

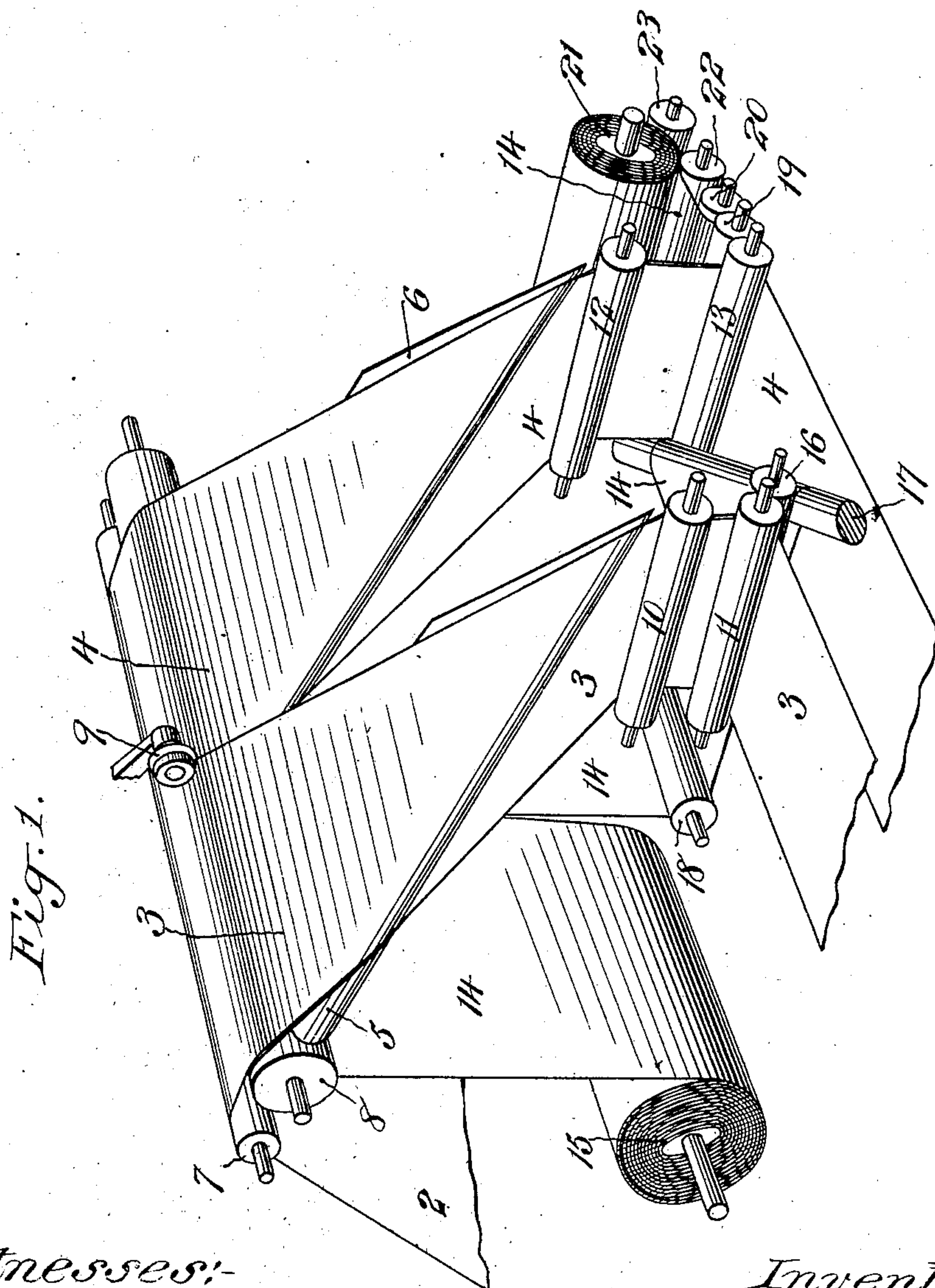
E. H. COTTRELL.  
ANTISMUTTING DEVICE FOR PRINTING MACHINERY.

