Oct. 18, 1927. 1,645,734

E. BERRY

MACHINE FOR TAPING OR SEALING BOXES, BOTTLES, AND LIKE CONTAINERS

Filed March 15, 1927 2 Sheets-Sheet 1

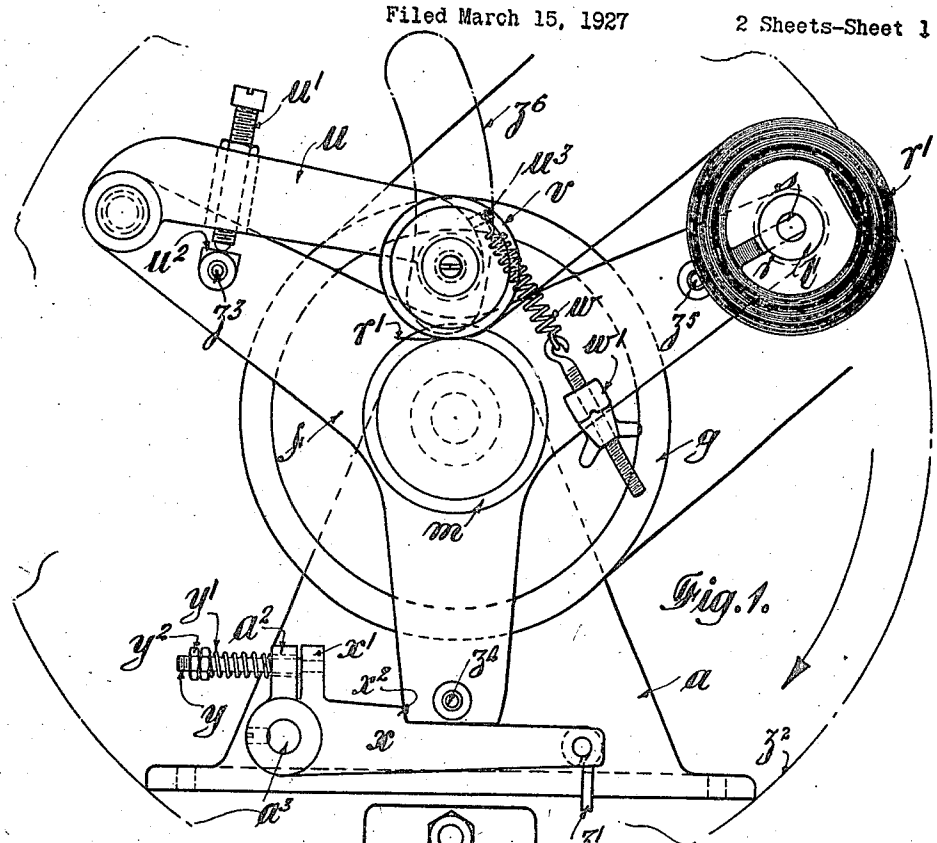


Fig. 1.

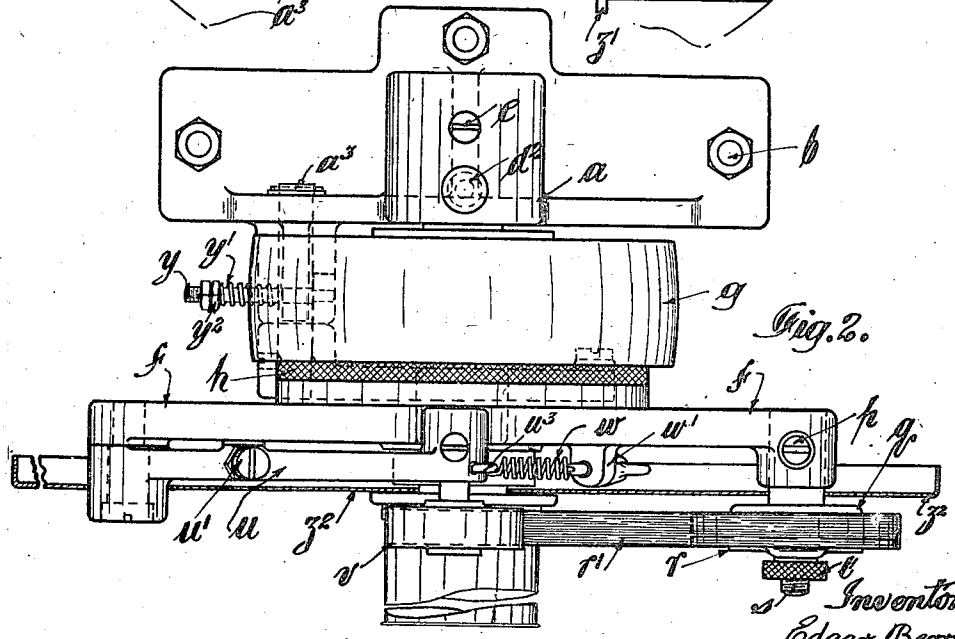


Fig. 2.

