

(No Model.)

2 Sheets—Sheet 1.

J. BOYER & C. M. GEYER.
PAPER CUTTER.

No. 417,140.

Patented Dec. 10, 1889.

Fig. I

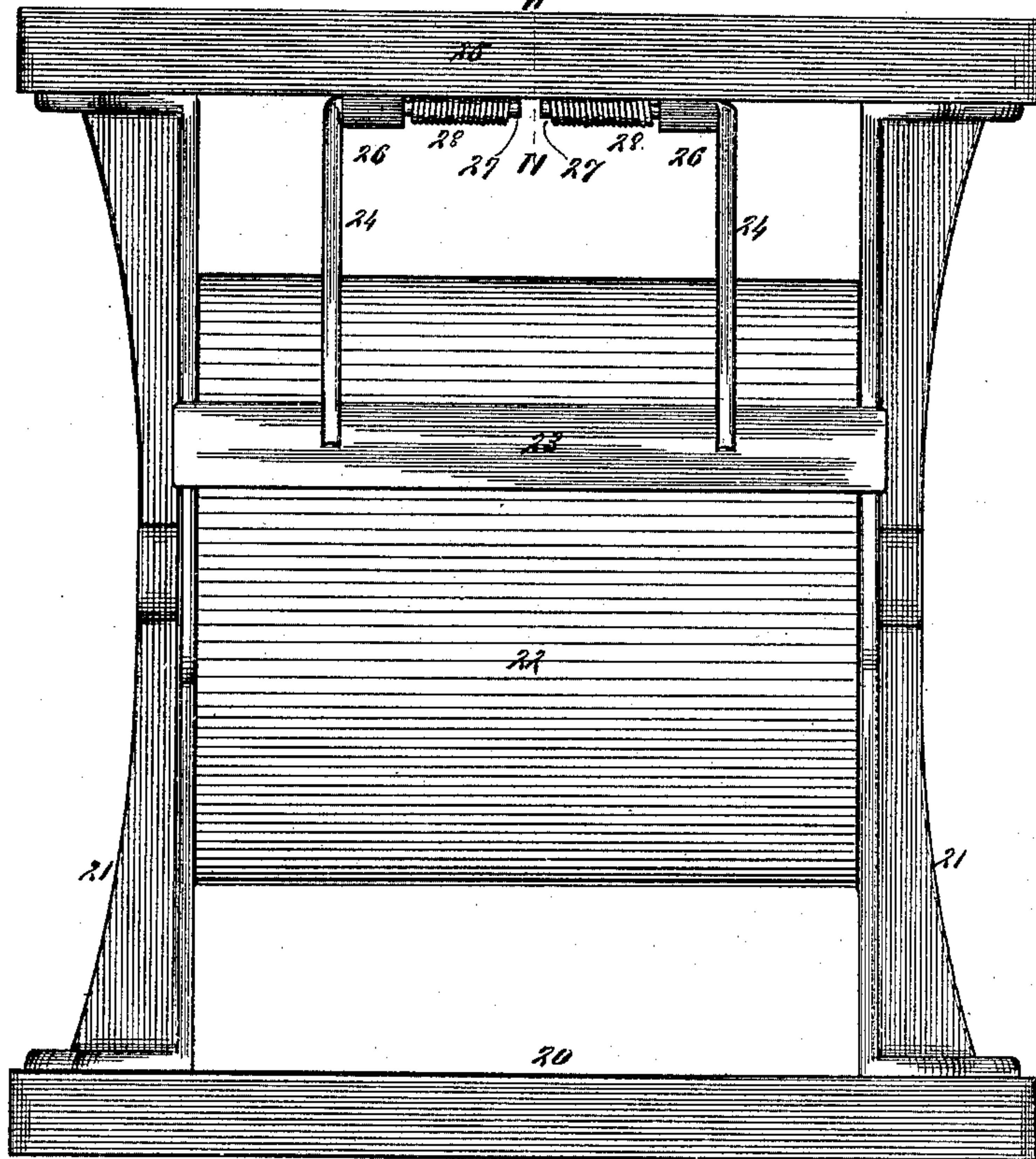


Fig. II

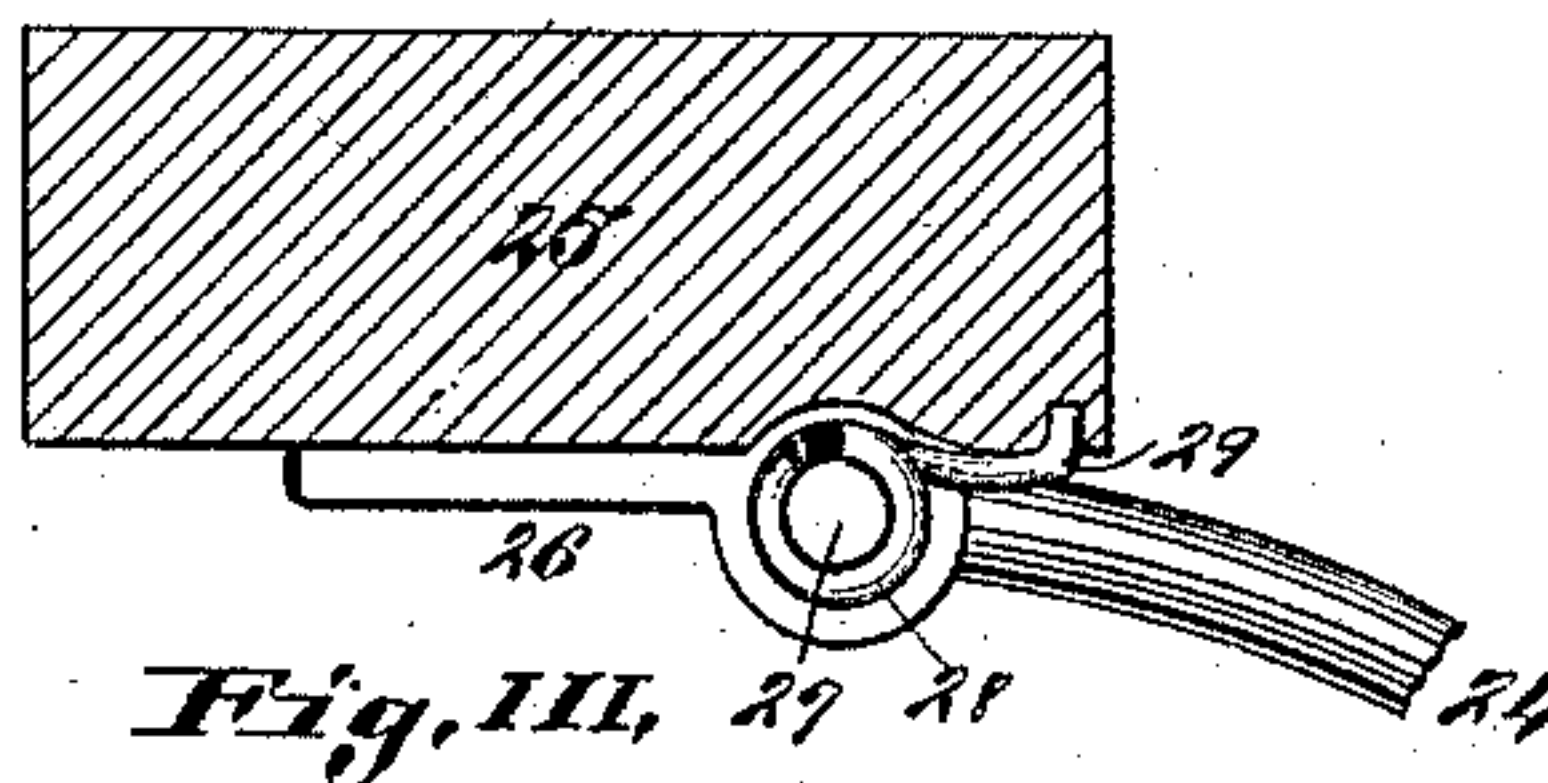


Fig. III

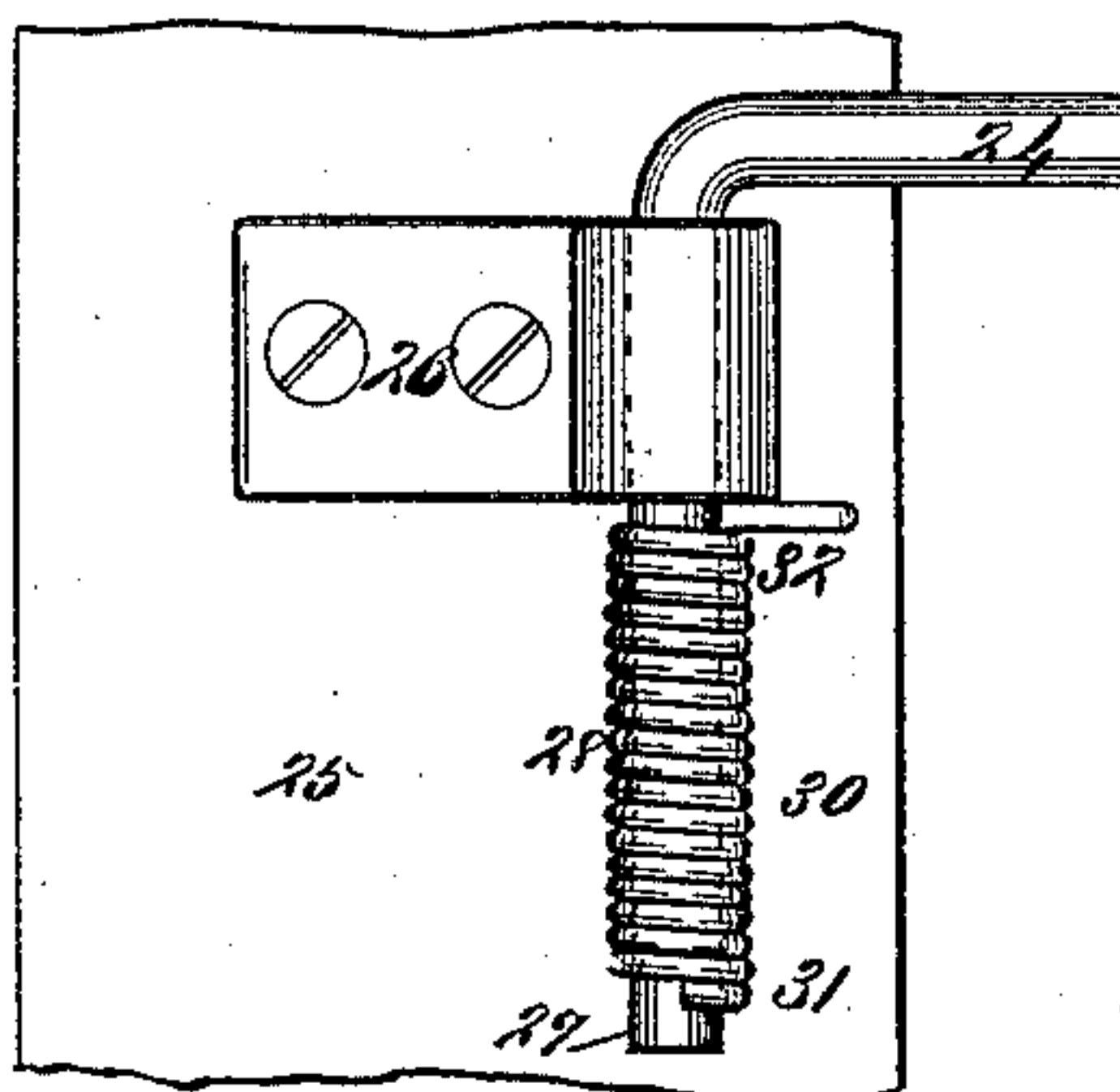
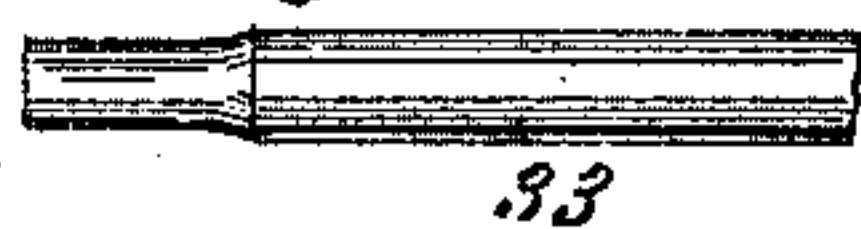


Fig. IV



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Fig. V.