APPLICATION FILED JULY 18, 1907.

898,727.

Patented Sept. 15, 1908.

4 SHEETS—SHEET 1.



Witnesses:  
J. George Barry,  
Henry Shiner.

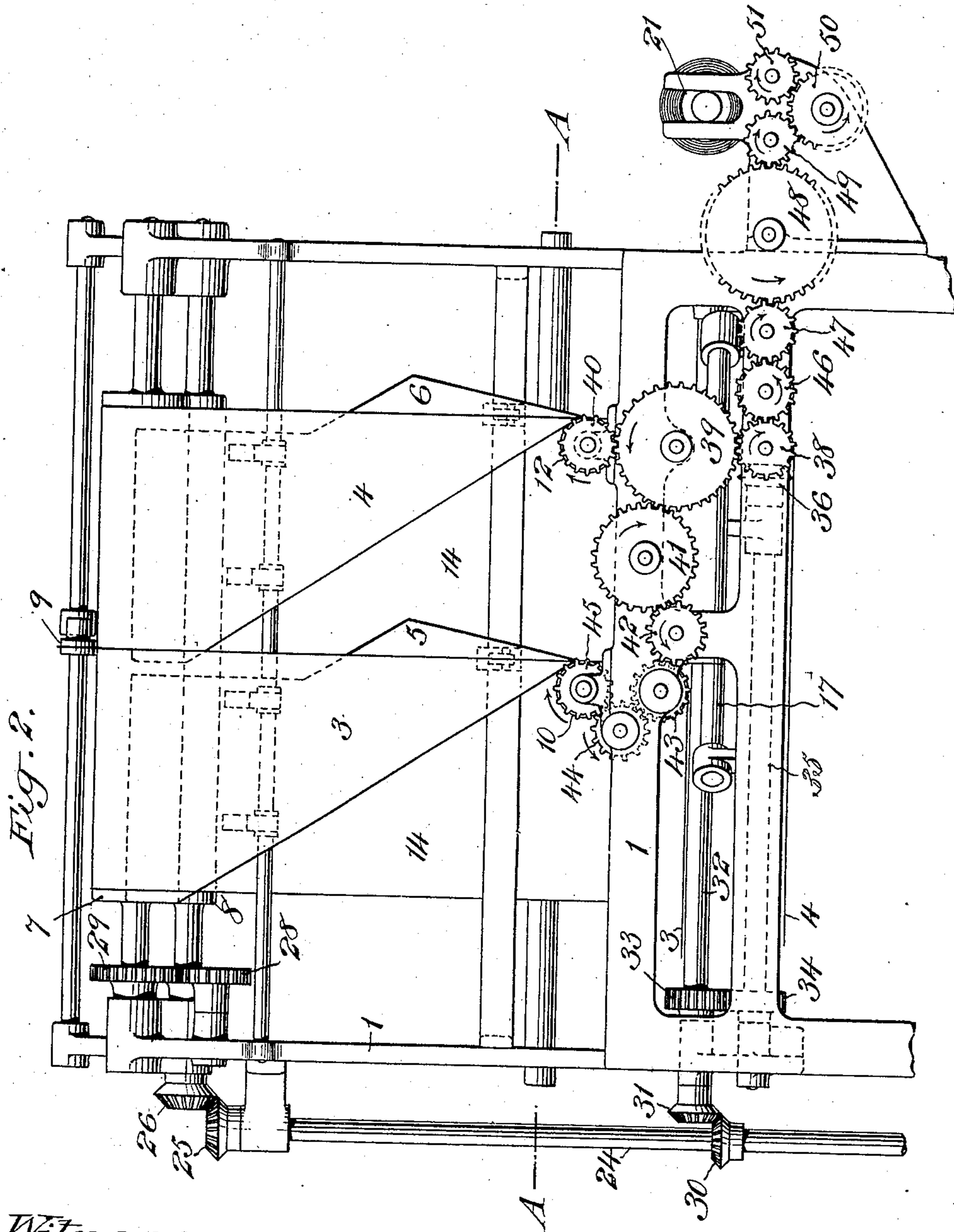
Inventor:  
Edgar H. Cottrell  
by attorneys  
Brown & Luard

