

C. R. GUTSCH.
WEB PRINTING MACHINE.
APPLICATION FILED JUNE 5, 1908.

Patented Jan. 17, 1911.

981,923.

FIG. 1.

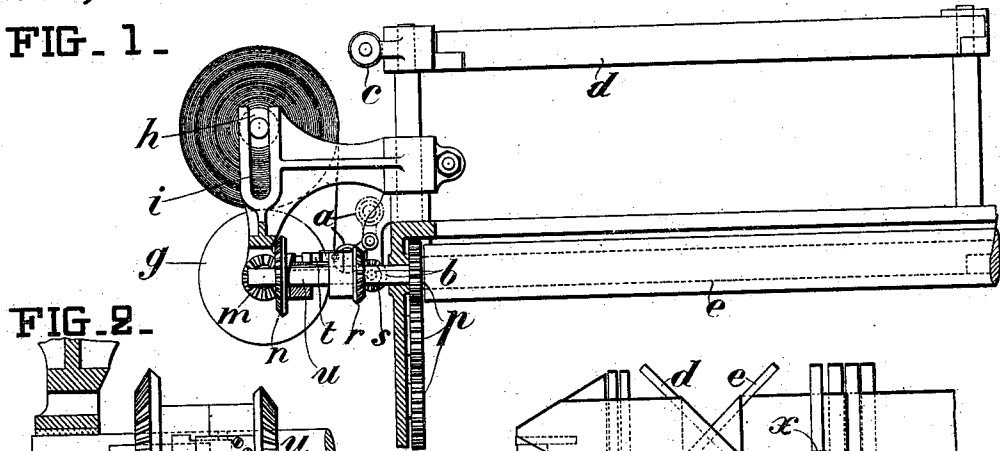


FIG. 2.

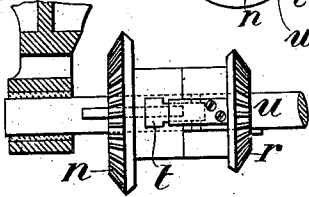


FIG. 3.

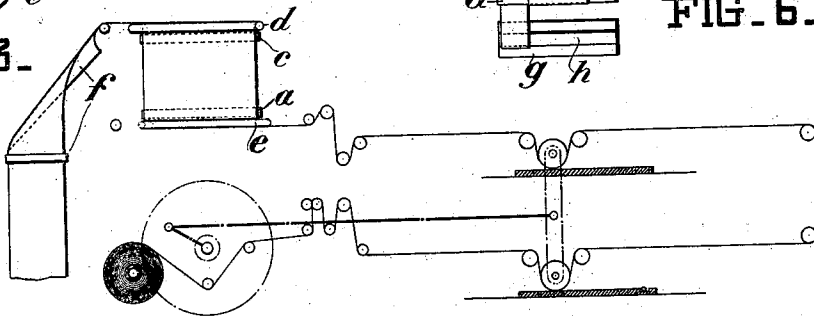


FIG. 6.

FIG. 4.

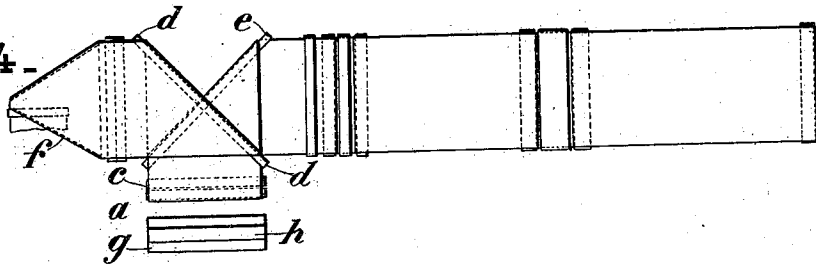
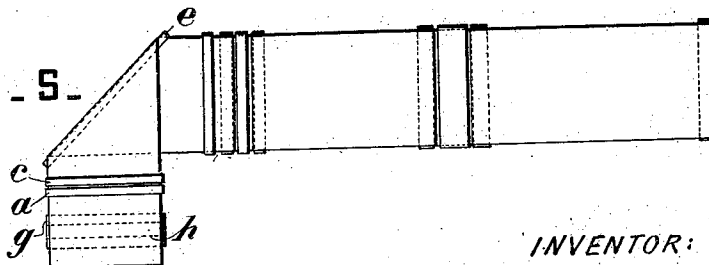


FIG. 5.



