(No Model.) 2 Sheets—Sheet 1.

J. J. ALLEN.

MACHINE FOR GUMMING PAPER.

No. 386,863. Patented July 31, 1888.

Fig. 2.

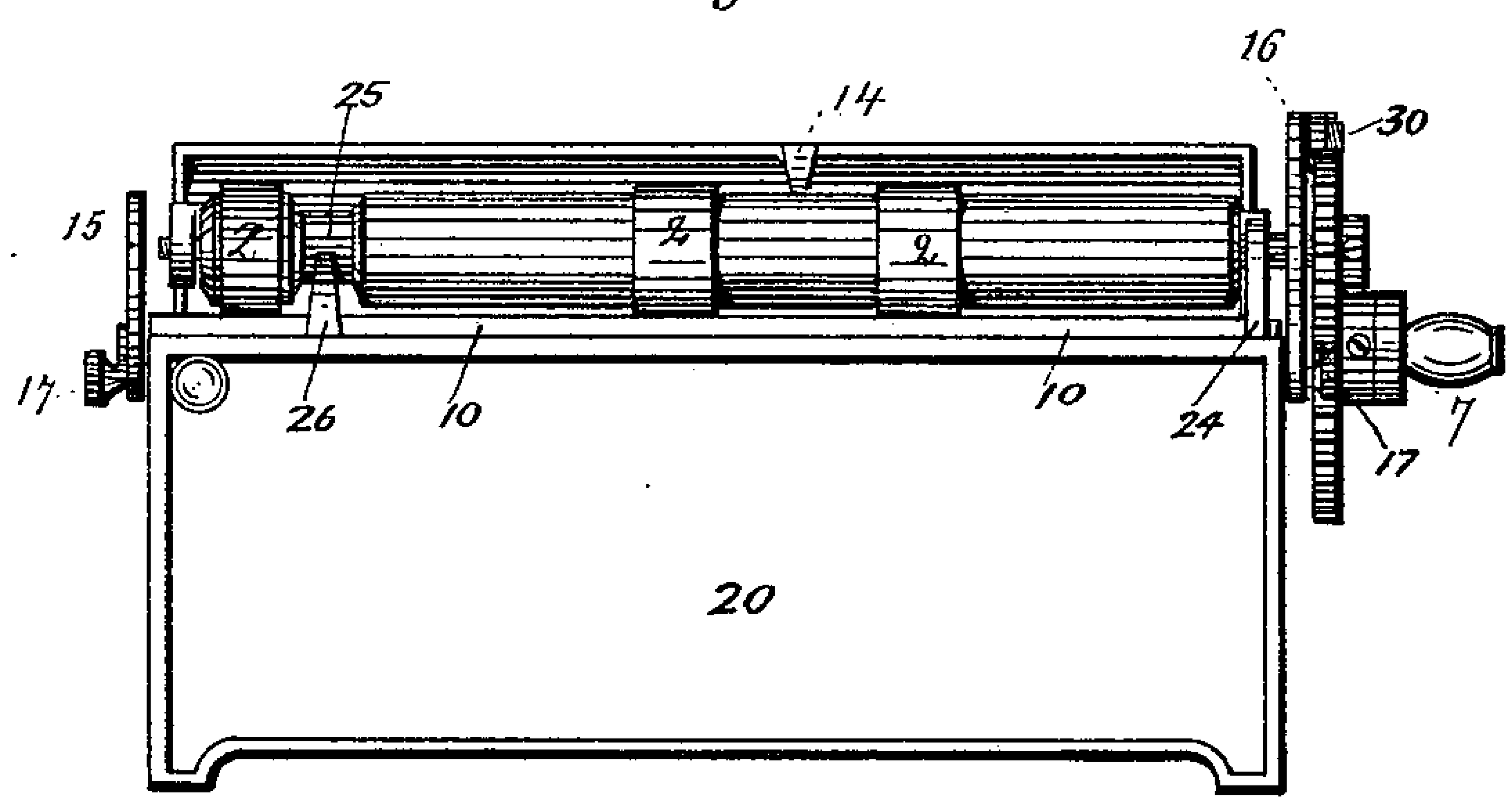
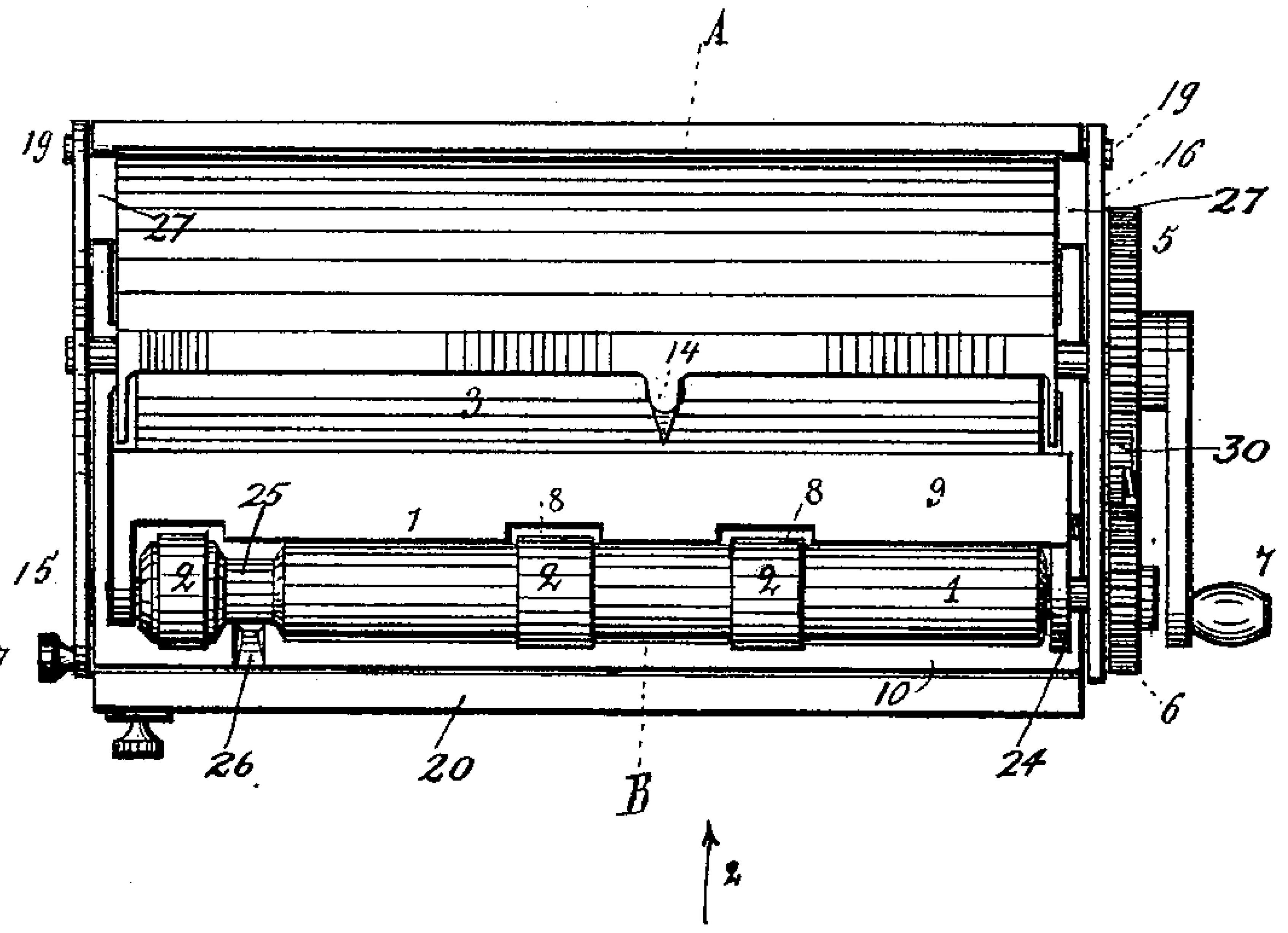