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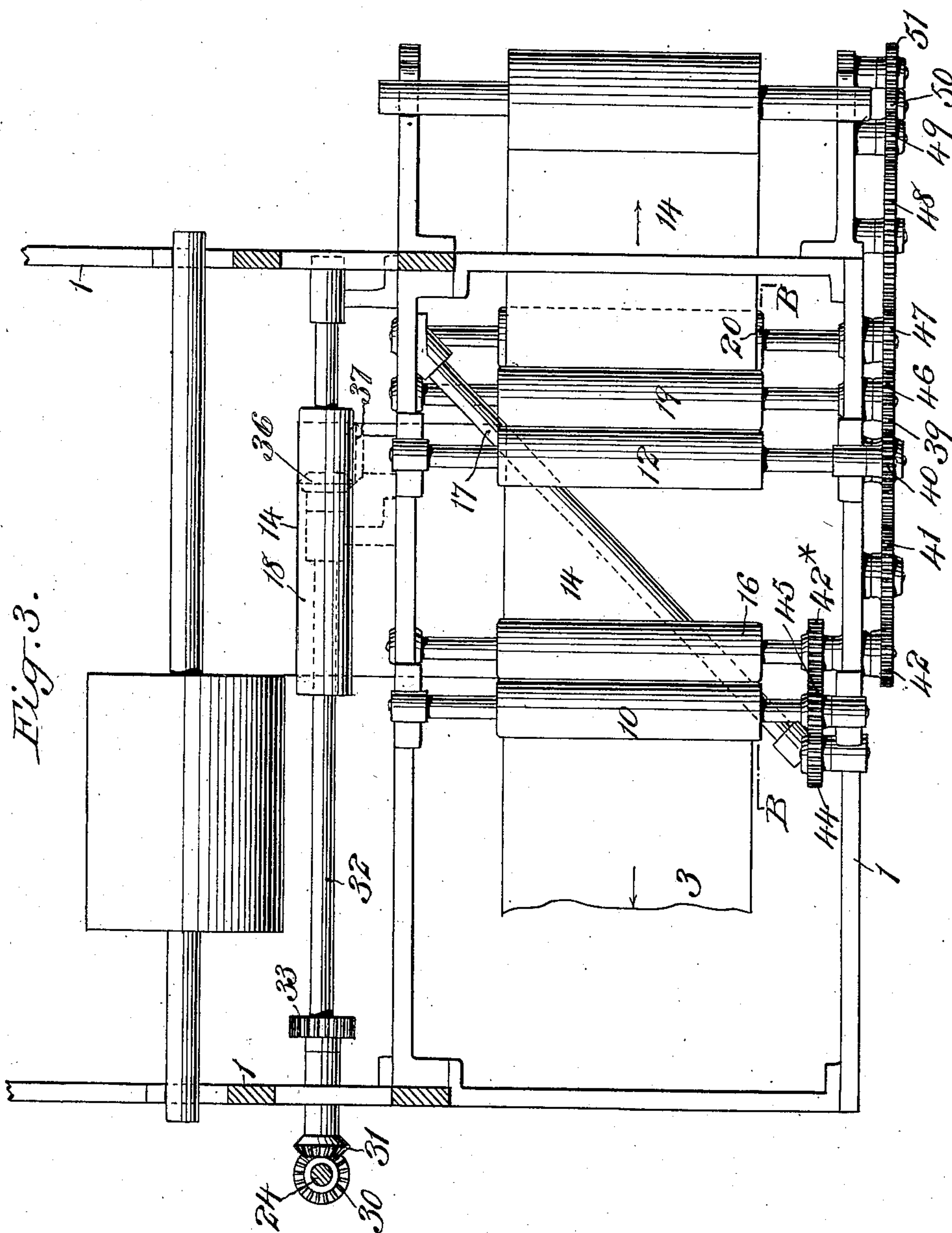
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