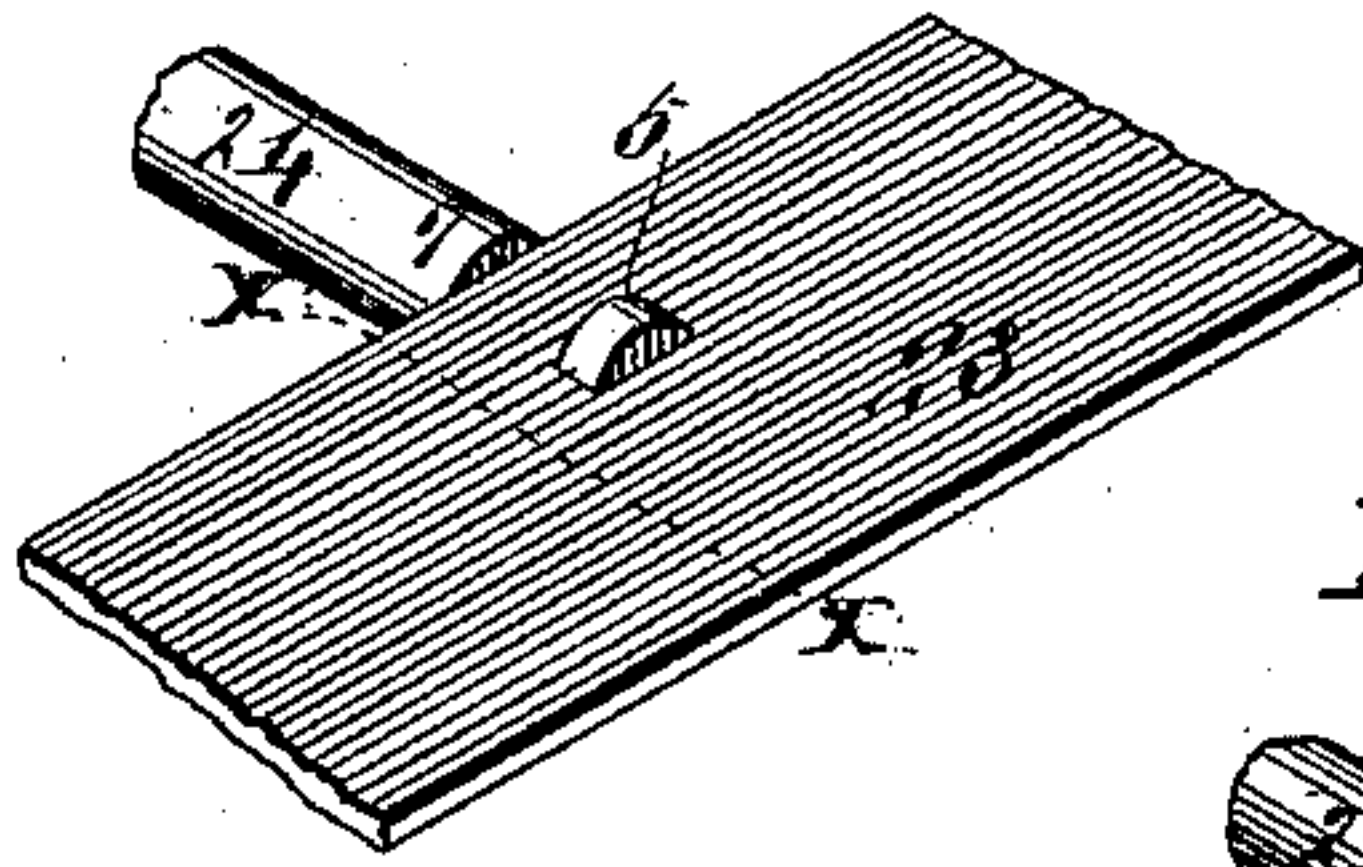


Fig. VI.

