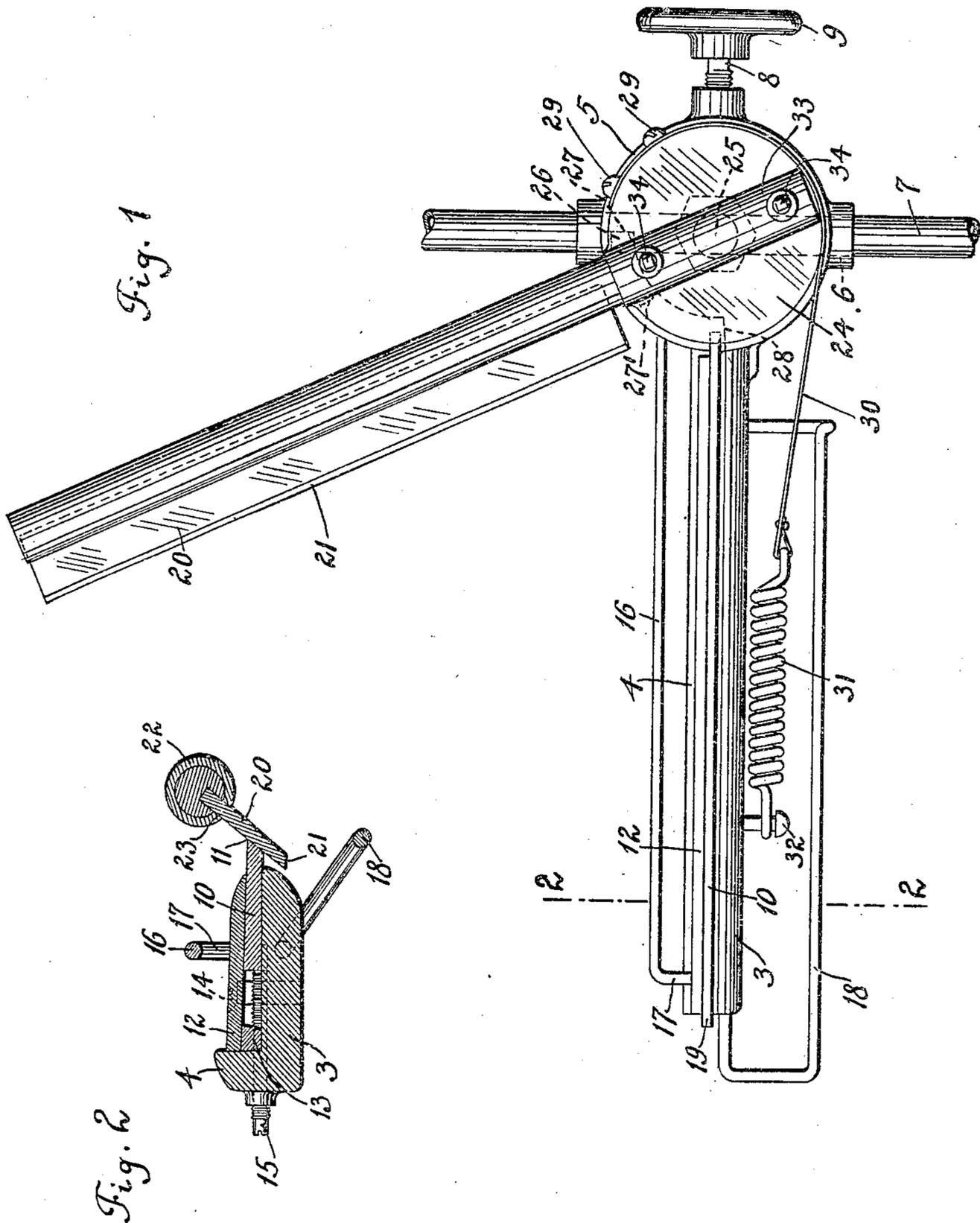


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 PAPER CUTTING SHEARS.
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958,455.

Patented May 17, 1910.



WITNESSES:
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PAPER-CUTTING SHEARS.

958,455.

Specification of Letters Patent. Patented May 17, 1910.

