

G. H. HOLDT.
 BACK GAGE FOR PAPER CUTTING MACHINES.
 APPLICATION FILED JUNE 28, 1911.

1,018,111.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.

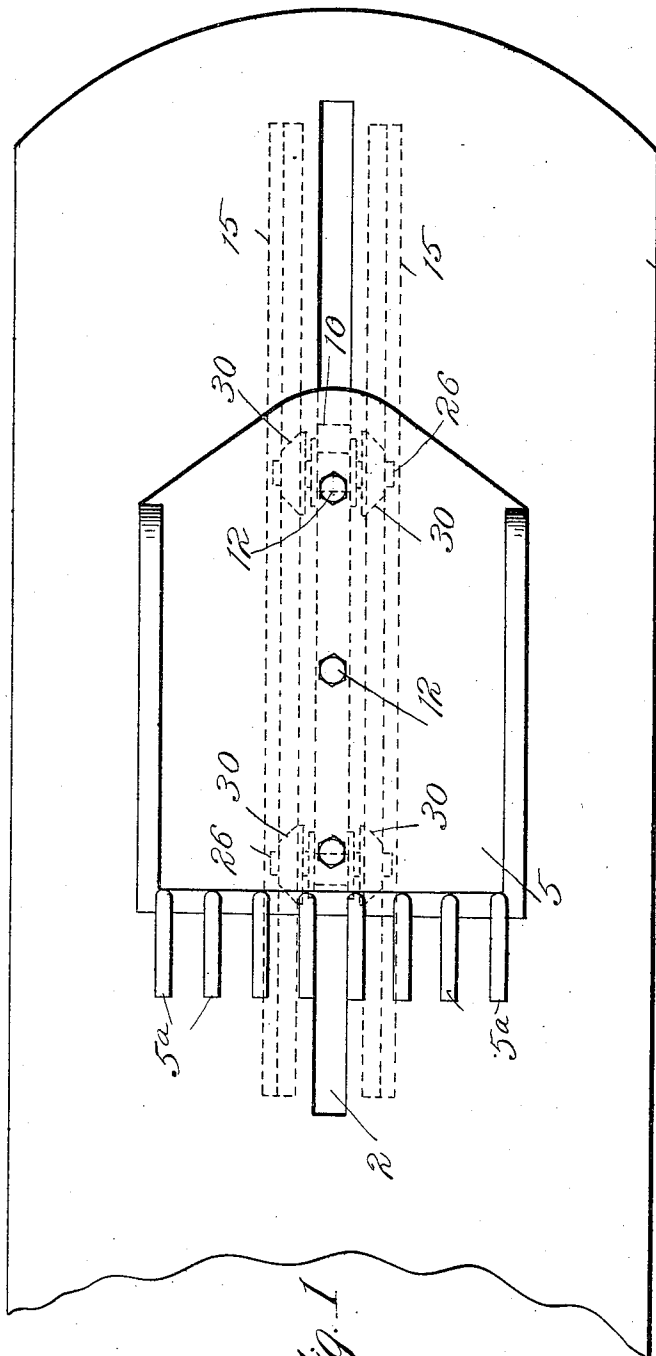


