

No. 706,164.

Patented Aug. 5, 1902.

H. CÔTÉ.

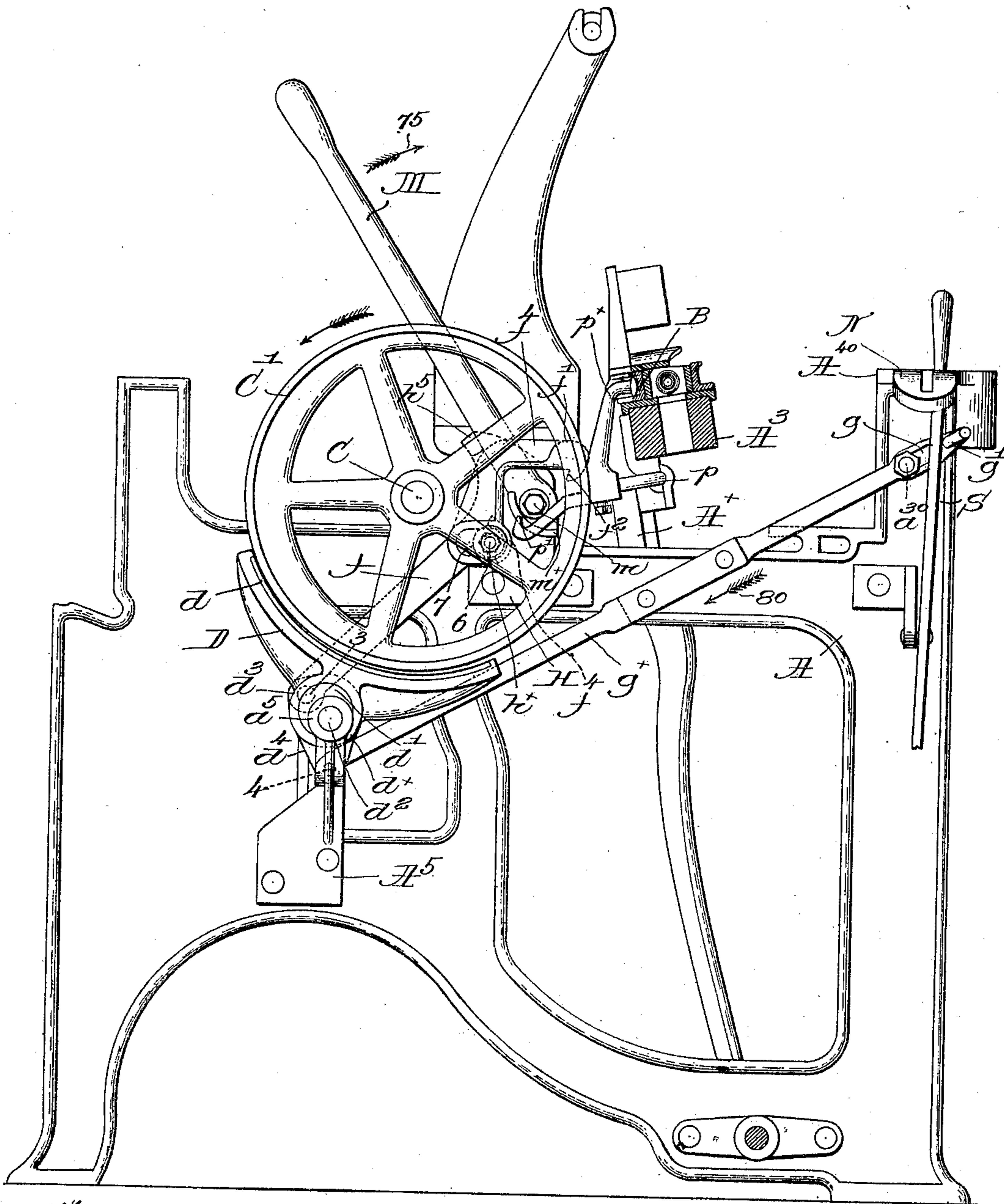
STOPPING MECHANISM FOR LOOMS.

