(No Model.) 3 Sheets—Sheet 1.

R. TATHAM.

COILER FOR RAILWAY HEADS, CARDING MACHINES, &c.

No. 255,473. Patented Mar. 28, 1882.

Fig: 1.

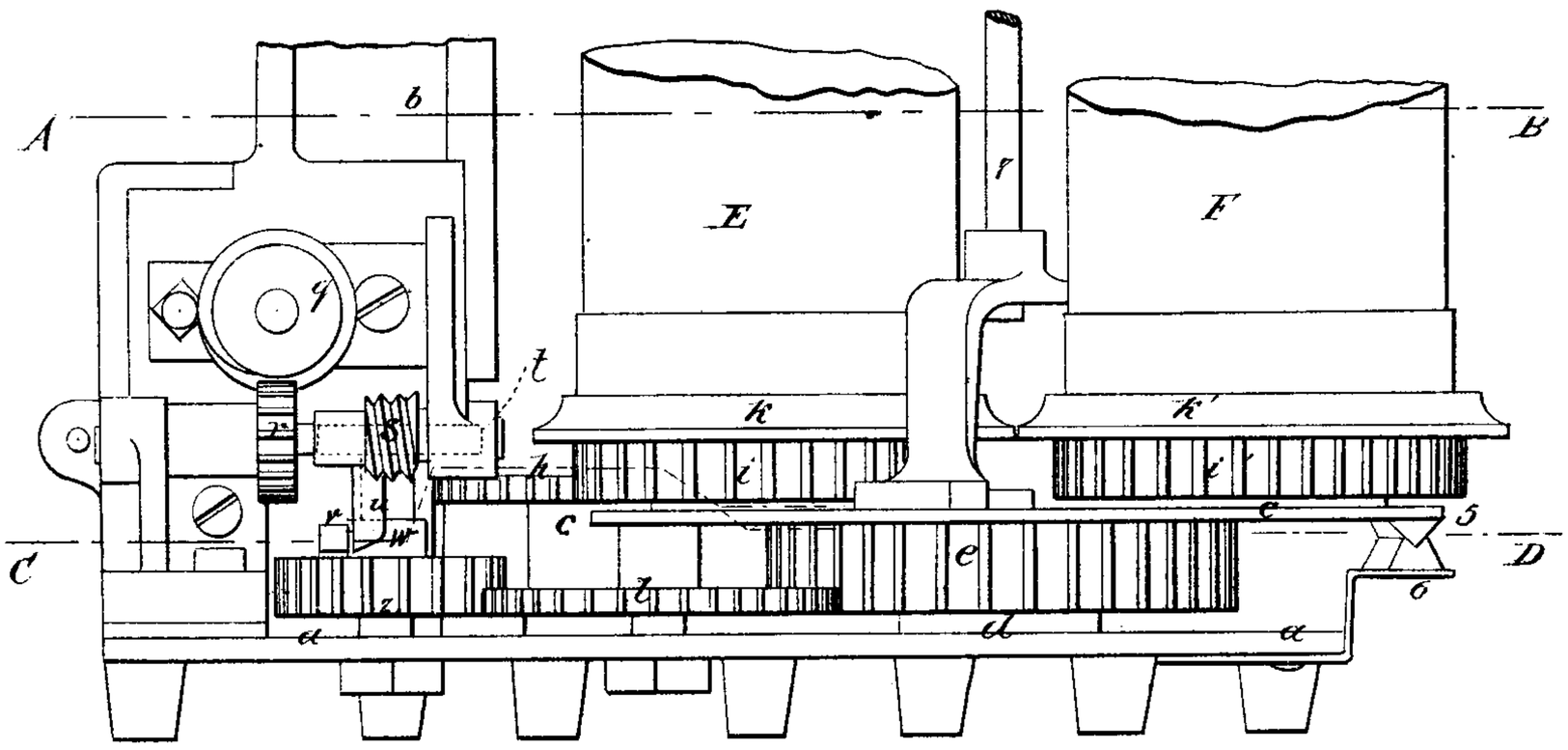
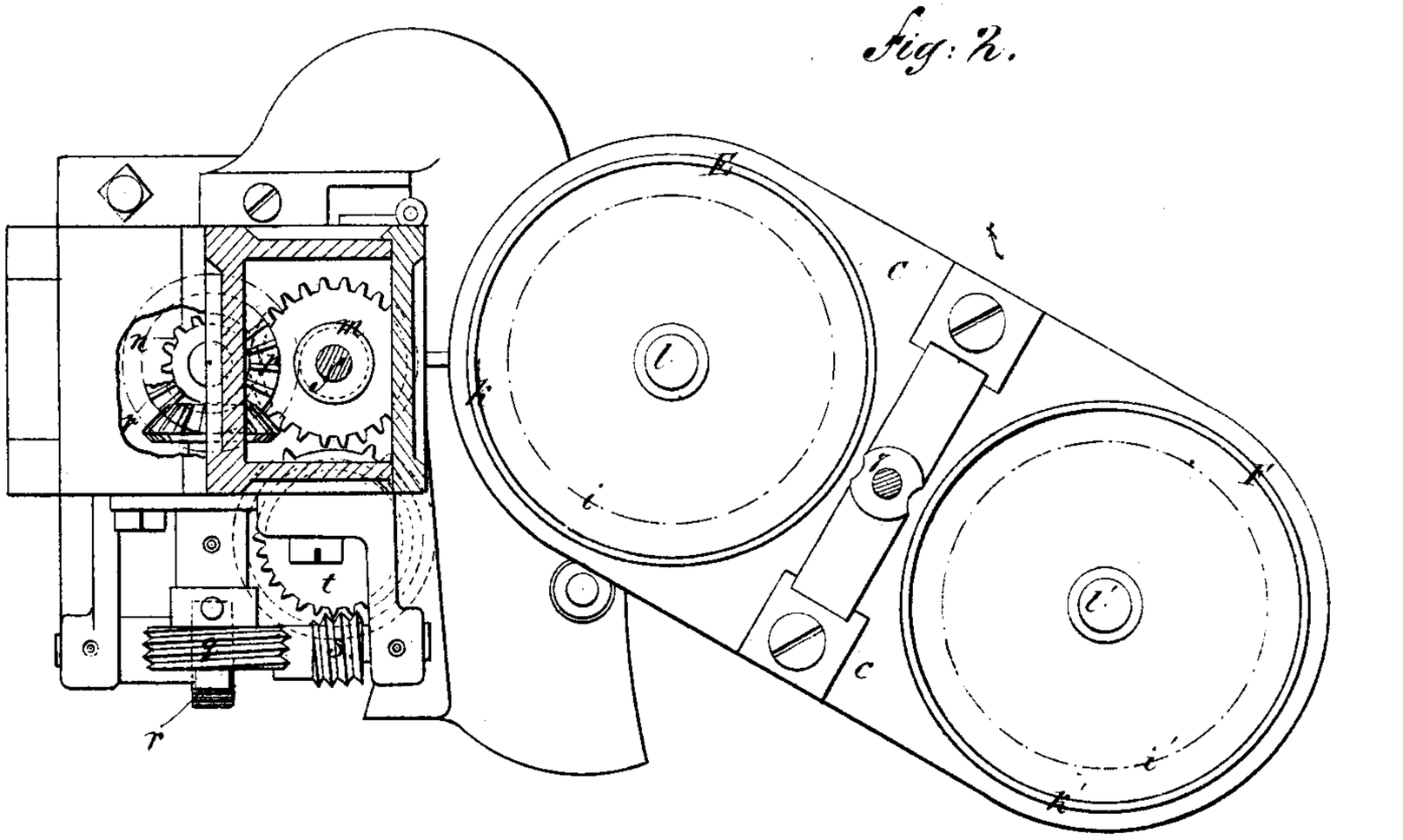