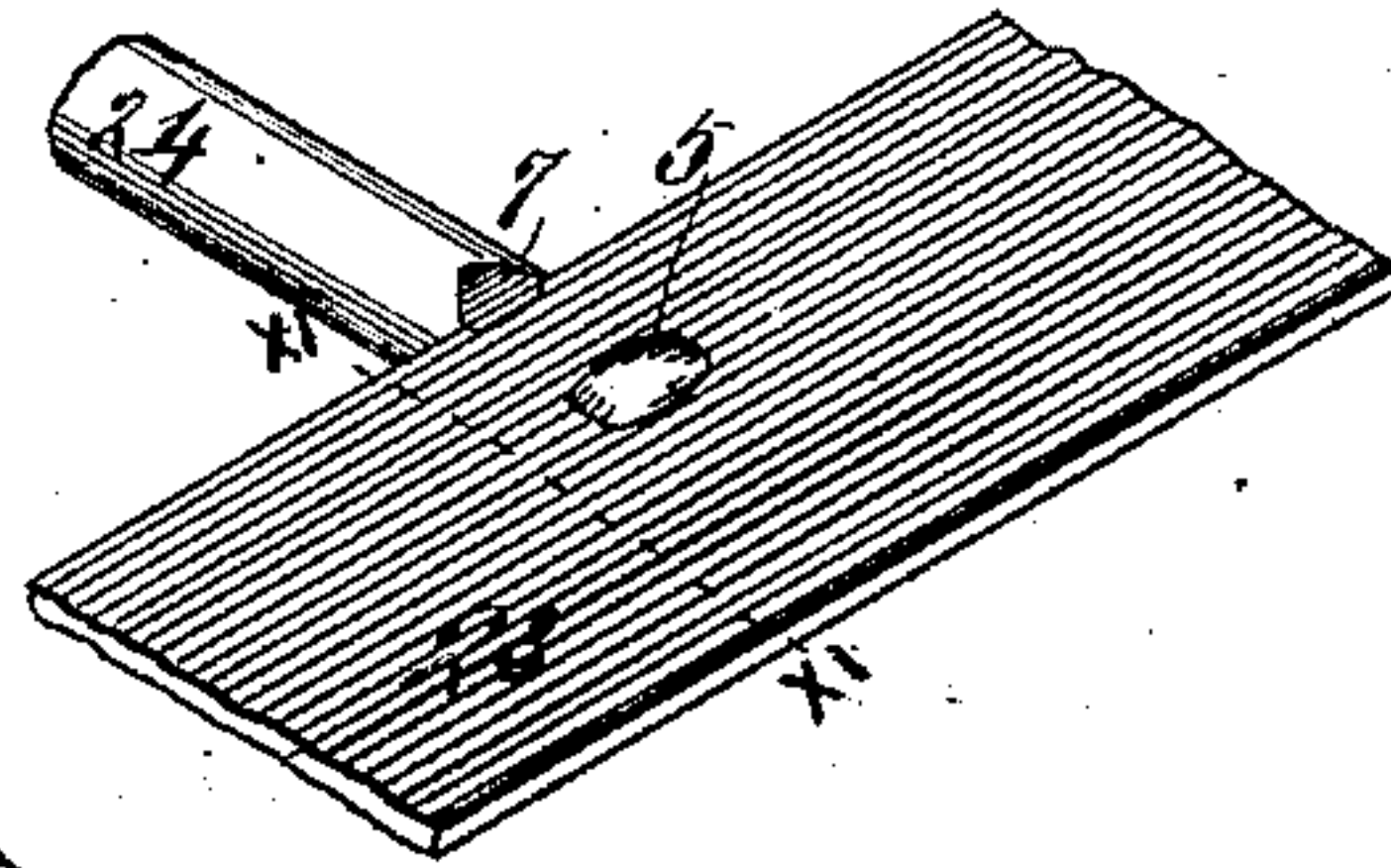


Fig. VII.

