No. 722,984. PATENTED MAR. 17, 1903.

W. HOLDSWORTH.

GILL DRAWING FRAME.

APPLICATION FILED JUNE 12, 1901.

NO MODEL. 4 SHEETS—SHEET 1.

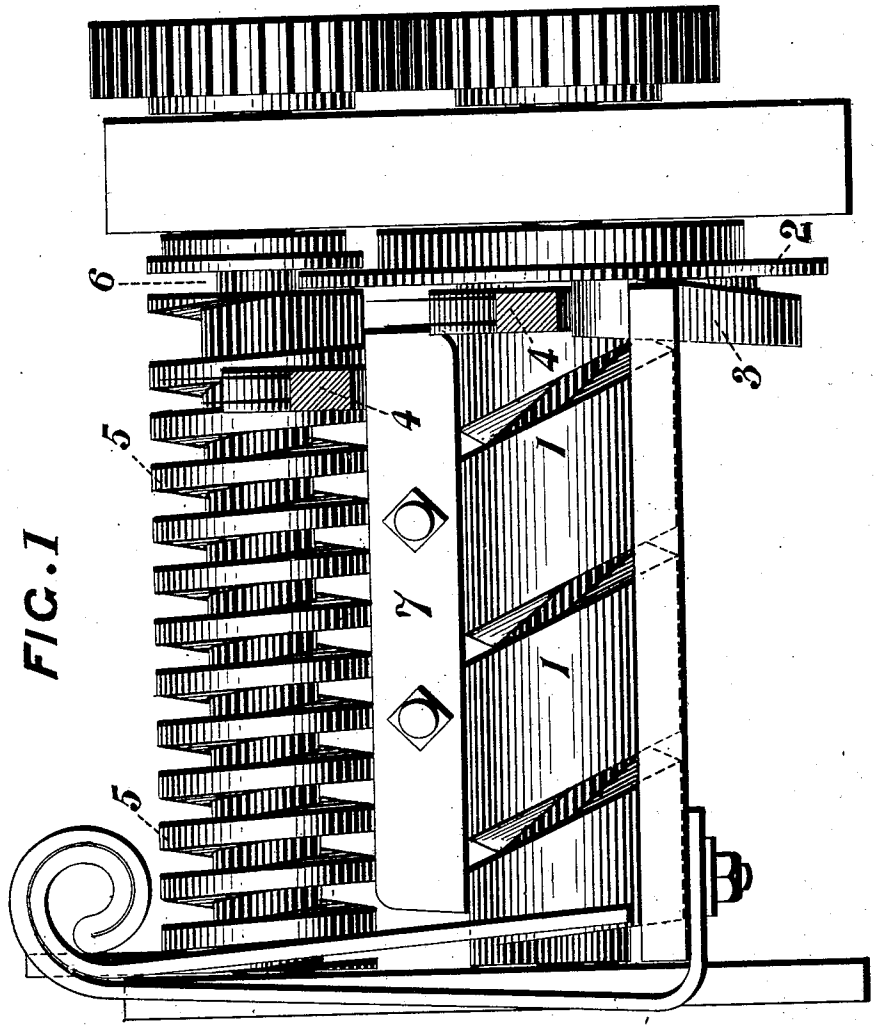


FIG. 1

WITNESSES

Walter Brierley

Gervase Appleyard.

INVENTOR

William Holdsworth.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 2.

FIG. 3

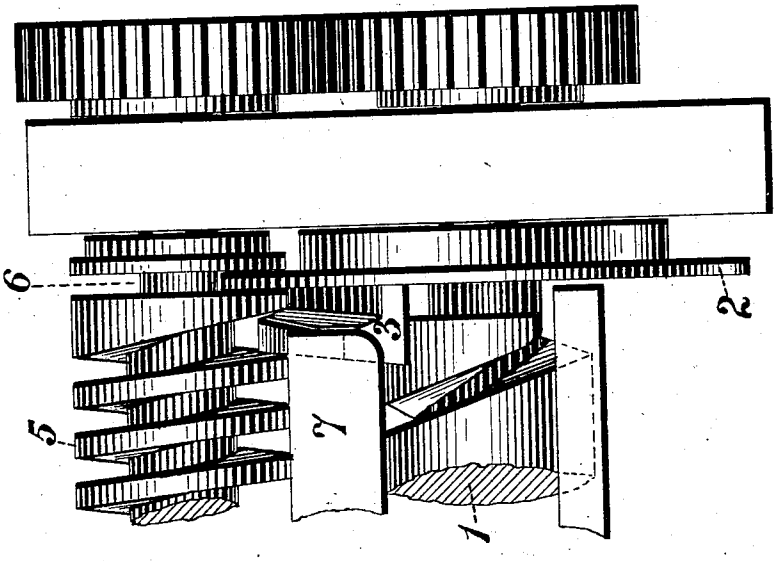
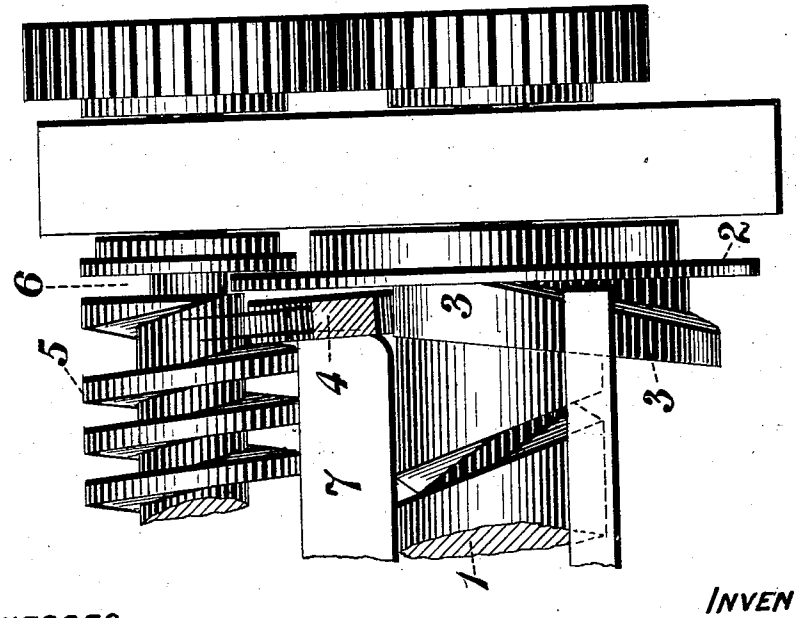