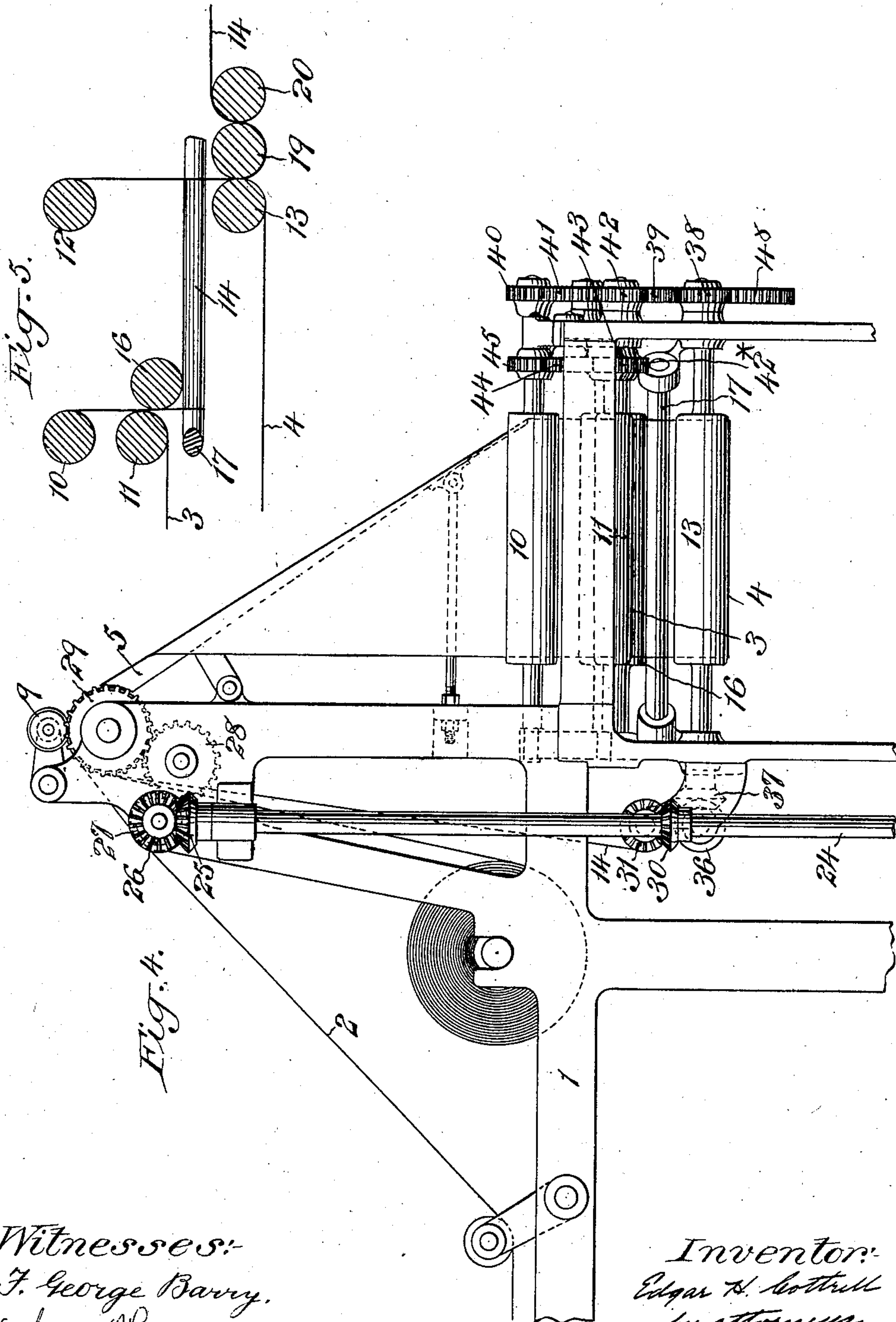
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F. George Barry.  
Henry Thine

