

Oct. 14, 1941.

G. LETSCH

2,259,313

CONTACT CONVERTER

Filed Aug. 16, 1939

2 Sheets-Sheet 1

Fig. 1.

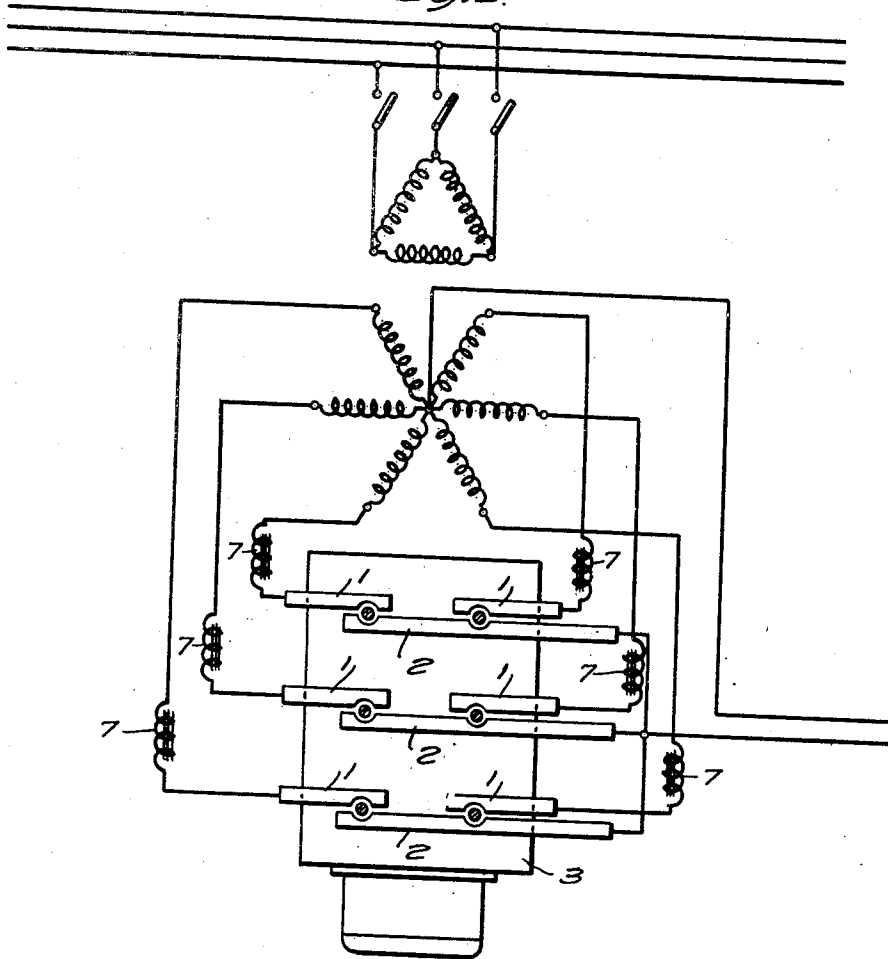
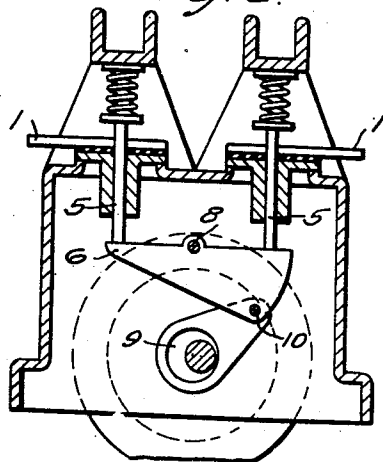


Fig. 2.



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Fig. 3.

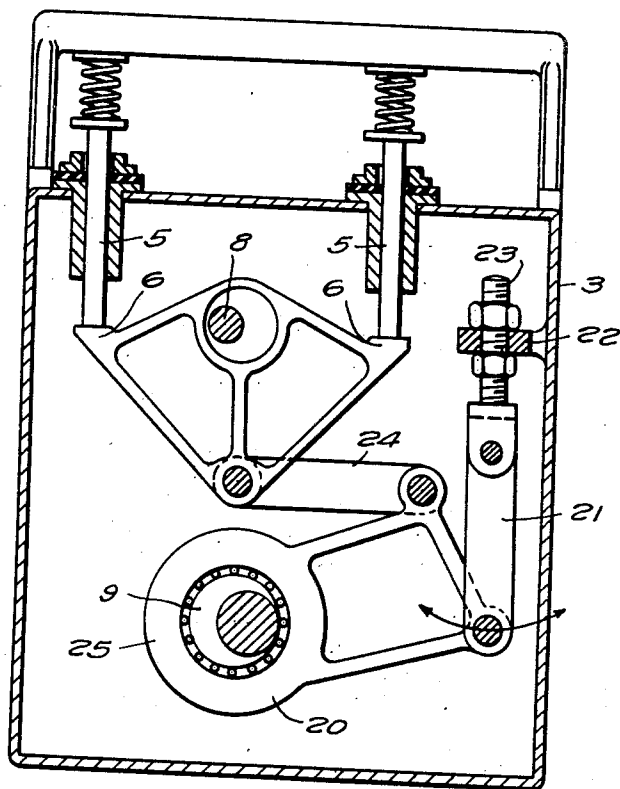
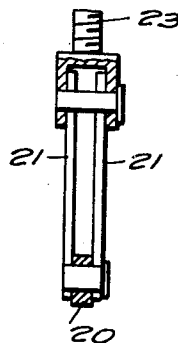


Fig. 4.



