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## The Creation of the Trap Set and its Development Before 1920

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The trap set has been an important part of American popular music for more than a century. Known by many names (modern drummers are familiar with the terms drum set, drum outfit, or drum kit), the trap set is an arrangement of percussion instruments that allows one player to perform on multiple instruments simultaneously.<sup>1</sup> Innovative drummers created the trap set in the late nineteenth century to help them meet the ever-growing demands imposed by rapidly changing styles of popular music. During the twentieth century, the trap set became an integral part of genres ranging chronologically from ragtime to the blues, swing, and rock and roll. Unlike the relatively simple arrangement of several drums and cymbals that we nowadays associate with these styles of music, however, the early trap set included a great variety of percussion instruments, some of which were played with the help of an assortment of ingenious mechanical devices.

This article will survey the trap set in the first few decades of its existence, before it became more standardized in the jazz bands of the late 1920s and early 1930s. Discussion will focus on the uses of the trap set and various influences on it, as well as the wide range of equipment associated with it during this early period. Like many of the musical styles for which it was used, the trap set is a distinctly American creation that has its roots in a number of different cultural traditions.

The idea that a single musician could play more than one percussion instrument at a time was nothing new to performers in the late nineteenth century. James Blades writes in *Percussion Instruments and Their History* that having one performer play both the drum and cymbal "is of

1. The term traps, used to define the whole host of small instruments and sound effects that a drummer used, is likely a shortened form of either "contraptions" or "trappings." (In favor of the former derivation, see, for example, Geoff Nicholls, *The Drum Book: A History of the Rock Drum Kit* [San Francisco: Miller Freeman Books, 1997], 8; for the latter, see J. Bradford Robinson, "Drum set," in Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* [London: Macmillan, 1984], 1:612.) "Traps" is still the term used by modern orchestral percussionists to refer to the many small instruments they play.

Eastern origin and is age old."<sup>2</sup> By the mid-nineteenth century, this practice had become standard in European orchestras, drawing harsh words from Hector Berlioz in his 1848 treatise on orchestration:

[T]he bass drum is almost always accompanied by the cymbals, as if the two instruments were inseparable by nature. In some orchestras they are both played by the same player: with one of the cymbals attached to the bass drum he can strike the other against it with his left hand while wielding the bass drum stick with his right. This economical practice is intolerable. The cymbals lose all their resonance that way and just make a noise like dropping a bag of scrap iron and broken glass. It's a vulgar trick, lacking all dignity and distinction. At the very best it would do for monkeys to dance to and for accompanying thimbleriggers, acrobats, sword-swallowers and snake-eaters in public places and the grubbiest city squares.<sup>3</sup>

In the United States, photographs taken during the Civil War (1861– 1865) often show a cymbal attached to a bass drum for use in a military band.<sup>4</sup> After the war, this configuration could be found in many of the community and town concert bands that were gaining popularity throughout the country. Likewise, African-American musicians in New Orleans used the same bass drum and cymbal configuration in ensembles that played for funerals.<sup>5</sup> This music was characterized by up-tempo (i.e., fast-paced) music and syncopated rhythms, and eventually led to the creation of musical styles like ragtime and jazz. These ensembles used roughly the same instrumentation as contemporary concert bands, including woodwind, brass, and percussion instruments. For both types of music the percussion section was made up of two musicians, one playing the snare drum and the other playing the bass drum with cymbal attached.

Musical life in the late nineteenth century was rich and exciting. Minstrel troupes, musical theater and burlesque shows, dance bands, and circus groups traveled across the nation to provide a wide variety of entertainment. Musicians associated with these groups often played several

2. James Blades, *Percussion Instruments and Their History* (London: Faber and Faber, 1970), 286, n. 1.

3. Hugh MacDonald, Berlioz's Orchestration Treatise: A Translation and Commentary (Cambridge: Cambridge University Press, 2002), 280.

4. A typical example can be seen in Margaret Hindle Hazen and Robert M. Hazen, *The Music Men: An Illustrated History of Brass Bands in America, 1800–1920* (Washington, D.C.: Smithsonian Institution, 1987), 92.

5. Robert B. Breithaupt, "The Drum Set: A History," in John H. Beck, ed., *Encyclopedia of Percussion* (New York: Garland Publishing, 1995), 173.

different genres as they tried to make a living. As a result, stylistic elements, playing techniques, and even musical instruments were shared and exchanged between the various types of music that enriched the life of nineteenth-century audiences.

Though aimed at white audiences, many aspects of popular culture at this time borrowed heavily from African-American traditions. One example of this cultural assimilation is the banjo, an instrument of African origins that was co-opted by white musicians in the mid-nineteenth century. Other examples include spirituals and slave songs that were printed for white use, and even blackface actors who "borrowed" the African-American complexion. Soon, white musicians also began to flavor their performances with elements of the new styles of music developing in New Orleans.

#### First Steps

Late-nineteenth-century ensembles that played popular music generally used two drummers, one of whom also played the cymbals. As the drum manufacturer William F. Ludwig Sr. (1879–1973), a professional drummer early in his career, recalled in a 1921 article published by his company:

[T]wo drummers were used in dance orchestras, that is, if twelve or more men were used; less than that, drums were not used at all. This applied to brass bands as well as orchestras. In the earlier days brass bands were commonly used for dances.<sup>6</sup>

By the 1880s, newer styles of music, significantly influenced by African-American idioms, relied heavily on syncopated rhythms and uptempo music, thus requiring more extensive use of percussion instruments. Ludwig's article points out that the idea of having a single drummer play both the snare drum and the bass drum with cymbals first appeared in theater orchestras. Perhaps in part to accommodate the limited space of most orchestra pits and the unwillingness of some employers to hire drummers, enterprising musicians began to experiment with ways that one person could play all three instruments, replacing the traditional pair of players. As Ludwig explains:

6. William F. Ludwig, "The Evolution of the Pedal," in Ludwig & Ludwig, Drum Makers to the Profession (advertising flyer, Chicago: Ludwig & Ludwig, 1921), 1.

