R. ARIUCHI.

COMBINED PAPER ROLL SUPPORT AND CUTTER.

APPLICATION FILED JULY 3, 1919.

1,324,019.

Patented Dec. 2, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

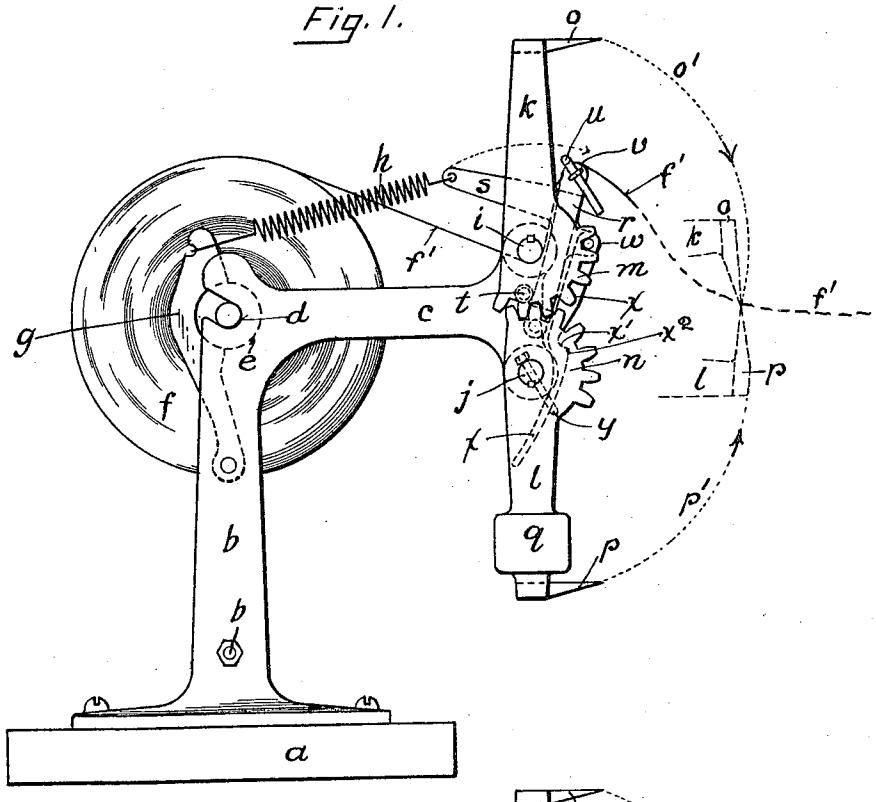
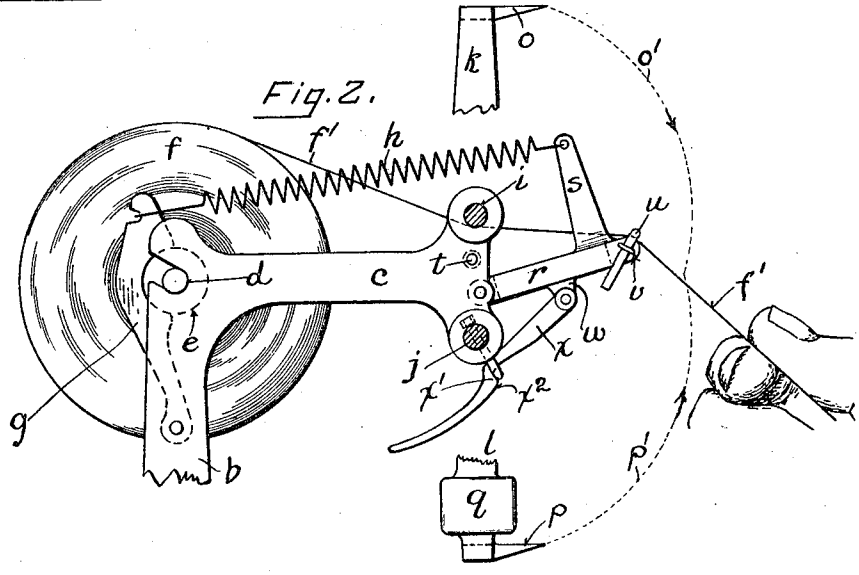


Fig. 2.



