(No Model.) 3 Sheets—Sheet 1.

C. F. BRADFORD.

MACHINE FOR WINDING COTTON, &c., UPON A CORE.

No. 383,856. Patented June 5, 1888.

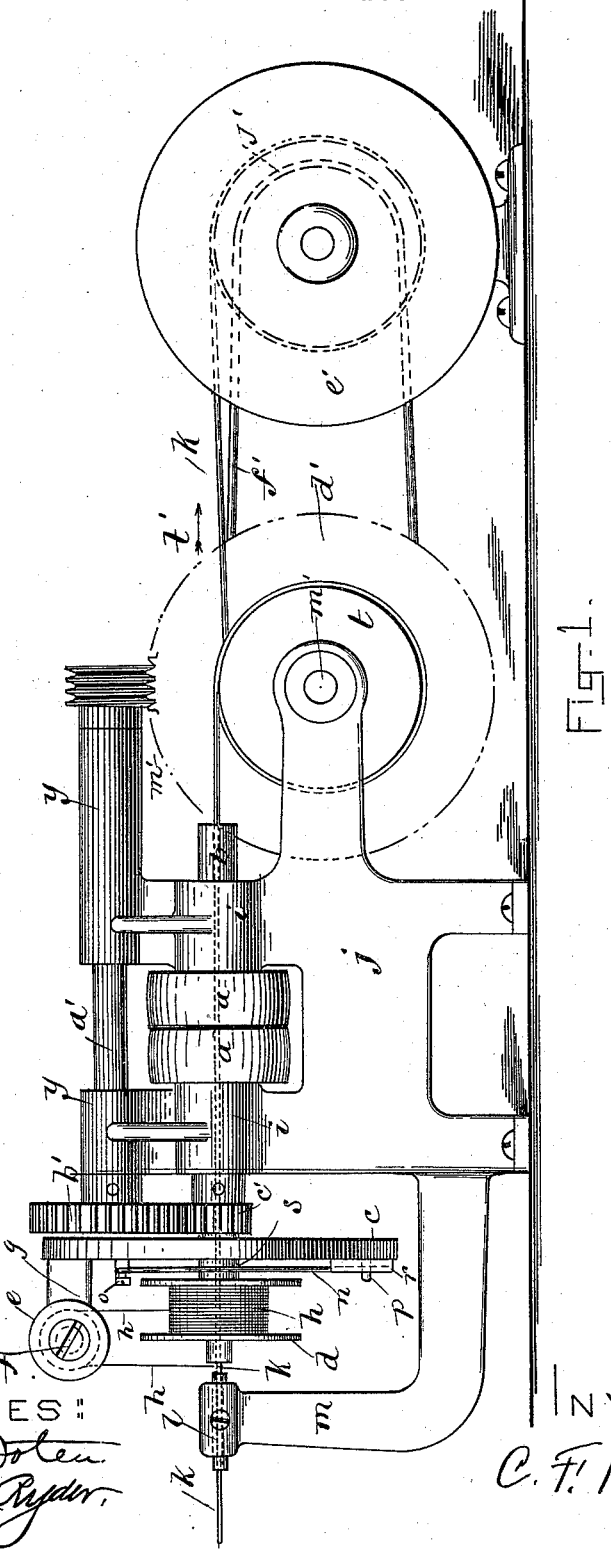

Fig. 1.

WITNESSES:
Chas. C. Dolen
Samuel T. Ryder.

INVENTOR
C. F. Bradford.

(No Model.) 3 Sheets—Sheet 2.