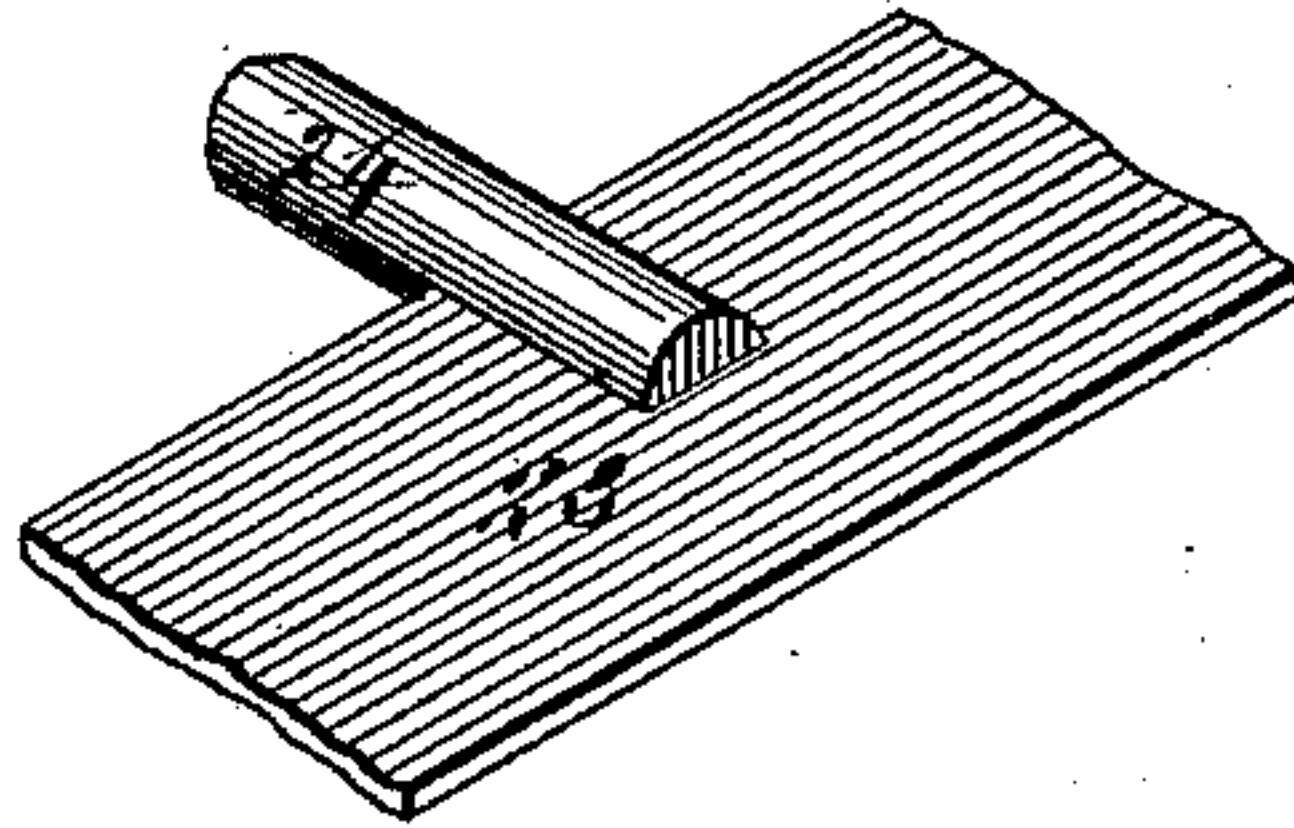


Fig. VIII.