(Application filed Dec. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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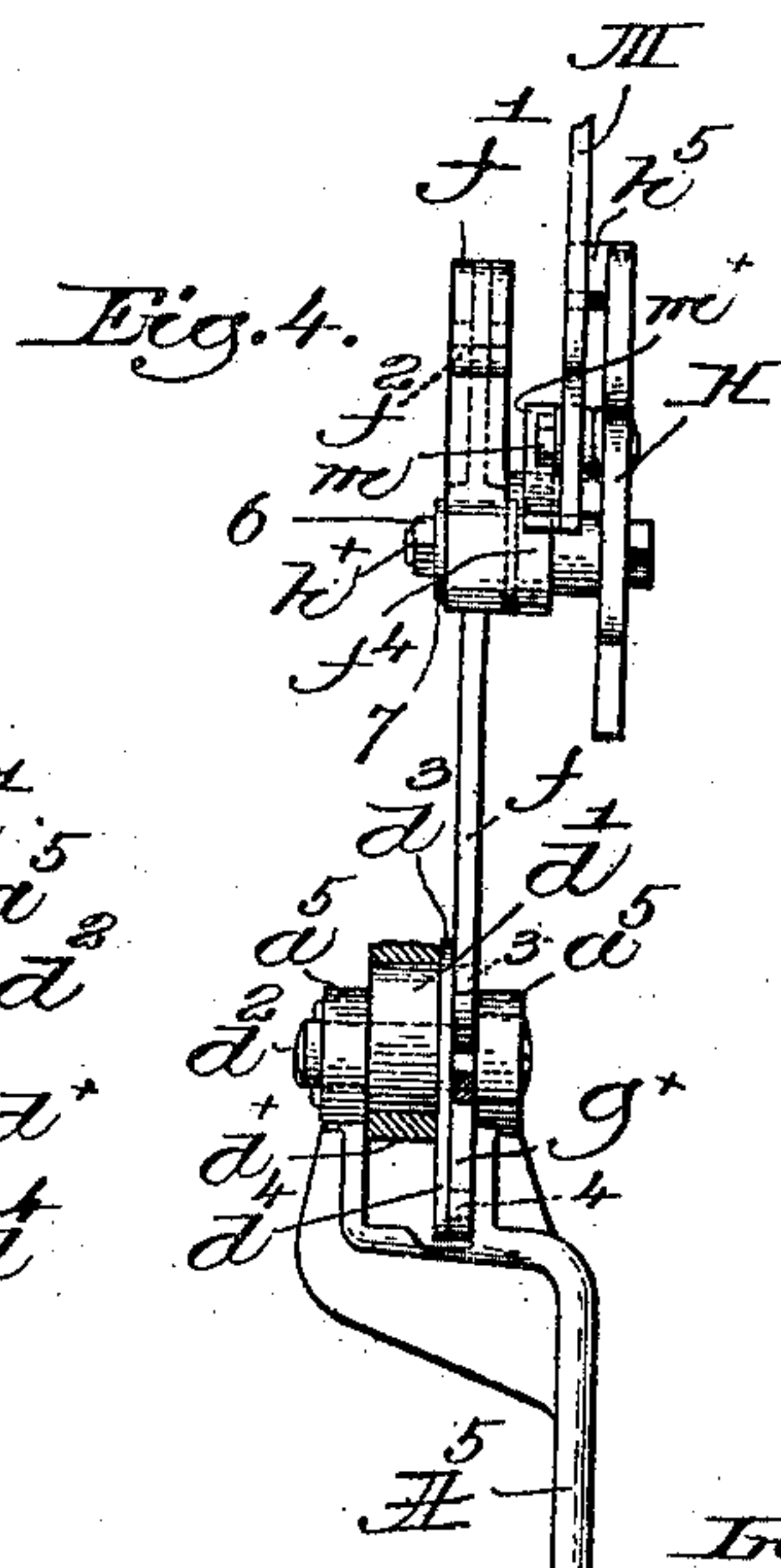
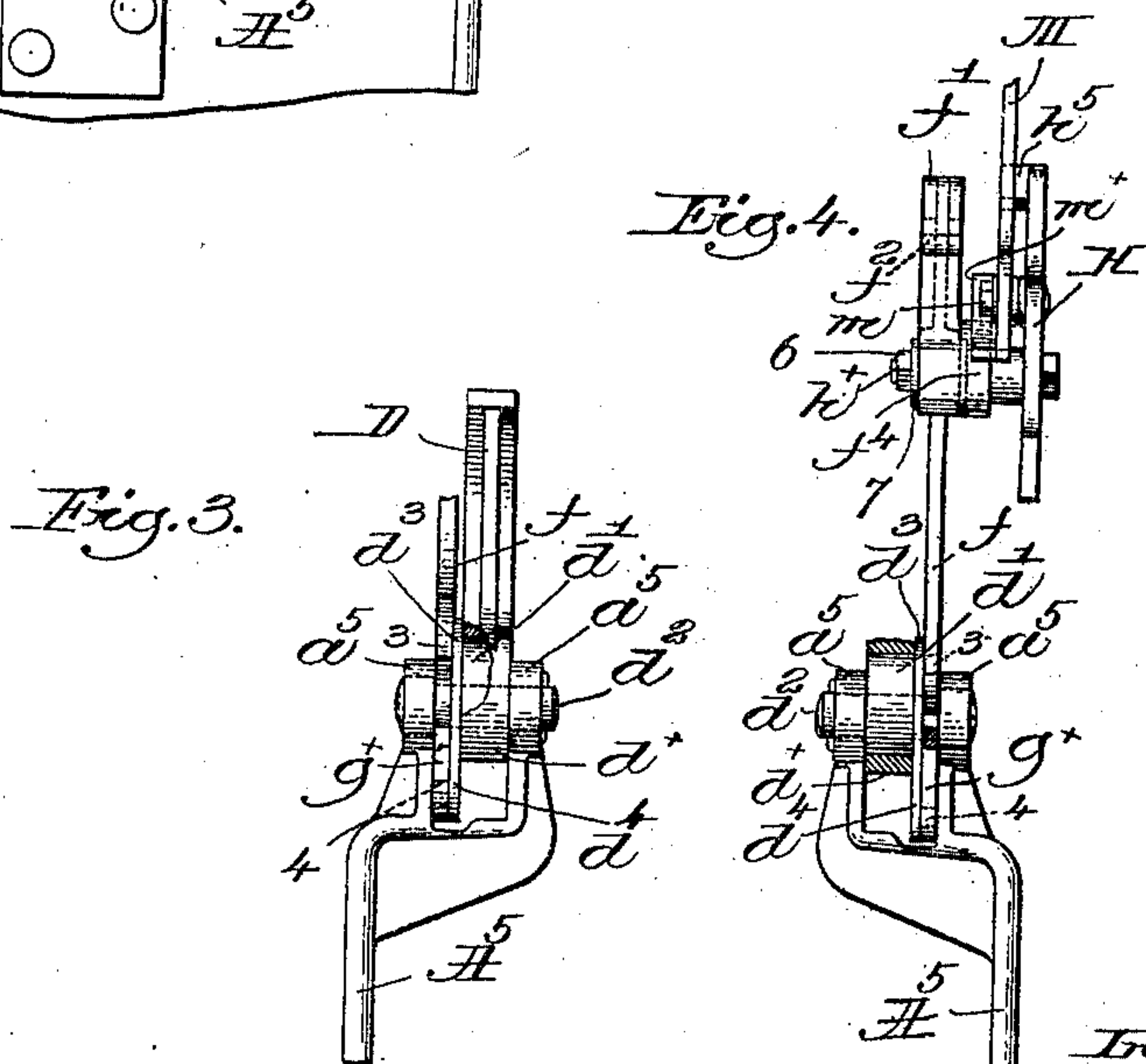
