(No Model.) 2 Sheets—Sheet 1.

W. SCHNURR.

ADJUSTABLE GEARING.

No. 526,750. Patented Oct. 2, 1894.

Fig. 2.

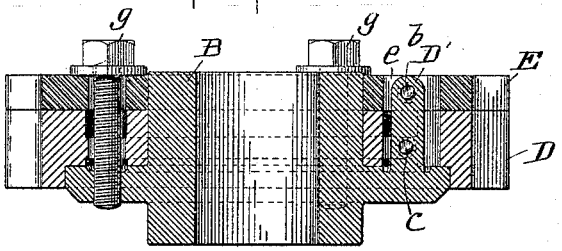
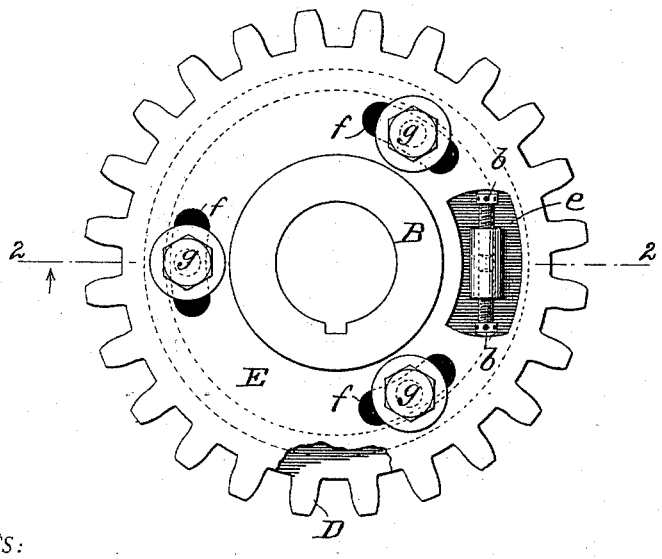


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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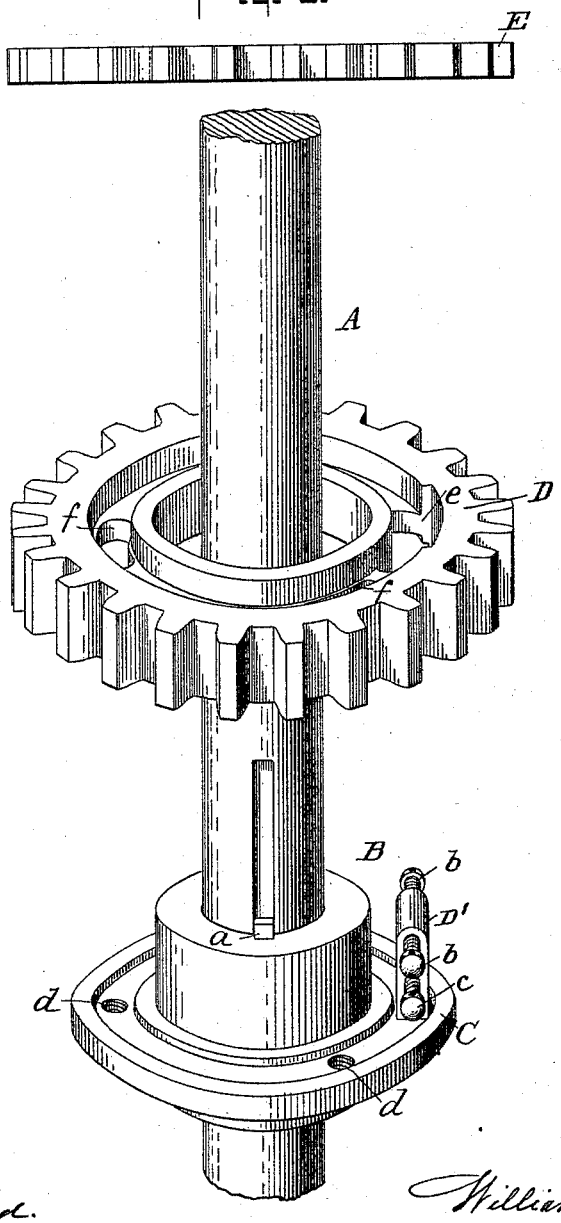
Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM SCHNURR, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE UNITED STATES PRINTING COMPANY, OF OHIO.

ADJUSTABLE GEARING.

SPECIFICATION forming part of Letters Patent No. 526,750, dated October 2, 1894.

Application filed May 21, 1894. Serial No. 511,892. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHNURR, a resident of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Adjustable Gearing, of which the following is a specification.

My invention relates to adjustable gearing, and has for its object to construct an intermediate gearing so that it can be set to mesh exactly into both gears which it is to unite and to bring both said gears to any definite desired zero position.

A further object of my invention is to so construct a gear-wheel that any wear on the teeth may be taken up by an adjustment of part of the wheel.