Inventor:  
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Mowatt Seward.



# UNITED STATES PATENT OFFICE.

EDGAR H. COTTRELL, OF STONINGTON, CONNECTICUT, ASSIGNOR TO C. B. COTTRELL & SONS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## ANTISMUTTING DEVICE FOR PRINTING MACHINERY.

No. 898,727.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed July 18, 1907. Serial No. 384,365.

*To all whom it may concern:*

Be it known that I, EDGAR H. COTTRELL, a citizen of the United States, and resident of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Antismutting Devices for Printing Machinery, of which the following is a specification.

The object of this invention is to provide novel mechanism for preventing smutting of a plurality of printed webs as they are passed through a cutting and folding machine, the smut web being delivered from one roll and wound onto another roll after having been passed successively between each printed web and its former at the same speed as the speed of the printed web.

In the accompanying drawings, Figure 1 is a view in perspective showing so much of a cutting and folding machine as will give a clear understanding of the construction, form and arrangement of my improvement as applied thereto, Fig. 2 is a view in front elevation of a portion of the cutting and folding machine, Fig. 3 is a horizontal section taken in the plane of the line A—A of Fig. 2, Fig. 4 is a view in side elevation of a portion of the cutting and folding machine with my improvement applied thereto, and Fig. 5 is a detail section taken in the plane of the line B—B of Fig. 3.

The framing of the cutting and folding machine is denoted by 1. The printed web as it is fed to the cutting and folding machine before it is slit, is denoted by 2 and the two webs formed by slitting the web as it comes from the slitting machine, are denoted by 3 and 4 respectively. Two stationary formers 5 and 6 are shown mounted on the framing 1, around which formers the printed webs 3 and 4 are turned. Rolls 7 and 8 are mounted in the framing 1, over which the printed web is passed on its way to the formers. A slit-ter 9 of any well known and approved form is shown in position to slit the printed web as it comes into the cutting and folding machine, which slit-ter is shown herein as operating at the time that the web passes over the roll 8. The printed web 3 after leaving the former 5, passes around two longitudinally disposed horizontal upper and lower rolls 10 and 11 mounted in the framing 1. The printed web 3 is then led from the roll 11 in a direction at right angles to the direction of its movement as it enters the cutting and folding machine.

The printed web 4, after it passes over the former 6, passes around two longitudinally disposed horizontal upper and lower rolls 12 and 13. After passing around the roll 13, the printed web 4 is led from the machine in a direction at right angles to the direction in which it enters the machine and beneath the web 3.

The smut web, denoted by 14, is delivered from the roll 15 mounted in the framing 1. From the roll 15, the web passes upwardly over the roll 8, between it and the printed web 3. From thence the smut web passes around the former 5, between it and the printed web. A longitudinally disposed horizontal roll 16 is located adjacent to the printed web lower roll 11, around which roll 16 the smut web 14 passes. From thence the smut web passes around a horizontally disposed turning bar 17 arranged at an angle of forty-five degrees. The smut web 14 is then led rearwardly and around a roll 18 mounted in suitable bearings in the framing 1. The smut web is then led upwardly and again passes around the roll 8 but this time between it and the printed web 4. From thence the smut web passes around the former 6 between it and the printed web 4.

Longitudinally disposed horizontal rolls 19, 20 are mounted in the framing adjacent to the lower printed web roll 13 and the smut web 14 passes under the roll 19 and over the roll 20 and from thence on to the smut web winding roll 21 which is supported on two longitudinally disposed rolls 22, 23. The winding roll 21 is loosely mounted in the framing so that the said winding roll will at all times rest upon the friction driving rolls 22, 23.

