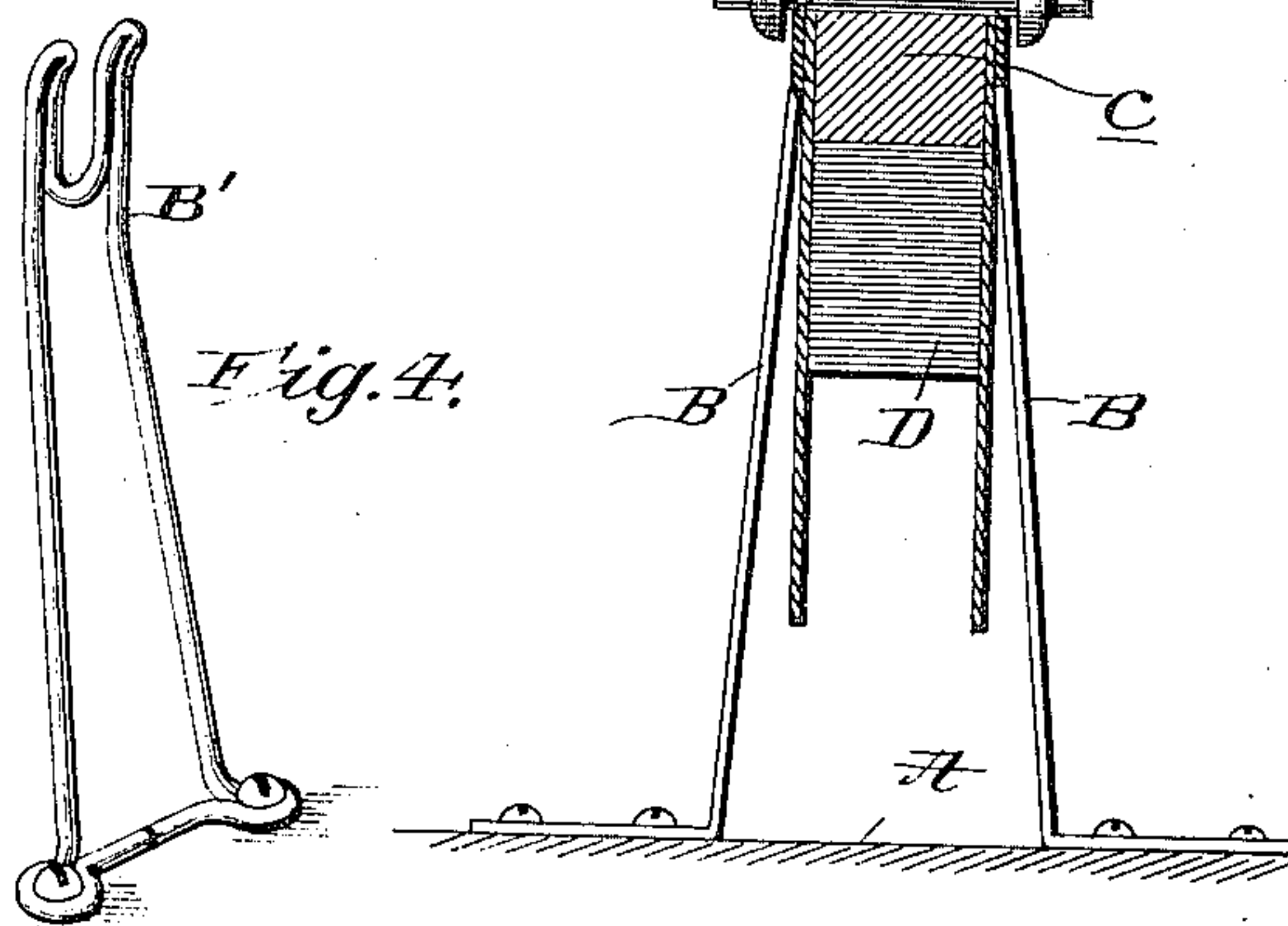