Fig. 1.



WITNESSES:

INVENTOR:
John James Allen

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. J. ALLEN.

MACHINE FOR GUMMING PAPER.

No. 386,863. Patented July 31, 1888.

Fig. 4.

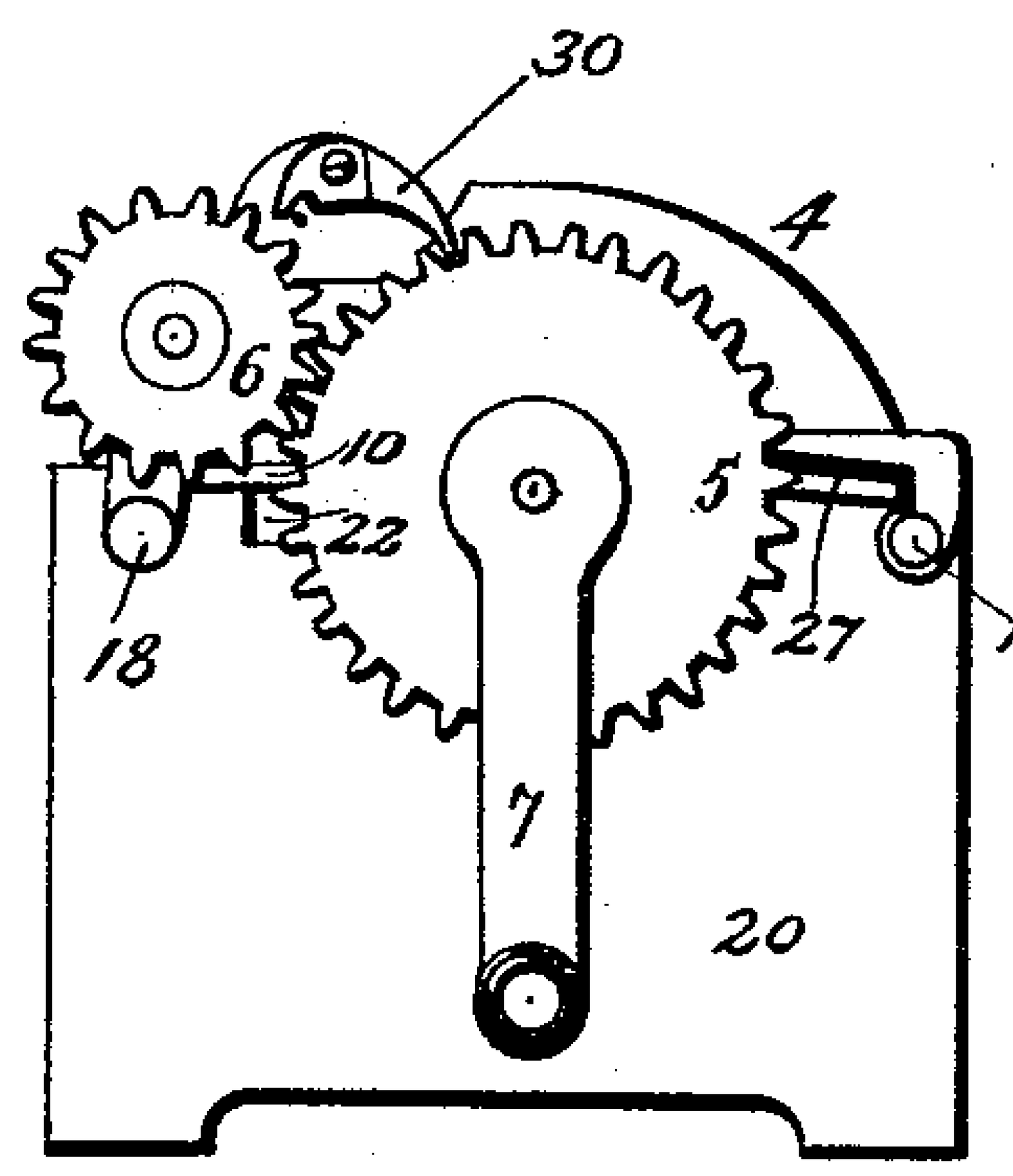


Fig. 9.

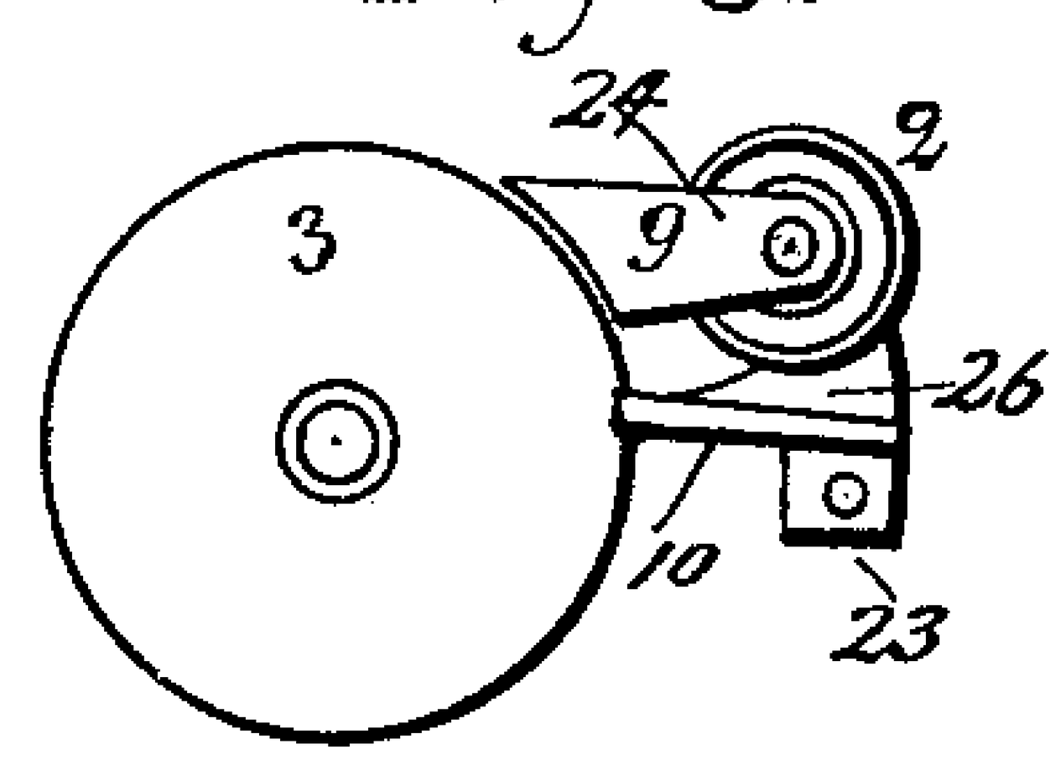


Fig. 3.