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Fig. 3.

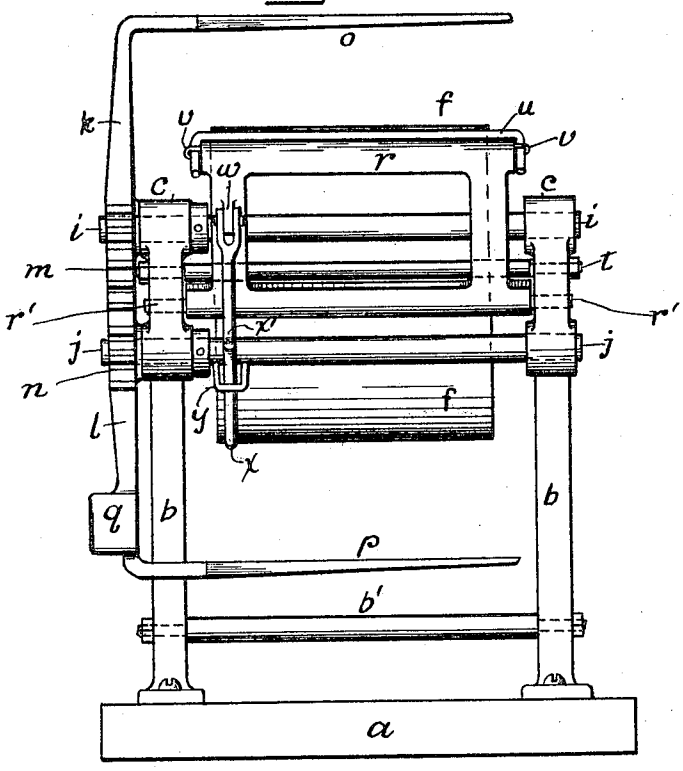


Fig. 4.



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UNITED STATES PATENT OFFICE.

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COMBINED PAPER-ROLL SUPPORT AND CUTTER.

1,324,019. Specification of Letters Patent. Patented Dec. 2, 1919.

Application filed July 3, 1919. Serial No. 308,647.

To all whom it may concern:

Be it known that I, RIKIZO ARIUCHI, a subject of the Emperor of Japan, and a resident of the city of Portland, county of Multnomah, State of Oregon, have invented a certain new and useful Improvement in Combined Paper-Roll Supports and Cutters.

The object of this invention is to provide a counter fixture for mounting a roll of wrapping paper, to hold the roll against unrolling by a friction brake, and to provide shear-like automatic devices by which the end pulled out from the roll will be cut off from the stock, by the mere act of pulling an end of paper from the roll.

My invention furthermore has for its purpose the providing of a simply constructed device; and to so arrange the action of the shear-like devices that all danger of accident is eliminated.

The construction and operation of my device by which the above mentioned results are attained are illustrated in the accompanying drawings, in which Figure 1 is a side elevation, indicating in broken lines also the action of the shears;

Fig. 2 is a fragmental sectional elevation showing the operation of the means actuating the shears, by the act of pulling an end of paper from the roll; the reaction of said means causing the cutting action of the shears;

Fig. 3 is a front elevation of my device, and

Fig. 4 is a detail, in front elevation, of the lower shears member, viewing the same in its horizontal or cutting position.

a is the base on which are mounted standards *b*, connected by a brace-rod *b'* and having at their upper ends horizontal projecting frame-members *c*. In the upper ends of the standards are provided slots *d* constituting bearings in which to removably support the journal-ends of a roller *e*, on which is mounted a roll of paper *f*.