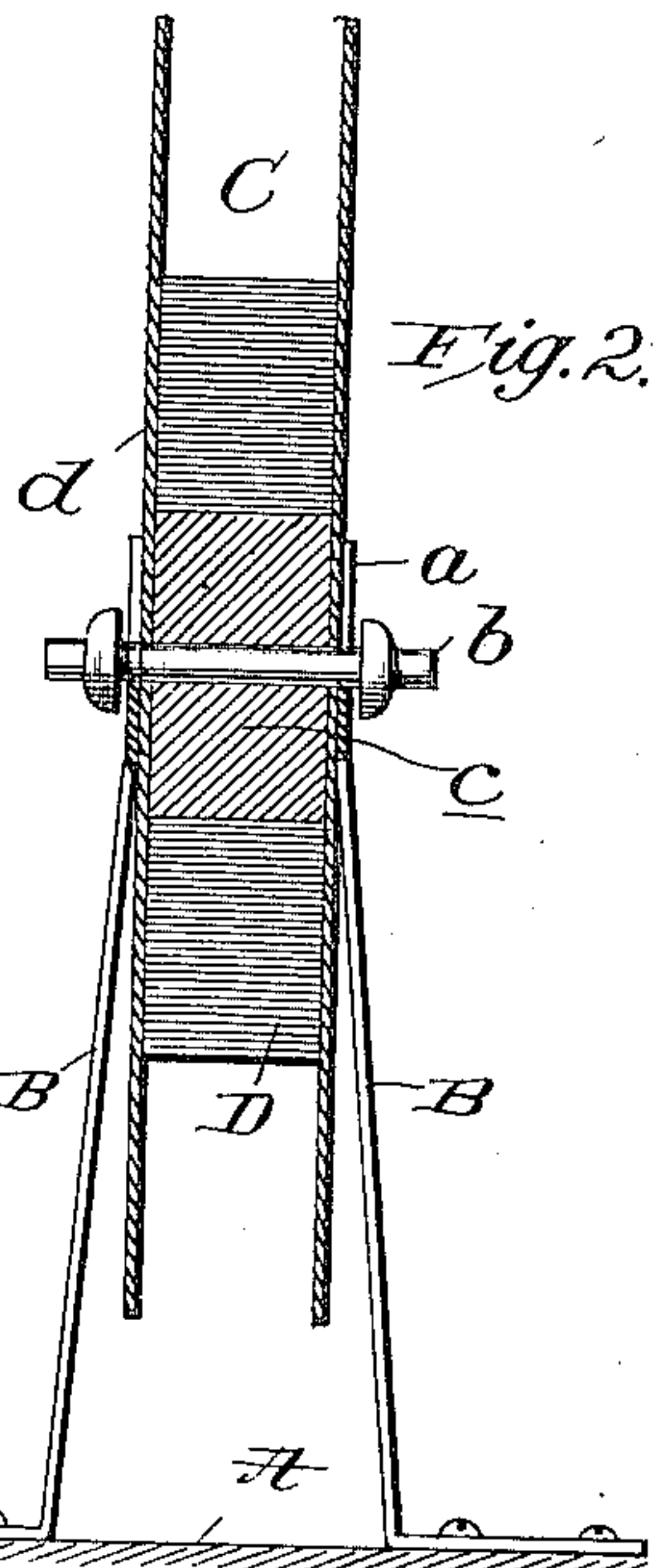
