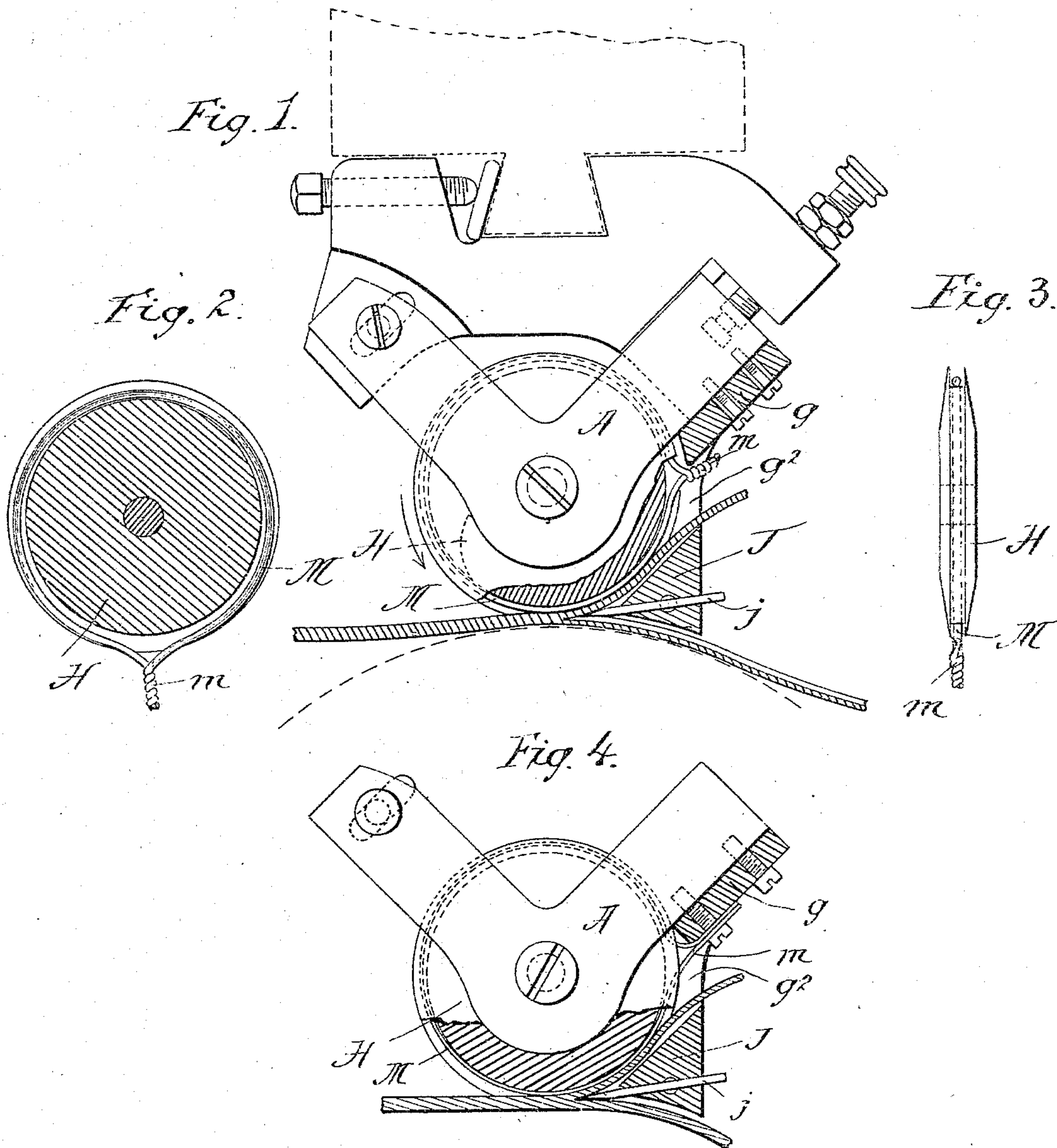


(No Model.)

L. W. BROWN & A. BIRNIE.  
MACHINE FOR SCORING PAPER BOARD.

No. 551,257.

Patented Dec. 10, 1895.



Witnesses  
Wm H Chapin  
H. J. Clemons

Inventors.  
Leroy W Brown, and  
Alfred Birnie  
By: *Chapin & Co*  
Attys.



