To all whom it may concern:

Be it known that I, Frederik Schade, a subject of the King of Denmark, residing at No. 5 Asylgade, Skive, in the Kingdom of Denmark, have invented new and useful Improvements in Devices for Rolling Up Paper and the like, of which the following is a specification.

The present invention relates to an improved device for rolling up paper and the like, and more particularly to a device for rolling paper which has been folded lengthwise, the object of the invention being to provide a device of this character by means of which the rolled paper will be comparatively smooth and in which device the paper will receive a preliminary bending or rolling before being rolled into the form of a cylinder.

In the drawing Fig. 1 shows a side-view of the device, Fig. 2, a top-view of the same; Fig. 3 is a section along the line 3—3 in Fig. 2; Fig. 4 is a section along the line 4—4 in Fig. 2; Fig. 5 is a section similar to that in Fig. 4, only in a different form of construction, and Fig. 6 is the paper to be rolled.

It has heretofore been found almost impossible to smoothly roll paper that has been folded longitudinally, and the object of this invention is to accomplish this result and at the same time provide a device which can be operated at considerable speed.

On the bedplate 1 (Fig. 1) there are standards containing bearings for the reels, which include spindles 2 and 3, of which spindle 2 carries the roll of paper 4. The end of the paper is passed on to spindle 3, to which it can be attached by pressing it down into a groove in spindle 3 and by clamping it into said groove by means of a bar or rail 5 (Figs. 2, 4, and 5), after which the spindle 3 is given a couple of turns. Then the rods 6 (Figs. 2 and 4) are inserted into holes 7 (Figs. 1 and 4) in spindles 8 disposed on the spindle 3, the paper being rolled up on these rods 6 instead of on the smaller spindle 3. The rods 6 form a skeleton around which the paper is rolled or bent into polygonal shape in cross section; and as the rods 6 can be set at different distances from the centre, the rolling up can take place around as great a perimeter as may be desired.

The discs 8 are secured on the spindles 3 by means of screws 9 (Fig. 2) and, by loosening these screws, the discs can be shifted on the spindle 3, so that several widths of paper can be rolled up.

The spindle 3 has a square transverse section at one end, so that it can be passed into a hole in the axle 10 which will then carry it around with itself, said axle 10 being furnished with a rope-pulley 11, which by means of a rope 12 is turned by means of another rope-pulley 13 on the axle 2. The spindle 2 is turned round by means of a belt-pulley 14 (Fig. 2).

When the rolling-up is finished, the rods 6 are pulled out, and the paper can then be very tightly rolled from within by turning the spindle 3.

Instead of using rods to roll up the paper on, plane or curved plates 15 (Fig. 4) may be used.

By reason of the preliminary bending of the paper into polygonal form in cross section, the length of the paper is divided into a plurality of short sections the edges of which form parallelograms, and the inner folds of which are stretched almost to the same extent as the outer folds, the only places where it is possible for the paper to "crimp" being where the inner fold passes over the members 6 or 15, and therefore, when the members 6 or 15 are removed, the only function of the spindle 3 is to curve the sections of the paper, and this can be done at great speed. If the paper were rolled directly on to the spindle 3, the rolling would have to be done very slowly and carefully to prevent "crimping" along the whole length of the paper, and even then the result would be very unsatisfactory.

I claim—

1. A device for rolling paper, comprising a pair of reels, removable means carried by one of said reels for preliminarily bending the paper into a plurality of sections having parallel edges, and means carried by said reels for curving said sections to roll the
paper into cylindrical form upon the removal of said first means.

2. A device for rolling paper, comprising a pair of reels, a plurality of removable bars carried by one of said reels for preliminarily bending the paper into a plurality of sections having parallel edges, and a spindle carried by said reel centrally of said bars for rolling the paper into cylindrical form upon the removal of the bars.

In testimony whereof I have signed my name to this specification.

FREDERIK SCHADE.