The earliest account of one man on drums that we are able to get is given to us by Anthony (Tony) Becker of Chicago, who loves to tell of the earlier days and of the cleverness of Frank Wagner, and the way that he obtained the bass drum and cymbal effect on the large tympani by using the butt end of a snare drum stick and playing snare drum at the same time (fig. 1).

This was done by a novel arrangement of his own invention. A cymbal was fastened horizontally on the top of the tympani to one side in such a way that the cymbal and tympani could be struck simultaneously with the snare drum stick of the right hand. A metal rim on the butt end of the snare drum stick would strike the cymbal while the tip of the stick struck the tympani head, producing a bass drum and cymbal effect.<sup>7</sup>

According to Ludwig, Wagner played with Hooley's Theater in Chicago from 1877 until 1891, and it was at some point during his tenure there that he began to use this one-man percussion configuration. As the technique developed, a bass drum was substituted for Wagner's original setup with a kettledrum. This combination became known as the double drums and soon replaced the traditional percussion section (fig. 2). Ludwig explained how this worked in his autobiography, My Life at the Drums:

The bass drum was placed to the right of the player with the cymbal mounted on the top. The drummer would strike the bass drum and cymbal with the snare stick, and then quickly pass to the snare drum for the afterbeat, with an occasional roll squeezed in between.<sup>8</sup>

#### The Drum Pedal and other Accessories

The music played by double drummers ran the gamut of popular styles, including concert band, circus, minstrel, burlesque, dance, and theater music. Double drummers provided the rhythmic drive for all of these musical styles, and it did not take long before they began to develop more efficient ways to play their instruments. The most effective of these was through the use of a pedal that allowed the drummer to play the bass drum with his foot. In his autobiographical work *Fifty Years a Drummer*, published in 1931, Arthur Rackett remembered those early days:

#### 7. Ibid.

8. William F. Ludwig, My Life at the Drums (Chicago: Ludwig Drum Company, 1962), 10.



FIGURE 1. Frank Wagner playing timpani, snare drum, and cymbal. Illustration from William F. Ludwig, "The Evolution of the Pedal," in Ludwig & Ludwig, *Drum Makers to the Profession* (advertising flyer, Chicago: Ludwig & Ludwig, 1921), 1. National Music Museum Archives.

In 1882 I settled in Quincy, Illinois. This was about the time that the first foot pedal came out. Dale of Brooklyn made it. Everybody laughed at the idea, but I sent for one and started to practice in the woodshed.... In a very few months I could manipulate the foot pedal to play with our family sextette, band and orchestra for all kinds of work, even playing the pedal in wagon parades.<sup>9</sup>

The "Dale of Brooklyn" mentioned by Rackett must have been musical instrument maker Benjamin B. Dale, who lived at 335 South Fifth Street, Brooklyn, in the 1880s, and later moved to Cranford, New Jersey.<sup>10</sup> His toe-operated foot pedal used a large beater to swing forward and strike the bass drum head when the pedal was depressed. Simultaneously, an attached metal hoop was activated to strike a cymbal mounted on a board beneath the entire mechanism. This design was sold by several

10. Nancy Groce, *Musical Instrument Makers of New York* (Stuyvesant, N.Y.: Pendragon Press, 1991), 35.

<sup>9.</sup> Arthur Rackett, Fifty Years a Drummer (Elkhorn, Wisc.: Arthur Rackett, 1931), 10.



FIGURE 2. Drummer playing double drums. Illustration from Ludwig, "The Evolution of the Pedal," 1. National Music Museum Archives.

musical instrument dealers, including August Pollman of New York, who advertised it in an 1891 catalog (fig. 3).

Most drummers did not use professionally-produced models like the one by Dale, which at the time were quite unreliable. Instead they used pedals that they, or another local drummer, constructed themselves. As Ludwig writes:

The following winter [i.e., 1893] I met Fred Ziets—the double drummer at Hooley's Theater that made use of a pedal.... I was intrigued with the pedal, and Fred Zietz sent me to Mr. Stone—a bass player in Sam T. Jacks burlesque house who also made wooden pedals. I purchased one of his home-made pedals for two dollars, and it was a "heel-pedal" as were all the first pedals, as it was assumed that the toe pedals would not have enough force for the accents.<sup>11</sup>

The heel pedal was operated by resting the toes of the foot on the floor and pressing down with the heel to operate the pedal, which propelled the mallet forward to strike the bass drum.<sup>12</sup> Compared to modern toe

11. Ludwig, My Life at the Drums, 10.

12. Mechanically, a heel pedal is a first-class lever. The fulcrum for this simple machine is in the middle of the lever, near where the player rests his foot. The load is in front of the fulcrum; when effort is exerted behind the fulcrum, by the player's heel, a hinged mallet is pushed forward to hit the drum.