Fig. 1

Witnesses:
 Marion Clifford
 Elsie Swenson

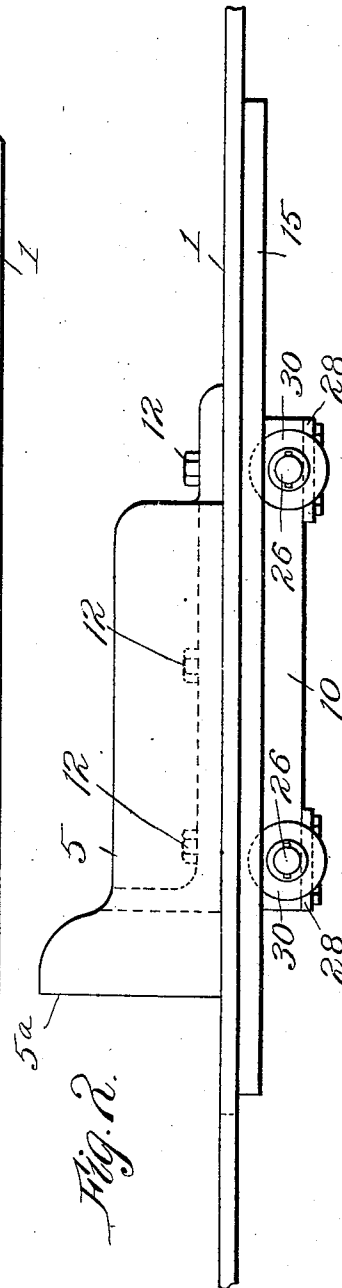


Fig. 2

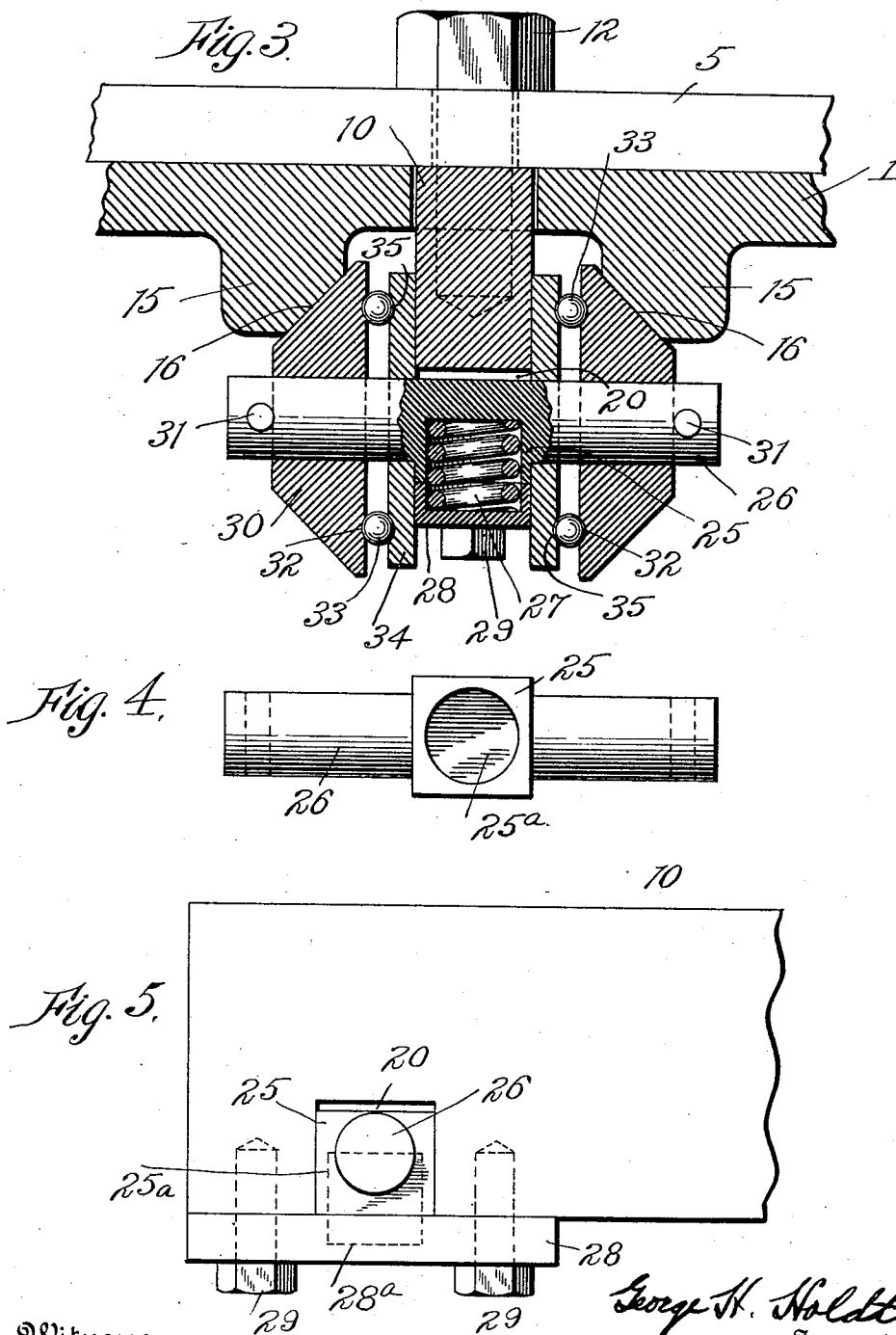
George H. Holdt
 Inventor,
 By his Attorney, *Wm. H. Wright*