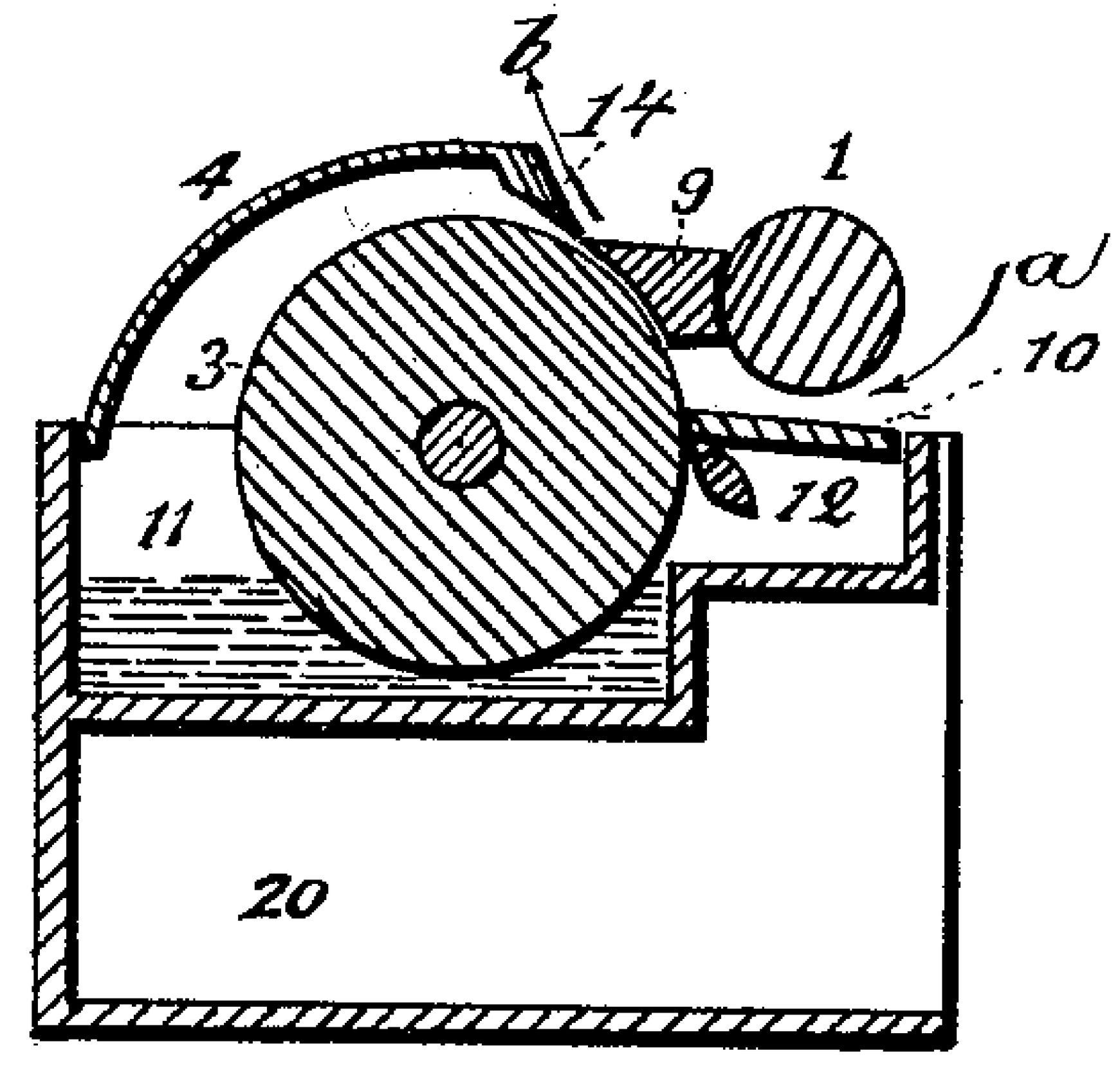


Fig. 7.

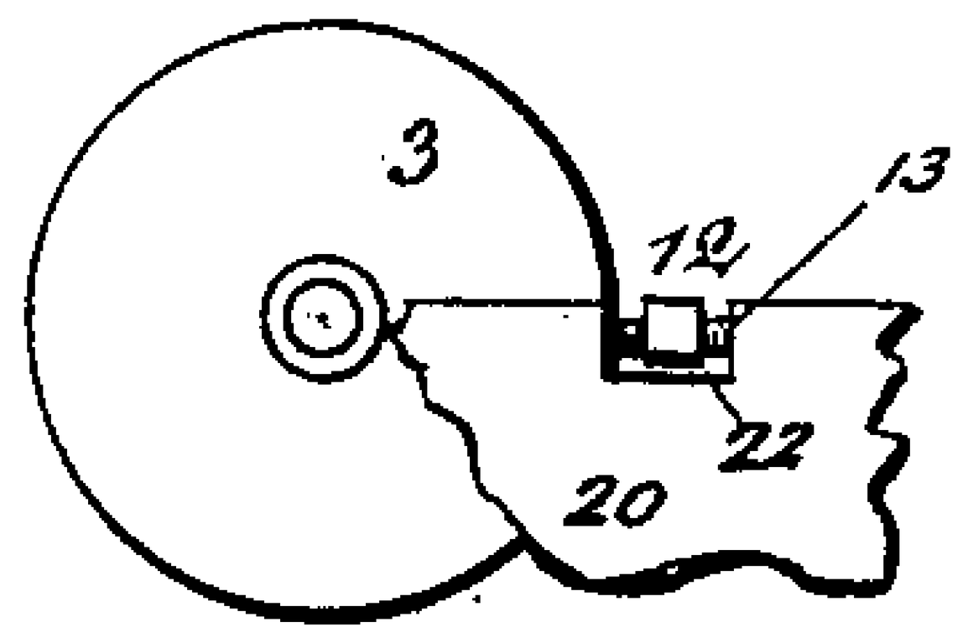


Fig. 5.

