

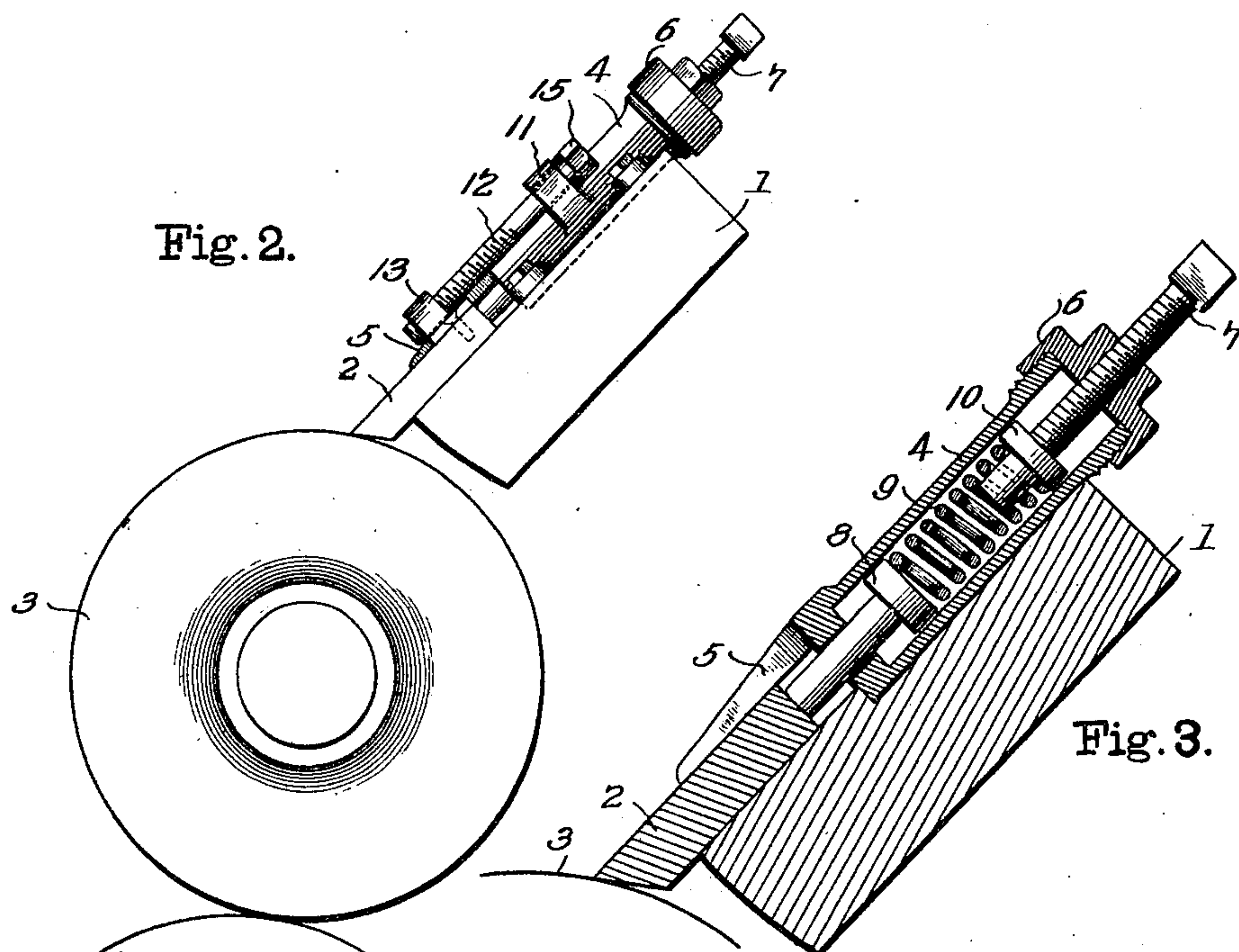