Inventor:
Edgar Berry.
By his Attorney: Walter Gunn

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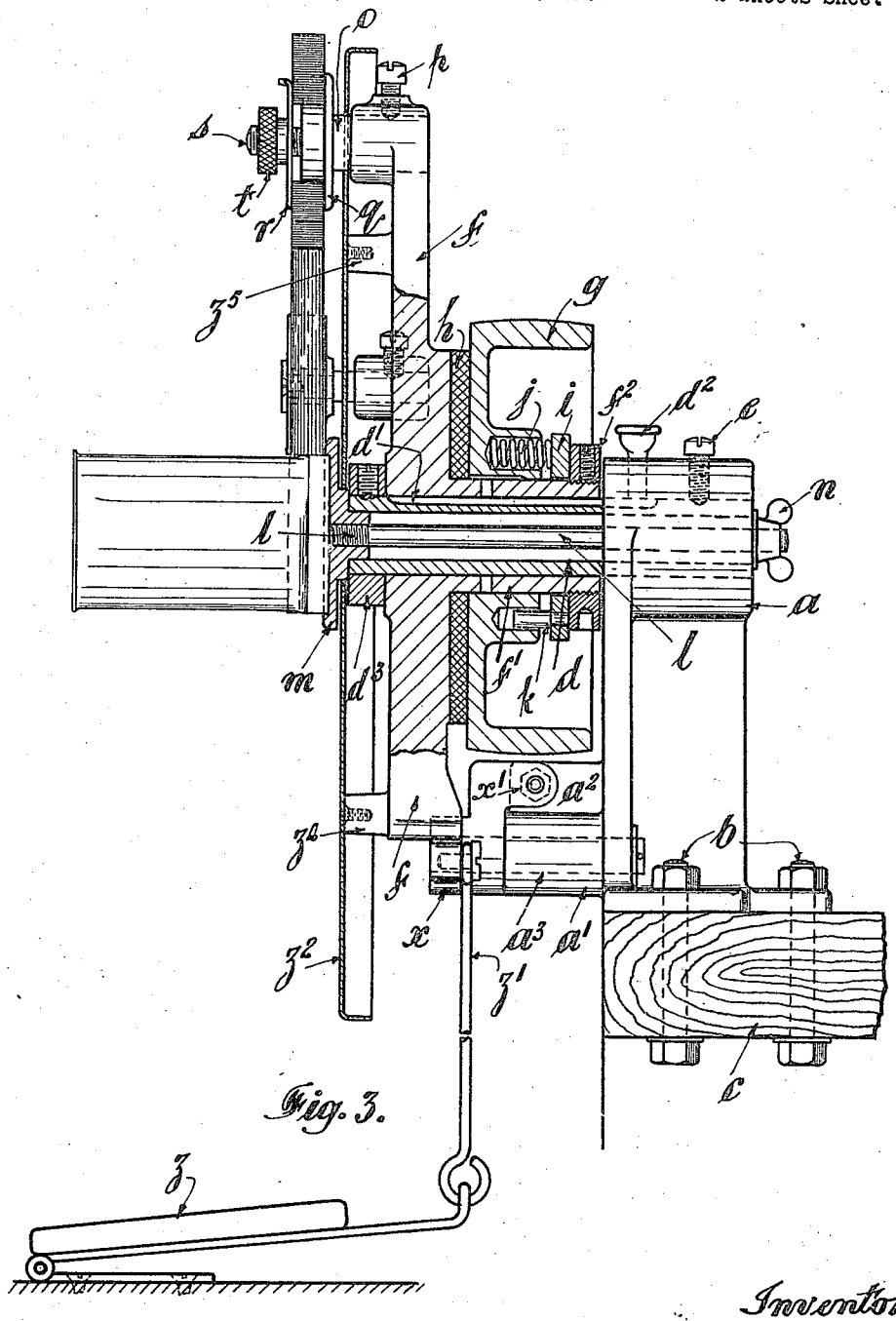


Fig. 3.

Inventor:
Edgar Berry.

By his Attorney: Walter Gunn

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UNITED STATES PATENT OFFICE.

EDGAR BERRY, OF HYDE, MANCHESTER, ENGLAND.

MACHINE FOR TAPING OR SEALING BOXES, BOTTLES, AND LIKE CONTAINERS.

Application filed March 15, 1927, Serial No. 175,622, and in Great Britain December 20, 1926.

The sealing of the lids of boxes, bottles and the like by means of adhesive tape has hitherto been done by hand, and has been comparatively slow.