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## UNITED STATES PATENT OFFICE

2,259,313

## CONTACT CONVERTER

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assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania

Application August 16, 1939, Serial No. 290,476  
In Germany August 18, 1938

2 Claims. (Cl. 200—16)

My invention relates to a mechanical contact rectifier, and particularly to an operating mechanism for such a device.

In the construction of mechanical rectifiers it has been customary to provide a plurality of contact elements corresponding in number to the number of phases of the alternating current to be rectified. This has resulted in a mechanical device of considerable size, and it is an object of my invention to so arrange the mechanical contacts of a mechanical rectifier so as to occupy a reduced amount of space and to reduce the movable operating elements to a minimum.

It is a further object of my invention to provide a mechanically movable actuating system capable of adjustment to determine the contact intervals and also to provide adjustment to compensate for wear or mechanical inaccuracies in the mechanical portion of the contact actuating device.

Other objects and advantages of my invention will be apparent from the following detailed description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a plan view of a contact device according to my invention;

Fig. 2 is a detailed illustration of an actuating mechanism according to my invention;

Fig. 3 is a detailed view of an improved actuating mechanism, and

Fig. 4 is a detail showing the method of connecting the linkages according to my invention.

In the illustrated embodiment of my invention, a mechanical actuated contact device comprises a plurality of contactors, each contactor comprising two fixed contact members 1 and 2 which are preferably removably mounted on a suitable framework 3 and a movable bridge element 4 controlled by means of a reciprocating stem 5 acting substantially in the manner of a tappet stem in an internal combustion engine.

In the preferred embodiment of my device, these contact elements 1 and 2 are arranged in pairs so that a single lever device 6 may actuate each of the contactors of the pair. Preferably current limiting or saturation type reactors 7 are connected in series with each of the contact elements in order to eliminate sparking at the instant of breaking in the contact. The actuating member for each pair of contact devices comprises a pivoted lever 6 journaled on an axis 8 intermediate between the contact devices. Preferably, this axis 8 is mounted in the framework 3 supporting the contact elements. In order to operate the pivoted lever 6, a suitable cam herein illustrated as an eccentrically mounted cylindrical segment 9 is connected to the pivoted lever 6 by means of a suitable linkage 10 so that actua-

tion of the cam 9 alternately raises and depresses the opposite ends of the pivoted lever 6 in the manner of an inverted walking beam.

As is illustrated in Fig. 3, the pivot axis 8 of the walking beam 6 may be constructed with an eccentric mounting in the casing or frame 3 of the contact device, so that the double ended beam 6 may be adjusted to determine the contact interval of the contact devices.

In order to secure a means of eliminating any inaccuracies in the construction or to compensate for wear in the linkage mechanism 10, I prefer to construct a mechanism having a compound link member as illustrated in Fig. 3. The compound link member comprises a rocker 20 cooperating with the cam 9 and having one point connected by means of a link 21 to a substantially fixed bearing 22 by means of a bolt 23 while the rocker 20 is connected to the beam 6 by a link 24.

To secure greater freedom of motion and to reduce the wear, any or all of the bearing points may be provided with suitable anti-friction devices such as the roller bearing 25 shown about the eccentrically mounted cam 9. By adjusting the bolt 23 securing the linkage to the bearing point 22, any inaccuracies in the mechanical construction of the linkage members or the cam 9 may be compensated for as well as any inaccuracies resulting from mechanical wear of the linkage members.

While for purposes of illustration I have shown and described a specific embodiment of my invention, it is apparent that changes and modifications can be made therein without departing from the true spirit of my invention or the scope of the appended claims.

I claim as my invention:

1. A mechanical rectifier comprising a plurality of pairs of contactor devices, a tappet like stem for operating each of said contactor devices, a double-armed suspended beam for actuating a pair of said stems, a pivot axis intermediate the ends of said suspended beam eccentric means for adjusting said pivot axis and eccentric means for oscillating said beam about said pivot.

2. A mechanical electrical converter comprising a plurality of contactors, said contactors being arranged in pairs, a tappet like operating member for each of said contactors, a double-armed beam suspended on an axis intermediate each pair of contactors, an actuating cam for said beam, and a linkage between said cam and said beam, a substantially fixed bearing for said linkage and means to adjust said bearing to compensate for inaccuracies.

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