A brake-arm *g*, pivoted on the near standard *b* (see Figs. 1 and 2) is controlled by a spring *h*, so as to bear on that portion of the roller *e* projecting beyond the adjacent side of the roll of paper; and in this way the roller is held against rotating except when the end of the paper is pulled forward.

The extremities of the horizontal frame-members *c* are provided with two vertically alined journal bearings and therein are journaled shafts *i*. *j*. On the near ends of these shafts are rigidly mounted companion arms *k*, *l*, formed with meshing gear-segments *m*, *n*, and each arm has a shears-member, *o* and *p*.

The lower arm *l* is weighted, as at *q*, so that gravity will tend to hold said arms *k*, *l*, in, and return the same to, a vertical position, so as to hold said shears members apart, when at rest.

There is further hinged between the extremities of the horizontal projecting frame-members *c*, a rockable-plate *r* having a perpendicular member *s*, to which one end of the spring *h* is fastened, thus using the latter for two functions. The movement of said rockable-plate by the re-action of said spring, is limited by a stop rod *t*, supported in the extremities of the horizontal arms *c*.

The rockable-plate *r* is provided with a paper-guiding rod *u*, slidable in ears *v*, so that it may be lifted to facilitate the insertion of the end of the paper.

The rockable-plate is further made with an ear *w*, to which is hinged a notched arm *x*; sliding in a staple *y* on the shaft *j*. Thus when the rockable-plate *r* is moved forward *i. e.* from the roll of paper *f*, the notched portion *x'* of the arm *x* will engage with the staple *y* on the shaft *j*; and when the spring *h* is then permitted to re-act and pull said rockable-plate in reverse direction, the notched-arm *x* will impart a partial rotation to said shaft *j*, and through the medium of the meshing gears *m*, *n* cause the shears-members *o* and *p* of the two arms *k* and *l*, to come together and sever the end of paper pulled from the roll *f*; said end being designated by the letter *f'*.

My device operates as follows:

A roll of paper, *f*, having been mounted on the roller *d*, the end of the paper, *f'*, is led under the shaft *i*, and over the top of the rockable-plate *r*, under the guide-bar *u*, as illustrated in Fig. 1. When a piece of the paper-end *f'*, is to be severed, the latter is drawn forward, as illustrated in Fig. 2, relative to the length of paper required. In the act of so drawing the paper-end forward the arm *r* will be brought to a more or a less horizontal position, causing the notched-arm *x* to drop into engagement with the staple *y* on the shaft *j*. By then suddenly releasing the pull on the paper end *f'*, the re-action of the spring *h* will move the rockable plate *r* in reverse direction,

in so doing, causing the notched arm x to partially rotate the shaft j, hence causing the meshing gear-segments, m, n, of the arms k, l, to swing the latter forward, that is, in the direction indicated by the arrows in the dotted lines o', p', of Figs. 1 and 2, and in so doing causing the shears-members o and p to come together and cut off the end of the paper strip. And the notch of the arm x is so constructed that when the arm r has again attained a vertical position, the staple y, of the shaft j will slip off the rounded shoulder x^2 of the notch portion x' of said arm x, thus releasing the shaft j and permitting the weight q carried by the arm l to operate through the medium of the gear-segments m, n, to restore the arms k, l to their normal, vertical positions as shown in Fig. 1. Hence, restoring my device to its initial state, ready for again being operated as described.

There will always be a projecting end as f', of the paper over-hanging the top of the rockable-plate r, convenient for being seized by the fingers of the operator. And it is to be noted that since the shears-element of my device is thrown into action by the operator pulling the end of the paper strip away from my device, all danger of accidentally cutting the fingers of the operator is eliminated.

It will be noted that the brake g, and rockable plate could be operated by independent springs, but the two operations may be conveniently covered by a single coil-spring as shown.

My device may be adapted also for severing the ends of a roll of cloth; therefore the term paper is to be understood as including other material.

I claim:

1. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a spring-controlled brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a spring operating to hold the rockable plate in and return the same to its initial position, means, operated by the return rotation of the rockable plate, adapted to rotate the lower of said shafts and thereby causing the shears-element to act, said means being adapted to have their action automatically ended by the return of said rockable plate to its initial position.

2. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a spring-controlled brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a spring operating to hold the rockable plate in and return the same to its initial position, a staple carried by the lower of said shafts, a notched arm pivoted to said rockable plate and adapted to become engaged with said staple during the rotation of said rockable plate from said roller, and to become released from the staple when the rockable arm is turned to its initial position.

3. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a spring controlled brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a guide for the paper strip carried by said rockable plate, a spring operating to hold the rockable plate in and return the same to its initial position, means, operated by the return rotation of the rockable plate, adapted to rotate the lower of said shafts and thereby causing the shears-element to act, said means being adapted to have their action automatically ended by the return of said rockable plate to its initial position.

4. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair

of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a spring operating to hold the rockable plate in and return the same to its initial position, said spring also operating said brake, means, operated by the return rotation of the rockable plate, adapted to rotate the lower of said shafts and thereby causing the shears-element to act, said means being adapted to have their action automatically ended by the return of said rockable plate to its initial position.

5. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a guide for the paper strip carried by said rockable plate.

6. A combined paper roll support and cutter, comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, means for holding said arms apart, normally, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a movable guide for the paper strip carried by said rockable plate, a spring operating to hold the rockable plate in and return the same to its initial position, means, operated by the return rotation of the rockable plate, adapted to rotate the lower of said shafts and thereby causing the shears-element to act, said means being adapted to have their action automatically ended by the return of said rockable plate to its initial position.

7. A combined paper roll support and cutter, comprising an upright frame, including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one parallel with the axis of rotation of the latter, gearing cooperatively connecting said shafts, the lower of said arms being weighted, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a spring operating to hold the rockable plate in and return the same to its initial position, said spring also operating said brake, means, operated by the return rotation of the rockable plate, adapted to rotate the lower of said shafts, and thereby causing the shears-element to act, said means being adapted to have their action automatically ended by the return of said rockable plate to its initial position.

8. A combined paper roll support and cutter comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, the lower of said arms being weighted, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a spring operating to hold the rockable plate in and return the same to its initial position, said spring also operating said brake, a staple carried by the lower of said shafts, a notched arm pivoted to said rockable plate and adapted to become engaged with said staple during the rotation of said rockable plate from said roller, and to become released from the staple when the rockable arm is returned to its initial position.

9. A combined paper roll support and cutter comprising an upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the

frame for carrying a roll of paper, a brake restraining the rotation of said roller, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing coöperatively connecting said shafts, the lower of said arms being weighted, a rockable plate pivoted in the free ends of said horizontal frame members, and adapted to be rotated away from said roller by the pulling of the paper strip off the latter, a guide for the paper strip carried by said rockable plate, a spring operating to hold the rockable plate in and return the same to its initial position, said spring also operating said brake, a staple carried by the lower of said shafts, a notched arm pivoted to said rockable plate and adapted to become engaged with said staple during the rotation of said rockable plate from said roller, and to become released from the staple when the rockable arm is returned to its initial position.

10. In a combined paper roll support and cutter upright frame including horizontal, projecting members provided at their free ends with two vertically alined journal-bearings, a roller journaled in the frame for carrying a roll of paper, a pair of shafts journaled in said journal-bearings, and each provided with a rigid arm, a shears-element, one member of which is carried by the free end of each of said arms parallel with the axis of rotation of the latter, gearing cooperatively connecting said shafts, means for holding said arms apart, normally, means for operating said arms and therethrough said shears-member, said means being adapted to have the free end of said roll of paper carried thereover, and said means being thrown into action by the forward pull of said paper end.

11. In a combined paper roll support and cutter, a roller for carrying a roll of paper, a shears-element comprising two coöperating rotatable members, and means for operating said shears-element, said means being adapted to have the free end of said roll carried thereover, and being thrown into action by the forward pull of said end.

RIKIZO ARIUCHI.