

No. 667,055.

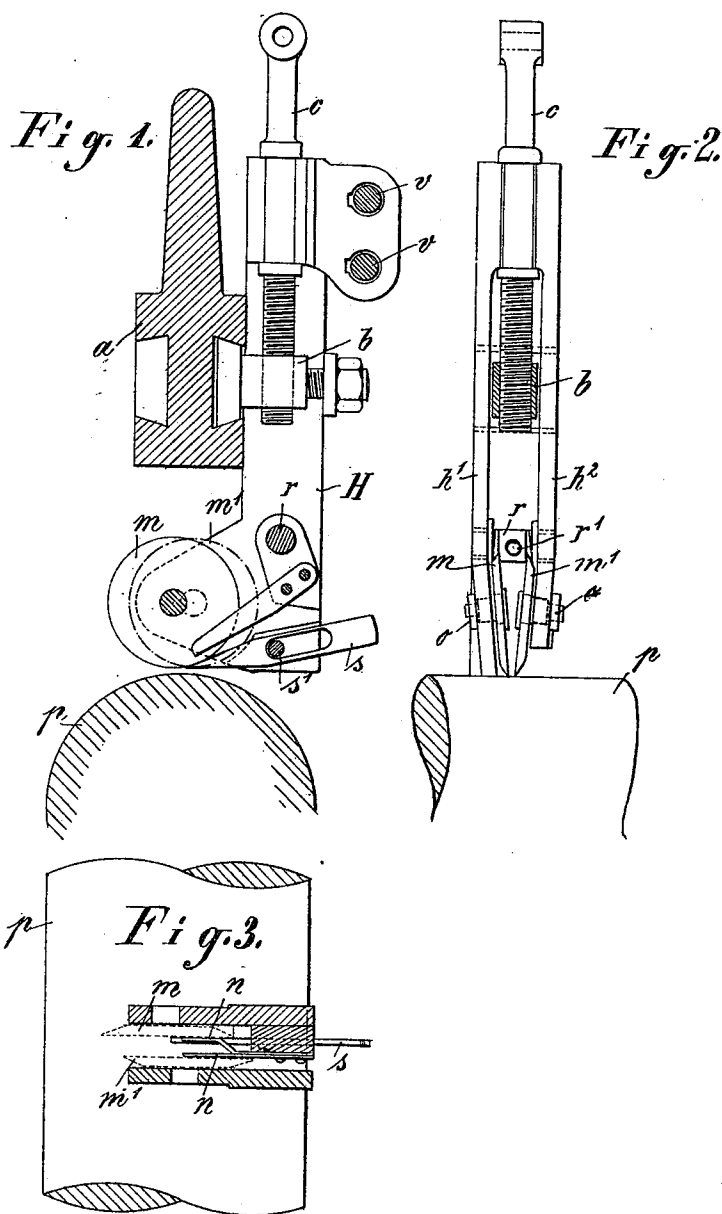
Patented Jan. 29, 1901.

A. ANDERSEN.

MACHINE FOR SCORING CARDBOARD.

(Application filed Dec. 31, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ANDREAS ANDERSEN, OF BERLIN, GERMANY.

MACHINE FOR SCORING CARDBOARD.

SPECIFICATION forming part of Letters Patent No. 667,055, dated January 29, 1901.

Application filed December 31, 1897. Serial No. 664,916. (No model.)

To all whom it may concern:

Be it known that I, ANDREAS ANDERSEN, manager, of 64^a Reinickendorferstrasse, Berlin, in the Kingdom of Prussia, German Empire, have invented Improvements in Apparatus for Scoring or Grooving Cardboard or the Like, (for which I have obtained Letters Patent in England, No. 25,737, dated November 5, 1897,) of which the following is a specification, reference being had therein to the accompanying drawings.

The greatest of all the drawbacks connected with the apparatus hitherto employed for scoring or grooving cardboard and the like consists in that the shaving removed may easily produce a stopping up of the whole apparatus. In order to avoid this, many forms of construction have been adopted. Among others, it was thought possible to avoid the above-mentioned drawback by mounting the two grooving-knives on axes lying in different vertical planes, one knife being allowed to precede the other so far that the shaving-ejector arranged at the side of the second circular knife lay entirely free to one side. This advancement of one knife in front of the other must, however, be somewhat considerable, as otherwise the first knife always partially covers the shaving-ejector, and thus renders impossible a displacement of the shaving to the side. There also resulted, as experience and many experiments have shown, another drawback—namely, that it was absolutely impossible to obtain a groove with sharp edges when one circular knife was too far in advance of the other. In order to enable a really sharp-edged groove to be made in ordinary scoring and grooving apparatuses, as the above-mentioned experiments have shown, the amount which one knife precedes the other must amount at the highest to five millimeters. Such an arrangement of one knife in advance of the other does not, however, allow the shaving-ejector to lie at one side entirely freely and the stoppage or stopping up of the whole apparatus by the produced shaving cannot be avoided. If, however, the two circular knives be brought into such an inclined position that their planes form an angle and the space in which the shaving traveling over the shaving-ejector is carried be gradually increased any choking of the whole

apparatus is entirely prevented. Sharply-cut edges may thus be obtained with a suitably-small selected separation of the circular knives when the latter are placed in an inclined position and any stopping up of the shaving apparatus is prevented. An apparatus constructed in this manner is shown in the accompanying drawings, in which—