FIGURE 3. Bass drum and cymbal pedal. Illustration from August Pollman, *Catalogue of Musical Merchandise Edition J* (New York: August Pollman, 1891), 287. The Metropolitan Museum of Art, New York.

pedals this mechanism seems more complex than necessary, but for drummers used to playing the double drums without a pedal, it was very useful (fig. 4).

In 1894 William J. Rappold, of Philadelphia, created one such design.<sup>13</sup> The pedal, whose patent he assigned to the J. W. Pepper Company, was advertised as the "Premier Bass Drum and Cymbal Beater." This operated two separate mechanisms that worked in opposite directions. The first pushed a mallet towards the bass drum in the usual manner, while the second pulled a metal hoop back toward the player to strike a cymbal that was mounted between the player's foot and the bass drum (fig. 5).

Some pedal mechanisms mounted the bass drum mallet on the top of the bass drum, requiring a mechanism that would pull the mallet down to hit the drumhead. This was accomplished through the use of an intermediary chain or rod.<sup>14</sup> Several pedal designs with a down-swinging mallet were patented in the late nineteenth century and remained commercially available well into the twentieth century. One of the early designs was patented by George R. Olney of St. Louis, Missouri, in 1887,<sup>15</sup> and

13. William J. Rappold, inventor, *Drum and Cymbal Pedal or Beater*, United States patent 516,612, 13 March 1894.

15. George R. Olney, inventor, *Drum Pedal*, United States patent 357,093, 1 February 1887.

<sup>14.</sup> Mechanically, this type of pedal is a third-class lever, where the fulcrum is at the back of the lever, near the player's heel. When effort is exerted by the toe or ball of the foot, the load (mallet) is pulled by the intermediary chain or rod toward the bass drum.



FIGURE 4. Homemade heel pedal for bass drum. Stephen Joseph Collection, courtesy of Diane Fehring Reynolds. Photo: Percussive Arts Society Museum, Lawton, Oklahoma.

a few years later could be purchased from C. G. Conn of Elkhart, Indiana.<sup>16</sup> In this design, when the down-swinging mallet was pulled forward to strike the drumhead, the back end of the mallet struck a cymbal that was mounted to the top of the bass drum (fig. 6).

Adoption of the foot pedal was not universal, however, as Ludwig explained in this passage about his experience playing in Chicago in the 1890s:

16. C. G. Conn, C. G. Conn's Wonder and American Model Band & Orchestral Instruments (Elkhart, Indiana: C. G. Conn, undated [between 16 September 1890 and July 1891]), 33.

# PREMIER Bass Drum and Cymbal Beater.

New Model. Quick Action. Improved Mechanism. No Intricate Parts to Get Out of Order. Drum Holder Adjustable. Will Fit Any Size Drum.



Patent March 13, 1894

The drum holder or standard is adjustable and will fit any size drum.

FIGURE 5. "Premier Bass Drum and Cymbal Beater." Illustration and description from *J. W. Pepper's Complete Catalogue* (Philadelphia: J. W. Pepper, 1898). Photo courtesy of Carolyn Bryant.

Though the work was much slimmer after the World's Fair [of 1893], I did play some open-air skating rink jobs. These jobs had the band playing for two hours each evening and provided me with fifty cents an hour. These jobs provided an excellent opportunity for pedal practice. Many of us younger drummers began using the pedals, but the old timers refused to use the "bloomin' contraptions."<sup>17</sup>

17. Ludwig, My Life at the Drums, 15.



FIGURE 6. Patent drawing of a bass drum and cymbal pedal. George Olney, patent no. 357,093, 1 February 1887. William F. Ludwig II Archive, National Music Museum.

Expressing the same reluctance of some drummers to switch to the foot pedal, Rackett wrote that "The drummer's ring, made up of old-timers, shut everybody with the foot pedal out of the down-town theatres."<sup>18</sup> Eventually, however, he got the chance to prove the effectiveness of the new device:

It had always been a custom at the down-town theatres for big musical shows to have two drummers, even with eighteen men. I had my first chance in Chicago to show what a double drummer could do. Mr. Doehue asked: "Can you handle the big 'Black Crook' show with 100 in chorus and ballet, play tympani, double drum and traps alone, as I would like to put in an extra first violin?" I said: "Yes, I will try it." At rehearsal, I remember the ballet master, Romeo, fussing around waiting for his solo. He always did a one-leg whirl spin to finish the solo dance. He said a foot pedal could not be worked loud enough or last long enough for his finish. I was on my mettle. If I failed they would have to put in a bass drummer and cut out one violin, and down-town the foot pedal would have gotten a black eye. When we started in the gallop for the finish, I raised my heel off the floor and let her go on the ball of my

18. Rackett, Fifty Years, 10.

foot, a trick I had practiced for years in playing gallops. I beat two in the bar on bass drum. (I was using a forty-inch bass drum screwed down to the floor, which had a powerful tone, and with a single stroke beat on the small drum one could drown the orchestra out, if necessary.) Romeo said the gallop never had never been played as fast.<sup>19</sup>

Although numerous pedal patents were introduced in the years around the turn of the twentieth century, for the most part these devices were highly unreliable. A basic design that worked effectively had not yet been introduced. As Ludwig wrote:

This pedal [i.e., the swing pedal] was not powerful or fast enough for the fast rag-time tempos and our leader, Morris Leby, called for faster tempos and stronger accents. In vain I tried to supply what he wanted, but it was useless with that slow overhanging pedal. Then I secretly set to work on an idea which had long been tossing through my mind—why not have a shorter beater rod connected close to the beating spot? Several rough experimental models were cobbled together and I took one down to a rehearsal for a practical test. Crude as it was, it worked and satisfied the director. Word quickly spread about town that a new pedal had been born.<sup>20</sup>