FIG. 2



WITNESSES

Walter Brierley

Gervase Appleyard

INVENTOR

William Holdsworth

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 3.

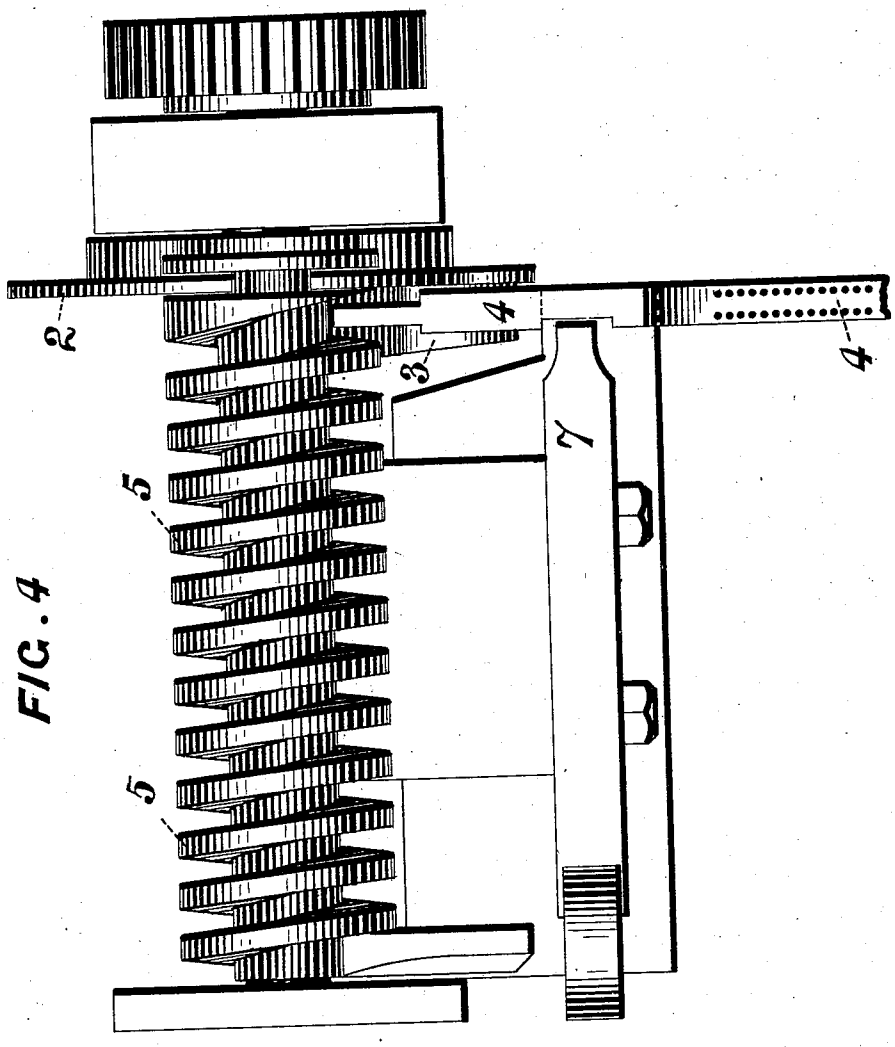


FIG. 4

WITNESSES

Walter Brierley

Gervase Appleyard.

INVENTOR

William Holdsworth

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 722,984. PATENTED MAR. 17, 1903.

W. HOLDSWORTH.

GILL DRAWING FRAME.