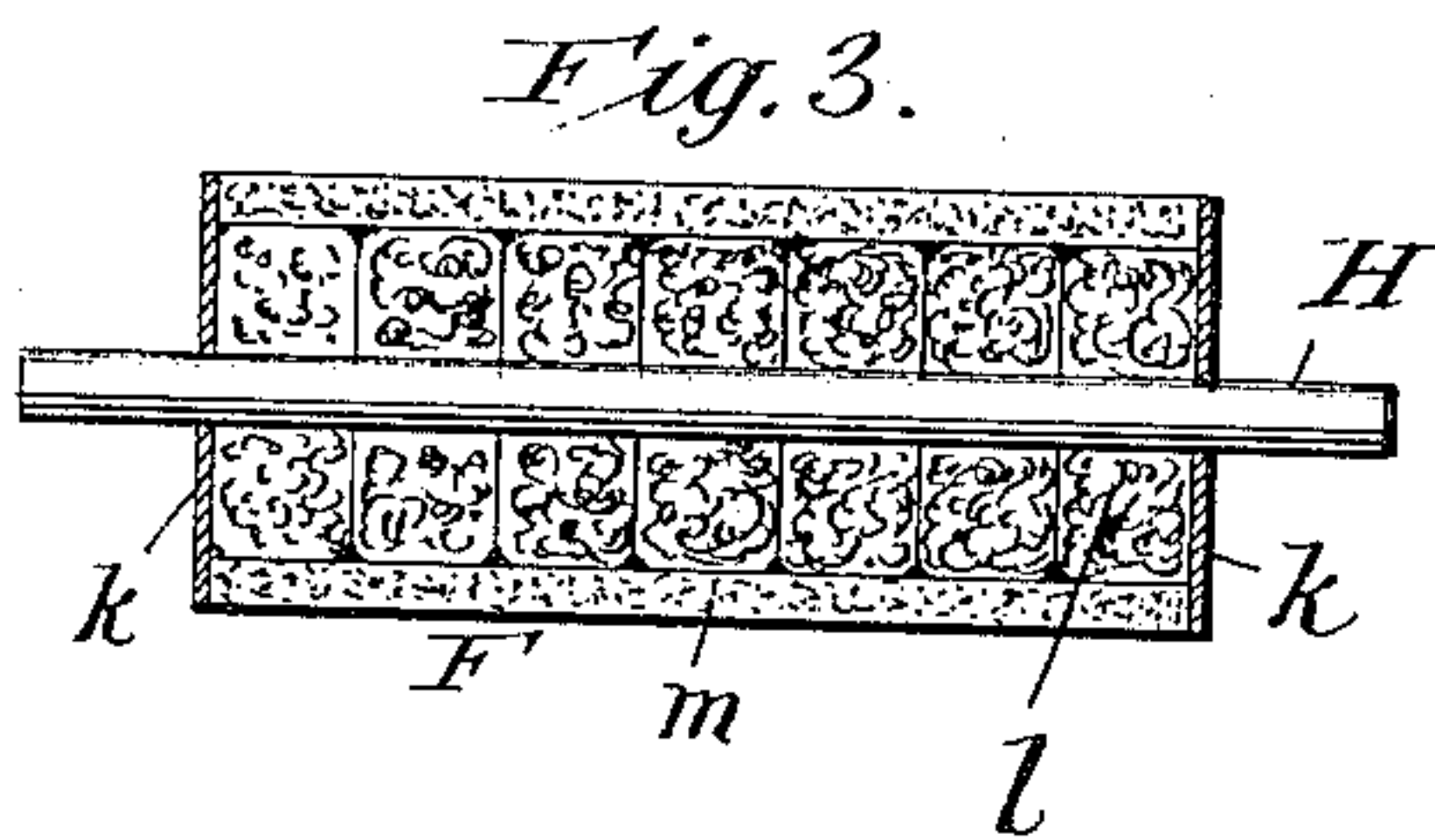