The design, which Ludwig patented in 1909, used pressure exerted by the toe of the foot to pull a short rod (marked 3 in the patent drawing, fig. 7) that is hinged in front of and slightly above the toe to propel the beater toward the drumhead. This design was enormously successful and became the standard piece of equipment that drummers needed to perform efficiently and reliably.<sup>21</sup>

William Ludwig and his brother, Theodore, began producing the pedal themselves, working at night and between rehearsals, but the popularity of the pedal made it impossible to keep up with the demand. They therefore enlisted the help of their brother-in-law R. C. Danly, an engineer, to begin production on a larger scale. The result was the founding of the Ludwig & Ludwig Drum Company, which—based partially on the enormous success of this drum pedal—would in later years become one of the largest and most influential drum companies of the twentieth century.

21. Ludwig's design functions as a third-class lever. The fulcrum is located at the back of the pedal, near the player's heel, and the effort is exerted by the toe or ball of the foot.

<sup>19.</sup> Ibid., 10–11.

<sup>20.</sup> Ludwig, My Life at the Drums, 12.



FIGURE 7. Patent drawing of a bass drum and cymbal pedal. William F. Ludwig, patent no. 922,706, 25 May 1909. William F. Ludwig II Archive, National Music Museum.

For both double drumming and pedal playing the drummer was, for the first time, seated. Drummers, who were used to performing outdoors or at the back of a concert band, had previously always worn their drums on a sling and stood while they played. With the player seated, different techniques for playing the drums were needed; and as pedal drumming became more prominent, some way of holding the instrument securely in place had to be found. One can imagine that not all theater owners were pleased with the way Rackett solved this problem, with his bass drum "screwed down to the floor," so a different solution was needed. Harry Bower, of Boston, in his 1897 pedal patent, proposed a different way to hold the drum in place.<sup>22</sup> The patent drawing (fig. 8) shows short pointed legs, known to drummers as spurs, that brace the drum against the constant force of the pedal mallet beating against it. These spurs were supposed to keep the drum from moving forward, or "walking," away from the drummer. Even with them, the problem is not completely solved unless a carpet or rug is placed under both the drum and the player's seat, so that the weight of the drummer keeps the rug and the bass drum from moving.

Mounting the snare drum required a different solution, in the form of a stand that held the drum high enough for the drummer to play it. At first, players supported the drum on a box or the seat of a chair. For this to work, the snare drum had to be tipped at a precarious angle (as shown in figs. 1 and 2 above) so that its sound was not completely muffled by the chair seat. Since no commercial products were available, innovative drummers initially began to build their own stands that were better suited for holding the drum. William Ludwig wrote about purchasing a homemade "tripod wooden snare drum stand" in the winter of 1893–94 at the same time that he first purchased a drum pedal.<sup>23</sup>

One of the first snare drum stands sold commercially resembles a chair that has been modified to hold a snare drum. Carl Fischer, of New York, advertised this design in his 1896 catalog. A small rod props up the side of the drum facing the drummer, while a much taller backrest, like that on a chair, positions the drum at a steep angle. The stand has three legs, like the "tripod" stand that Ludwig first purchased (fig. 9). A few years later, in 1902, J. W. Pepper offered a product that would be immediately recognizable to a modern drummer as a snare drum stand, with four arms to support the drum and a tripod base. The stand folded up for easy storage and transportation, and resembled stands that are still in use by drummers a century later (fig. 10).

One of the most unusual designs for an early snare drum stand was a combination drum stand and music rack that was offered by C. G. Conn in a 1913 catalog (fig. 11). Although this creative design appears workable, it did not become popular with drummers. It may have proven difficult to use for two reasons: first, it limited where the drummer could

23. Ludwig, My Life at the Drums, 15.

<sup>22.</sup> Harry A. Bower, Attachment for Playing Bass Drums and Cymbals, United States patent 590,182, 14 September 1897.



FIGURE 8. Patent drawing of a bass drum with spurs. Harry A. Bower, patent no. 590,182, 14 September 1897. William F. Ludwig II Archive, National Music Museum.



FIGURE 9. Snare drum stand. Illustration from *Carl Fischer's Band Instruments* (New York: Carl Fischer, 1896), 53. National Music Museum Archives.



FIGURE 10. Snare drum stand. Illustration from *J. W. Pepper's Musical Times and Band Journal* 17, No. 202 (Philadelphia: J. W. Pepper, 1902), 30. National Music Museum Archives.

position his music stand, and second, it may have been difficult to keep the music still while the drummer was playing.

#### The Traps

Once a basic physical arrangement had been established, whereby the bass drum and cymbal were played in unison by a foot pedal on the floor and the snare drum was mounted on a stand in front of the seated player, drummers could turn their attention to the musical uses of their instruments. As noted above, Ludwig described a style of playing in which the bass drum and cymbals kept the time while decorative flourishes were added by the snare drum. With the cymbal and bass drum played using a foot pedal, the drummer's hands were free to do much more than just play the snare drum, and enterprising performers found that they could also use other instruments to provide additional timbres and sound effects.

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FIGURE 11. Combined music rack and snare drum stand. Illustration from *Conn Band and Orchestra Instruments: General Catalog H-3* (Elkhart: C. G. Conn, 1 March 1913), 30. National Music Museum Archives.