The present invention has for its object to provide mechanical means for applying the tape.

According to the invention, a machine is provided in which the end of the tape, drawn from a reel, is laid between the box or other receptacle and a yielding or floating roller, and by moving the roller bodily around the receptacle, the tape is wrapped around the receptacle at the junction of the lid and the body of the receptacle, the machine being automatically stopped and the surplus tape being cut off after a complete band of tape has been rubbed or rolled down on to the receptacle.

Upon the accompanying drawing:—

Fig. 1 illustrates a face view, partly broken away, and

Fig. 2 a plan view, partly in section of a machine constructed according to the invention.

Fig. 3 illustrates a vertical cross sectional elevation of the machine.

The improved machine comprises a pedestal bearing *a* secured by bolts and nuts *b* to a bench or table *c*. Mounted in the bearing *a* is one end of a hollow shaft *d*, the shaft being held stationary by a set screw *e*. Rotatably mounted on the shaft is a three-armed member *f*, on the hub f^1 of which is rotatably mounted a belt pulley *g*. Between the member *f* and the pulley *g* is a fibre or like friction disc *h*. Between the pulley and a ring *i*, held on the hub f^1 by a screwed collar f^2, is a spring *j* for normally pressing the pulley against the disc *h* and the disc *h* against the member *f*, a pin *k* on the ring *i* (slidably fitting a hole in the pulley hub) serving to prevent relative rotary movement of the pulley and ring. In the shaft *d* is a longitudinal groove d^1 supplied with oil through an oil cup d^2 for lubricating the parts. At the front end of the shaft *d* is a collar d^3 for retaining the member *f* on the shaft.

Extending through the shaft *d* is a rod *l* to one end of which is connected a disc *m* with recessed face on the side furthest from the spindle, the spindle and disc being firmly and rotatably held to the shaft *d* and concentric therewith by the small hub part of the disc and by the rod *l* and the wing nut *n*.

To one arm of the member *f* is applied a flanged pulley, the stud axle *o* of which is fixed by a set screw *p* to the arm. While one flange *q* of the pulley is in one with the stub axle and barrel of the pulley, the other flange *r* is separate and is adjustably connected to the barrel of the pulley by a screw *s* and nut *t*. Between the two flanges of the pulley a reel of adhesive tape r^1 can be placed, the flange *r* being slotted to allow of quick removal and replacement, and after replacement serving to put a slight drag on the reel of tape to prevent over-running.

To another arm of the member *f* is pivotally connected a lever arm or link *u*, which at its free end is fitted with a rubber-covered roller *v*. This roller lies and rotates in the same plane as the reel of adhesive material. It also lies and rotates immediately over the axial centre line of the shaft *d*. A screw u^1 in the link and a stop u^2 on the arm of the member *f* serve to regulate the extent to which the roller may approach the axial line of the shaft *d*, against the pull of a regulatable spring *w* acting as between a lug w^1 on the reel-carrying arm and a pin u^3 on the link *u*.

In one with the pedestal bearing *a* is a boss a^1 and web a^2 and passing through said boss is a pin a^3. Secured to a protruding part of said pin is a lever *x*, with cranked arm x^1 which lies alongside the web a^2. In said web is a hole and through such hole loosely passes a spindle *y* fitted with a spring y^1 and nuts y^2, the spindle being connected at one end to the arm x^1 of the lever *x*. By means of the spring the longer arm of the lever *x* is normally held in a horizontal position. On its upper face the lever is formed with a shoulder x^2 against which the third arm of the member *f* is adapted to abut, when the lever is horizontal. To the free end of the lever is connected the link rod z^1 of a foot pedal *z*.

The disc *m* constitutes a "centre", and is interchangeable with "centres" of various sizes. Further, the recess in the face of the disc is shaped to suit the shape of receptacle requiring to be taped. In the example shown the centre is suitable for a circular receptacle.

In proceeding to use the machine, the receptacle requiring to be taped is placed lid

foremost into the recess of the disc m and held in such position by hand. In the drawing a circular box is shown. The free end of the adhesive tape is then brought forward and its adhesive face pressed on to the box at a point where its width will lie across the edge of the lid, the pressure of the finger being sufficient to initially fix the tape to the box and the roller v afterwards pressing upon the tape. The foot pedal z is then depressed, thereby drawing down the lever x and freeing the member f, whereupon, by means of a power belt applied to the pulley g, the member f is rotated in the direction of the arow, see Fig. 1, and the tape caused to wrap around the box, until it has completely encircled the box. At the same time, the rubber-covered roller v moves around the box and presses or rolls down the tape into close contact with the box at all parts of its width.