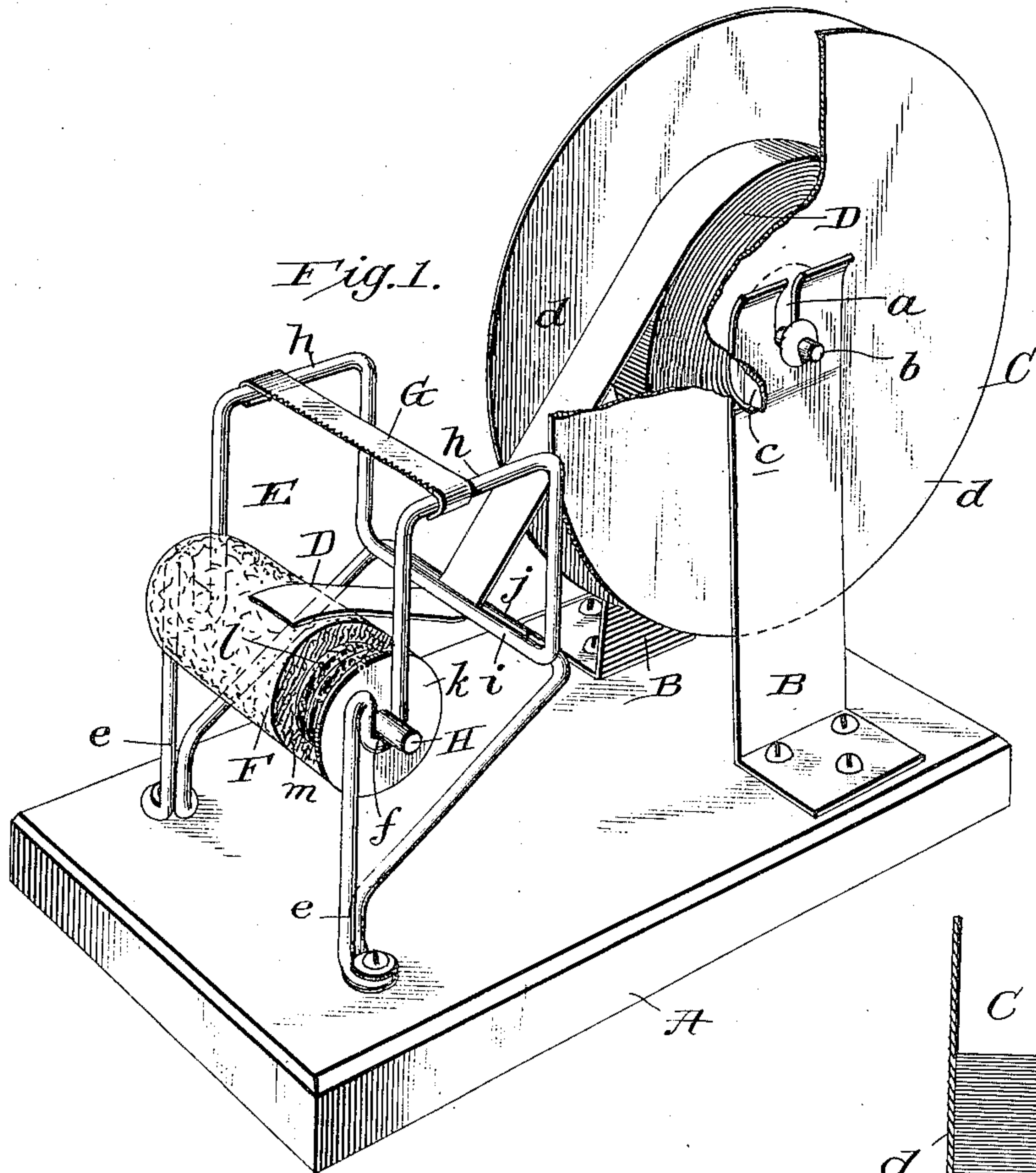