Fig: 2.



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(No Model.) 3 Sheets—Sheet 2.

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Fig: 3.

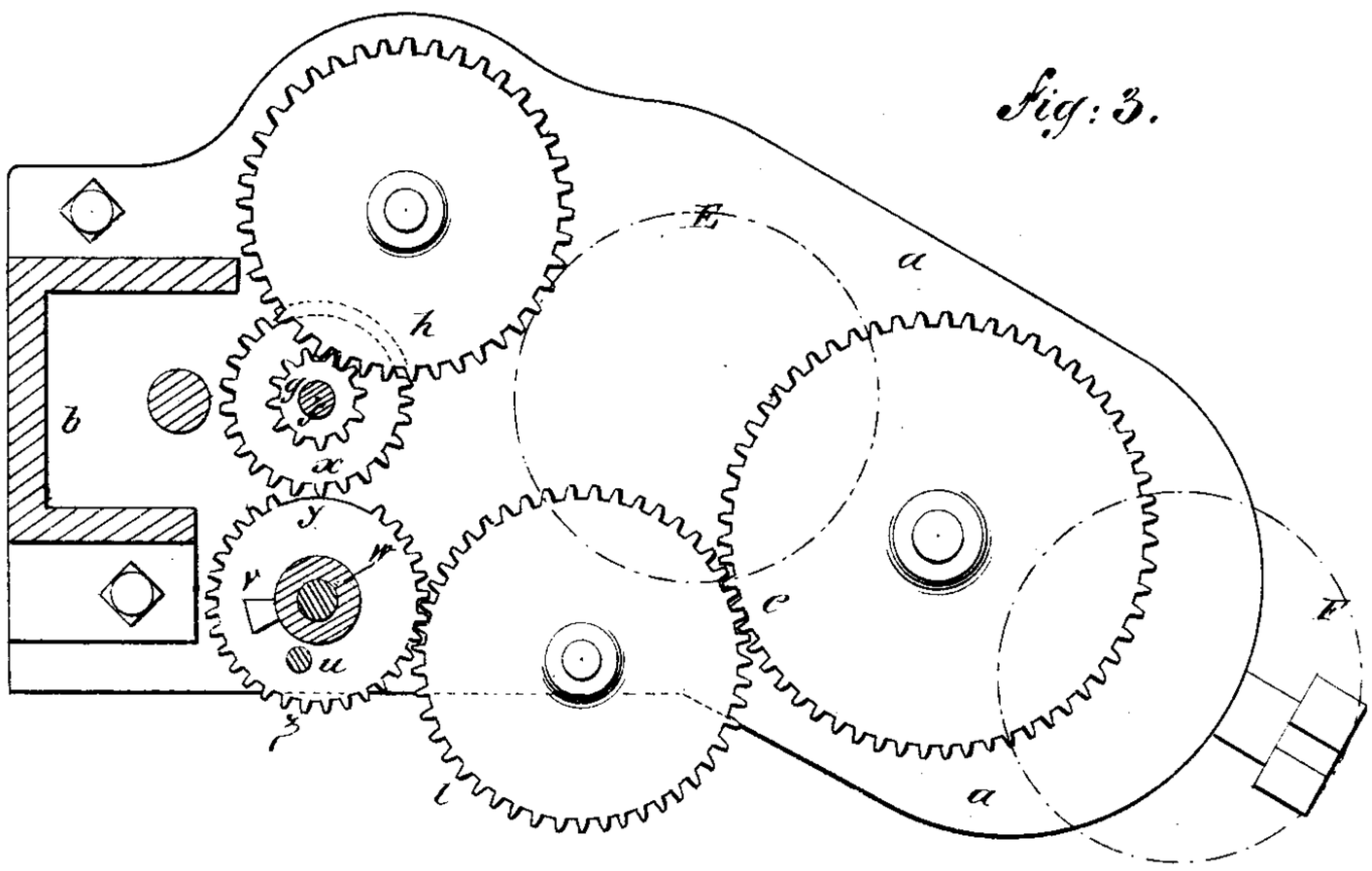

Fig: 4.