WITNESSES:

René F. Quine
William F. Martinez

INVENTOR:

Carl Rudolf Gutsch

By Attorneys,

Arthur C. Kaser & Umana

UNITED STATES PATENT OFFICE.

CARL RUDOLF GUTSCH, OF LÖRRACH, GERMANY.

WEB-PRINTING MACHINE.

981,923.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed June 5, 1908. Serial No. 436,809.

To all whom it may concern:

Be it known that I, CARL RUDOLF GUTSCH, a subject of the Grand Duke of Baden, and resident of Lörrach, Grand Duchy of Baden, Germany, have invented new and useful Improvements in Web-Printing Machines, of which the following is a full, clear, and exact specification.

The present invention relates to printing machines for paper webs.

The already known rotary quick printing machines and flat printing machines for paper webs work usually in the manner that the paper web is firstly printed, then cut into separate sheets and finally folded. Such printing machines are principally employed for printing newspapers. In such machines, and especially in small printing offices, it may occur that the machines are not at work throughout the entire day but are only used during certain hours for the newspaper printing and are obliged to remain idle the rest of the time.

In order to construct such machines to be more convenient in service and especially in order to render it possible for them in addition to the ordinary folding of a paper web simultaneously or separately to effect a rolling up of a portion thereof, the improved machine which forms the object of the present invention possesses a rolling or winding up mechanism for the paper, placed laterally out of the path of the paper web leading to the folder and connected with the driving gear of the machine by means of a releasable coupling gear so that it can also be put in operation during the folding and without interfering with this process to allow of the rolling up of a portion of the paper web.

In order to make clear at once the manifold application of the so improved machine, I may give a few examples of the increased applicability of the improved machine.

Assuming that the machine is fully employed for newspaper printing, then the rolling up mechanism will be uncoupled and out of action. The machine then works in the usual manner inasmuch as the printed paper web passes to the folder in the full width and quits the machine in the finished folded state. If, by way of example, only the half width of the paper web is to be used for the newspaper printing, and that with another part of the paper web, wrap-

ping paper for bakers, confectioners and so on, is to be prepared provided with corresponding printing, then only the one half paper web passes in the usual manner to the folder, while the other part after being printed passes directly to the engaged winding up device. One can therefore obtain from the machine at the same time newspapers and a paper web printed and rolled up.

If the operator wishes himself to produce an unprinted paper roll of narrower width during the utilization of the press in the usual manner, inasmuch as he does not require to use the paper web throughout its entire width, he can effect this very simply by utilizing the present device, inasmuch as he may cause the paper web on the machine to be divided into two parts by means of well known cutting mechanisms, of which parts only one traverses the press in the usual manner and is printed and folded, while the other part of the paper web passes to the engaged winding up device without imprint. The unprinted paper web of any desired width obtained in this manner can be removed from the press at any desired time after the gear for the winding up mechanism has been disengaged. The operator is therefore in the position during the printing of a portion of the paper web to roll up another portion thereof unprinted in roll form, and can later utilize this roll in the ordinary manner and pass it through the press or use it simply as wrapping paper.

Figures 1 and 2 of the drawing illustrate an embodiment of the invention, as far as is necessary for the understanding of the improvements. Fig. 1 shows a part of a printing press provided with the rolling up mechanism. Fig. 2 is a detail view of the coupling gear. Fig. 3 is a diagrammatic side view of the printing press (without the winding up rollers) and shows the course of the paper web for printing throughout the whole width and subsequent folding, the winding up mechanism being then put out of action, and Fig. 4 is a plan view thereof with the winding up rollers. Fig. 5 shows also diagrammatically the course of the paper web in the case in which the winding up mechanism is put in operation and the paper web is to be wound up throughout the entire width. Fig. 6 shows another application of the machine where one part of the paper web is led to the folder and another to the winding up mechanism.