F. E. FRANCIS.
GUMMED STRIP SERVING APPARATUS.
APPLICATION FILED APR. 2, 1909.

952,106.

Patented Mar. 15, 1910.



WITNESSES
C. Rader
R. E. Newhall

INVENTOR:
Floyd E. Francis,
by *Dodger & Sons,*
Attorneys.

UNITED STATES PATENT OFFICE.

FLOYD E. FRANCIS, OF GAINES, PENNSYLVANIA.

GUMMED-STRIP-SERVING APPARATUS.

952,106.

Specification of Letters Patent. Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that I, FLOYD E. FRANCIS, a citizen of the United States, residing at Gaines, in the county of Tioga and State of Pennsylvania, have invented certain new and useful Improvements in Gummed-Strip-Serving Apparatus, of which the following is a specification.

My invention pertains to means for storing, delivering, moistening, and serving paper tape, for sealing packages and for like purposes, and consists in various novel features, details and combinations herein-after set forth.

The structure is illustrated in a preferred form in the accompanying drawings, in which:

Figure 1 is a perspective view of the apparatus; Fig. 2, a vertical transverse section through the body of the tape reel or drum; Fig. 3, a longitudinal sectional view of the moistening roller; and Fig. 4, a perspective view of a slightly modified form of reel standard.

Numerous structures have heretofore been devised, and various forms thereof are now in use, for performing the work of my structure. My purpose, however, is to simplify and cheapen the construction, and at the same time increase the efficiency of such structures, so that they may go into more general use than heretofore. I aim also to obviate certain objections that have presented themselves to the use of prior structures of this class, notably the excessive moistening of the strip, and the fouling of the water and dampening roll. To this end I adopt the construction illustrated in the drawings, and which I will now proceed to describe.

Upon a suitable base A are mounted standards B which may be of any appropriate resilient material, such as flat sheet steel, brass, or the like, and which are provided with feet for attachment to the base. In Fig. 1 these standards are represented as formed of flat steel plates, the lower extremities of which are bent laterally to form the supporting and attaching feet, while the body of each standard is inclined somewhat from the vertical to a point within a short distance of its upper end, where it assumes a vertical direction to or nearly to the upper extremity. In Fig. 4, however, the standard B' is represented as bent up of a single piece of wire, but has the same gen-

eral form as the standards B of Figs. 1 and 2.

The upper or vertical portion of each standard B is formed with a seat or depression *a* to receive the protruding ends of a rod or shaft *b*, which forms an axle for a reel or drum C, composed of a central hub or spool *c* and two disks *d* of sheet metal, or other thin and comparatively rigid material. The reel C is designed to receive and carry a long coil D of paper tape, gummed on one surface to enable it, upon being moistened, to serve as fastening material for bundles, paper boxes, and other light packages or receptacles, thus taking the place of, and dispensing with the need for, string or the like, commonly used for the purpose. The disks *d* are loose upon and free from shaft or axle *b*, and are pressed firmly into contact with the hub or spool *c* by the standards B, which, when the reel is removed from between them, tend, by reason of their inclination, to approach each other or to make actual contact.

In order to introduce the reel C between the standards B and mount its shaft or axle in the seats *a*, the standards B are forced apart, the reel is introduced between them, and the ends of shaft or axle *b* are dropped into the seats *a*, as indicated in Figs. 1 and 2, the reel being retained in such position by gravity. The pressure of the standards B holds the disks *d* against the hub or spool *c* with pressure sufficient to guard against accidental rotation of the parts, and prevents the strip or tape D from being too freely unwound. The tension thus produced may be varied by slightly springing or bending the standards B, if desired.

Mounted upon the base A in front of the reel and its standards, is a frame E in which is journaled or supported a moistening roller F. The construction of frame E is one of the features of my invention. The frame is formed of a single piece of wire, bent to produce two uprights or standards *e*, with seats or bearings *f* for the protruding ends or journals *g* of the shaft or axle H of moistening roll F, the standards *e* being continued upward to a convenient height, and thence carried backward to produce horizontal supports *h*, for the cutting blade or bar G, being then carried downward and horizontally to form a guiding and pressure-producing bar *i*. From the feet of the standards *e* the free ends of the wire are carried upward a short distance beside the standards

e, thereby tending to stiffen and brace the same, and they are then bent rearwardly at an angle, and finally turned horizontally inward toward each other to form a second
 5 guiding and pressure bar *j*, their free ends abutting near one extremity of said horizontal bar *j*, as shown in Fig. 1. The abutting ends may be soldered or otherwise secured if desired, but this is not deemed necessary, particularly if reasonably stiff or resilient wire be used.

The two bars *i*, *j*, tend, by reason of the shape into which the wire is bent and of the resilience of the wire, to make contact one
 15 with the other, but in actual use of the structure they are separated by the tape or strip *D*, which is carried between them and over the moistening roll, as indicated in Fig. 1. The pressure exerted upon the strip or tape
 20 *D* by said bars *i*, *j*, may be regulated or varied by very slightly springing or bending the wire frame at a suitable point or points.

