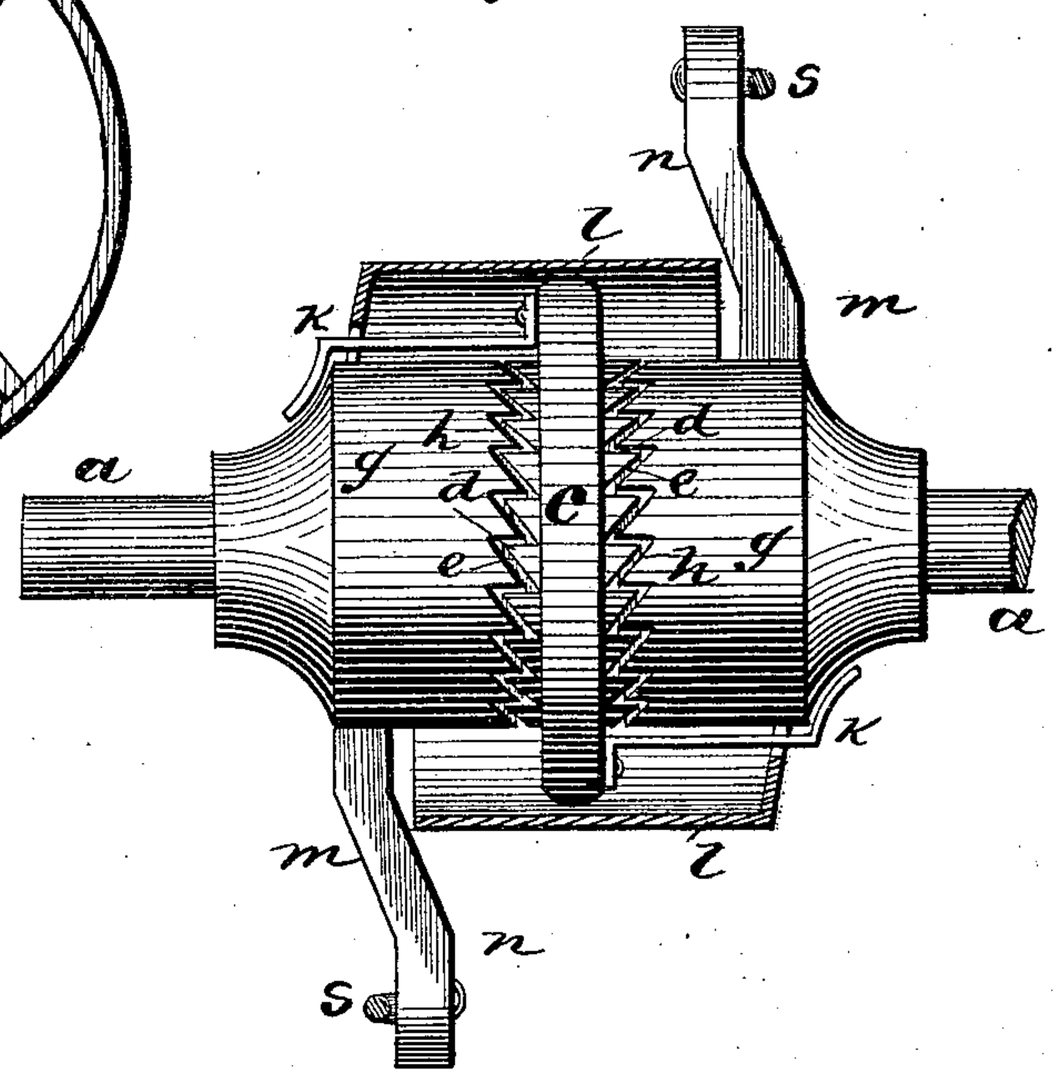
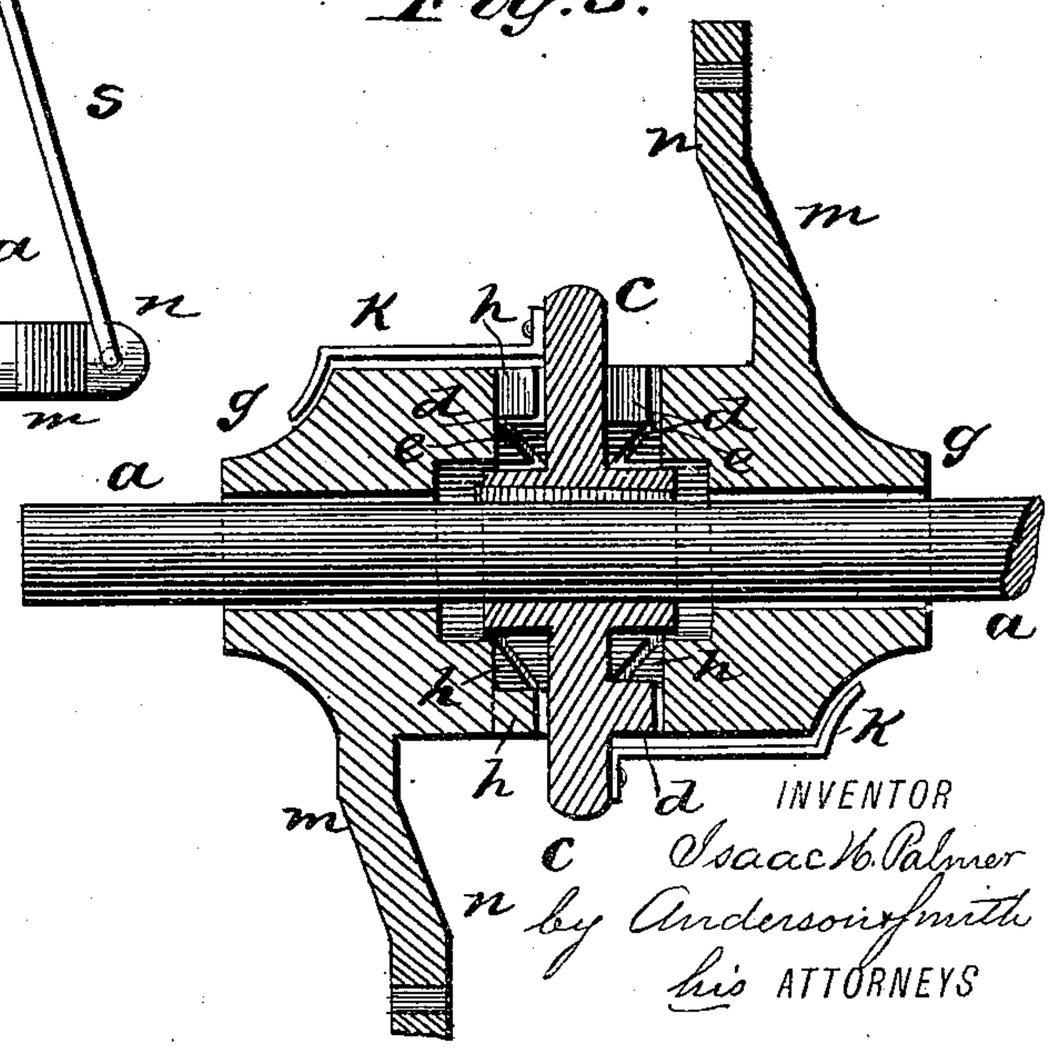