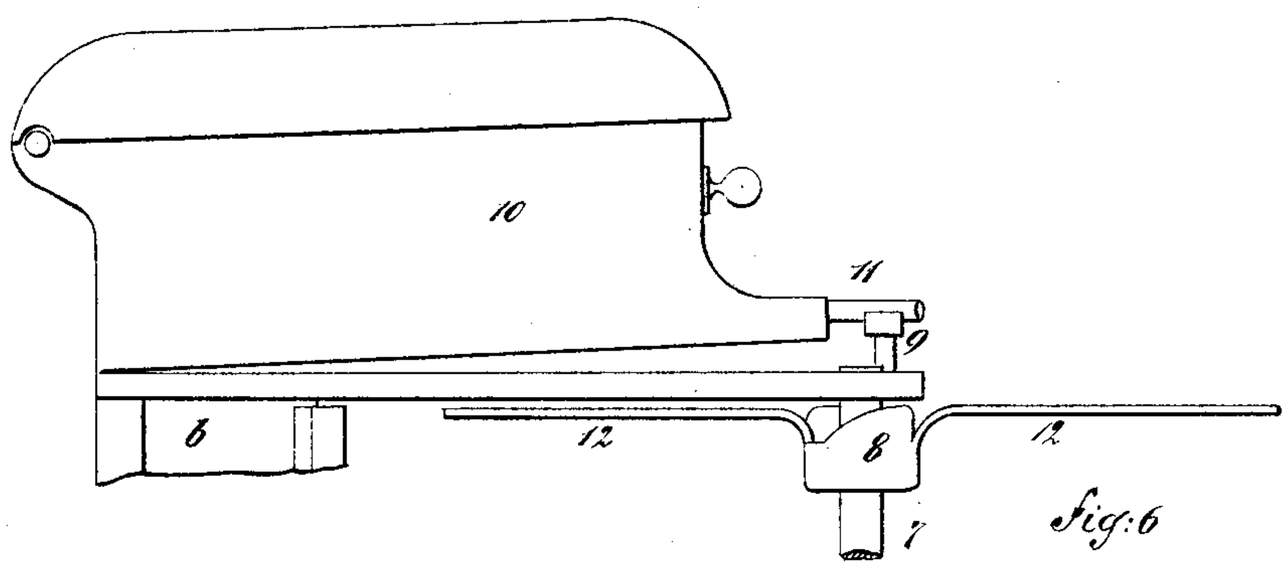

Fig: 6

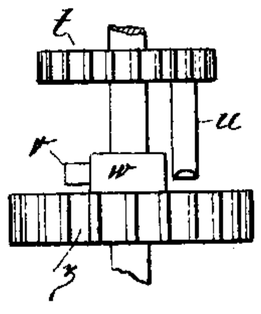

Fig: 5.

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Fig. 7.