The cutting bar *G* is simply a piece of
 25 flat sheet metal, preferably steel, having its ends bent into hook form to clasp about the horizontal supporting bars *h* of the frame *E*, as shown in Fig. 1, the forward edge of said cutting bar being beveled and
 30 serrated to produce a perforating and cutting edge against which the paper may be drawn, and by which it may be severed.

The moistening roll *F* consists of a shaft or axle *H*, of sufficient length to extend from
 35 one bearing *f* to the other and somewhat beyond, the protruding ends serving as convenient means for handling the roll without touching its moist surface or body. Upon this shaft or axle *H* are placed two disks *k*
 40 of sheet metal or other suitable material, between which is placed a body *l* of sponge, or like absorbent material, which may conveniently be made up in the form of circular disks strung upon the shaft or axle between
 45 the retaining disks *k*, as shown in Fig. 3, a covering *m* of thick felt or other suitable fabric being placed about the sponge or absorbent body. In practice I have found that a roll thus constructed will take up sufficient moisture to maintain the roll in good
 50 working condition for a full day's use, and that it will give off its moisture in the limited quantity desirable for moistening a gummed tape of the character used. By the
 55 employment of such a roller I obviate the necessity of providing a water reservoir, such as is usually provided in machines or structures of this class. Such reservoirs are found objectionable for the reasons: first,
 60 that it is difficult to insure the uniform moistening of the roll and hence of the tape, and, second, that the water in a short time becomes foul and ill-smelling, and the roll, if made of or covered with absorbent material,
 65 is similarly affected. With a roll construct-

ed as here shown and described, it is only necessary to lift it from its bearings and immerse it in water for a moment, thereafter restoring it to its bearings, when it is ready for immediate and prolonged use.

The distance from the point at which the tape of strip *D* passes between the guide bars *i*, *j*, to the cutting edge of bar *G*, is somewhat greater than the distance from said bars to the vertical plane of the axis of the
 75 moistening roll *F*, and by reason of the adjustability of bar *G* upon the supporting bars *h*, the relation between these two lengths or distances may be somewhat varied. The purpose in making the distance
 80 from the bars *i*, *j*, to the cutting bar *G* greater than that from the bars to the vertical plane of the roller axis, is to cause the end of strip or tape *D*, after severance
 85 of the portion drawn off for use, to project somewhat beyond or in advance of said roll *F*, where it may be conveniently grasped by the fingers of the user preparatory to drawing the strip forward for severance of
 90 another length or section. It is desirable, however, that approximately the entire length of the severed section be moistened, hence the strip or tape should not project too far beyond the roll, and as different
 95 users, or different uses, may call for variation in this regard, the cutting bar *G* is made adjustable, as above pointed out, to give whatever amount of projection may be deemed desirable.

The disks *k* of roller *F*, lying within the
 100 frame *E* and between its uprights or standards, are retained thereby in position on the shaft or axle *H*, but may be secured there either by friction, soldering, or in other convenient way, if desired.

The apparatus being constructed as above described, the operation is as follows: A spool or hub *c* bearing a long coil of gummed tape with the gummed face wound inward, is placed upon the shaft or axle *b* between
 110 the two disks *k*, and the reel so formed is introduced between the standards *B*, the shaft or axle *b* resting in the seats or depressions *a*. If deemed necessary a small button or collar *n* may be forced upon the protruding
 115 ends of the shaft or axle *b* to prevent its accidental displacement. The free end of strip or tape *D* is drawn outward and passed between the bars *i* and *j* of the frame *E*, and thence over the top of roll *F*, as shown in
 120 Fig. 1. When a length of the tape is required for sealing or securing a package, the salesman or user grasps the forward end of the tape or strip, and draws it forward and slightly downward so as to cause it to
 125 bear with moderate pressure upon the upper surface of roll *F*, which is thereby caused to rotate as the strip or tape is drawn forward. Bars *i* and *j* produce the requisite degree of tension upon the strip, and the stand- 130

ards B similarly produce friction sufficient to prevent the too free turning of reel C. When the requisite length of tape has been drawn off from the reel, the user lifts the strip upward, bringing it into contact with the serrated edge of the cutting bar G, and drawing the strip laterally, causes the free portion to be perforated and detached from the main body. When the necessary length is detached, the free end of strip or tape D, or that portion lying forward of the guide bars *i, j*, falls to and rests upon the top of the roller F at some distance from the cutting bar G. This comparatively wide separation of the cutting bar and the moistening roll is desirable in order that the user may not, in grasping the free end of the tape, injure his fingers by encountering the serrated edge of the cutting bar.

