TRANSMISSION OF POWER.

THERE is a new device for the transmission of power before the public which is attracting a great deal of attention. It consists in running a loose belt between two pulleys instead of the usual way of encircling the pulleys with a belt. Simple as this arrangement is, it is a very efficient method by which power can be transmitted from one shaft to another. The most remarkable thing about it is the fact that more power can be transmitted in this way, with less pressure on the bearings, than in the old way. This may seem at first sight to be unreasonable, but it can be fully demonstrated that this is a fact. It is said that this is owing to the fact that the belt is loose. It is in this feature that it differs from all other frictions, and bases its claims for superiority.

We illustrate one application of this principle to the driving of dynamos directly from the fly-wheels of an engine. A great saving in belting, room, and an appreciable saving in power, are among the advantages of this system, and an unusually steady light is produced.

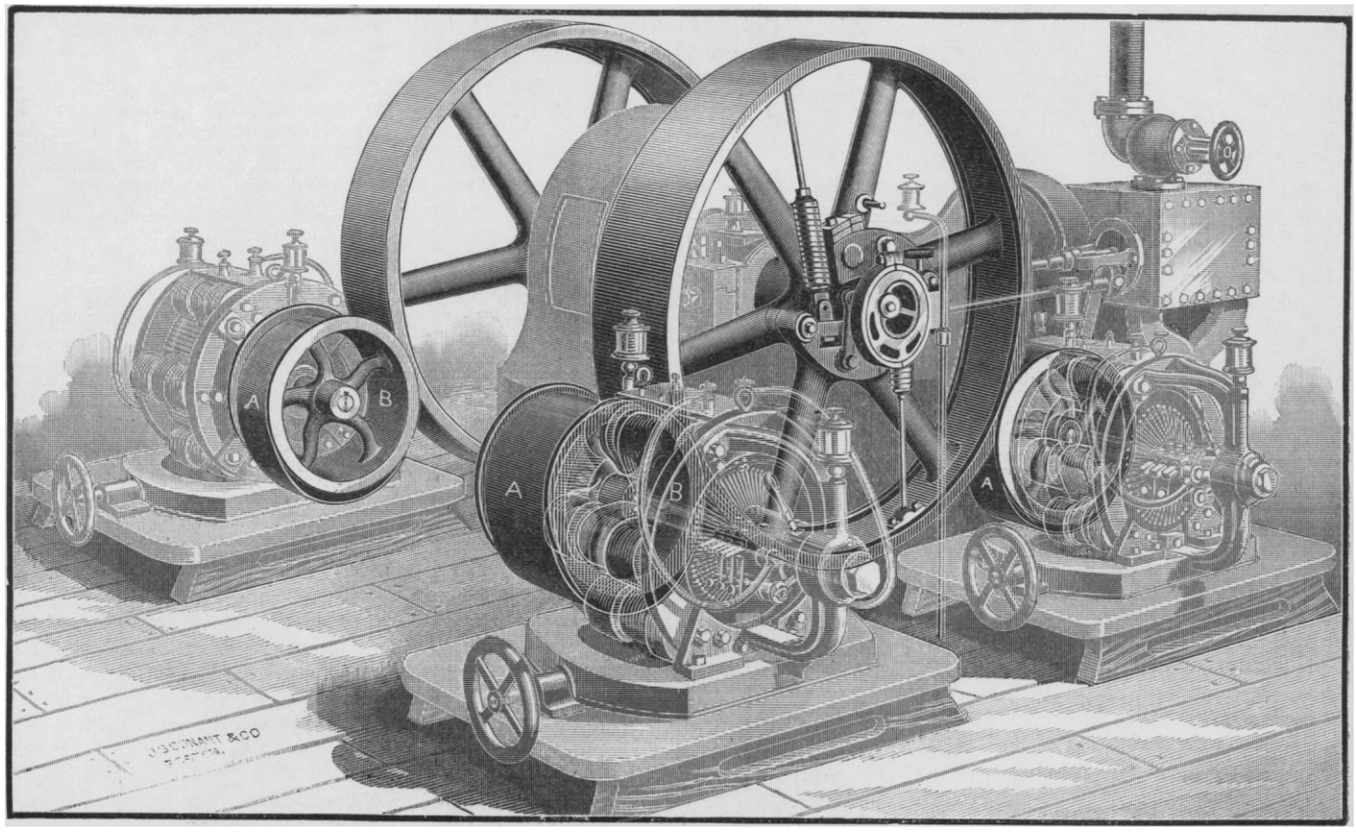

FIG. 1. — DYNAMOS DRIVEN BY MEANS OF EVANS FRICTION BELT.

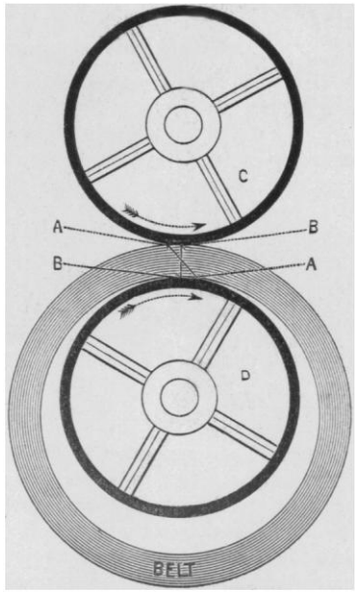

FIG. 2. — PRINCIPLE OF THE EVANS FRICTION BELT.

The arrangement of this system is shown in Fig. 2, where *C* is a driving-pulley, which drives pulley *D*, through the medium of the belt. The friction of pulley *C* on the belt produces a tangential force in the direction of rotation. In a similar way, there will be a corresponding force acting in the opposite direction on the under side of the belt, due to the resistance of the driven pulley. These two forces constitute a static couple. The belt is free to act under its influence, and two things take place. The tendency to rotation will cause the pressure to be transmitted in an oblique direction, as shown. These two forces will also produce an upsetting or fulling action, which will thicken the belt, and create pressure enough to drive, after a slight pressure is first put on the belt.

Practical men will appreciate at once the advantage of having a simple and durable way in which they can start and stop one or more dynamos independently of each other, and this without slowing down the engine. This system has been in continual use in stations for some time, and has given universal satisfaction; and large plants which are being built in the vicinity of Boston are preparing to adopt this arrangement.

The same principle is applied by the inventors to the transmission of power from one cone to another, for the purpose of obtaining a variable speed. They have also attached a governor to the driven cone in special cases, where a steady speed is required from a source that is variable, and a very close regulation has been thus obtained. This is especially valuable for driving dynamos where water-power is used.

The patents which control these principles are owned by the Evans Friction Cone Company of Boston. The results of tests which they have made are very interesting. The method seems to be almost universally applicable to all places where power is used.