Among the earliest additions to the trap set were the triangle and tambourine, which had been in use in European music since the Middle Ages.<sup>24</sup> These instruments, along with the bass drum and cymbals, were often employed in military and marching bands of the eighteenth and early nineteenth centuries in an attempt to emulate Turkish janissary musicians. Together with the snare drum, bass drum, and cymbals, the triangle and tambourine subsequently became part of the standard percussion section of both the orchestra and the concert band. However, another use of the triangle and tambourine in nineteenth-century

<sup>24.</sup> Jeremy Montagu, *Timpani and Percussion* (New Haven: Yale University Press, 2002), 20, 24.

American culture is more likely the reason for their inclusion in the trap set.

Minstrel shows date back to the 1840s. Everything about them—the music, the characters, and the musical instruments—was intended to caricature African-American slaves who lived on plantations. The standard musical ensemble for such shows featured banjo, violin, tambourine, and bones,<sup>25</sup> often augmented by other instruments such as accordion, guitar, flute, and triangle (fig. 12). After the Civil War, minstrel shows were influenced by other theatrical styles and incorporated all sorts of acts, but primarily this genre was associated with its caricature of African-Americans.

No matter what the venue, a nineteenth-century audience would have recognized this musical ensemble as a reference to the minstrel stage and the characters associated with it, even without blackface performers. The mere sound of a banjo and bones would have been enough to cue the audience to the arrival of one of the caricatured African-American characters, a cultural clue that would be lost on audiences today. A story remembered by William F. Ludwig II, son of the drummer and drum manufacturer William F. Ludwig Sr., illustrates how minstrel ideas permeated the culture and spread into other vaudeville shows as late as the second and third decades of the twentieth century:

Jack Powell was a short and portly fellow that had a black-face act during the teens and twenties when minstrel shows were popular. He had a special oneman act for vaudeville that brought him onstage in a chef's costume in black-face. Underneath the costume he wore a curved steel plate that matched his body contour, because when he was introduced—"Here he is, Jack Powell and his musical menu!"—he would come running out to a chord from the pit orchestra and belly-flop and slide to a drum set on the stage, just in time to hit the bass drum with a drum stick to end the chord. Then he'd start to play with both sticks on the bass drum head, then the hoops, and then he'd roll over and get to his knees, all the while playing a 2/4 street beat....<sup>26</sup> (fig. 13)

When a show of any type wanted to introduce a comedic African-American character, the drummer in the pit would have needed a set of bones, a tambourine, and a triangle to provide musical clues to the audi-

<sup>25.</sup> Philip F. Gura and James F. Bollman, *America's Instrument: The Banjo in the Nineteenth Century* (Chapel Hill: The University of North Carolina Press, 1999), 20, 27.

<sup>26.</sup> Paul Schmidt, *History of the Ludwig Drum Company* (Fullerton, Calif.: Centerstream, 1991), 64.



FIGURE 12. Ensemble of minstrel musicians, ca. 1860, including (from left to right) bones, cello, violins, accordion, triangle, and tambourine (but not banjo). Photo from the collection of Philip F. Gura, Chapel Hill, N.C.

ence. Once in place for use in minstrel and variety shows, it was not long before these instruments were added to other types of music as well. By combining their sounds with drums and cymbals, drummers could draw on a greatly expanded sound palette. As early as the 1870s, tambourines, bones, and triangles were sold in catalogs along with drums.<sup>27</sup>

The popularity of sound effects in the myriad variety shows, skits, music, and comedy routines that appeared on the vaudeville stage led drummers to introduce even more gadgets to their setups. Before the instruments were commercially produced, drummers made sound effects in any way they could, as Rackett explained:

27. See, for example, M. Slater, Illustrated Catalogue of Musical Instruments (New York: M. Slater, 1874), 35.



FIGURE 13. Advertisement for Jack Powell in blackface. *The Ludwig Drummer* (Chicago: Ludwig & Ludwig, Fall 1930), cover. National Music Museum Archives.

[D]uring the latter part of the World's Fair (1893), I had to make most of my traps and imitations, as there were none on the market at that time—at least not those which I wanted. What few traps there were, were crude. I got the idea for my lion roar from boyhood days, when we used to take resin strings, run them in through a small tin can and make a noise by pulling the string. I got two ten-gallon wine casks and one big pickle barrel, knocked out both ends, put in one drum head, and ran a G bass string through the middle of the head. A cotton glove (well resined) was worn on the hand. This

gave a splendid imitation of the "lion roar." For the elephant roar, I had made a tin horn (large size), imitating the elephant with my voice through the funnel. I went to the Zoo and studied the noises of all animals. My rooster crow was made with my voice alone (this is the only real imitation; any one can do it if they try). It is always sure fire. My dog bark, terrier and big dog, also was done with the voice; billy goat, horse, cow were all done with the voice. I had made up my mind I would get them in this way and stuck to it till I did....<sup>28</sup>

Drummers soon included whistles, bells, cymbals, xylophones, chimes, and even timpani in their setups in order to offer the greatest variety of sounds to accompany the stage action. These various small instruments or sound effects began appearing in trade literature of the 1890s under the heading "traps" and were used in all styles of music, even making their way into classical music and concert bands.<sup>29</sup> Lists of traps in trade catalogs became longer and longer with each successive issue, and the use of these small percussion instruments became such an important part of a drummer's duties that around the turn of the century the whole arrangement of drums, cymbals, and sound effects became known as the trap set. With the introduction of silent films, and eventually radio, traps remained important in both theatrical and musical uses in a variety of media.