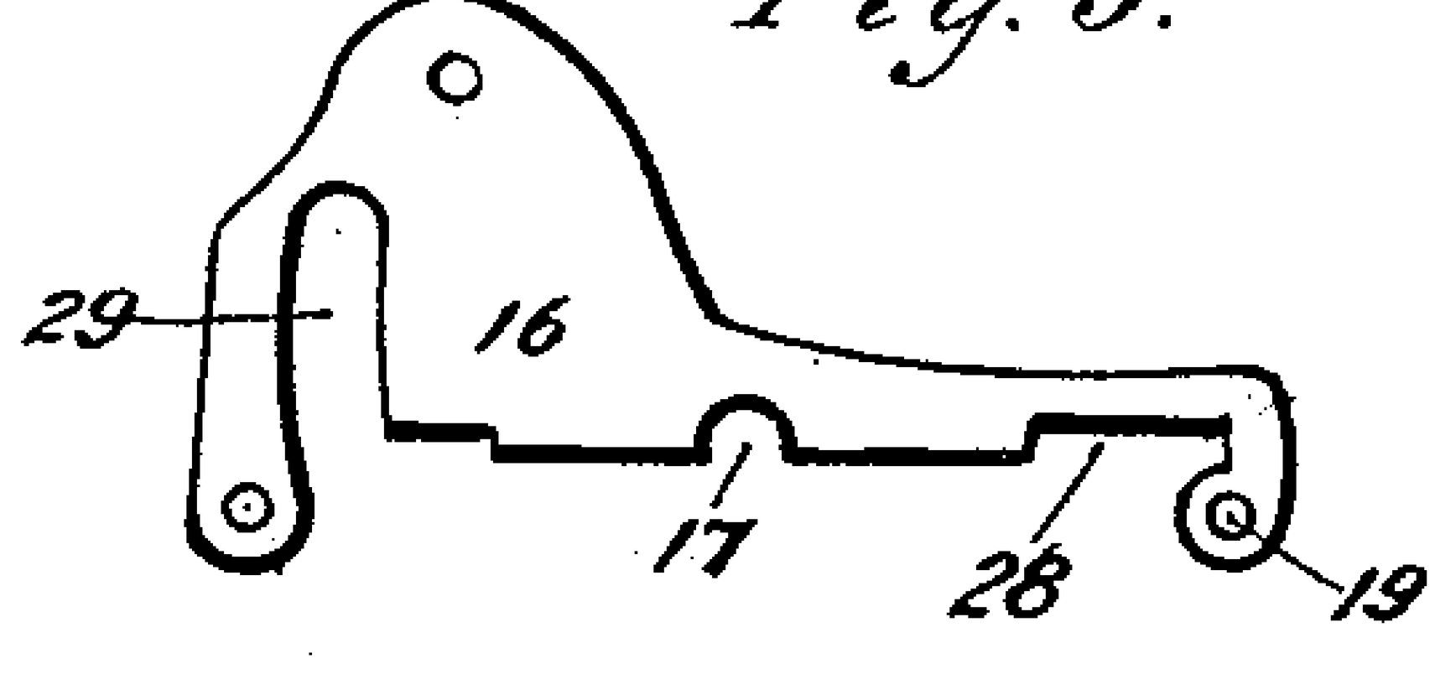


Fig. 6.

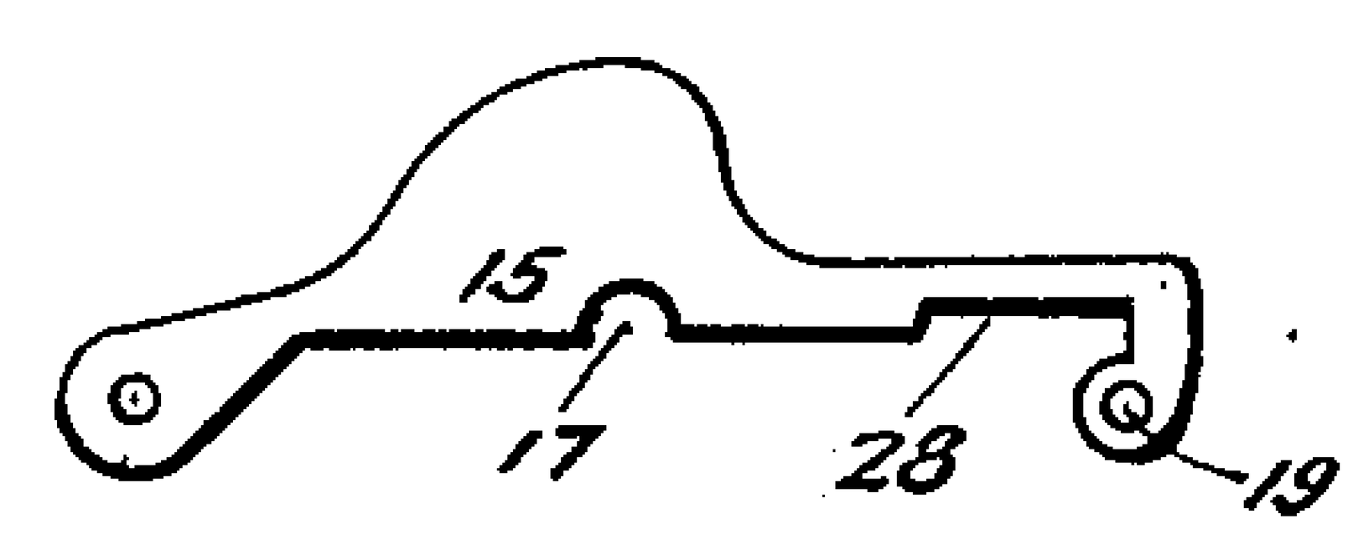


Fig. 10.