G. H. HOLDT.
 BACK GAGE FOR PAPER CUTTING MACHINES.
 APPLICATION FILED JUNE 28, 1911.

1,018,111.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 2.



Witnesses:
 Marion Clifford
 Elsie Swenson

George H. Holdt
 Inventor,
 By *Bush* Attorney *Wright*

UNITED STATES PATENT OFFICE.

GEORGE H. HOLDT, OF PEARL RIVER, NEW YORK, ASSIGNOR TO DEXTER FOLDER COMPANY, OF PEARL RIVER, NEW YORK, A CORPORATION OF NEW YORK.

BACK GAGE FOR PAPER-CUTTING MACHINES.

1,018,111.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed June 28, 1911. Serial No. 635,804.

To all whom it may concern:

Be it known that I, GEORGE H. HOLDT, a citizen of the United States, and a resident of Pearl River, county of Rockland, State of New York, have invented certain new and useful Improvements in Back Gages for Paper-Cutting Machines, of which the following is a specification.

In the present construction of back gages for paper cutting machines, the gage proper is rigidly mounted upon a tongue or strip of metal which is cut to fit accurately in the longitudinal slot formed in the table or bed of the cutting machine. In the operation of a cutting machine having this construction of back gage, the guiding tongue and the slot will sometimes wear more in some parts than in others, particularly when the machine is used continually for a long time for cutting a certain class of work. This is true in the constant operation of a machine for cutting what is known as "short stock," which requires the constant adjustment of the gage back and forth for short distances. With such operation the tongue of the gage will wear out the slot over the short distance upon which it has been most used so that the tongue becomes loose in this particular part of the guiding slot, and the result is that the machine cannot cut accurately because the accuracy of cutting depends entirely upon the exactness of the mounting of the gage upon the bed of the machine. This unequal wear causes the machine to cut "out of square." This defect cannot be remedied by refitting the tongue because a tongue made to fit that portion of the slot which has been subjected to the unusual wear will be too large to operate properly in the other portion of the slot which has not become worn. The only remedy for the difficulty has been to entirely recut the slot in the table and fit a new guide tongue in the new slot.

The present invention is designed to obviate the difficulty pointed out by providing a gage mechanism which will reduce the tendency of wear between the moving parts and will automatically retain the gage in accurate relation to the cutting mechanism. In accomplishing this result, I have mounted the back gage upon a supporting tongue or strip which fits loosely in the longitudinal slot in the cutter table so as to have no

wearing contact with the side walls of the slot. The table is provided upon its under face with two guide rails upon which operate guide rollers mounted upon an axle which passes freely through a recess or pocket cut in the bottom of the gage tongue, and held in operative position by means of self-adjusting springs. Anti-friction bearings are arranged between the guide rollers and gage tongue to hold the guide rollers in position with the least possible friction. I prefer to employ conical guide rollers mounted upon a horizontal axle and held in engagement with track faces presented in planes inclined at angles of 45 degrees from the horizontal. In the ordinary embodiment of the invention, the gage tongue is provided with two sets of guide rollers arranged adjacent to the opposite ends of the tongue and operating upon the same guideways so as to accurately hold the tongue in position at both ends. The adjusting springs are confined between the recessed axles and suitable cap plates secured to the bottom of the tongue so that their pressure will pull downwardly upon the tongue and press upwardly upon the guide rollers. This upward pressure of the conical guide rollers upon the inclined trackways will accurately center the gage supporting tongue in the slot of the table and relieve the slot from all wear.

