No. 889,546. PATENTED JUNE 2, 1908.

J. K. PROCTOR.

GARNET MACHINE.

APPLICATION FILED AUG. 2, 1906.

Fig. 1.

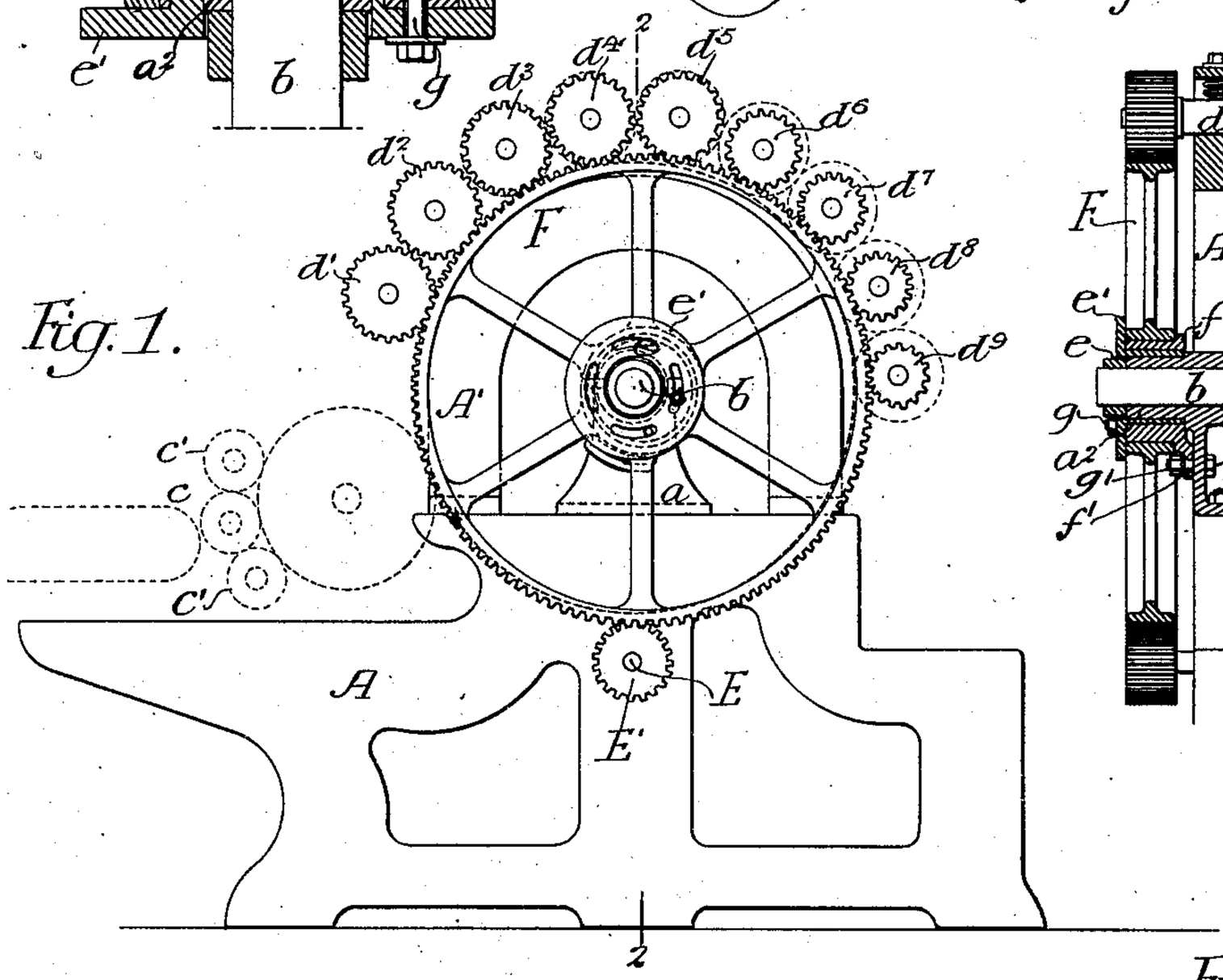


Fig. 2.