In September 1902, *C. G. Conn's Musical Truth* included an excerpt from the *Music Trade Review* (date unknown), describing how some of these traps might be used in a theatrical setting:

Among quaint or curious things not generally known is the "odd noise" department connected with some of the big band instrument factories. . . . In this department is produced to order any odd noise required in rendering orchestral music.

An interesting exhibition could be made of ingenious contrivances for such a purpose. These noises are often heard by those who attend theatres and similar places of amusement. The origin or cause of some is quickly recognized, but concerning others the general public is quite uninformed.

It is well known, for example, that the sound of cymbals is made by the clashing together of two metal discs in the hands of the miscellaneous musical operator on the extreme right of the orchestra, but it is not so well known that the said operator, who is usually surrounded on all sides by

28. Rackett, Fifty Years, 11.

29. The papers of David Blakely, who was John Philip Sousa's tour manager, include the Sousa band's expense book for 1892, in which several entries were made for the purchase of "traps." David Blakely Papers, Manuscripts and Archives Division, New York Public Library.

noise-making paraphernalia, has, in the immediate vicinity, a pair of cocoanuts with handstraps wherewith to imitate a horse's hoofs beating on the hard dusty road as the travel-stained messenger from the King approaches with a reprieve, presently to be greeted by a howling multitude of disappointed citizens who really wanted the execution to take place just for the "thrill" of it.

Part of the well appointed operator's outfit includes a police rattle, a police whistle, clog mallet with jingles to imitate clog dancing, a self-loading pop-gun, a foghorn, steamboat whistle—often used in "scenes on the Mississippi," tug boat's whistle, a "locust" or "frog", bird, canary, jay bird, cuckoo, robin, rooster, Shanghai rooster, Bantam rooster, hen cackle, duckquack, cricket, "baby cry," locomotive whistle and railroad train in motion.

These various sounds are produced accurately on instruments specially constructed and tested.  $^{\rm 30}$ 

Figure 14 shows numerous traps that were offered for sale by another major maker and retailer of musical instruments, Lyon & Healy of Chicago.

The main problem trap-set drummers faced in dealing with the expanding list of sound effects was finding convenient places to put all of their instruments where they could be easily reached when needed. Trade manufacturers were quick to supply products for this need. A variety of clamps, screws, and clips allowed many of the instruments to be mounted to the bass drum or music stand. This method worked well for additional instruments that were hit, such as cymbals and wood blocks, but it was not a solution for whistles and other traps that had to be blown. Trap tables were usually used for these items, set off to the side within easy reach of the drummer, while whistles were sometimes even worn on strings around the drummer's neck. Other creative methods were devised for playing and holding these various traps. In the mid-1920s, C. Bruno and Sons sold a "trap tree," a stand with many different hangers and holders for trap instruments.<sup>31</sup> Sears, Roebuck offered a pedal-operated triangle, presumably operated by the opposite foot from the bass drum pedal, that would allow the drummer's hands to remain free to play other instruments (fig. 15).

During the 1920s and 30s, the idea of using a second pedal eventually led to the introduction of various designs that allowed drummers to play

<sup>30.</sup> C. G. Conn, C. G. Conn's Musical Truth 5, no. 3 (Elkhart: C. G. Conn, September 1902), 31.

<sup>31.</sup> C. Bruno and Son, *Musical Merchandise and Victor Talking Machines* (New York: C. Bruno & Son, Inc., 1926), 210.



FIGURE 14. Traps advertisement. Lyon & Healy's Musical Handbook (Chicago: Lyon & Healy, 1906), 198. National Music Museum Archives.



FIGURE 15. Pedal operated triangle. Illustration from Sears, Roebuck & Co., *Musical Instruments* (Chicago: Sears, Roebuck & Co., ca. 1910), 760. The Metropolitan Museum of Art.

the cymbals (including the sock cymbal and low boy) separately from the bass drum (fig. 16). Later, the so-called hi-hat would mount a pair of cymbals, still controlled by a pedal, on a stand so that the player could also hit them with a stick. This invention made possible the many different rhythms associated with jazz and later rock and roll, but these developments and stylistic changes occurred in the late twenties, thirties, and forties, well after the early formation of the trap set, and are therefore beyond the scope of this study.

#### New Designs for Drums

The creation of the trap set followed closely on the heels of the introduction of drums to the orchestra. In Western music prior to the nineteenth century, with a few rare exceptions, the use of drums other than tuned pairs of timpani had been confined to folk and military music. During the nineteenth century, the snare drum gradually gained acceptance into the orchestra, in the process undergoing significant changes so that it would better fit that style of music. Shallow-shell snare drums with rod-tension systems became the preferred instrument for orchestral music, replacing the much larger rope-tension instruments that had been used through the Civil War in the United States military. In the 1860s, traditional rope-tension drums could have shells ranging from ten



FIGURE 16. Low boy pedal. Illustration from C. Bruno and Son, *Musical Merchandise and Victor Talking Machines* (New York: C. Bruno & Son, Inc., 1926), 210. The Metropolitan Museum of Art.

to fifteen inches in height, with a diameter of at least twelve inches, while the shallower drums introduced into the orchestra usually measured between six and seven inches high. Shallow-shell snare drums were much quieter and therefore better able to balance with the other instruments in the ensemble. Rod-tension systems also allowed greater tension to be applied to the drumheads, thus permitting more articulate playing. Midnineteenth-century English innovators introduced both the rod-tension system, patented by Cornelius Ward in 1837,<sup>32</sup> and the shallow-shell snare drum, made by manufacturers such as Henry Potter.<sup>33</sup> These changes soon spread throughout Europe.

