This invention relates to new and useful improvements in an anal retractor.

More particularly, the invention contemplates an improved anal retractor which is characterized by a pair of semi-annular members having their ends in end abutment with each other and hingedly connected so as to be foldable in half. The invention proposes to so arrange the hinges of the anal retractor that the ends of the semi-annular members abut each other and limit pivoting to a position in which the pair of semi-annular members are in a common plane.

The invention also proposes the provision of anchor springs mounted on the top faces of the semi-annular members. Rigid strips are also proposed to be mounted over the adjacent ends of said semi-annular members for locking them in end abutment with each other. It is proposed to pivotally mount these rigid strips so that they may be moved to release the abutting ends of the semi-annular members.

It is proposed to form the semi-annular members of half round stock with the half round faces comprising the bottom face of the annular retractor. The dominating feature of the improved anal retractor resides in the fact that it may be folded up and easily fits into a surgeon's bag. When it is in its open condition it is used in the usual way.

Another object of the invention is the construction of an article as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a plan view of an anal retractor constructed in accordance with this invention and schematically illustrated in use.

Fig. 2 is a perspective view of the anal retractor, per se.

Fig. 3 is a perspective bottom view of the anal retractor.

Fig. 4 is a fragmentary enlarged elevational view looking in the direction of the line 4—4 of Fig. 2.

Fig. 5 is a fragmentary enlarged elevational view looking in the direction of the line 5—5 of Fig. 2.

Fig. 6 is a perspective view of one of the rigid strips used in the anal retractor.

Fig. 7 is a perspective view of the anal retractor in its folded condition.

Fig. 8 is a fragmentary elevational view looking in the direction of the line 0—0 of Fig. 7.

Fig. 9 is a fragmentary elevational view similar to Fig. 4 but illustrating a modified construction.

Fig. 10 is a plan view of Fig. 9.

The anal retractor, in accordance with this invention, includes a pair of semi-annular members 10 and 11 having their ends in end abutment with each other. Hinges 12 connect adjacent ends of said members 10 and 11 by which the members may be folded one upon another, as illustrated in Fig. 7. The hinges 12 are so located on the ends of the members that when the anal retractor is in its open condition the ends abut each other (see Fig. 4) and limit pivoting of the hinges to positions in which the semi-annular members are in a common plane.

Anchor springs 14 are mounted upon the top faces of the semi-annular members. These top faces are flat. The semi-annular members 10 and 11 are formed from half round stock. The curved faces are at the bottom so as to be adjacent the body of a person upon which the retractor is used. The anchor springs 14 are secured to the annular members by screws 15 at their central portions. The ends 18 of the anchor springs 14 are turned slightly upwards to facilitate slipping the holding cords and strings beneath them.

Rigid strips 17 are mounted over the adjacent ends of the semi-annular members 10 and 11 for locking them in end abutment with each other. Each rigid strip 17 is mounted at one or the other of the ends by a pivot screw 18. This pivot screw is provided with a shoulder-like portion 19 under its head for engaging through the opening 20 in the rigid strip for pivotally supporting the rigid strip with a minimum of play. Each rigid strip 17 has an upwardly curved portion 21 extending over the hinge 12. Each rigid strip 17 is also provided with a downwardly extending inside stop lug 22 for engaging against the inside diameter of the anal retractor for holding the rigid strip in position over the abutting ends.

When the anal retractor is not used, it is folded as illustrated in Figs. 7 and 8, and in this way it is carried in the physician's bag. The anal retractor is used by opening it up so that the semi-annular members 10 and 11 are in a common plane, and then the rigid strips 17 are
pivoted over the abutting ends to the positions illustrated in Figs. 2, 3 and 4. The rigid strips serve to lock the semi-annular members in their open positions. The anal retractor is then placed over a cavity or incision in a patient’s body, as for example illustrated in Fig. 1. Clips are clipped on to the edge portions of the cavity or incision are connected with strings. These strings are pulled tightly outwards so as to open the cavity or incision, and then the strings are wound around the anchor springs.

In Figs. 9 and 10 a modified form of the invention has been disclosed which distinguishes from the prior form in the fact that the outer end of each anchor spring is provided with a boss or thickened portion through which a clamp screw threaded engages. This clamp screw has a conical bottom end adapted to engage in a small conical recess formed in the top face of the adjacent semi-annular member.

In other respects this form of the invention is similar to that previously shown and like reference numerals identify like parts in each of the several views.

The operation of this form of the invention is very similar to the prior form, distinguishing merely in the fact that when the clamp screw is screwed downwards so that their conical ends engage the recesses in the top faces of the semi-annular members, the rigid strips will be locked in their positions over the abutting ends of the semi-annular members. Still further, when the screws are turned down tightly they will force the abutting ends of the semi-annular members tightly against each other and so add to the rigidity of the anal retractor.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. An anal retractor, comprising a pair of semi-annular members having their ends in end abutment with each other, hinges connecting adjacent ends of said members by which they may be folded one upon the other, anchor springs mounted on the top faces of said members, rigid strips mounted over the adjacent ends of said members for locking them in end abutment with each other, and pivots for said rigid strips by which they may be moved to release said abutting ends.

2. An anal retractor, comprising a pair of semi-annular members having their ends in end abutment with each other, hinges connecting adjacent ends of said members by which they may be folded one upon the other, anchor springs mounted on the top faces of said members, rigid strips mounted over the adjacent ends of said members for locking them in end abutment with each other, and pivots for said rigid strips by which they may be moved to release said abutting ends, said semi-annular members being of half round stock.

3. An anal retractor, comprising a pair of semi-annular members having their ends in end abutment with each other, hinges connecting adjacent ends of said members by which they may be folded one upon the other, anchor springs mounted on the top faces of said members, rigid strips mounted over the adjacent ends of said members for locking them in end abutment with each other, and pivots for said rigid strips by which they may be moved to release said abutting ends, said rigid strips having curved portions extending over said hinges.

4. An anal retractor, comprising a pair of semi-annular members having their ends in end abutment with each other, hinges connecting adjacent ends of said members by which they may be folded one upon the other, anchor springs mounted on the top faces of said members, rigid strips mounted over the adjacent ends of said members for locking them in end abutment with each other, and pivots for said rigid strips by which they may be moved to release said abutting ends, said rigid strips having curved portions extending over said hinges, and having downwardly extending inside stop lugs for engaging against the inside diameter of said semi-annular members.

5. An anal retractor, comprising a pair of semi-annular members having their ends in end abutment with each other, hinges connecting adjacent ends of said members by which they may be folded one upon the other, anchor springs mounted on the top faces of said members, rigid strips mounted over the adjacent ends of said members for locking them in end abutment with each other, pivots for said rigid strips by which they may be moved to release said abutting ends, and clamp screws threaded mounted through said rigid strips and abutting said semi-annular members for holding the rigid strips fixedly in position.

JOSEPH REMBRANDT HELFRICK.