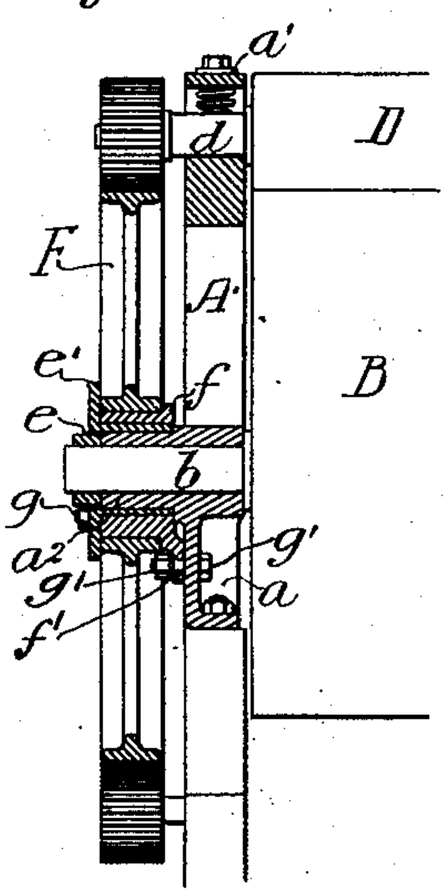


Fig. 3.

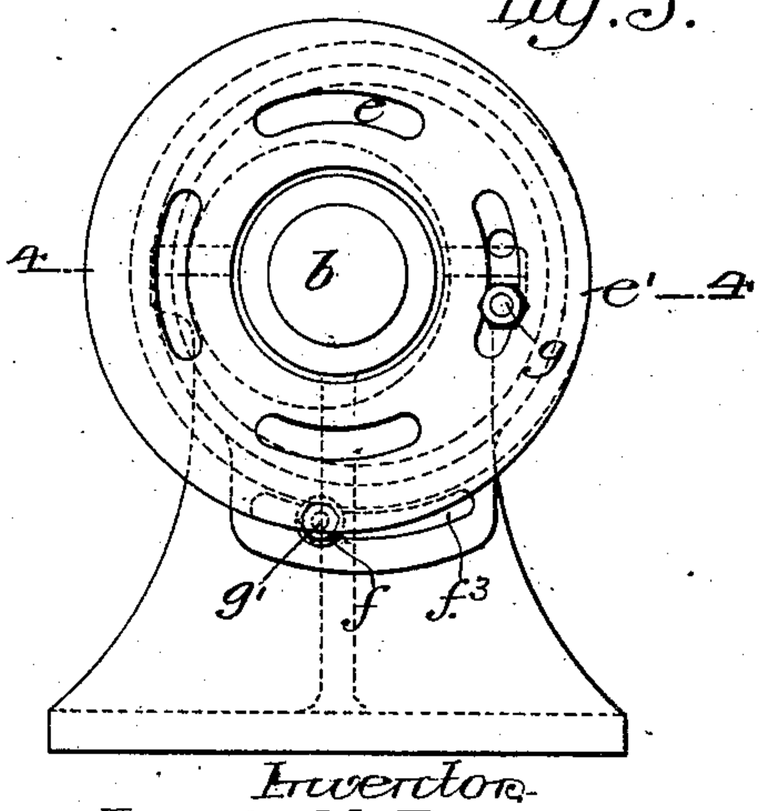


Fig. 4.

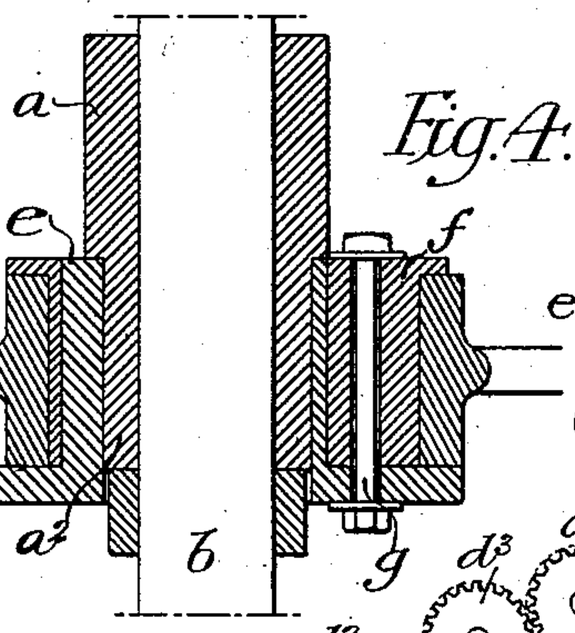


Fig. 5.