In order that my invention may be fully understood, I will first describe the same with reference to the accompanying drawings, and afterward point out the novelty more particularly in the annexed claims.

In said drawings: Figure 1 is a plan view of the bed or table of a paper cutting machine having my improved construction of back gage applied thereto. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical transverse sectional view on a larger scale. Fig. 4 is a detail view showing the axle for supporting the guide wheels. Fig. 5 is a detail side elevation of a part of the gage tongue showing the mounting of the roller axle in the same.

I have not thought it necessary to show the general construction of paper cutting machines to which my invention relates, but have illustrated only the bed or table of the machine with the improved back gage mechanism mounted thereon.

1 is the bed or table formed as usual with

the longitudinal slot 2 cut through it and extending for a sufficient distance to provide the necessary back and forth adjustment of the pile positioning back gage.

5 5 represents a back gage which as usually constructed comprises a flanged horizontal plate arranged to slide upon the upper smooth surface of the bed 1, and having at its forward end a series of vertical parallel
10 gage flanges 5^a.

10 is a rectangular strip of metal shaped to fit loosely in the slot 2 of the table. This slot 10 constitutes the guiding and supporting tongue of the back gage. The back gage
15 is rigidly secured to the tongue 10 along its central longitudinal line by means of screw bolts 12, the tongue 10 being supported in the slot 2 from the gage 5.

Projecting beneath the table 1 and extending parallel with the slot 2 are the guide rails 15 formed with the inclined guide faces 16 arranged in planes approximately at angles of 45 degrees to the horizontal.

Adjacent to each end the gage tongue 10
25 has two guide sockets or pockets 20 cut in its lower edge to receive the rectangular hub sections 25 of the axles 26. Each of these rectangular hub sections 25 is formed with a cylindrical bore 25^a in its under face
30 to receive a stout expansion spring 27 which is confined by a cap plate 28 secured to the lower edge of tongue 10 by tap bolts 29. Each cap plate 28 has a cylindrical recess 28^a in which the lower end of spring 27 is
35 seated.

Freely journaled upon the opposite ends of each axle member 26 is a cone-shaped guide wheel 30 confined by a cotter pin 31 or some other suitable means. The inner
40 face of each of the guide wheels 30 is formed with a shallow groove or ball race 32 in which are mounted a series of anti-friction ball bearings 33 confined on the opposite side by a circular bearing plate 34 journaled upon the axle 26 alongside of the
45 tongue 10 and formed with a shallow groove or ball race 35.

The tongue 10 is provided with a pair of guide rollers 30 at each end. The expansion
50 springs 27 exert a downward pressure upon tongue 10 for holding the back gage 5 in close contact with the top surface of table 1. Said springs also exert an upward pressure upon the guide wheels 30 which run in peripheral contact with the inclined ways 16
55 of the rails 15 for centering the gage tongue 10 in the slot 2. Anti-friction bearings between the guide wheels 30 and the tongue 10 resist any inward thrust upon the wheels
60 with a minimum of friction.

It will be observed from this construction that since the gage tongue 10 is held out of wearing contact with the side walls of the slot 2, all wear between the tongue and table slot will be obviated. It will also be ob-

served that the wear between the rollers 30 and the guideways 16 will be reduced to a minimum and that any slight wear that may occur after long usage will be accurately and automatically compensated for by the self adjusting springs 27. The accuracy of the gage mounting will remain constant no matter what usage the cutting machine is subjected to.