# UNITED STATES PATENT OFFICE.

LEROY W. BROWN AND ALFRED BIRNIE, OF SPRINGFIELD, MASSACHUSETTS.

## MACHINE FOR SCORING PAPER-BOARD.

SPECIFICATION forming part of Letters Patent No. 551,257, dated December 10, 1895.

Application filed May 17, 1895. Serial No. 549,727. (No model.)

*To all whom it may concern:*

Be it known that we, LEROY W. BROWN and ALFRED BIRNIE, citizens of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Machines for Scoring Paper-Board, of which the following is a specification.

10 This invention relates to improvements in mechanisms for scoring sheets of paper or cardboard of such general class as is exemplified by the mechanism described in Letters Patent of the United States to Chauncey W. Gay, October 23, 1894, No. 527,963.

15 The present improvement relates to the means for causing the waste strip or shaving which is excavated from the cardboard by the plow or blade to be constrained to move tangentially or substantially so outwardly from the scoring-wheel so that it may not be carried around within the groove of the wheel to clog or interfere with the scoring action of the wheel; and to this end the invention consists in the combination with the double-  
20 edged scoring-wheel of a band of suitable material arranged within the groove of, and loosely surrounding, the wheel, and having a part or projection which extends beyond the cutting-edges of the wheel and which is adapted to abut against some fixed part or to be supported or restrained thereby from unduly rotating with the wheel, and which serves as a deflector to guide out the waste strip or shaving.

35 In the accompanying drawings, Figure 1 shows in side elevation and partial section a part of a scoring-machine with a sheet of paper-board being fed therethrough and showing the improved guide for leading out the waste strip. Fig. 2 is a sectional view through the double-edged scoring-wheel centrally and transversely of its axis, and showing the encircling waste-guide. Fig. 3 is an edge view  
40 of the scoring-wheel and the encircling waste-guide, a front portion of the latter being shown as broken off and in section. Fig. 4 is a view of a slightly-modified construction to be hereinafter referred to.

50 In the drawings, A represents the holder for

the scoring-wheel H, said holder having thereon the bifurcated shoe J, constructed with the aperture or throat  $g^2$  through the shank  $g$ .  $j$  represents the excavator or plow mounted on and projected inwardly beyond the heel of the shoe. These parts are all substantially as seen in the aforesaid patent.

The leading-out guide for the waste strip consists of a band M, of suitable material—such, for instance, as wire looped around into a circle and having its ends brought together and extending radially from the circle described by the major part of the said band. As specifically shown the ends of the wire are brought together and twisted, as seen at  $m$ ,  
60 Figs. 1, 2, and 3. The said band M is of such diameter that it may lie within the groove in the wheel, loosely, and have more or less deflection therein in the plane of rotation thereof, so that the cutting-edges of the wheel at their lowermost part will protrude below the thickness of the band when operating on the work, as seen in Fig. 1. The friction, often-  
70 times, at the inner sides of the sharp flanges of the scoring-wheel H, upon the opposite sides of the band, will cause the said band to be swung around, as the wheel rotates, so that its nose or radial projection  $m$  abuts against the portion of the shank  $g$  of the shoe at the upper boundary of the clearing-throat  $g^2$  and  
80 forms a barrier against the passage of the waste strip or shaving around in the groove of the scoring-wheel.

When the machine is not running, the leading-out band M may drop down so that the nose  $m$  thereof will drop against the base of the throat  $g^2$ ; but this is merely incidental and if desired the band may have its nose secured to the part of the shoe at the upper boundary of the throat, and such a connection of the parts is indicated in Fig. 4, and in this figure the wire may be a flat wire like a watch-spring or it may be of other material or form; and, again, the invention is not limited to the combination of the leading-out band substantially as described with any particular part which restrains it or supports it against unduly rotating, for its combination with the scoring-wheel, substantially as described, may be made available in many de-  
90 100



scriptions of scoring mechanisms wherein such a double-edged and intermediately-grooved wheel is employed.

Having thus described our invention, what  
5 we claim, and desire to secure by Letters Patent, is—

In a scoring mechanism, the combination with a double-edged scoring wheel having the intermediate peripheral groove, of a band  
10 loosely encircling the wheel within the groove

and having an outwardly projecting part, and a stationary part with which the outwardly projecting part of the encircling band engages, substantially as described.

LEROY W. BROWN.  
ALFRED BIRNIE.

Witnesses:

WM. S. BELLOWS,  
WM. P. BIRNIE.