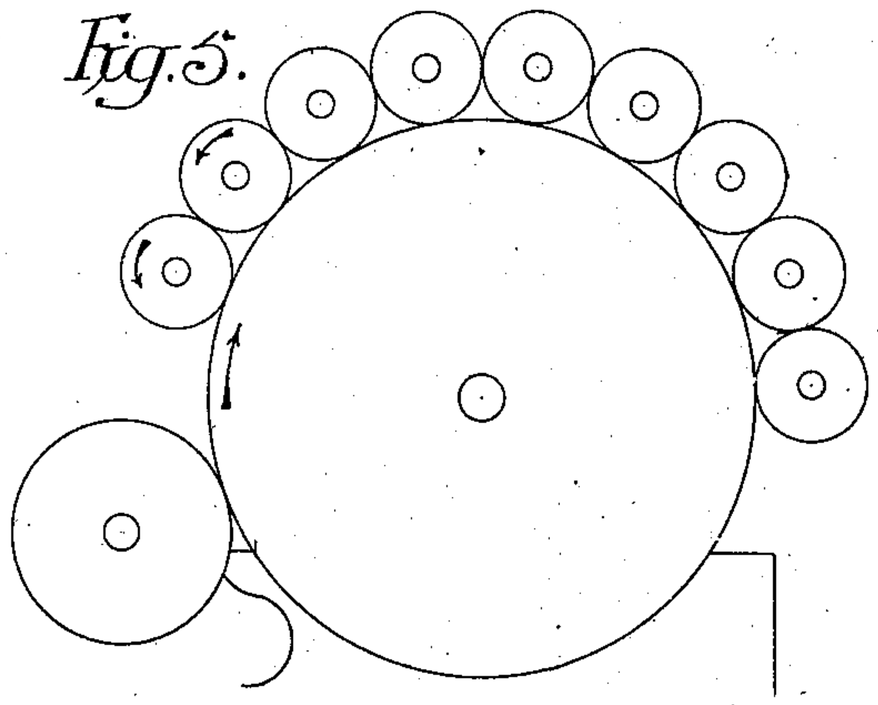


Fig. 6.

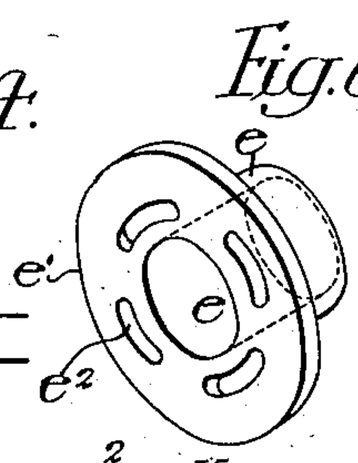
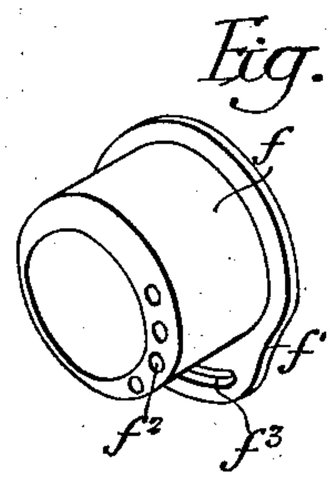


Fig. 7.



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by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

JOSIAH K. PROCTOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SMITH & FURBUSH MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

GARNET-MACHINE.

No. 889,546. Specification of Letters Patent. Patented June 2, 1908.

Application filed August 2, 1906. Serial No. 328,864.

To all whom it may concern:

Be it known that I, JOSIAH K. PROCTOR, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Garnet-Machines, of which the following is a specification.

The object of my invention is to so construct a garnet machine that while the workers are of the same diameter one worker will be driven at a greater surface speed than the worker immediately preceding.

My invention also relates to certain improvements in means for adjusting the several parts.

In the accompanying drawings:—Figure 1, is a side elevation of sufficient of a garnet machine to illustrate my invention; Fig. 2, is a transverse section on the line 2—2, Fig. 1; Fig. 3, is an enlarged view of a bearing forming part of my invention; Fig. 4, is a sectional plan view on the line 4—4, Fig. 3; Fig. 5, is a diagrammatic view showing the large cylinder together with the workers; and Figs. 6 and 7, are detached views of the eccentrics.

A is the frame of a garnet machine, mounted in each side frame is a bearing *a* for the main garnet cylinder B provided with teeth in the usual manner. The spindles *b* of the cylinder B extend entirely through each bearing, as clearly shown in Fig. 2. An arch A′ is mounted on each side frame A and these arches support the bearings *a′* for the spindles *d* of the workers D which are also provided with teeth in the ordinary manner.

c is a feed apron and *c′*, *c′* are the feed rolls for feeding the material to the machine. Any suitable mechanism may be used at the discharge end of the machine to carry away the material.

