Fig. 1 is a front elevation of the mechanism constituting the present invention.

Fig. 2 is a side elevation thereof.

Fig. 3 is a section on line 3—3, Fig. 1, showing a portion of the mechanism.

Fig. 4 is a vertical transverse section through the gear housing and the parts therein.

Fig. 5 is a side elevation of the gearing, a portion of the removable head of the housing being removed, the gears being shown in one position.

Fig. 6 is a view similar to Fig. 5 showing the gears shifted to another position relative to each other.

Referring to the figures by characters of reference 1 designates a base provided with standards 2 and 3 in which is mounted a drive shaft 4 provided with a drive pulley 5. A driven shaft 6 may be extended through the base and has a gear 7 meshing with another gear 8 secured to and rotatable with a shaft 9. This shaft is journaled in the standard 2 and in a bearing 10 and aligns with another shaft 11 journaled in the standard 3 and bearing 12. A pulley 13 is secured to shaft 11 and is adapted to receive motion through a belt 14 from the pulley 5.

A housing 15 is mounted for rotation on one end portion of the shaft 9 and has a head or cover plate 16 secured thereto which is extended a flange 17 provided with an arcuate slot 18. In this slot is adjustably secured a stud 19 carrying an idler pulley 20 which engages plate 14 at a point between the pulleys 5 and 13. An arm 21 is extended radially from the housing 15 and carries an adjustable weight 22 so that the housing can be rotated in one direction unless weight 22 is lifted and pulley 20 moved away from the engaged portion of the belt 14.

Secured to the shaft 9 so as to rotate within the housing 15 is an internal gear 23 meshing with a gear 24 mounted for rotation on the stud 25 extending inwardly from the cover plate or head 16 of the housing 15. This gear 24 in turn, meshes with a gear 26 secured to the end of shaft 11.

From the foregoing it will be apparent that under ordinary conditions the rotation of pulley 13 by the belt 14 will result in the transmission of motion through gears 26, 24 and 23 to the shaft 9 with the result that motion will be transmitted through gears 8 and 9 to the shaft 6. When the shaft 6 is subjected to excessive resistance or load however, the rotation of the gear 26 will be retarded and this will result in gear 24...
traveling along gear 23 to the position such as shown, for example, in Fig. 6. Consequently the housing 15 will be swung about its center with gear 24 because of the stud connection 25 between said gear and the housing. This will result in the weight 22 being lifted out of normal position and the pulley 20 being shifted so as to loosen belt 14 and either partly or entirely stop the transmission of motion from pulley 5 to pulley 13. Obviously, therefore, by a proper adjustment of the parts any excessive strain or load upon the transmission mechanism will result in the automatic slowing down or stopping of the drive connection between the pulleys 5 and 13 so that should the web of the mechanism to which the drive is connected be drawn too taut and endanger rupturing of the paper thereby, the further transmission of motion through the drive would be automatically slowed down or stopped until the web has had a chance to be relieved of the strain to which it has been subjected.

While this mechanism is designed primarily for use in connection with papermaking machinery, it is to be understood that it can be used efficiently wherever an automatic load controlled drive is desirable.

For the purpose of retarding the downward movement of the weighted arm 21 a dash pot structure indicated generally at 27 in Fig. 2 may be connected to the arm. As this dash pot constitutes no part of the present invention it has not been thought necessary to show or describe the same in detail.

What is claimed is:

1. In a mechanism of the class described, the combination with alining shafts, spaced pulleys one of which is secured to one of the shafts, and a belt connecting the pulleys, of driven mechanism connected to the other shaft, a weighted rotatable housing mounted upon one of the shafts, an idler movable with the housing and engaging the belt to hold it normally taut, an annular gear rotatable with one of the shafts, an intermediate gear meshing therewith and movable with the housing, and a gear upon the other shaft meshing with the intermediate gear.

2. The combination with spaced pulleys and a drive belt connecting the same, of alining shafts, one of said shafts being connected to one of the pulleys, an annular gear rotatable with the other shaft, a rotatable housing mounted freely on the gear shaft, an idler carried by the housing, of gravity operated means carried by the housing for holding the idler normally pressed against the belt to maintain the belt taut, a gear rotatable with the pulley shaft, and an intermediate gear carried by the housing and meshing with the annular gear and the gear upon the pulley shaft.

In testimony that I claim the foregoing as my own, I have hereunto affixed my signature.

BION B. FARNHAM.