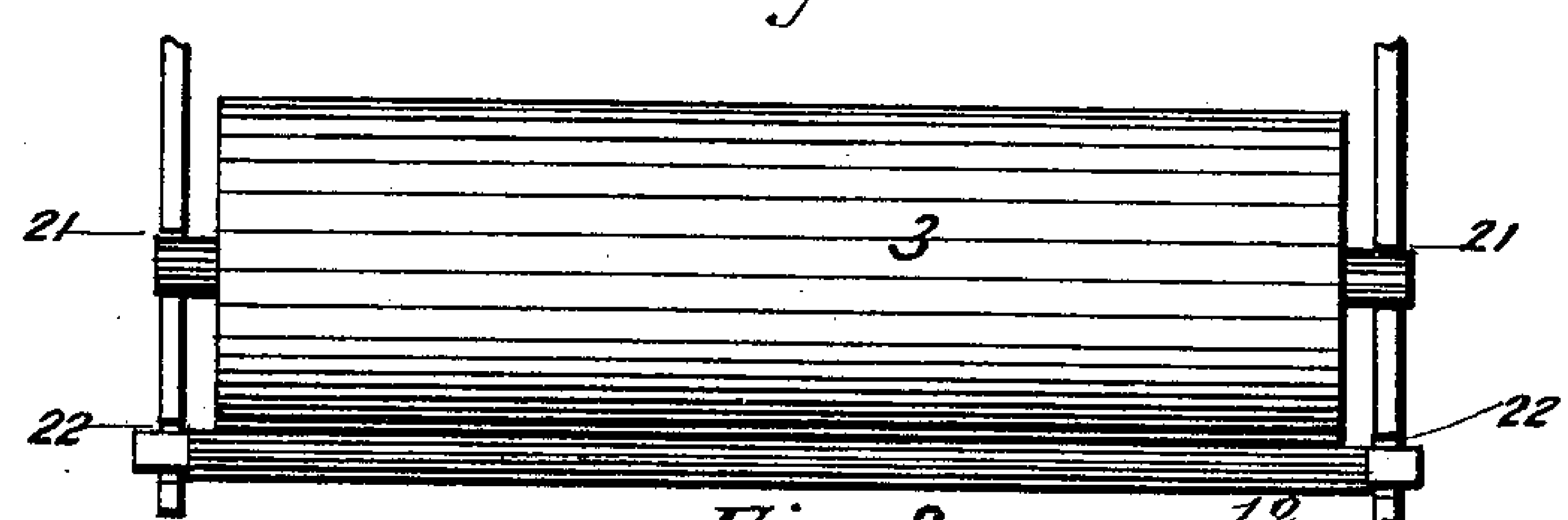
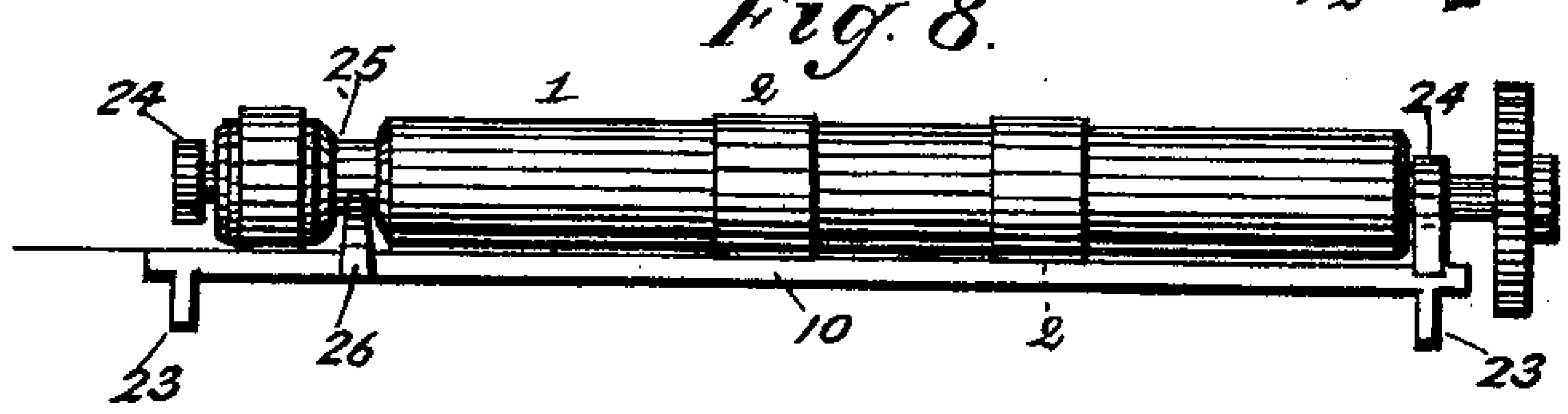


Fig. 8.



WITNESSES:

INVENTOR:
John James Allen.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN JAMES ALLEN, OF HALIFAX, COUNTY OF YORK, ENGLAND.

MACHINE FOR GUMMING PAPER.

SPECIFICATION forming part of Letters Patent No. 386,863, dated July 31, 1888.

