In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, the various parts are supported on a suitable frame A. The driven cone B is mounted upon a suitable shaft, which also carries the tight and loose pulleys b, which represent the medium through which power may be delivered to the machine. A driving-cone B′ is mounted upon a suitable shaft which is supported at an angle, preferably at right angles, to the shaft of the driven cone B. The cones B′ and B are arranged so that their like ends occupy the same relative positions toward a common meeting point of the shafts.

The track or way A′ is supported by the frame A. A carriage C is adapted to reciprocate along this track, and suitable means are provided for moving it therein. On the axle or shaft C′, carried by the carriage C, are idlers D, which are adapted to support and guide the connecting-belt B′ of said cone. The idlers D are cone-shaped and are formed of sections d, independently revoluble on the hub c of the idler, which is adapted to revolve on the axle C.

In a speed-regulator of the class described when belts of any considerable width are used it is found quite necessary to shape them to the pulleys, as the same edge is always presented to the like ends of the pulleys.

In passing over the guide-pulley or idler of the usual construction the belt is subjected to considerable strain, which tends to stretch the same out of shape and weaken it. When a cone-shaped guide-pulley is used, this tendency is overcome; but it is evident that there must of necessity be some compensating slip, as all portions of the belt travel at the same relative speed. In our improved guide-pulley or idler this friction is reduced to a minimum, as the several sections composing the pulley are free to revolve independently, and the belt is guided and presented to the cone in the proper position to reduce the strain thereon to a minimum. By the use of our improved cone-pulley structure...
in this relation it is found entirely practical to use a straight belt—that is, a belt without any special shaping, as is otherwise desirable.

We have illustrated and described our improved cone-pulley structure in connection with a speed-regulator. We are aware, however, that it has very great advantages for use in other relations, and therefore desire to claim the same specifically in combination with a speed-regulator, as well as broadly.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination of a plurality of independently-revoluble sections of uniformly-increasing diameters, which together unite to form an idler of regular taper, as specified.

In testimony whereof we have hereunto set our hands and seals in the presence of two witnesses.

HENRY P. WHITE. [L. S.]
LEWIS E. PAYNE. [L. S.]

Witnesses:
ETHEL A. TELLER,
Otis A. Earl.