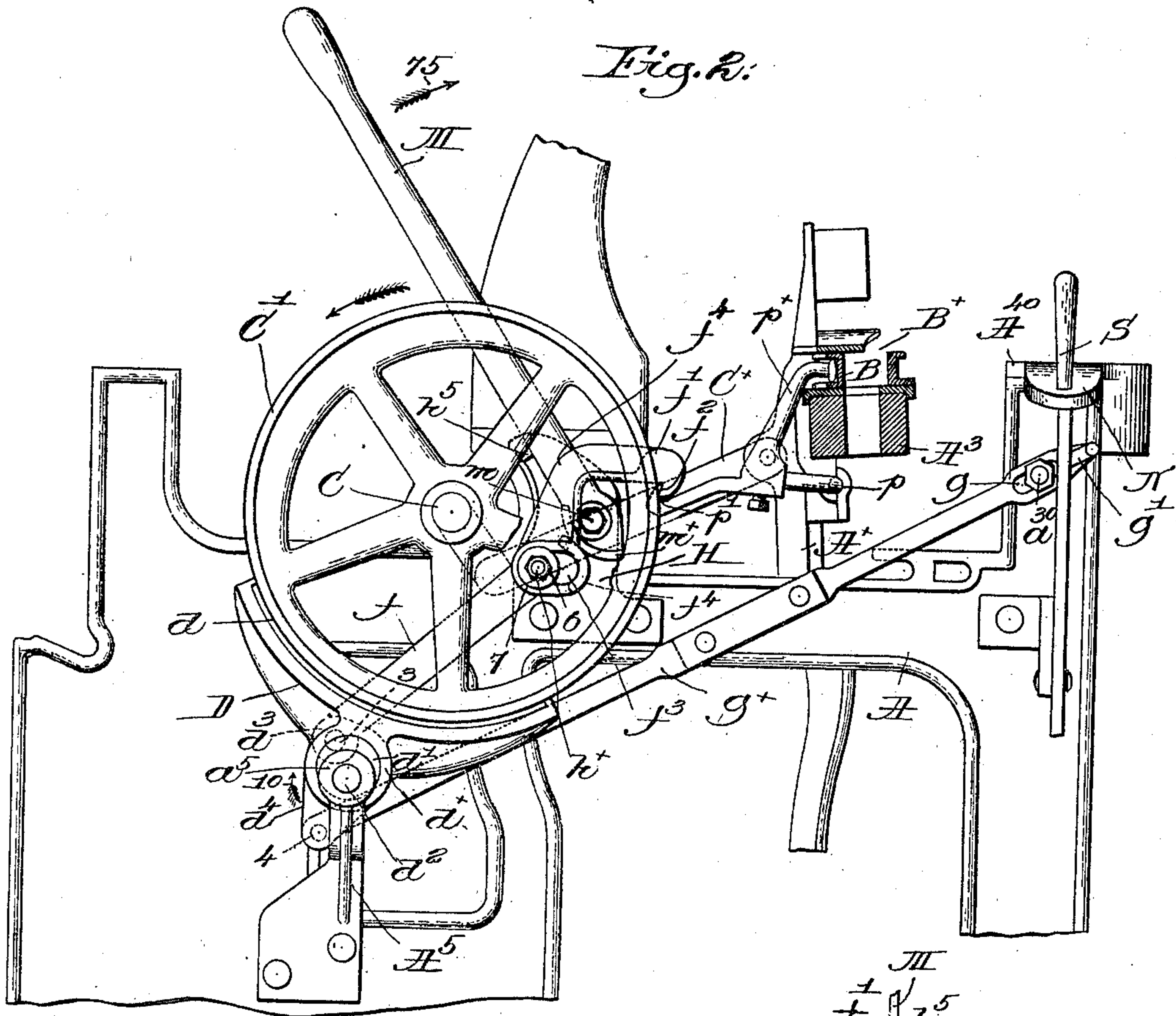
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STOPPING MECHANISM FOR LOOMS.