Application filed February 14, 1887. Serial No. 227,649. (No model.) Patented in England November 5, 1885, No. 13,383, and in Austria-Hungary May 13, 1886, No. 21,137.

To all whom it may concern:

Be it known that I, JOHN JAMES ALLEN, a subject of the Queen of Great Britain, residing in Halifax, in the county of York, England, have invented certain new and useful Improvements in Machines for Gumming Paper, of which the following is a specification.

This invention constitutes the subject-matter of Letters Patent in Great Britain No. 13,383, dated November 5, 1885, and in Austria-Hungary No. 21,137, dated May 13, 1886.

This invention relates to machines to be employed for applying a coating of gum or paste to paper or labels, thereby dispensing with the use of a brush and avoiding the waste and labor incidental to hand-gumming.

My improved machine is constructed with a gumming-roller revolving in a trough or vessel containing the paste or gum, with a strickle or scraper for removing the excess of gum from the roller, and with devices for feeding the paper or labels into contact with the gummed surface of the roller in order that it may impart its coating of gum to the paper or label. The paper or label is fed by a feeding-roller, and passes between the periphery of the gumming-roller and a guide-bar, by which it is held in contact with the gumming-roller. The gummed paper is lifted off from the gumming-roller by a spur or finger over which it rides and which directs it out of the machine.

Figure 1 of the accompanying drawings is a plan view of the machine. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical transverse section cut through line A B in Fig. 1. Fig. 4 is an end view of the machine. Figs. 5 and 6 are elevations of the locking-plates on opposite ends of the machine. Fig. 7 is a fragmentary end elevation looking in the same direction as Fig. 3. Fig. 8 is a front elevation of the feeding or intake roller and feed-plate. Fig. 9 is an end elevation of the gumming-roller guide-bar, intake-roller, and feed-plate; and Fig. 10 is a plan of the gumming-roller and strickle.

The several parts are designated by reference-numbers, of which—

Number 1 designates the intake roller or feed; 2 2, rubber rings placed thereon at intervals; 3, the gumming-roller; 9, the guide-bar; 10, the feed-plate, and 12 the strickle.

The entire mechanism is mounted on a box or base, 20, preferably of cast metal, which, as best shown in Fig. 3, is constructed to form a trough, 11, for holding the gum or paste. At the opposite ends of this trough are notches 21 21, Fig. 10, which form bearings for the journals of the gumming-roller 3. The ends of the trough are also formed with notches 22 22, (shown in Figs. 7 and 10,) into which are dropped the opposite ends of the strickle 12. This strickle consists of a bar having a true straight edge, which is adjusted parallel with and very close to the periphery of the gumming-roller 3, so that as the latter revolves the strickle will wipe off the excess of gum from its surface and will leave thereon a thin film of uniform thickness. The thickness of this film may be adjusted by screws 13 13, which pass horizontally through the opposite ends of the strickle and bear against the front and rear sides of the rear notches, 22 22. By lifting out the strickle and turning these screws forward or back the strickle will be set nearer to or farther from the gumming-roller.

A feed-plate, 10, is placed over the top of the trough, covering the space in front of the roller 3 and inclosing the strickle. Its ends drop into notches in the ends of the trough, and it has flanges 23 23, Fig. 8, which project inside the trough and prevent its longitudinal displacement. The intake-roller 1 is mounted in bearings over this plate 10, and the guide-bar 9, which is mounted behind the intake-roller, is fixed to the plate. The bearings for the roller 1 are formed by ears 24 24 projecting forwardly from the bar 9, as shown in Fig. 1. The right-hand one of these ears joins the plate 10, but the left-hand one stands above this plate, as shown in Figs. 1, 2, and 9, so that the edge of a sheet of paper may be introduced under the left-hand end of the intake-roller. The latter is reduced in diameter at 25, and a spur, 26, projects upwardly from the plate 10, and enters this reduced portion, thereby forming a partition to separate the left-hand end portion of the intake-roller from the main portion thereof to the right.

The gumming-roller 3 is protected by a hood or cover, 4, which shuts over the trough 11, and has flanges 27 27 projecting at its opposite ends. To the opposite ends of the box 20 are

pivoted locking-plates 15 and 16, by which the several parts are joined together in such manner that they may be readily taken apart for cleaning. The locking-plate 16 (shown in Fig. 5) is connected at the right-hand end of the box, being pivoted thereto by a stud at 19, so that it may be thrown back, and when in place it is fastened by a screw, 17, having a milled head, by which it may readily be screwed in or out. The locking-plate 15, which is shown in Fig. 6, is connected in like manner to the left-hand end of the box. Both plates have recesses 28 28 for engaging the flanges 27 27 on the hood 4, and notches 17 17 for engaging the journals of the gumming-roller 3. In addition the plate 16 has a deep notch, 29, for engaging the journal of the intake-roller 1.

The gumming-roller 3 is rotated by a crank, 7, and has a gear-wheel, 5, fixed to its spindle, which meshes with a pinion, 6, fixed to the spindle of the roller 1, so that by the rotation of the crank both the gumming and the intake rollers are driven. A gravity-pawl, 30, is pivoted to the locking-plate 16, as shown in Fig. 4, and engages the teeth of the wheel 5 in order to prevent the backward rotation of the gumming-roller.