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To all whom it may concern:

Be it known that I, ALBERT WORCESTER, a subject of the King of England, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Paper-Cutting Shears, of which the following is a specification.

The present invention relates to improvements in machines for cutting paper, muslin, etc., and is specially adapted for use in the manufacture of card-board boxes.

The cutting blades of paper cutting machines are usually made of a hardened steel, tempered in the usual way by heating the same until it assumes the desired color and then cooling the same suddenly in the well known manner. As far as known, the cutting blades are usually provided with a plurality of holes to be engaged by bolts or other fastening means for attaching said blades to the cutting machines; since, however, these holes are drilled into the blades after the same have been hardened in the steel mill, it is obvious, that the blades must be first annealed when the same are received from the mill in order that holes may be drilled into the same. Of course, when then the steel is again hardened, it is very difficult or almost impossible to harden the same exactly to that degree at which it was received from the steel mill, whereby the quality of the cutting edges will be impaired.

The object of the present invention is to overcome the hereinbefore mentioned defects of the cutting blades, by providing a simple and efficient means for attaching the same to the cutting machine without changing the hardness of the same.

Another object of the invention is to provide a machine for cutting trimmings for card-board boxes, such as paper, muslin, etc., the parts of which are constructed and arranged in such a manner that, while better adapted for use than the devices heretofore in use, the machine is rendered simpler and cheaper.

Other objects of the invention will be apparent in reading the specification and from an examination of the drawings, forming part of the present application for Letters Patent.

With these and other objects in view, the invention consists in the combination, construction and arrangement of the parts, as will hereinafter fully appear, pointed out in

the appended claims and illustrated in the drawings, in which—

Figure 1 is a front elevation of a paper cutting machine constructed in accordance with the present invention, and Fig. 2 is a section taken on line 2, 2 of Fig. 1.

In the drawings, the numeral 3 denotes the base plate of the machine, provided with an upwardly extending ridge 4 at its rear portion, and a, preferably, cylindrical supporting block 5 at one of its ends. The base plate 3 is of oblong configuration of the desired width, and of a length which corresponds to the greatest length of the paper or other material to be manipulated upon the machine; the ridge 4 extends throughout the whole length of the base plate 3 and serves a purpose hereinafter to be specified. A hole 6 extends through the block 5, preferably in a vertical direction, and is brought into engagement with a vertical supporting rod 7, fastened in any suitable manner to the floor or to a frame, not shown in the drawings. The base plate 3 is kept at a desired level by a set screw 8, engaging the supporting block 5 and the supporting rod 7, its rotation being facilitated by a hand-wheel 9. Obviously by this arrangement the base plate and the parts attached thereto may be shifted to any desired level, and in that level to any predetermined angle relative to the axis of the supporting rod 7. The stationary cutting blade of the machine is indicated at 10, and comprises a slightly beveled blade, provided with a cutting edge 11, resting upon the base plate 3 and kept thereon by a clamping plate 12, which engages the cutting blade 10 and a rod 13, abutting against or made integral with the ridge 4 of the base plate. The rear face of the clamping plate 12 abuts also against the ridge 4, and is pressed against the rod 13 and the cutting blade 10 by screws 14 which engage the clamping plate and the base plate. The cutting blade 10 is kept in position upon the base plate 3 by means of set screws 15, engaging threads in the base plate 3 and contacting at their inner ends with the cutting blade 10, and preventing thus the movement of the cutting blade toward the ridge 4; the movement in the other direction being prevented by the pressure applied by the clamping plate 12 upon the tapering face of the cutting blade.

A guide bar 16 is arranged in a plane parallel to the plane of the base plate 3, and is attached to the supporting block 5, its

other end being bent downward, as shown at 17, and resting upon the clamping plate 12. A frame 18 is attached to the underside of the base plate 3 and serves to prevent persons from coming in contact with the sharp edge 19 of the cutting blade.