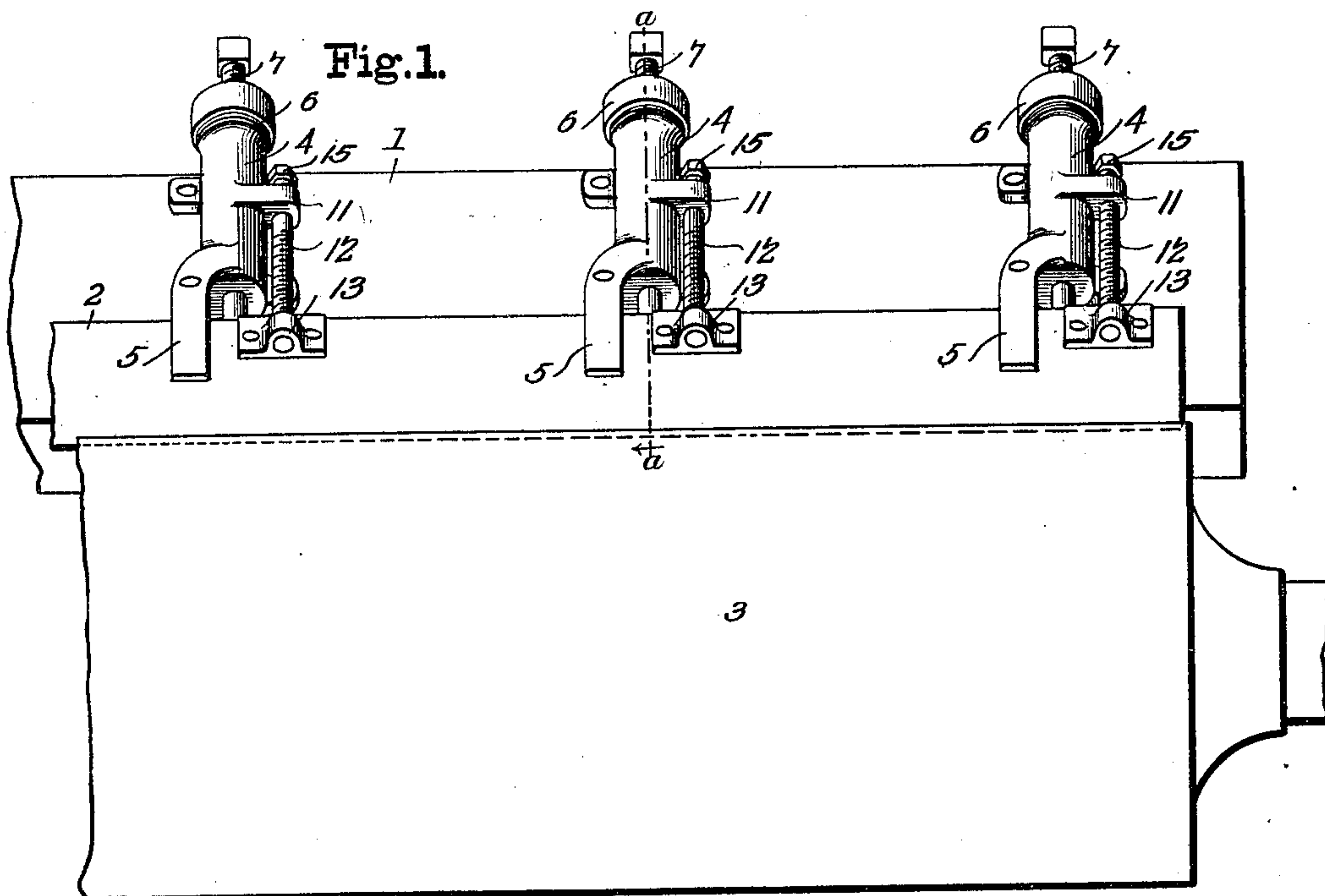
No. 681,307.