After starting the machine the operator removes his or her foot from the foot-treadle z, and the lever x is free to rise up to its normal position, so that when the third arm of the member f has completed one revolution, it meets the shoulder x^2 of the lever and its motion is automatically arrested. That portion of the tape surrounding the box is then severed from the main length by means of a pair of scissors, or the like and the taped box is removed and a fresh one inserted, the end of the tape applied to the new box, and the machine restarted.

The friction disc h allows of a slip between the pulley g and the member f when the arm of the latter engages the shoulder x^2.

By the substitution of discs m of different sizes, and with recesses of different shapes, receptacles of various sizes and shapes can be taped.

To protect the operator, a light metal shield z^2 is applied to the machine, such shield being secured to the three-armed member f by screws, applied at z^3, z^4, z^5. And to allow for the angular movements of the pressure roller and its axis, a curved slot z^6 is cut in the shield, see Figs. 1 and 2.

What I claim is:—

1. A machine for sealing boxes or other receptacles by means of a length of adhesive tape, comprising a stationary shaft, a "centre" carried by said shaft, a member revolubly mounted on said shaft and carrying a reel-holding pulley and a floating roller, the latter yieldingly pressing upon the periphery of the receptacle to be sealed, means for rotating the said reel-and-roller-carrying member, and means for automatically stopping said member after each complete revolution, as set forth.

2. A machine for sealing boxes and other receptacles by means of a length of adhesive tape, comprising a stationary hollow shaft and a fixed support therefor, an interchangeable disc with a recess in one face detachably secured at one end of the shaft, a three-armed member loosely journaled on said shaft, a pulley also loosely journaled on the shaft, a friction disc between the pulley and three-armed member, and springs for holding the pulley normally in frictional driving connection with the three-armed member, a reel-holding pulley on one arm of the three-armed member, a link or lever arm on another arm of said member, and a rubber-covered roller at the end of said link or lever arm, a spring and tension regulating means between said lever arm and the arm carrying the reel-holding pulley for holding the rubber-covered roller elastically against the receptacle to be sealed, a regulating screw and stop for regulating the angular movements of the lever arm relatively to the axial line of the said shaft, and means for engaging the third arm and holding the three-armed member stationary and for releasing the same when so required, said means also serving to automatically arrest the movements of the three-armed member after completing one revolution, as set forth.

3. A machine for sealing boxes and other receptacles by means of a length of adhesive tape, comprising a stationary hollow shaft, and a fixed support therefor, an interchangeable disc with a recess in one face detachably secured at one end of the shaft, a three-armed member loosely journaled on said shaft, a pulley also loosely journaled on the shaft, a friction disc between the pulley and three-armed member, and springs for holding the pulley normally in frictional driving connection with the three-armed member, a reel-holding pulley on one arm of the three-armed member, a link or lever arm on another arm of said member, and a rubber-covered roller at the end of said link or lever arm, a spring and tension regulating means between said lever arm and the arm carrying the reel-holding pulley for holding the rubber-covered roller elastically against the receptacle to be sealed, a regulating screw and stop for regulating the angular movements of the lever arm relatively to the axial line of the said shaft, a lever and means for axially supporting same below the three-armed member, said lever having a shoulder with which said third arm of the three-armed lever may engage, a spring for holding the lever normally elevated, and a foot-pedal and link rod for lowering said lever clear of the three-armed member when requiring to free the same, as set forth.

4. A machine for sealing boxes and other receptacles, by means of a length of adhesive tape, comprising a stationary hollow shaft and a fixed pedestal bearing therefor, an interchangeable disc with recess in one

face and a boss on its other face, such boss fitting into the bore of the shaft, a spindle and nut for detachably securing the disc to the shaft, a three-armed member with elongated hub loosely journaled on said shaft, a belt pulley loosely journaled on the hub of the three-armed member, a friction disc between the pulley and three-armed member, a collar at one end of the shaft and a like collar at the other end, a ring next the collar at the pedestal bearing end of the shaft, a spring between said ring and the pulley, and a pin connected to the ring and slidably engaging the pulley, an adjustable reel-holding pulley at the free end of one arm of the three-armed member, a lever arm pivotally connected to another arm of the said three-armed member, a rubber-covered roller axially mounted at the free end of said lever arm and means for elastically drawing said roller towards the axial line of the hollow shaft, a lever pivotally mounted below the third arm of the three-armed member and having a shoulder on its top edge, a cracked arm at one end of said lever, and a boss and web flange on the pedestal bearing of the shaft, a spring and rod for holding the cranked arm yieldingly against the web flange, a foot-pedal and a link rod between said foot-pedal and the free end of said lever, substantially as herein set forth.

In testimony whereof I have signed my name to this specification.

EDGAR BERRY.