The intake-roller 1 has rubber bands 2 2 placed over it at intervals to give it a frictional surface for engagement with the paper to be fed. These turn freely in notches 8 8 in the bar 9, and the feed-plate 10 directly beneath them is formed with slight depressions into which they project, so that they do not actually touch the feed-plate; but when a piece of paper or label is inserted between them, as denoted by the arrow *a* in Fig. 3, they engage or grip it and propel it forward against the gummed surface of the roller 3. The paper is thrust upward by the latter and enters between it and the guide-bar 9. This bar has its rear surface adjacent to the gumming roller curved or hollowed out parallel with the cylindrical surface of the roller, as shown in Fig. 3, and stands just sufficiently apart therefrom to avoid being gummed thereby, but close enough thereto to hold the paper into contact therewith during its upward passage, so that the paper receives a coating of gum from the roller. The advancing edge of the paper as it emerges from the guide-bar 9 is lifted from the surface of the gumming-roller to which it tends to adhere by means of a spur or finger, 14, which is formed, preferably, on the front edge of the hood 4, as shown in Figs. 1, 2, and 3. The gumming-roller may advantageously be formed with a peripheral groove, into which the point of this finger shall project to insure its taking under the advancing edge of the paper. The gummed paper or label is thus lifted off from the roller 3 and directed upwardly out of the machine in the direction denoted by the arrow *b* in Fig. 3.

When it is desired to gum only the edge of a piece of paper, the latter is inserted under the left-hand end of the intake-roller 1, so that its edge only comes in contact with the gumming-roller 3. In this case the spur 26 prevents its being thrust in too far, so that too wide a coating of gum would be applied to its edge.

I claim as my invention the following defined novel features, substantially as hereinbefore specified, namely:

1. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, and a stationary guide-bar concaved on its side adjacent to the roller set close to but out of contact therewith and adapted to hold the paper to be gummed against the surface of said roller.

2. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a strickle for wiping off any excess of gum from said roller, a stationary guide-bar concaved on its side adjacent to the roller and adapted to hold the paper to be gummed against the surface thereof, a feed-plate in front of said gumming-roller, and an intake-roller above said feed-plate adapted to draw the paper in and direct it between the roller and said guide-bar.

3. The combination of a trough for holding gum, constructed with notches in its ends, a gumming-roller mounted to rotate therein, a strickle mounted with its ends in said notches closely adjacent to said roller, and adjusting-screws turning in the opposite ends of said strickle and engaging said notches for adjusting the strickle toward or from the roller in order to vary the thickness of the film of gum applied thereto.

4. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a stationary guide-bar having a concave surface adjacent to said roller and adapted to hold the paper to be gummed against the surface thereof, and a take-off finger adapted to project under the advancing edge of the paper as it emerges from said guide-bar and lift it off the surface of said roller.

5. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a feed-plate in front of said gumming-roller, an intake-roller above said feed-plate adapted to feed the paper to be gummed toward the periphery of said gumming-roller, and a concaved-surfaced guide-bar adapted to hold the paper against the surface of the gumming-roller.

6. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a strickle for wiping off any excess of gum from said roller, a feed-plate above said strickle, an intake-roller above said feed-plate, and a guide between said intake-roller and the gumming-roller adapted to hold the paper to be gummed against the surface of the gumming-roller.

7. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a feed-plate in front of said gumming-roller, an intake-roller above said feed-plate

adapted to feed the paper to be gummed to the gumming-roller, and the bearings for said intake-roller insulated from the feed-plate at one end thereof in order to admit one edge of a sheet of paper thereunder, whereby the edge alone of the paper may be presented to the gumming-roller.

8. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a feed-plate in front of said gumming-roller and having an upwardly-projecting spur near one end, an intake-roller above said feed-plate and formed with a reduced portion, into which said spur projects, and the bearings for said intake-roller insulated from the feed-plate between the end thereof and said spur to admit one edge of a sheet of paper thereunder, whereby the edge alone of the sheet of paper may be presented to the gumming-roller and may be guided by said spur.

9. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a removable hood constructed to be set over said trough and to partially inclose said roller, and a take-off finger borne by said hood and adapted to project under the advancing edge of the paper after the latter has passed in contact with said roller and to lift it from the surface thereof.

10. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a removable hood constructed to be set over said trough, and locking-plates connected removably to the opposite ends of the trough and adapted when fastened in place to engage and hold down the journals of said roller and the ends of said hood.

11. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a removable feed-plate constructed to be set over said trough in front of said gumming-roller, an intake-roller mounted above and borne by said feed-plate, and locking-plates connected removably to the opposite ends of the trough and adapted when fastened in place to engage and hold down the journals of said gumming-roller and the ends of said feed-plate.

12. The combination of a trough for holding gum, a gumming-roller mounted to rotate therein, a removable feed-plate constructed to be set over said trough in front of said gumming-roller, an intake-roller mounted above and borne by said feed-plate, a guide adapted to hold the paper to be gummed against the surface of the gumming-roller fixed to and borne by said feed-plate, and fastening devices for confining the feed-plate to the trough, whereby it may be readily removable therefrom, and whereby the feed-plate, intake-roller, and the guide are simultaneously removable.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN JAMES ALLEN.

Witnesses:

WALTER BRIERLEY,

J. BRIERLEY HOWARD.