Mounted on the extension a^2 of the bearing *a* is an eccentric sleeve *e* having a flange *e′* and mounted on this sleeve is another eccentric sleeve *f* having a segmental flange *f′*. The two sleeves *e* and *f* are secured together by one or more bolts *g* illustrated clearly in Fig. 4, and the segmental flange *f′* of the sleeve *f* is secured to the bearing *a* by a bolt *g′* so that when the parts are adjusted the sleeves form a rigid bearing for the driving gear wheel F which is driven by a pinion E′ on the driving shaft E. This shaft is driven in the ordinary manner.

On the spindle *d* of each worker D is a gear wheel. On the first worker is a gear wheel *d′*, on the second worker is a gear wheel d^2 and so on until the last worker is reached on which is a gear wheel d^9. The gear wheels gradually decrease in diameter from the gear wheel *d′* to the gear wheel d^9, there being less number of teeth in the wheels as the diameter decreases, and as all these gear wheels mesh with the main gear wheel F the surface speeds of the several workers increases from the feed to the discharge end of the machine, producing the desired effect. By this means one worker will receive the fiber from the main cylinder and this worker will be cleaned by the next worker which is driven at a higher speed, and this worker will transfer the fiber to the cylinder again, the following one cleaning the one preceding it and so on until the material is carried through the machine.

The two eccentric sleeves are provided so that the main gear wheel F can be adjusted in order that its teeth will properly mesh with the teeth of the several gear wheels *d′* to d^9 inclusive, and, therefore, I provide the two eccentrics *e* and *f*, as clearly shown in Figs. 6 and 7.

The flange *e′* of the eccentric *e* has a series of perforations e^2 and the hub of the eccentric *f* has a series of holes f^2 placed a given distance apart, while the segmental flange *f′* of the eccentric *f* is slotted at f^3. By this means the rough adjustment is attained by moving one eccentric in respect to the other and locking the two together by the bolt *g* which passes through one of the perforations e^2 and through one of the holes f^2.

The final adjustment is attained by swinging the two eccentrics which are locked together in the bearing and securing them in position by the bolt *g′* which passes through the slot f^3 in the segmental flange of the eccentric *f* and through a hole in the bearing *a*.

I claim:—

1. The combination in a garnet machine, of a main toothed cylinder, means for driving the same, a series of workers of practically the same diameter working in conjunction with the main cylinder, gear wheels on the spindles of each worker, said gear wheels being of decreasing diameter from the feed end to the discharge end of the machine, a single main gear wheel meshing with all of the worker gear wheels, and means for driv-

ing said main gear wheel, substantially as described.

2. The combination in a garnet machine, of a main cylinder, a series of workers acting in conjunction therewith, a gear wheel on the spindle of each worker, said gear wheels decreasing in size from the feed end to the discharge end of the machine so that the peripheral speed of the workers will be increased as the material moves forward, a bearing for the main cylinder, a gear wheel mounted eccentrically on said bearing and meshing with the gear wheels of the workers, with means for driving said main gear wheel, substantially as described.

3. The combination in a garnet machine, of a main cylinder, a series of workers acting in conjunction therewith, a gear wheel on the spindle of each worker, said gear wheels graded to produce increasing peripheral speed of the workers, from the feed end to the discharge end of the machine, a bearing for the main cylinder, a gear wheel carried by said bearing and meshing with the wheels on the workers, with means on the bearing for adjusting the main gear wheel in respect to the worker gear wheels without adjusting the main cylinder, substantially as described.

4. The combination in a garnet machine, of a main cylinder, a series of workers acting in conjunction therewith, a gear wheel on the spindle of each worker, said gear wheels gradually decreasing in diameter from the feed end to the discharge end of the machine, a gear wheel meshing with all the worker gear wheels, and an adjustable eccentric bearing for the said gear wheel, substantially as described.

5. The combination in a garnet machine, of a main cylinder, bearings therefor, a series of workers, having increasing peripheral speed, a gear wheel on the spindle of each worker, a gear wheel common to all the workers, two eccentric sleeves mounted on one of the bearings for the main cylinder and acting as the bearings for the main gear wheel, said eccentric sleeves being adjustable one in respect to the other and also in respect to the bearing, and means for locking the sleeves in the position to which they are adjusted, substantially as described.

6. The combination in a garnet machine, of a main cylinder, bearings therefor, an eccentric sleeve mounted on one of the bearings, means for securing the said sleeve to the bearing, a second eccentric sleeve mounted in the first eccentric sleeve, means for locking the two eccentric sleeves together, a gear wheel mounted on the first eccentric sleeve, a series of workers, a gear wheel on the spindle of each worker meshing with the main gear wheel, said worker gear wheels producing an increased peripheral speed of the workers from the feed end to the discharge end of the machine, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSIAH K. PROCTOR.

Witnesses:
HENRY HOWSON,
JOS. H. KLEIN.