Figure 1 is a sectional side view; Fig. 2, a sectional front view, and Fig. 3 a sectional plan view of the under part of same.

The actual scoring or grooving apparatus H is attached to the machine-frame *a* by means of a screwed lug *b* in such a way that the whole apparatus may be adjusted as regards its vertical position by means of a screw *c*, which is passed through the rectangular part of the screwed lug *b*.

The apparatus H consists, essentially, of two uprights or supports *h' h''*, which carry at their lower ends knives *m m'*, mounted on spindles *o*. As shown in Fig. 1, the spindles are so arranged relative to one another that one knife *m* precedes the other knife *m'*. The knives *m m'*, as shown in Fig. 2, are inclined away from one another at the top, so that the space between the two shaving-knives is wider at the top than at the bottom. The shaving remover or ejector *s*, which is adjusted by means of screws *s'*, is mounted in such a way that it comes into action the moment the material is grooved by the circular knife *m'*. There is also a pair of tongues *n*, acting as guides to the shaving, which remove to the outside the shaving when released. The adjustment or movement forward of the material to be grooved takes place by the rotation of a roller *p*.

A further advantage possessed by the present invention consists in that the distance between the knives *m m'*, Fig. 2, may be mutually adjusted, so that it is possible to make grooves of different widths. For this object a screw *r*, having a right and left hand thread, is provided, which screw is screwed into the uprights *h' h''* and by being turned may cause the uprights to be forced apart. As both uprights are only held together at their upper ends by screws *v*, they have a certain spring action, and an adjustment of the knives is thus possible without further trouble by revolving the screw *r*. The rotation of the

screw *r* is effected by means of a pin which may be easily inserted in a hole *r'*.

What I claim, and desire to secure by Letters Patent of the United States, is—

5 1. In a machine for scoring or grooving cardboard, the combination of the main frame, a roller located therebeneath, a support attached to the main frame, grooving-knives attached to the lower end of said support and
10 located between said main frame and roller, said knives being oppositely inclined and one of said knives being arranged in advance of the other, for the purpose and substantially as described.

15 2. In a machine for scoring or grooving cardboard, the combination of the main frame, a rotatable roll located directly below said frame, an adjustable support attached to the frame, a pair of circular grooving-knives connected to the lower end of said support and
20 located between said frame and roller, said knives being oppositely inclined away from one another at top and one of said knives arranged in advance of the other; with means
25 for raising the shavings cut by the knives and means for removing the shavings substantially as described.

3. In an apparatus for scoring or grooving cardboard, the combination of the vertically-
30 adjustable uprights, a pair of circular grooving-knives mounted on spindles at the lower ends of said uprights, one of said knives preceding the other; said knives being inclined away from one another at top substantially
35 as described; an adjustable shaving-ejector attached to said uprights in rear of the knives and adapted to come into action the moment the material is grooved by said knives, and a pair of tongues adapted to guide the shav-

ings and remove the same to the outside when
40 released by the ejector; with means for adjusting the knives so that grooves of different widths may be cut, and screws for holding the uprights together at their upper ends whereby a spring action is given the uprights
45 and adjustment of the knives is permitted, all constructed and adapted to operate substantially as and for the purpose set forth.

4. The herein-described device for scoring or grooving cardboard, adapted to be attached
50 to the framework of a machine, consisting of a pair of uprights; a pair of circular grooving-knives attached to said uprights at their lower ends, the spindles on which said knives are mounted being so arranged relative to
55 one another that one of said knives precedes the other; said knives being also inclined away from one another at top substantially as described; a shaving-ejector mounted at the lower ends of said uprights in rear of said
60 knives and a screw for adjusting said ejector combined with a pair of tongues embracing said knives adapted to guide the shavings and remove the same to the outside when released by said ejector; a screw transfixing
65 said uprights adapted to adjust the knives so that grooves of different widths may be cut; and screws for holding the uprights together at their upper ends to permit a spring action thereof and also the adjustment of the knives,
70 all constructed and adapted to operate substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ANDREAS ANDERSEN.

Witnesses:

CHARLES H. DAY,
HENRY HASPER.