In the application of the machine shown in Figs. 3 and 4 the paper after being printed passes over an obliquely placed guide-bar *e* to the side of the machine, then enters
 5 between two rollers *a*, *b* (Fig. 1) both arranged on the side of the machine and of which the roller *b* is the controlling or driving one, then passes upward, runs over an upper side roller *c*, then over an upper
 10 oblique guide-bar *d* crossing *e* at a right angle and is finally folded in the well known manner by means of the folder *f*. This is the course of the paper web when printed throughout its entire width. The machine
 15 is provided with a winding up mechanism, which in case of need enables the winding up of a portion of the paper web. This winding up mechanism is wholly placed on the side of the machine and near to the
 20 roller system *a*, *b* and consists according to the drawing simply of two superposed rollers, namely, of a lower driving roller *g*, and an upper roller *h*, which rests upon the
 25 roller *g* and is guided vertically displaceable in vertical bearing slots *i* (Fig. 1). The driving roller *g* impels the winding roller *h* by friction and can be actuated by the driving wheels *p* of the machine by means of three bevel gears *m*, *n* and *r*, *s*
 30 when these are put into engagement. The gear wheel *n* is longitudinally movable on its shaft *u* by means of a feather and groove (Fig. 2) so that it can be put into or out of gear with the corresponding tooth wheel *m*
 35 and a lock *t* is adapted to maintain the wheel *n* in or out of gear.

In Figs. 2, 3 and 4 the gear *m*, *n* is put out of action and the winding mechanism is therefore disengaged. The paper web has
 40 the course explained above. In Figs. 1 and 5 on the other hand the tooth wheel *n* engages with the tooth wheel *m*, the winding mechanism is engaged and the paper coming, as above, from the oblique guide-bar *e*,
 45 passes around the roller *a* and being fixed to the winding roller *h* is continuously wound upon it, whereby the winding roller according to the thickness of the enrolled web automatically adjusts itself in the ver-
 50 tical direction.

If only a portion of the width of the ma-

chine is being utilized, for instance, one half for the printing of a newspaper or for the folding mechanism, (which occurs principally in small offices), then it is possible
 55 by means of the above described winding device, as shown by Fig. 6, to effectively utilize the machine with a paper roll of greater width than would be necessary for the printing only, inasmuch as after putting
 60 in gear the driving mechanism for the winding device that part of the paper which is not used for printing the newspaper and which part is separated by means of a well known cutting device indicated at *x*, can be
 65 wound up upon the winding roller *h* simultaneously with the folding of the other part and without injury thereto. In this simultaneous double application, which, however, does not exclude the separate use
 70 of the folding mechanism or of the winding mechanism there is an especial advantage in the improved machine.

What I claim is:

In a printing machine for printing a
 75 paper web, the combination with a driving mechanism, a paper guide device and a paper folder, of an oblique guide to lead the paper web laterally out of the machine,
 80 guide-rollers on the side of the machine to receive said paper web, an upper oblique guide to reintroduce the paper web into the machine and to lead it to the folder, a winding up mechanism placed on the side of the machine and near to the said guide-rollers
 85 and a releasable gearing between the driving mechanism of the machine and the said winding up mechanism, so arranged that the winding up mechanism can be set in action even during the folding and without
 90 interfering therewith, for the purpose of winding up a portion of the paper web in addition to the usual folding of the web, simultaneously or separately therefrom, substantially as set forth.

In witness whereof I have hereunto signed my name this 26 day of May 1908, in the presence of two subscribing witnesses.

CARL RUDOLF GUTSCH.

Witnesses:

GEORGE GIFFORD,
 AMAND BRAUN.