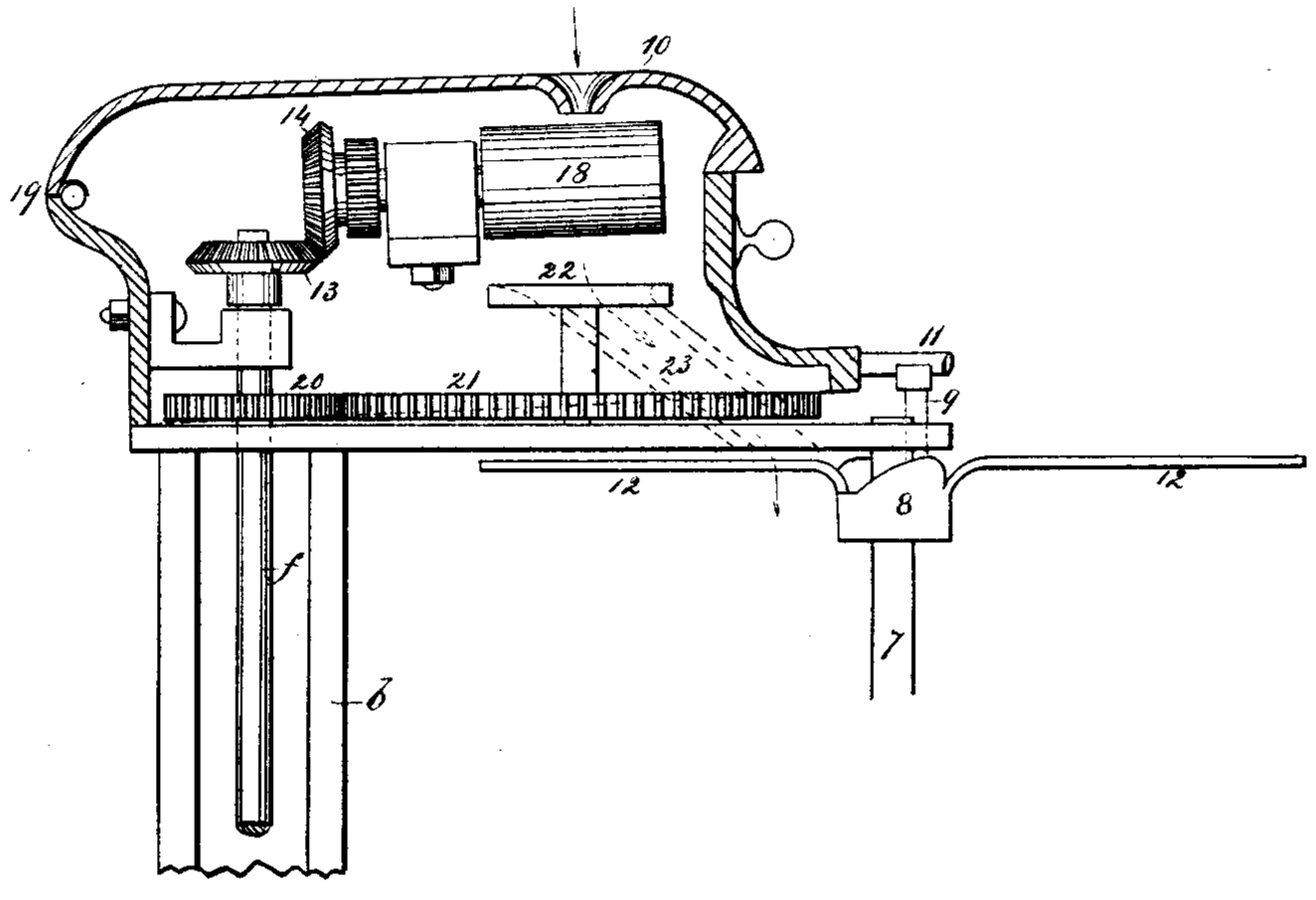
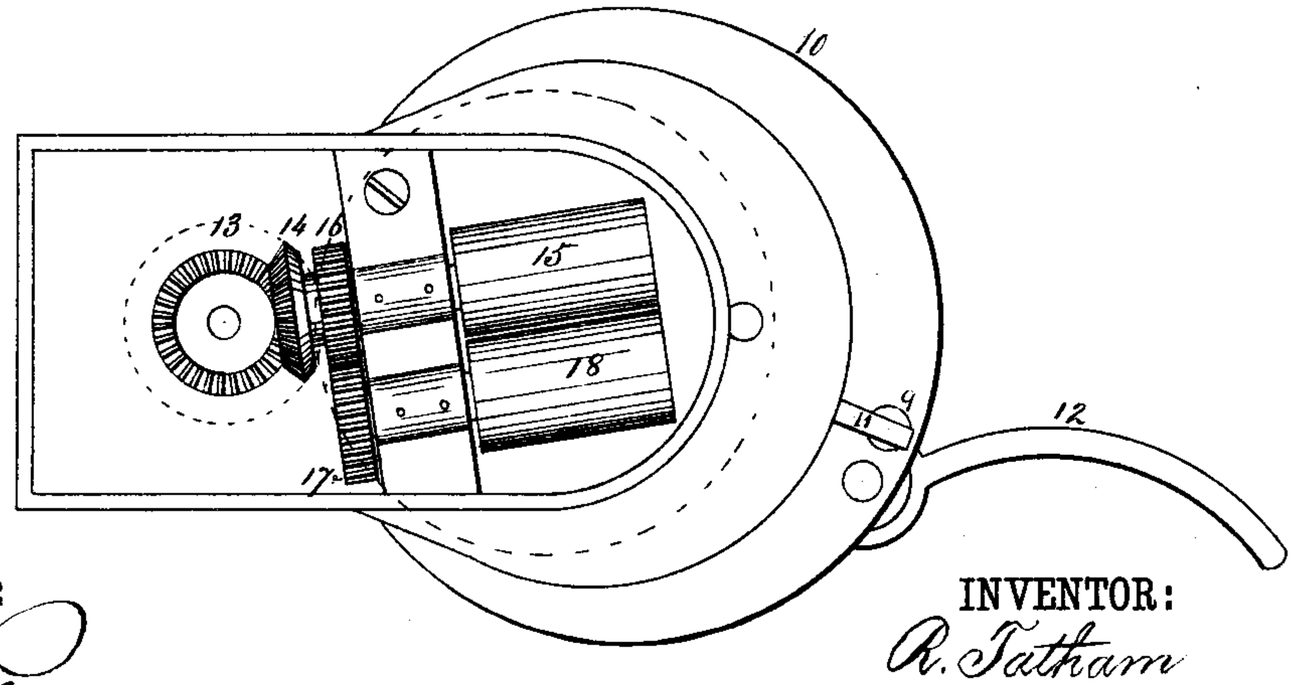


Fig. 8.