(Application filed Dec. 23, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

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## STOPPING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 706,164, dated August 5, 1902.

Application filed December 23, 1901. Serial No. 86,894. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY CÔTÉ, a citizen of the United States, and a resident of Woonsocket, county of Providence, State of Rhode Island, have invented an Improvement in Stopping Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

It is customary to provide looms with brake mechanism operative upon the occurrence of some abnormal condition in the running of the loom—such, for instance, as warp or weft breakage or improper boxing of the shuttle—so that when the power is thrown off the momentum of the moving parts will be quickly overcome and the loom stopped promptly. The lay attains very great momentum in the high-speed looms now employed, and very powerful and rapidly-acting brake mechanism must be employed in order that the lay may be brought to a stand quickly.

My present invention has for its object the production of novel, highly efficient, and very powerful brake mechanism, and in the present embodiment of the invention I have utilized the movement of the lay to set the brake.

By my invention I obviate the use of the usual dagger-protector mechanism, because I not only brake the loom, but brake it so effectually that the lay is prevented from advancing beyond a certain definite point, and I thereby prevent a shuttle smash in case the shuttle is not properly boxed. By thus combining the functions of brake and protector mechanisms the number of parts are reduced, and the strain on the loom is very much less, as the wedging action of the brake reduces the sudden jar and shock present with the usual dagger mechanism.

The various novel features of my invention will be hereinafter fully described, and particularly pointed out in the following claims.

Figure 1 is a left-hand side elevation of a portion of a loom with one embodiment of my invention applied thereto, the lay being shown in section and the loom in running condition with the brake off. Fig. 2 is a similar view, but showing the brake set and the lay stopped at substantially the front center

thereof. Fig. 3 is a rear elevation, partly broken out, of the brake or brake-shoe, its fixed support, and the shiftable fulcrum for the brake and Fig. 4 is a front elevation of the link forming a part of the fulcrum-shifting means and the support for the link, the brake-releasing device being shown in part.

The loom-frame A, crank-shaft C, connected by pitmen C<sup>x</sup> with the lay-swords A<sup>x</sup> to effect the movement of the lay A<sup>s</sup>, the spring-controlled protector rock-shaft p, mounted on the latter and having an attached binder-finger p<sup>x</sup>, the binder B of the shuttle-box B<sup>x</sup>, only one shuttle-box and binder being shown, the breast-beam A<sup>40</sup>, and the holding-plate N for the shipper S, the only member of the stopping means herein shown, may be and are all substantially of well-known construction.

I have herein shown an annular and normally-rotating member C' fast on the crank-shaft—as, for instance, a fly-wheel—forming one member of the brake mechanism, and a brake or brake-shoe D is adapted to cooperate with said member, the “brake,” as hereinafter termed, being of suitable shape and, if desired, provided on its concave face with a suitable friction-facing d, of leather, wood, or other suitable material. At its back and substantially midway between its ends the brake is enlarged to form a hub d<sup>x</sup>, into which is inserted a shiftable fulcrum, shown as a heavy metal disk d', eccentrically mounted on a stud d<sup>2</sup>, which passes through upright bearing portions a<sup>5</sup> of a strong bracket A<sup>5</sup>, rigidly secured to the loom side. The disk has secured to or forming a part of it two short oppositely-extended arms d<sup>3</sup> d<sup>4</sup> on one side of the disk and between it and the adjacent bearing portion a<sup>5</sup>. (See Fig. 3.)