The mechanism which I have shown for passing the printed webs and smut web over the formers at the same speed and for winding the smut web on to the winding roll is constructed, arranged and operated as follows. An upright shaft 24 is driven at the desired speed from the press. This shaft has a bevel gear driving connection 25, 26 with the roll 7 over which the printed web 2 passes before it is sub-divided. This roll 7 has a spur gear driving connection 27, 28, 29, with the roll 8 around which the smut web 14 passes on its way to the formers. The upright shaft 24 also has a bevel gear driving connection 30, 31, with a cross shaft 32 which carries the smut web roll 18 hereinbefore re-



ferred to. This shaft 32 has a spur gear driving connection 33, 34, with a transverse shaft 35 mounted in the framing, which shaft in turn has a bevel gear driving connection 5 36, 37 with the lower printed web roll 13. The roll 13 has a spur gear driving connection 38, 39, 40 with the roll 12. This roll 13 also has a spur gear driving connection 38, 39, 41, 42 with the smut web roll 16. This 10 smut web roll 16 has a spur gear driving connection 42, 43, with the lower printed web roll 11. This lower printed web roll 11 has a spur gear driving connection 43, 44, 45, with the upper printed web roll 10.

15 The printed web roll 13 has a spur gear driving connection 46, 47, with the smut web rolls 19, 20 and the smut web roll 20 has a spur gear driving connection 48, 49 with the roll 22 which in turn has a spur gear driving 20 connection 49, 50, 51 with the roll 23.

From the above description it will be seen that a single smut web may be provided for a plurality of printed webs, which smut web may be interposed between each printed 25 web and the former over which it is turned, the smut web being driven at the same speed as the printed webs and arranged also to present a fresh surface to each fresh surface of the printed webs. It will also be seen that 30 as soon as the smut web has been wound entirely on to the roll 21, the roll 21 may be used as the smut web delivery roll and the smut web again run through the machine. Furthermore, the smut web is turned in such 35 a manner after it has passed between the printed web 3 and its former that it presents its opposite face to the printed web 4 when it is passed between it and its former.

What I claim is:

40 1. In a cutting and folding machine, a plurality of formers, means for passing a plurality of printed webs over the formers, smut web delivery and winding rolls and means for passing the smut web from the delivery 45 roll successively between the formers and the printed webs at the same speed as the printed

webs and from the last former to the winding roll.

2. In a cutting and folding machine, a plurality of formers, means for passing a plu- 50 rality of printed webs over the formers, smut web delivery and winding rolls, friction driving rolls forming a support for the winding roll, and means for passing the smut web from the delivery roll successively between 55 the formers and the printed webs at the same speed as the printed webs and from the last former to the winding roll.

3. In a cutting and folding machine, a plurality of formers, means for passing a plu- 60 rality of printed webs over the formers, a smut web delivery roll mounted on an axis transversely of the machine, a smut web winding roll mounted longitudinally of the machine, a turning bar and means for pass- 65 ing the smut web from the delivery roll between one former and its printed web, thence around the turning bar, thence between a succeeding former and its printed web and from thence to the winding roll. 70

4. In a cutting and folding machine, a plurality of formers, means for passing a plurality of printed webs over the formers, a smut web delivery roll mounted on an axis 75 transversely of the machine, a smut web winding roll mounted longitudinally of the machine, friction driving rolls forming a support for the winding roll, a turning bar and means for passing the smut web from the delivery roll between one former and its printed 80 web, thence around the turning bar, thence between a succeeding former and its printed web and thence to the winding roll.

In testimony, that I claim the foregoing as my invention, I have signed my name in pres- 85 ence of two witnesses, this 9th day of July 1907.

EDGAR H. COTTRELL.

Witnesses:

F. GEORGE BARRY,  
HENRY THIEME.