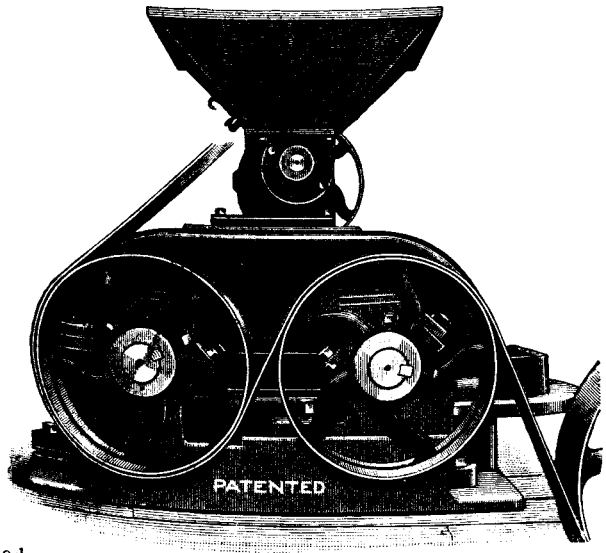
CENTRIFUGAL ROLLS.

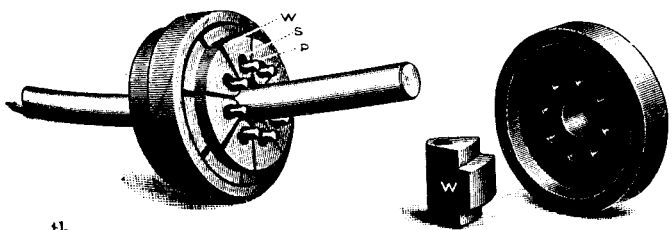
OUR readers will probably agree that in describing centrifugal rolls we are introducing them to machines of unusual interest.

Centrifugal rolls are so named becaues they alone crush by utilizing the immense centrifugal forces generated by their rotations. No springs are needed to force the roll faces together, and, although, the space between the tire faces opens and closes, as in common rolls, yet, in centrifugal rolls neither shaft or roll or bearing has any backward or forward movement. For these reasons no crushing push can be transmit-



ted to the roll shafts. These entirely escape the direct shocks, and the pounding caused by the backward and forward movements of the heavy common roll and its bearings.

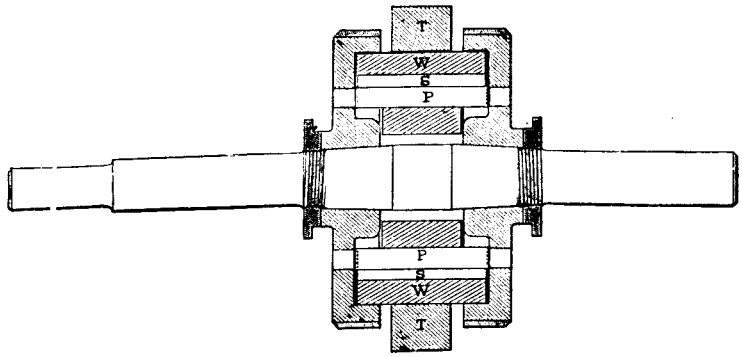
Centrifugal rolls have also the singular property of automatically balancing themselves. They, therefore, run with nearly the steadiness of dynamos. Since the output of common rolls is directly as their peripheral velocities, centrifugal rolls, which easily run three times as fast as other rolls of equal size, should have



three times their capacity, and as a matter of fact, their output exceeds their capacity.

The following description and cuts will enable our readers to understand their construction and operation:

The centrifugal roll consists of but three important parts, viz: the shaft, the segment weights (W) and the tire. The segment weights together, in operation, form a roll, over which is placed the tire. Each weight is held to the shaft flanges by the pin (P) passing through the weight slot (S). Each weight rotating with the shaft, is set out by centrifugal force, and together the weights form, as before stated, a strong roll. The segment weights are prevented from giving expanding pressure to the tire by strong steel hub flanges.



The slots (S) permit each weight to move back on its pin toward the shaft, but its backward movement can transmit no push to the shaft.

It is plain that the weights (W) in running hold the tire in position by the immense power of centrifuual force.

The tires in a pair of rolls can only be pushed back towards their shafts by a superior force, and as no rock is strong enough to exert such force it is easily crushed. If a bit of uncrushable steel gets between the rolls, and forces back the tires and weights, no harm is done; for no crushing shocks are transmitted directly to either shaft. The roll shafts are not pressed back at all.

This action may be illustrated by a weight rotated from a shaft by a cord. The weight may easily be pushed back, but no push can be transmitted to the shaft. It is thus seen that if centrifugal rolls faces are set as clearly together as wanted no springs are needed to keep them in position.

Centrifugal rolls, balancing themselves, run easily at all speeds. In the large sizes very moderate speeds give to centrifugal rolls ample crushing power.

All rolls benefit by high peripheral speeds; but while common rolls cannot run fast, centrifugal rolls can, and thus they have marvellous effectiveness without large diameters.

Small centrifugal rolls do extraordinary work. Centrifugal rolls of even moderate size do more and better work than the largest common rolls that can be constructed. They run easily, as shown in the cut, with small driving pulleys, and they require so much l ss power than slow running common rolls that no balance wheers are needed.

Please remember that centrifugal rolls of very moderate dimensions do work enough. That centrifugal rolls, being smaller cost less to buy, cost less to transport, cost less to set up, cost less to run and cost less for repairs, which are all comparatively small.