APPLICATION FILED JUNE 12, 1901.

NO MODEL. 4 SHEETS—SHEET 4.

FIG. 6

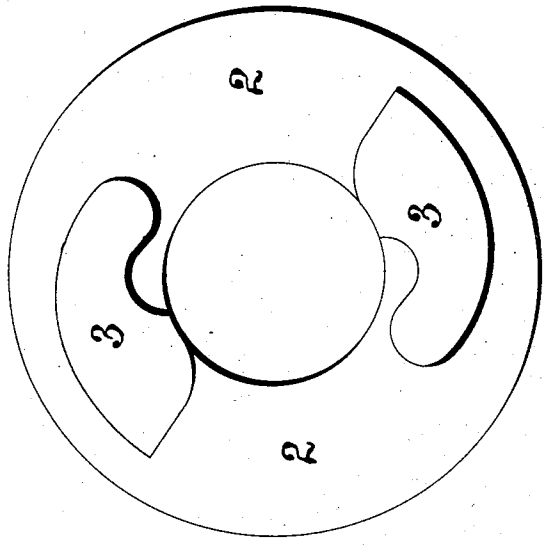
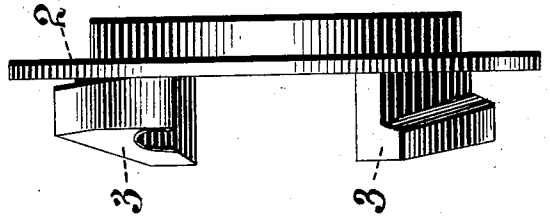


FIG. 5



WITNESSES

Walter Brierley

Gervase Appleyard.

INVENTOR

William Holdsworth

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM HOLDSWORTH, OF HALIFAX, ENGLAND.

GILL-DRAWING FRAME.

SPECIFICATION forming part of Letters Patent No. 722,984, dated March 17, 1903.

Application filed June 12, 1901. Serial No. 64,324. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HOLDSWORTH, machine-maker, a subject of the King of Great Britain and Ireland, and trading as James Holdsworth and Sons, of Mount street, Halifax, in the county of York, England, have invented certain new and useful Improvements in Gill-Drawing Frames, (for which I have obtained provisional protection in Great Britain and Ireland, No. 545, bearing date January 9, 1901,) of which the following is a specification.

This invention relates to improvements in the method of and means employed for actuating and guiding the gill-bars or fallers in gill-drawing frames, the object being to hold the bars or fallers as they are raised from the bottom or return screws and placed in the top operating-screws in such a manner that it is impossible for the fallers or bars to jam, and there is consequently little or no liability of breakage.

The invention consists in dispensing with the lifting-cam as heretofore used and substituting therefor small cams cast on the face of a disk or plate, which is itself secured on the bottom shaft, and as the fallers or bars are raised by the cams they are held between the face of the plates or disks and the ends of the saddles until they are taken by the top screws.

Referring to the drawings which form a part of this specification, Figure 1 is a side elevation of the top and bottom screws, showing my invention applied thereto and one of the fallers or gill-bars being lifted up. Fig. 2 shows a faller or gill-bar passing between the end of the saddle and the disk. Fig. 3 shows the cam and disk engaging with the top screws. Fig. 4 is a plan view showing a faller or gill-bar coming up between the end of the saddle and the disk. Fig. 5 is a side elevation of a disk with two lifting-cams thereon. Fig. 6 is a plan view of Fig. 5.

According to this invention on each bottom screw-shaft 1 is firmly fixed a plate or disk 2, on the face of which is cast or fixed one or more cams 3 3 for raising the fallers or gill-bars 4 from the bottom screw 1 to the top screw 5. The outer edge of the plate or disk 2 runs in a groove or recess 6 in the top screw 5, and the periphery of the cam 3 is a portion of a screw corresponding in pitch and shape to the entrance or leading-in portion of the top screw 5, with which it meshes. The plate or disk 2 and the end of the saddle 7 form a channel or guide up and in which the gill-bar or faller 4 is raised by the cam 3 clear of the upper surface of the saddle 7, and is then taken by the top screw 5 in the ordinary manner.

By this improvement it is impossible for a faller to jam or work otherwise than correctly even when the machine is running at a considerably higher speed than would hitherto have been practical. Fallers having thick ends or even damaged ends can be employed in connection with this invention, whereas the use of such on machines fitted with the ordinary spring-guides would result in the fallers jamming and consequent breakage.

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

In a gill-drawing frame, the combination with the top and bottom screws and gill-bars, the top screw having an annular groove, of a circular disk or plate mounted at the end of the lower screw and having its periphery traveling in said annular groove, and a cam carried by the disk within the periphery thereof and designed to mesh with the thread of the top screw, the part of said disk projecting beyond the cam guiding and holding the bars as they are lifted into engagement with the top screw, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM HOLDSWORTH.

Witnesses:
WALTER BRIERLEY,
GERVASE APPLEYARD.