Mainly, the invention consists in combining with a sleeve or collar which is keyed upon a shaft or otherwise rigidly attached thereto an adjusting arm carried by a flange of said sleeve or collar, and located within the opening of the main gear-wheel so that by adjusting the position of said arm the position of the main gear-wheel on the sleeve may be regulated to a great nicety.

The invention further consists in combining with the main gear-wheel a supplemental gear-wheel which can be regulated independently of the main gear-wheel for taking up slack, wear, back-lash or the like.

My invention is particularly applicable for use in multi-color presses where two printing cylinders are driven by or through an intermediate gear. If it is necessary that both the said printing cylinders shall at one particular time of their revolution be in a certain definite position relatively to each other and to a fixed object which I will call the zero position, it frequently occurs that this position can only be approximately but not exactly arrived at owing to slight differences in the position of the intermeshing teeth.

My invention will be found particularly useful to enable the exact position of the gears to be acquired.

I attain the object of my said invention by the mechanism illustrated in the accompanying drawings showing one form of my invention, and in which—

Figure 1 is a top view of a gear-wheel embodying my invention. Fig. 2 is a longitudinal transverse section thereof on line 2—2 of Fig. 1. Fig. 3 is a detail perspective view showing the parts as separate one from the other for purposes of clearer illustration.

Referring particularly to Fig. 3, B is a suitable hub which may be secured upon a shaft, as A, by means of a key *a* or other suitable fastening. This hub is provided with a flange C having rigidly attached thereto an adjusting arm or pillar D′. Working in this pillar or adjusting arm from opposite directions are adjusting screws *b b c c*. This flange is also provided with apertures *d*. Fitting loosely over the sleeve or hub B is a gear-wheel D which I will hereinafter designate as the main gear-wheel. This gear-wheel rests against the face of the flange C and is provided with an aperture *e* for the passage of the adjusting arm D′. The main gear-wheel is likewise provided with slots *f*.

E is an additional or supplemental gear-wheel having the same number and size of teeth as the main gear-wheel which fits over the hub B and is provided with apertures of the same number and general configuration as the main gear-wheel D.

By referring particularly to Fig. 2, it will be noticed that one set or pair of oppositely extending adjusting screws co-operates with the main gear-wheel and the other set or pair co-operates with the supplemental gear-wheel.

Passing through the slots in both gear-wheels and through the apertures *d* (which may be screw-threaded for the purpose) in the flange C are clamping bolts *g* which, when screwed down, clamp the entire structure rigidly together to prevent the parts from moving one on the other. When, now, it is desired to adjust the main gear-wheel relatively to the shaft, the clamping bolts are unscrewed to permit the gear-wheel to rotate on the hub B. The adjusting screws *c* are turned to rotate the wheel on the hub into the desired position and the clamping bolts are then screwed down to hold the parts firmly in their adjusted position and to take up the greater part of the strain, which would otherwise come upon the adjusting arm or pillar, which would tend to bend or break the adjusting devices. When, now, by reason of wear or other cause the gears become unreliable to

properly transmit the motion from one shaft to another, the defect may be remedied by a slight adjustment of the supplemental gear, which is accomplished as follows: The clamping bolts are unscrewed as before, and the adjusting screws *b* turned to move the supplemental gear relatively to the main gear so that the lapping of the teeth of the supplemental gear over the teeth of the main gear will compensate for the wear which has taken place, it being remembered that the gears are adjustable on the sleeve or hub B independently of each other. The clamping bolts are then screwed down in the same manner as before to hold the parts in their new adjusted position.

It will thus be readily seen that the object of my invention is efficiently accomplished by the device which I have herein described and illustrated. While, however, I have shown specific construction and have described the same in positive terms, I would have it understood that I do not limit myself to the precise construction of the parts or their arrangement as herein shown. Other and analogous forms of devices will readily occur to those who may wish to enjoy the fruits of my invention.

I do not herein claim broadly all means of adjusting gears relatively to their shaft or to each other, but

What I claim, and desire to secure by Letters Patent, is—

1. In a power transmitting device in combination, a hub provided with a flange and with an adjusting pillar carrying adjusting devices, together with a main gear and a supplemental gear, with both of which the adjusting devices on the pillar co-operate to adjust the same relatively to the hub and to each other, substantially as described.

2. In a power transmitting device in combination, a hub provided with a flange and adjusting devices, carried by said flange, a main gear-wheel, a supplemental gear wheel against both of which the adjusting devices bear to adjust the same with relation to each other and to the hub, together with means for holding the gears in their adjusted positions independently of the adjusting devices, substantially as described.

3. In a power transmitting device the combination of a hub provided with a flange, a pillar projecting therefrom, main and supplemental gear wheels on said hub, adjusting means extending from the pillar on the flange to said gear wheels, whereby they can be adjusted with relation to each other and to the hub, and bolts connected with the flange of the hub and adapted to secure the gear wheels in their adjusted positions and take the strain thereon, substantially as and for the purposes specified.

WILLIAM SCHNURR.

Witnesses:
GEO. E. MORSE,
HARRY M. TURK.