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UNITED STATES PATENT OFFICE.

ROGER TATHAM, OF ROCHDALE, COUNTY OF LANCASTER, ENGLAND.

COILER FOR RAILWAY-HEADS, CARDING-MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 255,473, dated March 28, 1882.

Application filed November 5, 1880. (No model.) Patented in England April 18, 1879.

To all whom it may concern:

Be it known that I, ROGER TATHAM, of Rochdale, in the county of Lancaster, England, have invented a new and useful Coiler for Railway-Heads, Carding-Machines, &c., of which the following is a specification.

My invention relates to that class of machines known as "coilers for railway-heads, carding machines," &c., in which two cans are alternately presented to such machines to receive the sliver or other material as it is delivered therefrom, and when brought into proper position to receive such sliver are revolved.

My invention consists in the construction of two trains of mechanism, one consisting of cog-wheels and the other of cog, bevel, and worm wheels, worms, a tappet-pin, and a stud, both trains actuated by the same driving-shaft, whereby the cans attached to the coilers are simultaneously rotated and delivered.

My invention also consists in mechanism for regulating the delivery of the slivers or other material to the cans, all of which will be hereinafter more fully described.

In the drawings, Figure 1 is a side elevation of the lower part of the coiler apparatus; Fig. 2, a horizontal section of the same, taken through the lines A B of Fig. 1; Fig. 3, a second horizontal section of the same, taken through the lines C D of Fig. 1; Fig. 4, a side view of the top of the pillar *b;* Fig. 5, a plan view of the same; Fig. 6, a detail view of wheels *t w*, tappet *u*, and stud *v*. Fig. 7 represents a side view (the cover cut away) of the mechanism for delivering the slivers, and Fig. 8 a top plan view of the same mechanism with the top of the cover cut away.

Similar letters of reference indicate corresponding parts throughout the views.

a is the foot-plate, and *b* the supporting pillar, of the machine. Partially inclosed within the pillar *b* is the driving-shaft *f*, on whose lower extremity is secured a pinion, *g*, meshing with the cog-wheel *h*. The latter gears with a wheel, *i*, secured to the under side of the circular disk *k*, said disk revolving upon a stud, *l*, carried by the table *c*. Through these means the revolution of the shaft *f* is communicated at times (as will be hereinafter more fully explained) to the can E upon the disk *k*. Through the medium of the cog-wheel *i'*, which revolves upon a second stud, *l'*, also carried by table *c*, and constructed to mesh with the aforesaid wheel *h*, when brought into proper relative position thereto by the rotation of table *c*, the can F, resting upon the disk *k'*, is also at times rotated. The revolution of the cans E F is alternate, the cog-wheels *i i'* being brought alternately in gear with wheel *h* in the following manner: On the aforesaid driving-shaft *f*, some distance above the pinion *g*, is secured a second pinion, *m*, which meshes with a wheel, *n*, mounted on a stud. Fast with *n* is a bevel-wheel, *p*, in gear with another, the axle of which carries a worm, *q*. Said worm in turn actuates a worm-wheel, *r*, which carries upon its axle a second worm, *s*. This last worm gears with a wheel, *t*, extending downward from which is the pin or tappet *u*, said tappet being loosely mounted in the wheel, so as to allow free vertical movement, and having its lower edge beveled, so as from one direction to engage with, and from the other to slide over, the correspondingly-beveled stud *v*, rising from the wheel *w*. Said wheel *w* is provided with teeth upon all but a small part of its periphery, which teeth mesh with those of a wheel, *x*, carried by the driving-shaft *f*. By this arrangement the wheel *w* is revolved until the toothless part *y* is reached, when it comes to a stop. Then the tappet *u*, carried by the wheel *t*, comes in contact with the stud *v* and carries wheel *w* around till it again meshes with *x*. The wheel *x* revolving faster than the tappet-bearing wheel *t* causes the wheel *w*, when in gear, to carry the stud *v* around and under the tappet *u*, said stud and tappet being beveled, as described, to allow such action.