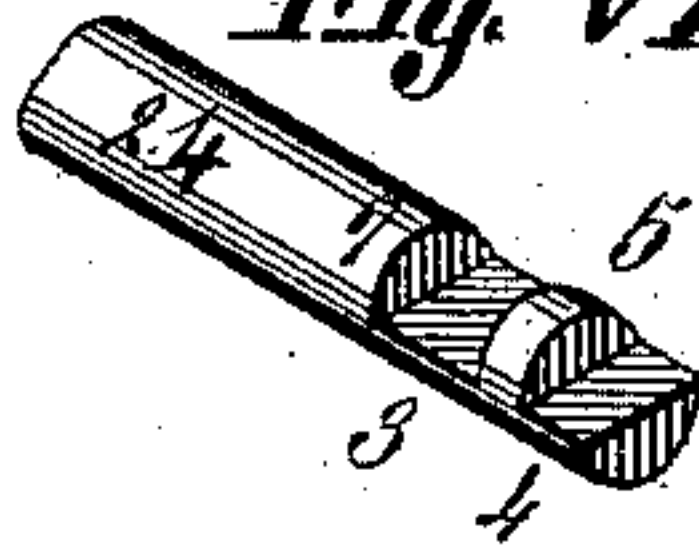


Fig. IX.

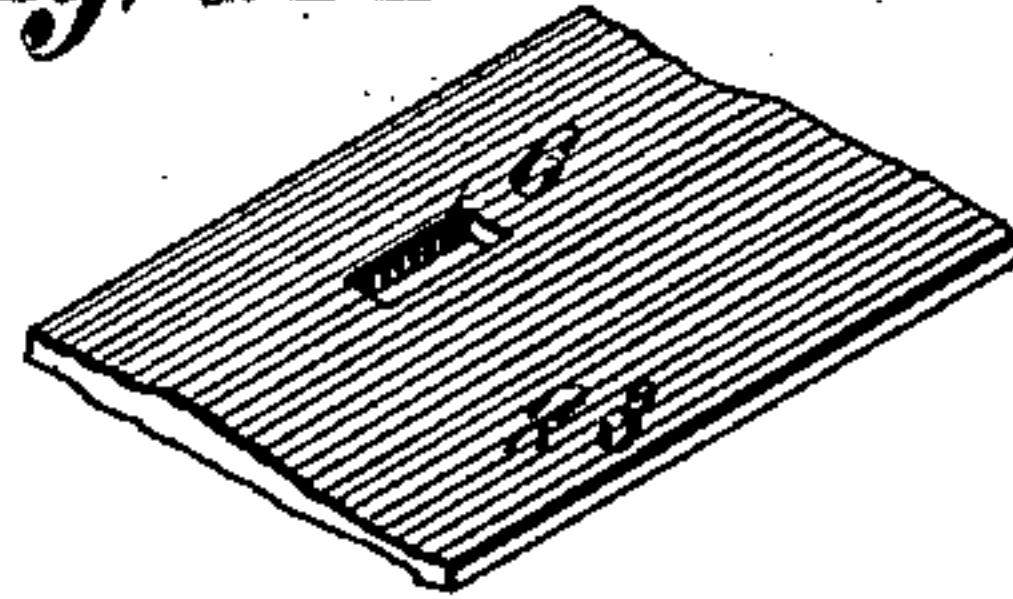


Fig. X.



Fig. XI.



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UNITED STATES PATENT OFFICE.

JOSEPH BOYER AND CHARLES M. GEYER, OF ST. LOUIS, MISSOURI; SAID
GEYER ASSIGNOR TO SAID BOYER.

PAPER-CUTTER.

SPECIFICATION forming part of Letters Patent No. 417,140, dated December 10, 1889.

Application filed July 20, 1888. Serial No. 280,472. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH BOYER and CHARLES M. GEYER, both of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Paper-Cutters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a front elevation. Fig. II is an enlarged detail vertical section taken on line II II, Fig. I. Fig. III is an enlarged detail view showing the manner of connecting the knife-carrying arms to the cross-bar. Fig. IV shows the end of the mandrel upon which the springs of the knife-carrying arms are formed. Fig. V is a detail perspective view illustrating the manner of securing the knife to its carrying-arms, and showing the position in which the arm and knife are placed before being secured or riveted together. Fig. VI is a detail perspective view of same, showing the pieces secured or riveted together. Fig. VII is a detail perspective view showing the reverse side to Fig. VI. Fig. VIII is a detail perspective view of one of the arms. Fig. IX is a detail perspective view showing part of the knife. Fig. X is a section taken on line X X, Fig. I. Fig. XI is a similar view taken on line XI XI, Fig. II.