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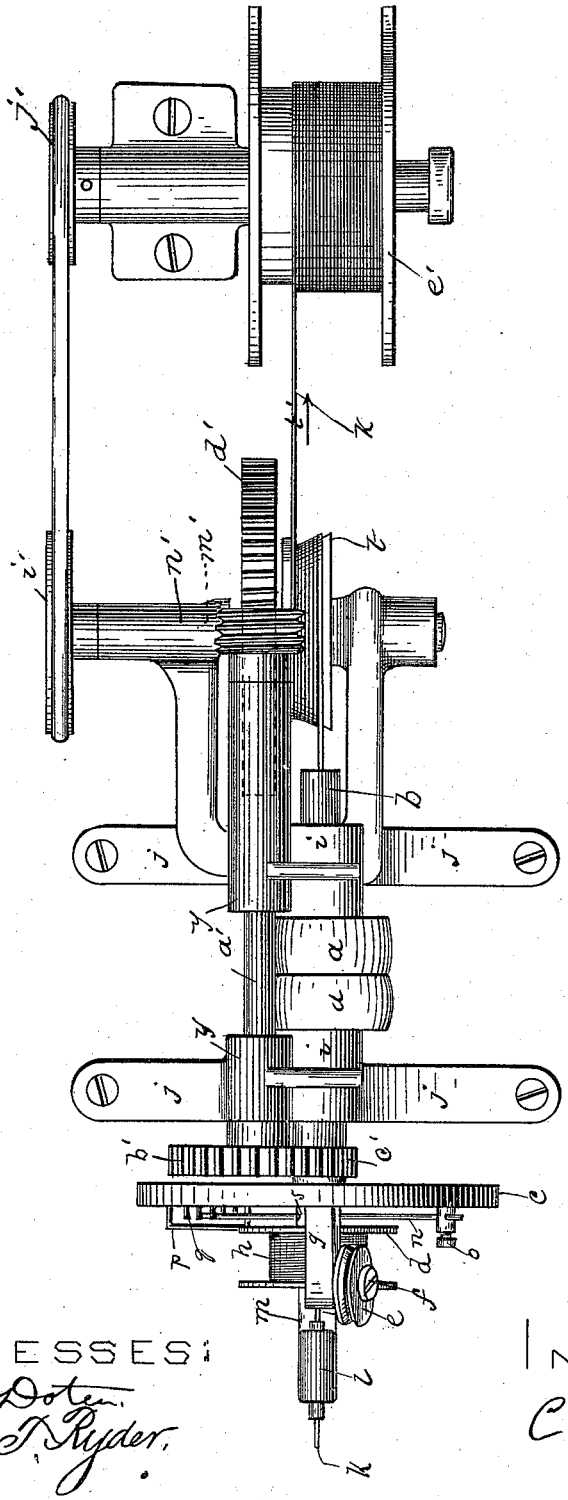

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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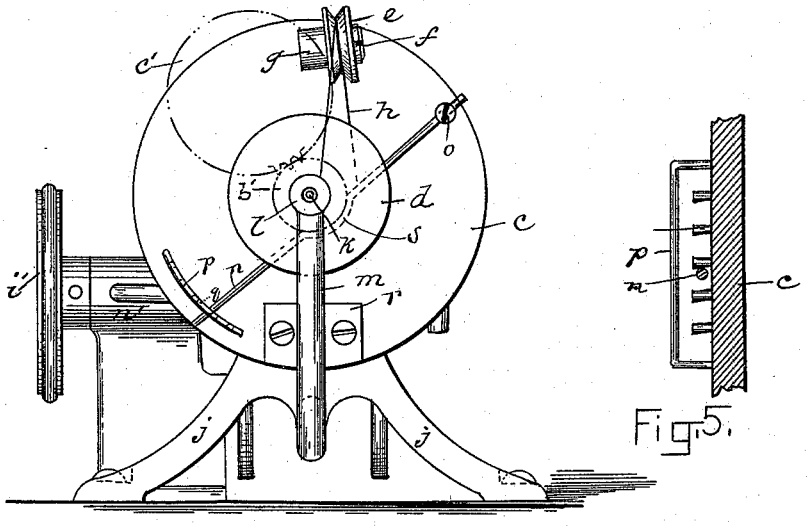

Fig. 3.

Fig. 5.

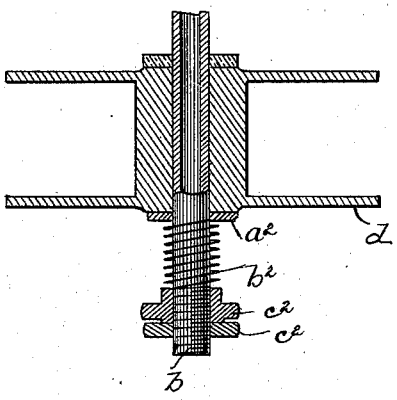

Fig. 4.

WITNESSES:
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Samuel P. Ryder.

INVENTOR:
C. F. Bradford.

UNITED STATES PATENT OFFICE.

CORNELIUS F. BRADFORD, OF PLYMOUTH, MASSACHUSETTS.

MACHINE FOR WINDING COTTON, &c., UPON A CORE.

SPECIFICATION forming part of Letters Patent No. 383,856, dated June 5, 1888.