The movable cutting blade of the machine is indicated at 20. This cutting blade, also tapered toward its cutting edge 21, is arranged in a tubular member 22, having a slot 23 through which said blade protrudes; the latter being kept upon said tubular member by pouring into said tubular member a suitable melted metal which, when once congealed, will hold the cutting blade in its proper position. The rod 22 is adjustably carried by a disk 24, which is oscillatably mounted upon the pivot 25 carried by the supporting block 5. The movement of the blade 20 is limited in the upward direction by a projection 26, carried by the disk 24 and abutting against a nose 27 which is arranged upon the supporting block 5, and in the other direction by a projection 27' upon the disk 24 and adapted to contact with a stop 28 upon the supporting block 5. To the disk 24 is secured, for instance by means of screws 29, 29, a flexible band 30, engaging one end of a spring 31, the other end of which is fastened to a pin 32, attached to the underside of the base plate 3.

In order to adjust the position of the cutting blade 20 relative to the cutting blade 10, the tubular member 22 is arranged in a sleeve 33 and kept thereon by set screws 34, 34. The sleeve is made integral with or fastened to the disk 24. Obviously by means of this arrangement the cutting blade 20 may be shifted in the direction of the longitudinal axis of the tubular member 22, and also set to any predetermined angle relative to said axis.

The operation of the device is as follows: The paper or other material is placed upon the clamping plate 12 and passed under the guide bar 16 to a desired position relative to the blade 10. The cutting blade 20 is then forced toward the blade 10, whereby its cutting edge is brought into operation and strips of paper or other material to be cut are severed from the sheet or roll. The spring 31 brings then the cutting blade 20 automatically back to its operative position.

While herein minute details of the device are described, it will be observed that many minor changes may be made in the construction, arrangement and combination of the parts without departing from the spirit and scope of the invention, which lies mainly in the mode of attaching the cutting blades to their supports, and the means for bringing the movable cutting blade back to its normal, operative position.

What I claim is:

1. In a machine of the character described,

the combination with a supporting block, of a base plate secured thereto, a cutting blade tapering toward its cutting edge, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate and preventing its forward movement, means engaging said base plate and cutting blade for preventing the movement of the latter in the other direction, a cutting blade oscillatably mounted upon said supporting block, and means for bringing said oscillatable blade back from its cutting position to its operative position.

2. In a machine of the character described, the combination with a supporting block, of a base plate secured thereto, a cutting blade tapering toward its cutting edge, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate and preventing its forward movement, a plurality of set screws engaging said base plate and cutting blade for preventing the movement of the latter in the other direction, a cutting blade oscillatably mounted upon said supporting block, and means for bringing said oscillatable blade back from its cutting position to its operative position.

3. In a machine of the character described, the combination with a supporting block, of a base plate secured thereto, a cutting blade, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate, means for predetermining the position of said cutting blade upon said base plate, a cutting blade oscillatably and adjustably mounted upon said supporting block, and means for bringing said oscillatable blade back from its cutting position to its operative position.

4. In a machine of the character described, the combination with a supporting block, of a base plate secured thereto, a cutting blade tapering toward its cutting edge, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate and preventing its forward movement, means engaging said base plate and cutting blade for preventing the movement of the latter in the other direction, a cutting blade oscillatably and adjustably mounted upon said supporting block, and means for bringing said oscillatable blade back from its cutting position to its operative position.

5. In a machine of the character described, the combination with a supporting block, of a base plate secured thereto, a cutting blade tapering toward its cutting edge, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate and preventing its forward movement, a plurality of set screws engaging said base plate and cutting blade for preventing the movement of the latter in the other direction, a cutting blade oscillatably and adjustably mounted upon said supporting block, and

means for bringing said oscillatable blade back from its cutting position to its operative position.

6. In a machine of the character described, the combination with a supporting block, of a base plate secured thereto, a cutting blade tapering throughout its width toward the cutting edge, a clamping plate engaging said cutting blade and holding the same by pressure upon said base plate and preventing its forward movement, a plurality of set screws engaging said base plate and said cutting blade for preventing the movement of the latter in the other direction, a tubular member having a slot throughout its length oscil-

latably mounted upon said supporting block, a cutting blade held upon said tubular member and protruding through said slot, means for adjusting the angular position of said tubular member and cutting blade relative to said supporting block, and means for bringing said oscillatable blade back from its cutting position to its operative position.

Signed at New York, in the county of New York and State of New York, this 21st day of October, A. D. 1909.

ALBERT WORCESTER.

Witnesses:

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STELLA N. LEVY.