Patented Aug. 27, 1901.

J. H. GATELY.  
PAPER MAKING MACHINE.

(Application filed Feb. 8, 1901.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN HENRY GATELY, OF BELLOWS FALLS, VERMONT.

## PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 681,307, dated August 27, 1901.

Application filed February 8, 1901. Serial No. 46,568. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HENRY GATELY, a citizen of the United States, residing at Bel-  
lows Falls, in the county of Windham and  
5 State of Vermont, have invented a new and  
useful Paper-Making Machine, of which the  
following is a specification.

My invention is an improvement in paper-  
making machines, particularly with relation  
10 to the doctor-blade which operates on the up-  
per couch-roller of a Fourdrinier machine,  
the object of my invention being to provide  
improved means for adjusting the doctor-  
blade with relation to the upper couch-roller  
15 and to permit the doctor-blade to yield some-  
what and compensate for variations in the  
thickness of the felt covering of or in the out-  
line of the surface of the upper couch-roller,  
thereby relieving the upper couch-roller of  
20 undue friction and reducing the wear of the  
felt covering thereof.

In the accompanying drawings, Figure 1 is  
a front elevation of a portion of a guard-  
board and doctor-blade provided with my im-  
25 proved compensating and adjusting devices,  
showing the same in operative relation to the  
upper couch-roller of a Fourdrinier machine.  
Fig. 2 is a side elevation of the same. Fig. 3  
is a detail sectional view taken on a plane  
30 indicated by the line *a a* of Fig. 1.

On the front side of the guard-board 1 is  
disposed the doctor-blade 2, the latter bear-  
ing on the upper side of the upper couch-  
roller 3. The guard-board is immovably fixed  
35 to portions of the frame of the machine which  
are not here shown, as the same are well un-  
derstood by those skilled in the art to which  
this invention relates.

On the front side of the guard-board at suit-  
40 able intervals are secured tubular casings 4,  
each of which is provided at its lower end  
with a guard-finger 5, that bears on the upper  
side of the doctor-blade, the latter being re-  
tained in position on the guard-board by the  
45 said fingers. A cap 6 is screwed to the upper  
end of each tubular casing, and in each of the  
said caps operates a screw 7. The rods of  
pistons 8 project from the lower ends of the  
tubular casings 4 and bear upon the upper  
50 edge of the doctor-blade. In each of the cas-  
ings 4 is a spring 9, which bears on the pis-  
ton 8 in the casing, the screws 7 being pro-

vided near their lower ends with enlarged  
portions 10, which bear on said springs, and  
said screws serving to increase or diminish 55  
the tension of the said springs and the pres-  
sure thereof on the pistons 8, and hence serv-  
ing to regulate the downward pressure of the  
springs on the doctor-blade and the friction  
between the latter and the upper couch-roller. 60

From one side of each tubular casing 4 pro-  
jects a lug 11, in which operates the un-  
threaded portion of an adjusting-screw 12.  
The lower ends of the said screws operate in  
threaded openings in parts 13, which are se- 65  
cured to the doctor-blade by any suitable  
means. The said parts 13 form lugs or ears  
on the doctor-blade. The heads 15 of the ad-  
justing-screws 12 coact with the lugs 11 of  
casings 4 to adjust the doctor-blade when the 70  
said adjusting-screws are turned, the func-  
tion of the adjusting-screws 12 being to limit  
and control the friction of the doctor-blade  
on the upper couch-roller by limiting the  
downward movement of the doctor. The 75  
springs 9, while keeping the doctor-blade in  
engagement with the upper couch-roller, per-  
mit the doctor-blade to yield somewhat and  
compensate for variations in the thickness of  
the covering or in the outline of the surface 80  
of the upper couch-roller, and the latter is  
relieved of undue friction, thereby reducing  
the wear of the expensive felt covering of the  
upper couch-roller.

As hereinbefore indicated, the tension of 85  
the springs on the doctor-blade may be regu-  
lated at will as may be required and the doc-  
tor-blade caused to bear with the requisite  
tension upon the upper couch-roller.

Having thus described my invention, I 90  
claim—

1. In a machine of the class described, the  
combination of a couch-roller, a doctor-blade,  
a guard-board, a casing on the latter having  
a guard-finger bearing on the doctor-blade, 95  
an adjustable connection between the doctor-  
blade and an element of the casing, an ele-  
ment in the latter engaging the doctor-blade  
and pressing the same against the couch-  
roller, a compression-spring for said element, 100  
and means to vary the tension of said spring,  
substantially as described.

2. In a machine of the class described, the  
combination of a guard-board, a couch-roller,



a doctor-blade, an adjustable connection between the guard-board and doctor-blade, to limit the downward movement of the latter, and springs to maintain the doctor-blade in operative relation to the couch-roller, substantially as described.

3. In a machine of the class described, the combination of an upper couch-roller, a doctor-blade, means to adjust the same toward and from the upper couch-roller and limit the downward movement of the doctor-blade, springs to maintain the doctor-blade in operative relation to the upper couch-roller, and means to vary the tension of said springs, substantially as described.

4. In a machine of the class described, the combination of a guard-board, a couch-roller,

a doctor-blade, a casing on the guard-board having a guide-finger bearing on the doctor-blade, an adjusting-screw connecting an element of the casing and an element of the doctor-blade, a movable element carried by said casing and bearing on the doctor-blade, a compression-spring bearing on said movable element, and means to vary the tension of said spring, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN HENRY GATELY.

Witnesses:

JOHN P. RILEY,  
ARTHUR M. JELLISON.