Application filed March 31, 1887. Serial No. 233,180. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS F. BRADFORD, a citizen of the United States, residing at Plymouth, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Machines for Winding Cotton or other Material upon a Core; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to produce an improved machine for winding cotton or other material regularly and evenly on a cord or core of jute, cotton, sisal, or other similar substance, or of metal, and it is intended to be applied more particularly to the manufacture of what is known as "corset" or "coraline" cord, although it is obvious that it may be applied to other uses.

In the drawings, Figures 1 and 2 are respectively a side elevation and a plan view of my machine. Fig. 3 is a front end elevation of the same. Fig. 4 is a section of the reel *d* with a modified form of tension. Fig. 5 is a detail of the form of tension shown in Fig. 1.

The machine is driven by means of the fast and loose pulleys *a a*, the fast pulley being attached to the hollow shaft *b*, having bearings *i i* in frame *j*. A cylindrical face-plate or wheel, *c*, is attached to the shaft *b* at the front of the machine and is rotated by it. The reel *d* in front of the plate *c* is loose on the shaft *b* and carries the thread or covering material *h*. The thread *h* passes from the reel *d* to a pulley or guide-wheel, *e*, which has a bearing on stud *f*, which is screwed into a projection or boss, *g*, on the plate *c*. The center of this guide-wheel is directly over the outer rim of the reel *d*. The thread *h* passes from the guide-pulley *e* to the center of shaft *b* and around the material to be covered. The reel *d* is prevented from too rapid rotation or unwinding by the friction of a rod or wire, *n*, which is attached to the plate *c* by a screw, *o*, and presses against the hub *s* in a score cut therein, which prevents the reel from slipping off the hub, the other end of the wire *n* being secured by a guide-wire, *p*, attached to the plate *c*, more or less tension being obtained by springing the wire toward or away from the hubs *s* of reel *d*. The wire *n* is held in position by pins *q q* attached to the plate *c*, as will be seen in Fig. 5.

The material *k* to be covered is conveyed to the machine through a tube or sleeve, *l*, supported by an arm, *m*. By the use of this tube the material is presented for winding in proper condition, especially when the core is composed of fibrous materials, for in that case by the action of the tube the fibers are laid all one way, so that the material to be wound on is smoothly laid upon the core without the projections of the "hurls" or ends of fibers. The end of the tube is to be made bell-shaped or countersunk, so that the core may more readily enter it. Said core *k* is fed forward by the capstan-roll *t*, around which it has four turns. The capstan *t* is secured to a shaft, *m'*, having bearings at *n' n'*. Said shaft *m'* is rotated by the gear *d'*, which derives motion from the worm on shaft *a'*. The shaft *a'* has bearings in frame *j* at *y y*, and is rotated by the gear *b'*, meshing into *c'*, the latter being attached to the main shaft *b*.

The operation of the machine is as follows: The core *k* is fed slowly forward in the direction of the arrow *t'* by capstan *t*, and as it passes the point of contact with the thread *h* the thread is wound around it, being rapidly revolved about it by means of the revolving plate *c*. The weight of the guide-wheel *e* and boss *g* is compensated for by a balance-weight, *r*, attached to the plate *c*. Two or more threads wound on the same reel or bobbin may be used instead of one thread. After leaving the capstan *t* the finished material is wound upon a reel, *e'*, said reel being driven by pulleys *i' j'* and a belt.

In Fig. 4 is shown a section of the reel *d* with a modified form of tension, consisting of a washer, a^2, spiral spring b^2, and adjusting-nuts c^2 c^2.

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

1. The plate *c*, and the reel *d*, placed in the center of the said plate, in combination with the tension device, consisting of the rod *n*, attached to the plate *c* by the screw *o*, and the guide-wire *p*, substantially as and for the purpose above described.

2. The plate *c*, the reel *d*, placed in the center of the said plate, and the guide-wheel *e*, in combination with the tension device, consist-

ing of the rod *n*, attached to the plate *c* by the screw *o*, and the guide-wire *p*, substantially as and for the purpose above described.

3. The plate *c*, the reel *d*, placed in the center of the said plate, the guide-wheel *e*, and the tube *l*, in combination with the rod *n*, attached to the plate *c* by the screw *o*, and the guide-wire *p*, substantially as and for the purpose above described.

CORNELIUS F. BRADFORD.

Witnesses:
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SAMUEL T. RYDER.