Our invention relates to certain improvements in machines for holding and cutting wrapping-paper; and our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 20 represents a suitable base, to which standards 21 are secured, and which support the roll of paper 22 in the usual manner.

23 represents the knife, secured to the ends of arms 24, that are connected to the cross-piece 25, made fast to the upper ends of the standards 21. The arms are secured to the cross-piece by means of boxes or brackets 26, and they have inwardly-extending ends 27, surrounded by coil-springs 28, the tendency of which is to keep the knife 23 upon the roll of paper, one end of each spring being made fast to the extension 27 of each arm, and the

other end bearing against the cross-piece 25, as shown at 29, Fig. II.

It is to the manner of connecting the springs to the arms 24 or to the extended ends 27 of the arms 24 that the first part of our invention partly relates, this connection being such that the springs can be quickly and cheaply made and as quickly and cheaply attached. It consists in forming the end of each spring 28, that is secured to the arm, of a smaller diameter than the other end—as, for instance, referring to Fig. III, each spring from a point at or about 30 to the inner end at 31 is formed of a smaller diameter than from the point 30 to the outer end 32, which is secured to the cross-piece 25. The result of this is, that when the springs are forced upon the arms the portions from 30 to 31 fit very tightly upon the arms, and as the outer ends of the arms or the knife 23 are raised the tendency is to tighten this portion of each spring upon the arms rather than to loosen it by the torsional pressure brought to bear upon the springs—that is, the springs are made to wind, as it were, instead of unwind, upon the arms or the extensions 27 of the arms as the knife is raised—so that the portions from 30 to 31 are tightened rather than loosened upon the arms as the knife rises, so that there is no danger whatever of the slightest slipping.

In the manufacture of these springs we wind them upon a mandrel—such, for instance, as is shown at 33, Fig. IV—with one end smaller than the rest. The parts of the springs that are formed upon the small portion of the mandrel are the parts from 30 to 31 and the parts that secure the springs to the arms. With this arrangement we dispense with the necessity of riveting or otherwise securing the ends of the springs to the arms, thus cheapening the cost of manufacturing the article.

The second part of our invention relates to the manner of connecting the knife to the outer ends of the arms 24. This consists in forming the arms with reduced portions 34, (see Fig. VIII,) between which is left a projection or lug 5. The knife 23 is provided with an opening 6 near each end, which is

made of such a size as to receive the lug 5 on the arms 24. One edge of the knife abuts against the shoulders 7 of the arms. (See Figs. V and VI.) After the arms and knife 5 have been placed together in the manner described they are connected rigidly by riveting down the shoulders 7 and the lugs 5, as shown in Figs. VII and XI. In this way a neat and secure connection is made between 10 the parts at a small expense, and the necessity of boring holes through the arms for rivets and handling the rivets in attaching the parts is avoided, thus cheapening the manufacture of the article.

15 We claim as our invention—

1. In a paper-cutter, the combination, with the knife, arms carrying the knife, and support to which the arms are hinged, of the springs having frictional contact with the 20 arms at one end and connected with the support at the other end, substantially as described.

2. In a paper-cutter, the combination of the

arms and knife, the former having projections and the latter having openings to receive the projections which are riveted upon the knife, substantially as and for the purpose set forth. 25

3. In a paper-cutter, the combination of the arms having projections, and a recess 30 formed on each side of the projections, and a perforated knife receiving the projections and fitting against the shoulders formed by the recess, substantially as and for the purpose set forth.

4. In a paper-cutter, the combination of the arms having projections, and shoulders 5, 35 formed by reduced portions 3 4, and a knife having holes therein admitting said projections, substantially as and for the purpose set forth. 40

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In presence of—
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