The Prussian army, a growing military power in nineteenth-century Europe, adopted an unusual style of march with straightened legs raised high and toes pointed. The *Paradeschritt*, also known as the goosestep, was recorded as early as the seventeenth century, but was especially associated with Prussia in the second half of the nineteenth century, and later in Hitler's Germany.<sup>34</sup> Shallow-shell drums with rod-tension mechanisms were well suited for use by drummers that had to perform this

<sup>32.</sup> Cornelius Ward, inventor, *Musical Drums*, British patent 7505, 9 December 1837.

<sup>33.</sup> A side drum in the collection of the National Music Museum, NMM 10293, by Henry Potter, London, 1858, has a shallow shell of only  $7\frac{1}{2}$  inches in height.

<sup>34.</sup> Norman Davies, Europe: A History. A Panorama of Europe, East and West, from the Ice Age to the Cold War, from the Urals to Gibraltar (New York: HarperPerennial, 1997), 612.

march. In the 1870s and 1880s these so-called "Prussian drums" began to be imported to the United States and used by American ensembles (fig. 17).

Soon American manufacturers began to produce their own Prussianmodel drums. An 1874 catalog issued by M. Slater lists several snare drums of this kind labeled "my own make."<sup>35</sup> As these instruments came to be more widely used, players discovered that they worked well in ensemble playing. In the 1880s, makers such as Lyon and Healy in Chicago introduced drums specifically marketed for orchestral use that were very similar to their Prussian drum models (fig. 18).

Drummers began to play double drums at about the same time that these Prussian and orchestral model drums were introduced. Smaller drums of this type, with softer dynamic levels better suited to ensemble playing, also worked better than earlier designs in the small groups where a drummer played double drums. For this reason, trap-set drummers preferred orchestral-model instruments, although rope-tension snare drums were still in widespread use for military and marching ensembles.

The bass drum had remained largely unchanged as it moved from the military band into the concert hall. Because the same drummer usually played both bass drum and cymbals, this drum was not required to play fast rhythms. The bass drum was most often used for sound effects, punctuations, and steady beats, with all of the intricate rhythmic playing left to the snare drum. Thus rod-tension bass drums did not seem to be necessary in the orchestra; although they were offered by some manufacturers (such as Adolphe Sax as early as 1867<sup>36</sup>), the instruments did not gain widespread acceptance as quickly as rod-tension snare drums. Some manufacturers in the United States did begin to produce them in the 1870s, at around the same time they began producing rod-tension snare drums, but this was probably as much for aesthetic reasons (so they would match the snare drums in appearance) as for musical ones.

When double drummers first began to use bass drum pedals, the typical bass drum available to them would have been rope-tensioned. Some trade literature even depicts pedals applied to these rope drums (as seen, for example, in figure 5 above). But current musical styles—especially

<sup>35.</sup> Slater, Illustrated Catalogue, 35.

<sup>36.</sup> Malou Haine and Ignace De Keyser, Catalogue des instruments Sax au Musée Instrumental de Bruxelles (Brussels: Musée instrumental, 1980), 152.



FIGURE 17. Prussian Drum, 1915, made by Clemens Kreher, Marienberg, Prussia. Smithsonian Institution, National Museum of American History, Behring Center, inventory no. 19.941. Photo by the author.



FIGURE 18. Orchestral drum advertisement. Lyon and Healy, *Illustrated Catalogue of Drums, Fifes, Flutes, Bugles, Etc.* (Chicago: Lyon & Healy, 1886), 16. National Music Museum Archives.

ragtime, with its emphasis on a driving beat and syncopated rhythms demanded bass drums that could provide a more articulate sound. Practical considerations also favored the switch to rod-tension drums. The tugs used to tighten a rope-tension bass drum would be difficult to adjust because traps mounted on the drum would be in the way, and some of the tugs would actually be under the drum. Secondly, with the tendency of the bass drum to "walk" (only partially solved by the addition of spurs), the tugs on the bottom of the drum, where it rested on the floor, would tend to loosen as the drum was played. Rod-tension bass drums did not completely solve these problems (adjusting the rods was still difficult), but they helped. In addition, the rods themselves could be used for mounting traps. For a variety of musical and practical reasons, therefore, trap drummers quickly adopted the rod-tension bass drum.

The basic trap set at the turn of the twentieth century thus consisted of rod-tension snare and bass drums, a cymbal, a snare drum stand, a bass drum pedal, and at the very least a triangle and a tambourine. While even this collection of equipment presented the drummer with space and transportation problems, most drummers needed many other traps, some even a timpano or xylophone. These additional sounds would help a drummer get jobs, assuming he could transport his trap set from one musical venue to the next. Musical instrument manufacturers soon provided products to help with this vexing situation as well.

Arthur Rackett wrote about his "forty-inch bass drum," but a drum this size is the very largest that most musical instrument manufacturers produced at the time. A smaller bass drum made the life of a traveling drummer much easier, and models as small as twenty-four inches in diameter were available,<sup>37</sup> while the width of the shell varied from twelve to twenty-four inches. Snare drums also became smaller. It is often difficult to distinguish between a snare drum that was meant for use in symphony orchestras and one meant for use on a trap set, especially since trap sets were used so often in groups called theater orchestras or dance orchestras. One drum that was clearly advertised especially for a trap set was the "Surprise Orchestra Snare Drum" that appeared in the J. W. Pepper 1909 Musical Times and Band Journal. According to the advertisement, the drum was fifteen and one-half inches in diameter and four inches deep (including hoops). An accompanying description states that "This Drum is made to meet the increasing demand for a good, well built, double head drum, with narrow body, for use in dance or theatre orchestras"38 (fig. 19).