Fig. 3.



WITNESSES

Phillemasi.

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UNITED STATES PATENT OFFICE.

ISAAC HENRY PALMER, OF LODI, WISCONSIN.

POWER-CONVERTER.

SPECIFICATION forming part of Letters Patent No. 303,541, dated August 12, 1884.

Application filed June 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, ISAAC H. PALMER, a citizen of the United States, residing at Lodi, in the county of Columbia and State of Wisconsin, have invented certain new and useful Improvements in Power Converters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a front view of my device. Fig. 2 is a side view of the clutch, and Fig. 3 is a vertical sectional view of the same.

The object of this invention is to provide a motor attachment for windmills, adapted to facilitate the operation of running feed-mills and other machinery; and the invention consists in the construction and novel arrangement of parts constituting the attachment, all as hereinafter set forth, and pointed out in the appended claims.

In the accompanying drawings, the letter *a* designates a rotary shaft, which is seated in suitable bearings, and extends horizontally below the plunger-rod *b* of the windmill.

On the middle portion of the shaft *a*, is keyed or otherwise rigidly secured, the double ratchet-wheel *c*, the ratchet-teeth of which are on each side facing outward. Each tooth is formed with one of its faces, *d*, in the radial plane, and the other inclined thereto, as shown at *e*. On each side the teeth are arranged in a similar manner.

On each side of the center ratchet-wheel, *c*, is located, on the shaft, a loose ratchet-wheel, *g*, having lateral teeth, *h*, of similar formation to those of the double ratchet-wheel, but conversely arranged, so that the inclined faces of the latter will engage similar faces of the former with a sliding movement when the loose ratchet-wheel is turned in one direction, while, when turned in the opposite direction, the radial faces of the teeth will be engaged, so as to interlock and rotate the central ratchet-wheel and shaft. Each loose ratchet-wheel is held in yielding relation to the central ratchet-wheel by a spring, *k*, the power of which, while sufficient to hold the lateral ratchet within engagement distance of the central ratchet, is not so great as to impede the sliding movement of the teeth of the ratchets. The diameter of the lateral or loose ratchet-wheels is similar to that of the center wheel, so that there is presented exteriorly by the three wheels, when in relative position on the shaft, a cylindrical surface, which is fitted with a cylinder-cover, *l*, adapted to inclose the ratchet portions of the wheels and deaden the noise made by the teeth in their sliding movements. In this construction the central ratchet-wheel is made as thin as is consistent with the strength required, so that its ratchet-faces are brought directly under the plunger of the windmill, and the lateral loose ratchet-wheels are each provided with an arm, *m*, which is bent inward, as at *n*, and then extending in the plane of rotation, is connected to a rod, *s*, which in turn extends upward to a head-piece, *t*, which is rigidly secured to the plunger-rod at or near its lower end. When the plunger-rod moves downward the loose ratchet-wheel on one side engages the center ratchet-wheel and turns said wheel and its shaft, while the teeth of the loose ratchet on the opposite side slide. Upon the upward movement of the plunger the latter loose ratchet engages the center wheel, and the teeth of the former loose ratchet slide. In this manner a continuous movement of the central ratchet-wheel and its shaft is kept up, serving to operate a feed-mill or other machinery with which the shaft *a* may be in connection.

I am well aware that it is not new in devices for converting reciprocating into rotary motion to employ loose ratchet-wheels in combination with a ratchet-wheel keyed to a shaft; and I do not claim such devices broadly.

What I claim, and desire to secure by Letters Patent, is—

An attachment for converting motion, consisting of the shaft *a*, the central ratchet-wheel, *c*, rigidly secured thereto, the loose lateral ratchet-wheels *g*, of the same diame-

ter with said central ratchet-wheel, arranged on said shaft and held up by springs, the bent arms *m* of the loose ratchet-wheels, the cylinder-cover *l*, embracing the ratchet portions of the fast and loose wheels, and the connecting-rods and head-piece, substantially as specified.

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

ISAAC HENRY PALMER.

Witnesses:
JOEL PRUYN,
SAM. W. EVERSON.