Referring to Figs. 1 and 2, it will be manifest that the brake D is interposed between its fixed support A<sup>5</sup> and the periphery of the rotatable member C' and that the center of the disk d' is eccentric to a line passing through the centers of the shaft C and stud d<sup>2</sup>. By rotating the disk or fulcrum d' it will move the brake toward or from the member C' radially and also circumferentially relatively thereto, and the nearer the disk approaches dead-center the harder will the brake



be pressed against said member C. This shift-  
able fulcrum for the brake also constitutes an  
eccentric connection between the brake and  
its fixed support A<sup>5</sup>, and the shifting of the  
fulcrum when setting the brake causes the  
latter to engage the rotatable member with a  
wedge action, a similar action upon the brake  
itself being effected by the fulcrum  $d'$  when  
it is turned, so that a very powerful braking  
action is effected and with great rapidity in  
application. A link  $f$  is pivotally connected  
at 3 with the arm  $d^3$  of the shiftable fulcrum,  
the upper end or head  $f^x$  of the link being ex-  
tended toward the front of the loom, as at  $f'$ ,  
and provided on its under side with a hook-  
like shoulder  $f^2$ . An elongated transverse  
slot  $f^3$  is made in the base of the head to re-  
ceive therethrough a guide-stud  $h^x$ , project-  
ing laterally from a bracket H, bolted to the  
loom side, as herein shown, a nut 6 and washer  
7 preventing displacement of the link. (See  
Figs. 2 and 4.)

The binder-finger  $p^x$  herein shown is pro-  
vided at its lower end with a rearwardly-ex-  
tended upturned hook  $p'$ , which is depressed  
below the shoulder  $f^2$  on the link-head when  
the shuttle is properly boxed, the binder B  
being pressed rearwardly at such time, so that  
when the lay beats up the hook will not en-  
gage the link. When the shuttle fails to en-  
ter the box, however, the hook  $p'$  is raised and  
engages the shoulder  $f^2$ , and as the lay beats  
up the link  $f$  will be moved from the position  
shown in Fig. 1 into that shown in Fig. 2, act-  
ing through the short arm  $d^3$  to turn the ful-  
crum-disk  $d'$  in the direction of arrow 10 and  
set the brake, a very slight angular movement  
of the fulcrum serving to apply the brake with  
great power. The braking effect attains its  
maximum before the lay reaches its front cen-  
ter, bringing the lay to a full stop in time to  
prevent a shuttle smash if the shuttle is not  
properly boxed, and the wedging action is so  
great that I have provided a manually-oper-  
ated releasing device for the brake.

A long lever M is fulcrumed at  $m$ , near its  
lower end, on the bracket H, the toe of the  
lever having a cam  $m^x$  thereon adapted to  
engage a lateral extension  $f^4$  on the base of  
the link-head, (see Fig. 4,) the movement of  
the link to set the brake bringing such exten-  
sion into the position to be engaged by the  
cam  $m^x$ , Fig. 2, and when the lever M is pulled  
forward by the attendant in the direction of  
arrow 75 the cam acts upon said extension to  
force the link  $f$  back, and thereby release the  
brake. The lever M is maintained in normal  
position, Fig. 1, by resting against a stop  $h^5$   
on the upper end of bracket H. A rod  $g^x$  is  
pivotally connected at 4 with the arm  $d^4$ , the  
upper end of said rod having a longitudinal  
slot  $g$  to receive a pin  $a^{30}$  on the loom-frame,  
permitting longitudinal movement of said  
rod, the latter having a lateral hook  $g'$  there-  
on to engage the shipper and release it from  
the usual holding-notch in the plate N when

the link is moved in the direction of the ar-  
row 80 by shifting of the fulcrum  $d'$  to set the  
brake, so that the shipper is automatically  
released by or through the operation of the  
brake mechanism.

I have herein shown and described one prac-  
tical embodiment of my invention without  
attempting to describe various modifications  
thereof, which may be made by those skilled  
in the art without departing from the spirit  
and scope of my invention, and the latter is  
accordingly not restricted to the specific con-  
struction and arrangement of parts herein  
shown and described.