What I claim is:

1. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, and automatically adjustable spring actuated means carried by said tongue and engaging beneath said table for retaining said gage in position.

2. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, and self-adjusting guiding means carried by said tongue and engaging beneath said table for retaining said gage in position.

3. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, and antifriction guide bearings between said tongue and said table adapted to center said tongue in said slot and retain said gage in position.

4. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, and guide wheels carried by said tongue and engaging beneath said table.

5. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, guide wheels carried by said tongue and engaging beneath said table, and anti-friction bearings between said guide wheels and said tongue.

6. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting freely through the slot of said table, guide wheels carried by said tongue and engaging beneath said table, and springs between said tongue and said guide wheels for the purpose set forth.

7. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and pro-

jecting freely through the slot of said table, guide wheels carried by said tongue and engaging beneath said table, anti-friction bearings between said guide wheels and said tongue, and springs carried by said tongue and holding said guide wheels in engagement.

8. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting through the slot of said table, guideways beneath said table and parallel with said slot, and guide wheels mounted upon said tongue and engaging said guideways.

9. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting through the slot of said table, guideways beneath said table and parallel with said slot, an axle adjustably mounted in said tongue, and guide wheels mounted upon said axle and held in engagement with said guideways.

10. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting through the slot of said table, guideways beneath said table and parallel with said slot, an axle movably mounted in said tongue, a spring confined between said tongue and said axle, and guide wheels mounted upon said axle and yieldingly held in engagement with said guideways.

11. The combination, in a paper cutting machine, of a slotted bed or table, a back gage adjustably mounted upon said table, a guide tongue secured to said gage and projecting through the slot of said table, parallel guideways arranged in planes inclined to the horizontal upon opposite sides of said slot beneath said table, and beveled guide wheels mounted upon said tongue and held in engagement with said inclined guideways.

12. The combination, in a paper cutting machine, of a slotted bed or table, inclined guideways projecting beneath said bed or table and parallel with said slot, a back gage adjustable over the surface of said bed or table, a tongue secured to said gage and projecting through said slot, beveled guide wheels adjustably mounted upon said tongue and engaging said inclined guideways, and springs interposed between said guide wheels

and said tongue for adjustably holding said wheels in engagement with said guideways.

13. In a mechanism of the character described, the combination of a slotted bed or table having guideways presented beneath it, a back gage adjustable over the surface of said bed or table, a tongue secured to said gage and projecting freely through said slot, guide wheels adjustably mounted upon said tongue and engaging said guideways, anti-friction bearings interposed between said guide wheels and said tongue, and self-adjusting means for retaining said wheels in engagement with said guideways.

14. In a mechanism of the character described, the combination of a slotted bed or table having guideways presented beneath it, a back gage adjustable upon said bed or table, a guide tongue projecting from said gage through said slot and formed with guide sockets, axles movably mounted in the sockets of said tongue and having guide wheels journaled upon them, and means confining said axles in said sockets to hold said wheels in engagement with said guideways.

15. In a mechanism of the character described, the combination of a slotted bed or table having guideways presented beneath it, a back gage adjustable upon said bed or table, a guide tongue secured to said gage and projecting through said slot, said tongue being formed with guide sockets, axles movably mounted in the sockets of said tongue and having guide wheels journaled upon them, and springs confined in said sockets in engagement with said axles to hold said wheels in engagement with said guideways.

16. In a mechanism of the character described, the combination of a slotted bed or table, guideways beneath the bed or table parallel with said slot, a back gage adjustable upon said bed or table, a guide tongue secured to said gage and projecting through said slot, said tongue being formed with guide sockets, axles movably mounted in the sockets of said tongue and formed with spring receiving sockets, guide wheels journaled upon said axles, springs confined in said axle sockets for supporting said axles, and anti-friction bearings between said wheels and said tongue.

GEORGE H. HOLDT.

Witnesses:

EUGENE KETCHUM,
CORDES LUCAS.