<sup>37.</sup> J. W. Pepper, J. W. Pepper's Complete Catalogue (Philadelphia: J. W. Pepper, 1905), 34-35.

<sup>38.</sup> J. W. Pepper, J. W. Pepper's Musical Times and Band Journal, vol. 21, no. 245 (Philadelphia: J. W. Pepper, 1909), 5.



FIGURE 19. "Surprise Orchestra Snare Drum." Illustration from J. W. Pepper's Musical Times and Band Journal, vol. 21, no. 245 (Philadelphia: J. W. Pepper, 1909), 7. National Music Museum Archives.

By specifically mentioning a "double head drum" this advertisement alludes to another possible design for drums that was tried, with some measure of success, around the turn of the century, namely a drum with only one head. Single-head snare drums, offered by all of the major musical instrument distributors, cut down on both the size of the drum shell and the weight of the instrument. The snares were located inside the drum on the underside of the batter head, and a snare strainer was mounted upside-down inside the shell. A typical example made around the turn of the century, possibly distributed by J. W. Jenkins & Sons of Kansas City, Missouri, can be found in the National Music Museum in Vermillion, South Dakota (fig. 20).

By 1906, J. W. Pepper was producing single-head bass drums. This company offered one of the earliest complete trap sets, whose price was \$27.50 including both bass and snare drums with single heads. Furthermore, Pepper showed how all the smaller pieces of the set could be packed inside the bass drum for easy transportation, thus offering a solution to drummers' ever-present need for lightweight, easy-to-carry equipment (fig. 21). Because the drums were made with only one head, being open where there would normally be a second head, they could be stacked inside each other, thus becoming carrying cases when the drummer traveled. Acoustically, however, these drums were less successful, as they did not have the resonance or tone of the more traditional doubleheaded drum.



FIGURE 20. Single-head snare drum, ca. 1900. National Music Museum, NMM 2754. Photo by Bill Willroth Sr.

A unique snare drum in the collection of the Smithsonian Institution's National Museum of American History, Behring Center, in Washington, D.C., is a double-head drum that can also be used for storage.<sup>39</sup> Cut into the side of the snare drum shell is a small door with a latch that would allow a drummer to put sticks and small traps inside. This "trap door" shows drummers' ingenuity when it came to their equipment and the need for easy portability (fig. 22).

Collapsible drums, which could be folded up and easily carried in a box, also met with some success. Many designs were patented and produced in the first two decades of the twentieth century; the most famous was one for which a patent was granted in 1917 to the drum manufacturer William Barry of Philadelphia.<sup>40</sup> When assembled the trap set looked like any other, but when it came time to pack, the rods easily slid away from the counter hoops, the heads came off the drum, and the shell folded in on itself by means of a series of eight hinges. The entire set could be carried in two small trunks (figs. 23–24).

39. Inventory no. 1991.0106.04. Unfortunately, only the drum shell and a single counter hoop remain of this drum, which was built around 1900. It certainly was a two-headed drum, however, because there are no indications of hardware being mounted to the shell or inside the shell, as would be required for a single-head drum.

40. William A. Barry, inventor, *Collapsible Drum*, United States patent 1,223,237, 17 April 1917.



FIGURE 21. Advertisement for the "J. W. P. Premier Trap Drummer's Outfit." J. W. Pepper's Musical Times and Band Journal, vol. 19, no. 227 (Philadelphia: J. W. Pepper, 1906), 11. National Music Museum Archives.



FIGURE 22. Snare drum with trap door, ca. 1900. Smithsonian Institution, National Museum of American History, Behring Center, inventory no. 1991.0106.04. Photo by the author.



FIGURE 23. Trap set with collapsible Barry bass drum, National Music Museum, NMM 10412. Photo by Bill Willroth Sr.



FIGURE 24. Advertisement for Barry folding bass drum. Barry Drum Manufacturer, *Barry Drum Catalog D* (Philadelphia: Barry, ca. 1920), 3. Percussive Arts Society, Lawton, Oklahoma.

By 1920, the trap set and the styles of music played on it had become firmly entrenched in the popular music world. During the following decade the trap set continued to expand, sometimes including full sets of timpani, bells, a xylophone, or even chimes. This trend continued until the introduction of "talky movies" in 1927, when suddenly musicians were no longer required to provide the music and sound effects in movie theaters. In the 1930s, the famous swing drummer Gene Krupa would strip all of the sound effects away from the trap set, leaving just the drums and cymbals.<sup>41</sup> Younger generations of drummers would call this more limited set of equipment by one of two names, trap set or drum set.

<sup>41.</sup> Nicholls, The Drum Book, 9.

The creation and development of the trap set was the result of an amalgamation of ideas, introduced by individual drummers and adapted by others in the exciting music world of the late nineteenth and early twentieth centuries. In response to a variety of musical needs, these drummers created a setup that was flexible enough to meet the demands of a wide range of popular music styles. In later years, both players and musical instrument manufacturers would continue to make improvements of various kinds, but it is mainly because of its versatility that the trap set has played a major role in all styles of popular music and will contribution to the world of musical instruments that drew on both European and African-American traditions, a combination that continues to influence much of popular culture in the United States.