The stoppage of the loom is so effectual that  
I am enabled to do away entirely with the  
usual dagger-motion now in general use, and  
by so doing the strain on the parts of the loom  
due to stoppage is greatly reduced, the wedg-  
ing action of the brake materially lessening  
the sudden jar or shock which always accom-  
panies the operation of the usual dagger-mo-  
tion.

Having fully described my invention, what  
I claim as new, and desire to secure by Letters  
Patent, is—

1. In a loom, a rotatable member, a brake  
to coöperate therewith, a fixed support for  
and relative to which the brake is movable  
circumferentially of and also toward and from  
said member, an eccentric connection between  
the brake and its support, and means acting  
by or through said connection to automatic-  
ally set the brake, the compound movement  
thereof operating to wedge it against the ro-  
tatable member between the latter and the  
fixed support.

2. In a loom, a rotatable member, a brake  
to coöperate therewith, a fixed support for  
the brake, an eccentric connection between  
the latter and its support, and means to turn  
said connection to apply the brake.

3. In a loom, a rotatable member, a brake  
to coöperate therewith, a shiftable fulcrum  
on which the brake is mounted, the brake  
being interposed between the fulcrum and  
the rotatable member, and means to directly  
act upon and shift the fulcrum to thereby  
apply the brake to and stop rotation of said  
member.

4. In a loom, a rotatable member, a brake  
to coöperate therewith, a fixed support, a ful-  
crum for the brake, eccentrically mounted on  
said support, and means to turn the ful-  
crum on the support and thereby apply the  
brake.

5. In a loom, a normally-rotating member, a  
brake to coöperate therewith, protector mech-  
anism, a shiftable fulcrum for the brake, and  
direct connections between the said fulcrum  
and the protector mechanism, to shift the  
former and thereby set the brake by or  
through the operation of the latter.

6. In a loom, a rotatable member, a brake  
to coöperate therewith, a shiftable fulcrum  
for the brake, actuating means for and di-



rectly connected with said fulcrum and operated by or through the movement of the lay, the lay, and protector mechanism for the loom, to control the operation of said actuating means, the shifting of the fulcrum by the said means setting the brake.

7. In a loom, a normally-rotatable member, a brake to cooperate therewith, the lay, a shipper, a fixed support, an eccentric connection between it and the brake, means operated by or through the lay to actuate said connection and set the brake, and means to release the shipper when said eccentric connection is actuated.

8. In a loom, a rotatable member, a brake to cooperate therewith, a shiftable fulcrum for the brake, means to automatically act directly upon and shift the fulcrum and thereby set the brake, and a manually-actuated device to operate through said means to release the brake.

9. In a loom, the lay, an actuating-shaft operatively connected therewith and having an annular member fast upon it, a brake to cooperate with said member, a fixed support, a fulcrum for the brake eccentrically mounted on said support, means operated by or through the movement of the lay to turn said fulcrum and thereby apply the brake, and

protector mechanism for the loom, to control the operation of said means.

10. In a loom, the lay, actuating mechanism therefor, including a rotatable member, a brake to cooperate with said member, a shiftable fulcrum for the brake, and means, including a member mounted on the lay, to act directly upon and shift the fulcrum and thereby apply the brake on the forward beat of the lay.

11. In a loom, a normally-rotating member, a brake to cooperate therewith, a shipper, a fixed support, a fulcrum for the brake, eccentrically mounted thereon, whereby rotative movement of the fulcrum applies or withdraws the brake, means operative upon proper boxing of the shuttle to actuate the fulcrum and set the brake, a connection between the fulcrum and shipper, to release the latter when the brake is applied, and manually-operated means to move said fulcrum to release the brake.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY CÔTÉ.

Witnesses:

GEORGE OTIS DRAPER,  
ERNEST WARREN WOOD.