The apparatus above described is simple, durable, inexpensive, and efficient. The introduction of the tape between the bars *i* and *j* is readily effected by merely springing the frame slightly and passing the tape laterally between them, thus avoiding the necessity of threading the same through a narrow slit or opening, which involves time and is more or less difficult. Similarly, the mounting and the dismounting of the reel, or the substitution of a filled for an exhausted spool, is easily and quickly performed.

I am aware that drums or holders for gummed tape have heretofore been combined with devices for moistening and for cutting the gummed strip, and I do not broadly claim such combination, but I believe my construction to be at once simpler and more efficient than those with which I am familiar.

Having thus described my invention, what I claim is:

1. The herein described apparatus for storing, delivering, moistening, and severing gummed tape, comprising a suitable base; resilient standards mounted upon said base; a reel or drum located between said standards and having a shaft or axle mounted in bearings therein; a frame located in advance of the drum or reel, formed of resilient material and provided with seats or bearings for a roll shaft, with parallel guide bars between which the tape may pass, and with horizontal supporting bars for a cutting bar or blade; an absorbent roll having journals mounted in the seats or bearings in said frame; and a cutting bar carried upon the supporting bars of said frame.

2. In an apparatus for storing and delivering gummed tape, a reel or drum comprising a central shaft or axle, a spool, and two disks mounted upon said axle on opposite sides of the spool; and resilient standards secured upon a suitable base, provided at their free extremities with seats for the drum shaft or axle, and adapted to press

against the disks of the drum and to hold them in contact with the faces of the spool, whereby friction is produced sufficient to prevent the too free turning of the spool.

3. In combination with a base A, resilient standards B provided at their upper ends with seats *a*; a drum or reel C comprising a central shaft *b* resting in the seats *a*, a spool *c*, and disks *d* mounted upon the axle *b*, and subject to the pressure of the standards B on their outer faces.

4. In combination with a suitable reel to carry tape, a frame E formed of a continuous length of resilient material, and comprising standards *e*, seats or bearings *f*, supporting bars *h*, and guiding bars *i, j*; moistening roll F having its journals mounted in the seats *f*; and cutting bar G mounted upon the supporting bars *h*.

5. In combination with a reel, a moistening roll, an intermediate tape guide, and a cutting bar located above the moistening roll at a distance from the guide bars slightly greater than the distance from said bars to the top of the moistening roll, the guides being so positioned that the tape, when released after cutting, shall fall to, rest upon, and project slightly in advance of the moistening roll.

6. In an apparatus for delivering and moistening gummed tape, the combination with a reel and a moistening roll, of a roll-supporting frame of resilient material having separable guide bars *i, j*, to guide and apply pressure to the tape.

7. In combination with a suitable reel and a moistening roll, a roll-supporting frame provided with cutter-supporting bars *h*; and a cutting bar or blade G having hook-shaped ends to clasp and engage said supporting bars.

8. In a machine for delivering and moistening gummed tape, a supporting frame for the moistening roller formed of a single piece of wire, and comprising standards *e* provided with bearings *f*, cutter-supporting bars *h*, and guide bars *i, j*.

9. In combination with a suitable reel, a moistening roll comprising a shaft or axle, a cylindrical body of sponge encircling said axle, and an outer covering of absorbent fabric.

10. In combination with a suitable tape reel, a moistening roll comprising a central axle, a body of sponge encircling said axle, and an outer covering of felt.

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

FLOYD E. FRANCIS.

Witnesses:

WILLIAM W. DODGE,
PARKER VAN P. DODGE.