Beneath and fast with *w* is the wheel *z*, which gears with wheel *l* (the latter turning a wheel, *e*, fixed to table *c*) whenever the said wheel *w* revolves. By these means the said table is turned.

For regulating the delivery of the slivers or other material to the cans an upright rod, 7, is fastened to and revolves with the axle of the table *c*. This rod is furnished at its top with a cam, 8, which, when the said table revolves, lifts a sliding pin, 9. This pin in turn lifts a

second pin, 11, which raises a cover, 10, containing the feed mechanism constructed and operated as follows:

Attached to the upper extremity of the main shaft *f* is a bevel-pinion, 13, gearing with a second pinion, 14, secured on the shaft of the feed-roller 15. On the same shaft is a gear-wheel, 16, engaging with a like wheel, 17, borne by the shaft of the second feed-roller, 18. The feed-roller shafts have bearings in a bracket secured to the cover 10, said cover being hinged at 19 to a plate borne by the pillar *b*.

To the shaft *f*, below the pinion 13, a second pinion, 20, is fixed, gearing with wheel 21, which bears the presser-plate 22. The latter receives the fibers from the feed-rollers and transmits them through the diagonal tube 23 to the cans. By this construction it will be seen that when the cover 10 is lifted the bevel-pinion 14 is thrown from gear, the rollers cease to revolve, and the slivers are no longer fed to the presser-plate and thence to the cans. On the other hand, when the cover drops, owing to the configuration of cam 8, the pinions 13 and 14 gear, the rollers rotate and feed the slivers to the presser-plate and thence to the cans. It is so arranged that the feed-cover 10 shall fall at the same time that either of the cans come into position to be filled.

Secured to the rod 7 or cam 8 are the two blades 12, which are set in such position as to cut the fibers fed to the cans at the moment of their departure from under the feed-rollers. To retain it in position the table *c* has an V-shaped lug formed upon it, which slides in a notch made in the spring 6, carried by the foot plate, *a*.

The operation of the machine is as follows: Motion being imparted to the driving-shaft *f*, the cog-wheel *h* is revolved through the medium of the connecting cog-wheel *g*. Said wheel *h* alternately meshes with and imparts motion to the wheels *i i'*, and through them to the cans E F. The alternate gearing is effected by the train of wheels and worms connecting together the said shaft *f* and the wheel *t*, whose tappet *u* at intervals engages with stud *v* upon segmental cog-wheel *w* and forces it in gear with wheel *x*. The latter, being fixed to shaft *f*, revolves and imparts motion to the table *c* through the medium of the wheels *w*, *z*, *l*, and *e*. This motion of the table causes the alternate meshing of the aforesaid shaft *h* with the wheels *i i'* and the consequent alternate revolution of the cans E F, so that the table *c* and the cans E F have independent and simultaneous movement imparted to them by the same driving-shaft, each can revolving around its own center, as well as around that of the table. At the same time the feed is regulated by the alternate gearing and ungearing of the bevel-wheels of the feed mechanism through the medium of the rod 7, cam 8, pins 9 and 11, and cap 10, and by the cutting action of the knives 12.

I claim—

1. In coilers, the combination of table *c*, fitted for rotation on a center, disks *k k'*, provided with gear-wheels *i i'* and driving gear-wheel *h*, and mechanism fitted for giving periodical rotation to table *c*, whereby the gears of the disks are brought alternately in mesh with the driving-gear, substantially as shown and described, for the purposes specified.

2. In coilers, the combination, with table *c*, of the mutilated gear *w*, provided with stud *v*, continuously-driven gear-wheel *t*, provided with pin *u*, driving-wheel *x*, placed for connection with the mutilated wheel, and gearing connecting the axis of table *c* with the axis of the mutilated wheel, substantially as shown and described, for operation as specified.

ROGER TATHAM.

Witnesses:
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WM. TUDOR MABLEY,
Both of Manchester.